FCC Part 22/24/27 Compliance Test Report

Test Report no.:	FCC_Cellular_RM-1105_07.docx	**Date of Report:**	03-Mar-2015
Number of pages:	115	**Customer's Contact person:**	Jari Rontu
Testing laboratory:	TCC Microsoft Tampere Laboratory P.O.Box 403 Visiokatu 3 FIN-33101 TAMPERE, FINLAND Tel. +358 71 800 8000 Fax. +358 71 804 6880	**Customer:**	Microsoft P.O.Box(86) Joensuunkatu 7E FIN-24101 SALO, FINLAND Tel. +358 (0) 7180 08000 Fax. +358 71 80 44122
FCC listing no.: **IC recognition no.:**	94436 661AK-1		
Tested devices/ accessories:	**Phone RM-1105 / Battery BV-T5E / Charger AC-100E / Headset WH-308**		
FCC ID:	PYARM-1105	**IC:**	661X-RM1105
Supplement reports:	-		
Testing has been carried out in accordance with:	**CFR 47, FCC rules Parts 22/24/27, TIA-603-C-2004 and IC standards, RSS-GEN (Issue 4, November 2014), RSS-133 (Issue 6, January 2013), RSS-132 (Issue 3, January 2013), RSS-139 (Issue 2, February 2009), RSS-130 (Issue 1, October 2013), RSS-199 (Issue 2, October 2014), RSS-195 (Issue 2, April 2014). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".**		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Microsoft.		
Test Results:	**The EUT complies with the requirements in respect of all parameters subject to the test.** The test results relate only to devices specified in this document		
Date and signature for the contents:	 Hannu Söderholm 2015.11.03 15:14:46 +02'00'		

Hannu Söderholm, Engineer, EMC

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1. Summary for FCC Part 22/24/27 Compliance Test Report

Date of receipt	01-Aug-2015
Testing completed	23-Sep-2015
The customer's contact person	Jari Rontu
Test Plan referred to	T:\Projects\RM-1105\TestPlan\RS_testplan_RM-1105.xlsm
Notes	LTE conducted output power results can be found in chapter 9. Appendix.
Document name	T:\Projects\RM-1105\EMC\FCC_Cellular_RM-1105_07_ant1.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:
GSM/WCDMA/WLAN/Bluetooth
The EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-1105	004402741813020	2030	-	01068.00000.15294.36000	400035
Battery	BV-T5E	4955405211010400583;0670775	LG v4.0	-	-	400027
Charger	AC-100E	4090495125580301759067 5758	0.3	-	-	400013
Headset	WH-308	-	-	-	-	400014
Phone	RM-1105	004402741813103	2030	-	01068.00000.15294.36000	400039
Phone	RM-1105	004402741812980	2030	-	01068.00000.15294.36000	400036

1.2. Summary of Test Results

GSM 850:

Section in CFR 47	Section in RSS-GEN or RSS-132	Name of the test	Result
§2.1046(a), 22.913(a)	4.4	Conducted RF output power	-
§22.913(a)	4.4	Radiated RF output power	PASSED
N/A	5.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§22.917(a)	4.5	Band edge compliance	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	-
§22.917(a), §2.1053	4.5	Spurious radiated emissions	PASSED
§2.1055(a)	4.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	4.3	Frequency stability, voltage variation	PASSED

GSM 1900:

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	-
§24.232(b)	6.4	Radiated RF output power	PASSED
N/A	6.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§24.238(a)	6.5	Band edge compliance	PASSED
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	-
§24.238(a), §2.1053	6.5	Spurious radiated emissions	PASSED
§2.1055(a)	6.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	6.3	Frequency stability, voltage variation	PASSED

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WCDMA2:

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	-
§24.232(b)	6.4	Radiated RF output power	PASSED
N/A	6.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§24.238(a)	6.5	Band edge compliance	PASSED
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	-
§24.238(a), §2.1053	6.5	Spurious radiated emissions	PASSED
§2.1055(a)	6.3	Frequency stability, temperature variation	-
§2.1055(d)	6.3	Frequency stability, voltage variation	-

WCDMA4:

Section in CFR 47	Section in RSS-GEN or RSS-139	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	-
§27.50(d)(2)	6.4	Radiated RF output power	PASSED
N/A	6.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53(g)	6.5	Band edge compliance	PASSED
§27.53(g), §2.1051	6.5	Spurious emissions at antenna terminals	-
§24.238(a), §2.1053	6.5	Spurious radiated emissions	PASSED
§2.1055(a)	6.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	6.3	Frequency stability, voltage variation	PASSED

WCDMA5:

Section in CFR 47	Section in RSS-GEN or RSS-132	Name of the test	Result
§2.1046(a), 22.913(a)	4.4	Conducted RF output power	-
§22.913(a)	4.4	Radiated RF output power	PASSED
N/A	5.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§22.917(a)	4.5	Band edge compliance	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	-
§22.917(a), §2.1053	4.5	Spurious radiated emissions	PASSED
§2.1055(a)	4.3	Frequency stability, temperature variation	-
§2.1055(d)	4.3	Frequency stability, voltage variation	-

LTE2:

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	-
§24.232(b)	6.4	Radiated RF output power	PASSED
N/A	6.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§24.238(a)	6.5	Band edge compliance	PASSED
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	-
§24.238(a), §2.1053	6.5	Spurious radiated emissions	PASSED
§2.1055(a)	6.3	Frequency stability, temperature variation	-
§2.1055(d)	6.3	Frequency stability, voltage variation	-

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LTE4:

Section in CFR 47	Section in RSS-GEN or RSS-139	Name of the test	Result
§2.1046(a)	6.4	Conducted RF output power	-
§27.50(d)(4)	6.4	Radiated RF output power	PASSED
N/A	6.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53(h)	6.5	Band edge compliance	PASSED
§27.53(h), §2.1051	6.5	Spurious emissions at antenna terminals	-
§27.53(h), §2.1053	6.5	Spurious radiated emissions	PASSED
§2.1055(a)	6.3	Frequency stability, temperature variation	-
§2.1055(d)	6.3	Frequency stability, voltage variation	-

LTE5:

Section in CFR 47	Section in RSS-GEN or RSS-132	Name of the test	Result
§2.1046(a), 22.913(a)	4.4	Conducted RF output power	-
§22.913(a)	4.4	Radiated RF output power	PASSED
N/A	5.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§22.917(a)	4.5	Band edge compliance	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	-
§22.917(a), §2.1053	4.5	Spurious radiated emissions	PASSED
§2.1055(a)	4.3	Frequency stability, temperature variation	-
§2.1055(d)	4.3	Frequency stability, voltage variation	-

LTE7:

Section in CFR 47	Section in RSS-GEN or RSS-199	Name of the test	Result
§2.1046(a)	4.4	Conducted RF output power	-
§27.50(h)(2)	4.4	Radiated RF output power	PASSED
N/A	N/A	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53(l)	4.5(b)	Band edge compliance	PASSED
§2.1051	4.5(b)	Spurious emissions at antenna terminals	-
§27.53(l), §2.1053	4.5(b)	Spurious radiated emissions	PASSED
§27.54	4.3	Frequency stability, temperature variation	PASSED
§27.54	4.3	Frequency stability, voltage variation	PASSED

LTE12:

Section in CFR 47	Section in RSS-GEN or RSS-130	Name of the test	Result
§2.1046(a)	4.4	Conducted RF output power	-
§27.50(c)10	4.4	Radiated RF output power	PASSED
N/A	N/A	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53(f)	4.6	Band edge compliance	PASSED
§27.53(f)	4.6	Spurious emissions at antenna terminals	-
§27.53(f)	4.6	Spurious radiated emissions	PASSED
§27.54	4.3	Frequency stability, temperature variation	PASSED
§27.54	4.3	Frequency stability, voltage variation	PASSED

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LTE13:

Section in CFR 47	Section in RSS-GEN or RSS-130	Name of the test	Result
§2.1046(a)	4.4	Conducted RF output power	-
§27.50(b)(10)	4.4	Radiated RF output power	PASSED
N/A	4.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53(c)(2)(4)	4.6	Band edge compliance	PASSED
§27.53(c)(2)(4),(f), §2.1051	4.6	Spurious emissions at antenna terminals	-
§27.53(c)(2)(4),(f), §2.1053	4.6	Spurious radiated emissions	PASSED
§2.1055(a)	4.3 (a)	Frequency stability, temperature variation	PASSED
§2.1055(d)	4.3 (a)	Frequency stability, voltage variation	PASSED

LTE17:

Section in CFR 47	Section in RSS-GEN or RSS-130	Name of the test	Result
§2.1046(a)	4.4	Conducted RF output power	-
§27.50(c)(10)	4.4	Radiated RF output power	PASSED
N/A	N/A	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53(g)	4.6	Band edge compliance	PASSED
§27.53(g), §2.1051	4.6	Spurious emissions at antenna terminals	-
§27.53(g), §2.1051	4.6	Spurious radiated emissions	PASSED
§2.1055(a)	4.3 (a)	Frequency stability, temperature variation	PASSED
§2.1055(d)	4.3 (a)	Frequency stability, voltage variation	PASSED

LTE30:

Section in CFR 47	Section in RSS-GEN or RSS-195	Name of the test	Result
§2.1046(a)	4.4	Conducted RF output power	-
§27.50 a 3	5.5	Radiated RF output power	PASSED
N/A	4.4	Peak to average power ratio	-
§2.1049(h)	6.6	99 % occupied bandwidth	PASSED
§27.53 a 4 i ii iii	5.6.2	Band edge compliance	PASSED
§27.53(g)	4.6	Spurious emissions at antenna terminals	-
§27.53 a 4 i ii iii	5.6.2	Spurious radiated emissions	PASSED
§27.54	5.4	Frequency stability, temperature variation	PASSED
§27.54	5.4	Frequency stability, voltage variation	PASSED

LTE41:

Section in CFR 47	Not allowed in Canada	Name of the test	Result
§2.1046(a)		Conducted RF output power	-
§27.50(h)(2)		Radiated RF output power	PASSED
N/A		Peak to average power ratio	-
§2.1049(h)		99 % occupied bandwidth	PASSED
§27.53(l)		Band edge compliance	PASSED
§27.53(h), §2.1051		Spurious emissions at antenna terminals	-
§27.53(l), §2.1053		Spurious radiated emissions	PASSED
§27.54		Frequency stability, temperature variation	PASSED
§27.54		Frequency stability, voltage variation	PASSED

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PASSED	The EUT complies with the essential requirements in the standard.
FAILED	The EUT does not comply with the essential requirements in the standard.
NP	The test was not performed by the TCC Microsoft Laboratory.

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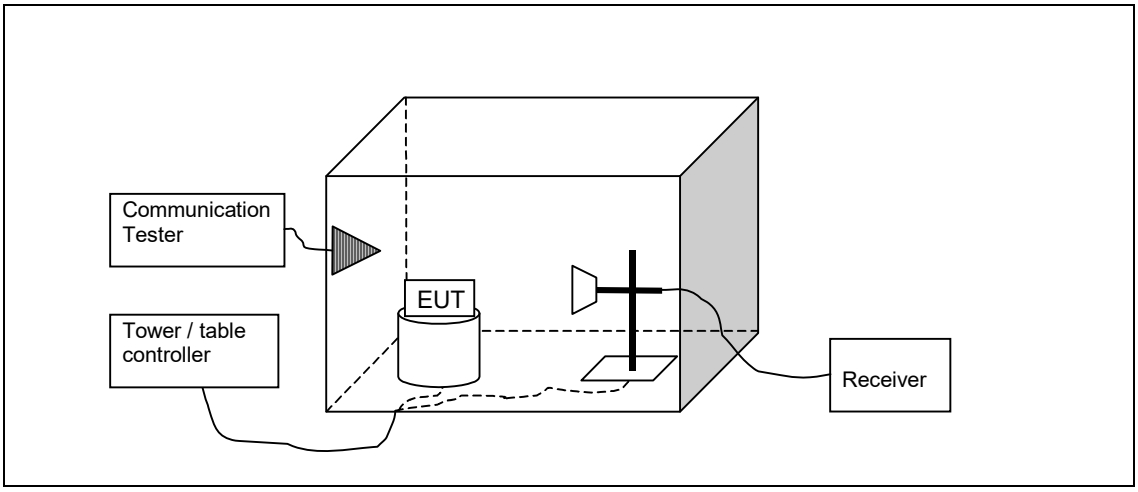
2. Radiated RF output power

(FCC §22.913(a), §27.50 a 3, §27.50(c)(10), §27.50(b)(10), §27.50(c)10, §27.50(h)(2), §27.50(d)(4), §27.50(d)(2), §24.232(b), RSS-132 4.4, RSS-133 6.4, RSS-139 6.4, RSS-199 4.4, RSS-130 4.4, RSS-195 5.5)

EUT with DUT number	RM-1105, DUT 400039
Accessories with DUT numbers	BV-T5E, DUT 400027
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 48 / 101.3
Date of measurements	23-Sep-2015
Measured by	Timo Raiskio

2.1.1 Test setup



2.2. Test method and limit

The measurement is made according to TIA-603-C-2004 as follows:

The measurement is performed in the Anechoic Chamber with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system. The turntable is rotated 360 degrees and this is repeated for both horizontal and vertical receive antenna polarizations.

The EUT is placed on a nonconductive plate at 170 cm height.

The substitution method is used. The measurement results are obtained as described below:

$$P[dBm] = P_{SUBST\ TX} + P_{MEAS} - P_{SUBST\ RX} - L_{SUBST\ CABLES} + G_{SUBST\ TX\ ANT}$$

Where $P_{SUBST\ TX}$ is signal generator level. P_{MEAS} is measured power level from the EUT. $P_{SUBST\ RX}$ is measured power level in substitute measurement. $L_{SUBST\ CABLE}$ is the loss of the cable between the signal generator and the substitution antenna and $G_{SUBST\ TX\ ANT}$ is substitution antenna gain.

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Limits for radiated RF output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
824 - 849	7 ERP	38.5
1850 - 1910	2 EiRP	33
1710 - 1755	1 EiRP	30
2502.5 - 2567.5	2 EiRP	33
699 - 712	2 ERP	33
777 - 787	3 ERP	34.8
704 - 716	3 ERP	34.8
2305 - 2315	0.251 EiRP	24
2496 - 2690	2 EiRP	33

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2.3. GSM 850 test results

RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
128 / 824.2	29	0.794	-3.33	32.33	VERTICAL	PASSED
190 / 836.6	28.58	0.72	-3.05	31.63	VERTICAL	PASSED
251 / 848.8	26.54	0.45	-4.27	30.81	VERTICAL	PASSED

2.4. GSM 850 E-GPRS (MSC9) test results

RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
128 / 824.2	24.7	0.295	-7.63	32.33	VERTICAL	PASSED
190 / 836.6	23.99	0.251	-7.64	31.63	VERTICAL	PASSED
251 / 848.8	25.46	0.351	-5.35	30.81	VERTICAL	PASSED

2.5. GSM 1900 test results

RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
512 / 1850.2	28.97	0.789	-13.8	42.77	HORIZONTAL	PASSED
661 / 1880	29.68	0.928	-13.08	42.76	HORIZONTAL	PASSED
810 / 1909.8	30.11	1.025	-12.8	42.91	HORIZONTAL	PASSED

2.6. GSM 1900 E-GPRS (MSC9) test results

RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
512 / 1850.2	24.77	0.3	-18	42.77	HORIZONTAL	PASSED
661 / 1880	25.8	0.38	-16.96	42.76	HORIZONTAL	PASSED
810 / 1909.8	25.28	0.337	-17.63	42.91	HORIZONTAL	PASSED

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2.7. WCDMA2 test results

RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
9262 / 1852.4	22.72	0.187	-20.07	42.79	HORIZONTAL	PASSED
9400 / 1880	22.57	0.181	-20.19	42.76	HORIZONTAL	PASSED
9538 / 1907.6	21.99	0.158	-20.86	42.85	HORIZONTAL	PASSED

2.8. WCDMA4 test results

RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1312 / 1712.4	22.84	0.192	-18.96	41.8	HORIZONTAL	PASSED
1412 / 1732.4	23.13	0.206	-18.76	41.89	HORIZONTAL	PASSED
1513 / 1752.6	23.62	0.23	-18.27	41.89	HORIZONTAL	PASSED

2.9. WCDMA5 test results

RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
4132 / 826.4	19.72	0.094	-12.65	32.37	HORIZONTAL	PASSED
4175 / 835	18.91	0.078	-13.02	31.93	VERTICAL	PASSED
4233 / 846.6	17.97	0.063	-12.82	30.79	VERTICAL	PASSED

2.10. LTE2 test results

FDD, CBW 3MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1851.5	24.54	0.284	-18.23	42.77	HORIZONTAL	PASSED
18900 / 1880	24.21	0.263	-18.55	42.76	HORIZONTAL	PASSED
18900 / 1908.5	23.04	0.201	-19.84	42.88	HORIZONTAL	PASSED

FDD, CBW 20MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1860	23.68	0.233	-19.12	42.8	HORIZONTAL	PASSED
18900 / 1880	23.89	0.245	-18.87	42.76	HORIZONTAL	PASSED
18900 / 1900	22.76	0.189	-20.07	42.83	HORIZONTAL	PASSED

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FDD, CBW 3MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1851.5	24.44	0.278	-18.33	42.77	HORIZONTAL	PASSED
18900 / 1880	24.19	0.263	-18.57	42.76	HORIZONTAL	PASSED
18900 / 1908.5	23.23	0.21	-19.65	42.88	HORIZONTAL	PASSED

FDD, CBW 20MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1860	23.42	0.22	-19.38	42.8	HORIZONTAL	PASSED
18900 / 1880	23.55	0.226	-19.21	42.76	HORIZONTAL	PASSED
18900 / 1900	22.67	0.185	-20.16	42.83	HORIZONTAL	PASSED

2.11. LTE4 test results

FDD, CBW 3MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1711.5	25.28	0.337	-16.51	41.79	HORIZONTAL	PASSED
20175 / 1732.5	25.3	0.339	-16.59	41.89	HORIZONTAL	PASSED
20175 / 1753.5	25.8	0.38	-16.08	41.88	HORIZONTAL	PASSED

FDD, CBW 20MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1720	24.78	0.3	-17.11	41.89	HORIZONTAL	PASSED
20175 / 1732.5	24.68	0.294	-17.21	41.89	HORIZONTAL	PASSED
20175 / 1745	25.13	0.326	-16.77	41.9	HORIZONTAL	PASSED

FDD, CBW 3MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1711.5	25.16	0.328	-16.63	41.79	HORIZONTAL	PASSED
20175 / 1732.5	25.26	0.335	-16.63	41.89	HORIZONTAL	PASSED
20175 / 1753.5	25.63	0.365	-16.25	41.88	HORIZONTAL	PASSED

FDD, CBW 20MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 1720	24.43	0.277	-17.46	41.89	HORIZONTAL	PASSED
20175 / 1732.5	24.65	0.292	-17.24	41.89	HORIZONTAL	PASSED
20175 / 1745	24.58	0.287	-17.32	41.9	HORIZONTAL	PASSED

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2.12. LTE5 test results

FDD, CBW 3MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 825.5	20.98	0.125	-11.3	32.28	HORIZONTAL	PASSED
20525 / 836.5	19.64	0.092	-12	31.64	VERTICAL	PASSED
20525 / 847.5	19.2	0.083	-11.58	30.78	VERTICAL	PASSED

FDD, CBW 10MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 829	20.51	0.113	-11.72	32.23	HORIZONTAL	PASSED
20525 / 836.5	19.76	0.095	-11.88	31.64	VERTICAL	PASSED
20525 / 844	19.02	0.08	-11.98	31	VERTICAL	PASSED

FDD, CBW 1.4MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 824.7	20.94	0.124	-11.36	32.3	VERTICAL	PASSED
20525 / 836.5	19.54	0.09	-12.1	31.64	HORIZONTAL	PASSED
20525 / 848.3	18.68	0.074	-12.12	30.8	VERTICAL	PASSED

FDD, CBW 10MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 829	20.77	0.119	-11.46	32.23	HORIZONTAL	PASSED
20525 / 836.5	19.79	0.095	-11.85	31.64	VERTICAL	PASSED
20525 / 844	18.7	0.074	-12.3	31	VERTICAL	PASSED

2.13. LTE7 test results

FDD, CBW 15MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2507.5	23.15	0.207	-23.5	46.65	HORIZONTAL	PASSED
21100 / 2535	24.22	0.264	-22.73	46.95	HORIZONTAL	PASSED
21100 / 2562.5	23.49	0.223	-23.46	46.95	HORIZONTAL	PASSED

FDD, CBW 15MHz, QPSK, 1RB mid, Peak detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2507.5	25.18	0.33	-21.47	46.65	HORIZONTAL	PASSED
21100 / 2535	26.95	0.496	-20	46.95	HORIZONTAL	PASSED
21100 / 2562.5	26.76	0.475	-20.19	46.95	HORIZONTAL	PASSED

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FDD, CBW 20MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2510	23.09	0.204	-23.65	46.74	HORIZONTAL	PASSED
21100 / 2535	24.32	0.271	-22.63	46.95	HORIZONTAL	PASSED
21100 / 2560	23.85	0.242	-23.17	47.02	HORIZONTAL	PASSED

FDD, CBW 20MHz, QPSK, 1RB mid, Peak detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2510	25.52	0.357	-21.22	46.74	HORIZONTAL	PASSED
21100 / 2535	26.83	0.482	-20.12	46.95	HORIZONTAL	PASSED
21100 / 2560	26.51	0.448	-20.51	47.02	HORIZONTAL	PASSED

FDD, CBW 20MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2510	23.24	0.211	-23.5	46.74	HORIZONTAL	PASSED
21100 / 2535	23.75	0.237	-23.2	46.95	HORIZONTAL	PASSED
21100 / 2560	23.62	0.23	-23.4	47.02	HORIZONTAL	PASSED

FDD, CBW 20MHz, 16QAM, 1RB mid, Peak detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2510	25.52	0.357	-21.22	46.74	HORIZONTAL	PASSED
21100 / 2535	26.76	0.474	-20.19	46.95	HORIZONTAL	PASSED
21100 / 2560	26.58	0.455	-20.44	47.02	HORIZONTAL	PASSED

2.14. LTE12 test results

FDD, CBW 3MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 700.5	20.71	0.118	-9.75	30.46	VERTICAL	PASSED
23095 / 707.5	21.09	0.129	-9.06	30.15	HORIZONTAL	PASSED
23095 / 714.5	20.67	0.117	-9.66	30.33	HORIZONTAL	PASSED

FDD, CBW 10MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 704	21.07	0.128	-8.86	29.93	HORIZONTAL	PASSED
23095 / 707.5	21.08	0.128	-9.07	30.15	HORIZONTAL	PASSED
23095 / 711	21.08	0.128	-9.22	30.3	HORIZONTAL	PASSED

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FDD, CBW 3MHz, 16QAM, 1RB mid, RMS detector

Channel / fc [MHz]	ERP [dBm]	ERP [W]	PMEAS [dBm]	ATOT [dB]	Polarisation	Results
0 / 700.5	20.07	0.102	-9.47	29.54	HORIZONTAL	PASSED
23095 / 707.5	20.76	0.119	-9.92	30.68	VERTICAL	PASSED
23095 / 714.5	20.89	0.123	-9.44	30.33	HORIZONTAL	PASSED

FDD, CBW 10MHz, 16QAM, 1RB mid, RMS detector

Channel / fc [MHz]	ERP [dBm]	ERP [W]	PMEAS [dBm]	ATOT [dB]	Polarisation	Results
0 / 704	20.84	0.121	-9.09	29.93	HORIZONTAL	PASSED
23095 / 707.5	21.11	0.129	-9.57	30.68	VERTICAL	PASSED
23095 / 711	21.15	0.13	-9.48	30.63	VERTICAL	PASSED

2.15. LTE13 test results

FDD, CBW 5MHz, QPSK, 1RB mid, RMS detector

Channel / fc [MHz]	ERP [dBm]	ERP [W]	PMEAS [dBm]	ATOT [dB]	Polarisation	Results
23205 / 779.5	19.18	0.083	-12.21	31.39	VERTICAL	PASSED
23230 / 782	19.42	0.088	-11.79	31.21	VERTICAL	PASSED
23255 / 784.5	18.67	0.074	-12.29	30.96	VERTICAL	PASSED

FDD, CBW 10MHz, QPSK, 1RB mid, RMS detector

Channel / fc [MHz]	ERP [dBm]	ERP [W]	PMEAS [dBm]	ATOT [dB]	Polarisation	Results
23230 / 782	19.35	0.086	-11.86	31.21	VERTICAL	PASSED

FDD, CBW 5MHz, 16QAM, 1RB mid, RMS detector

Channel / fc [MHz]	ERP [dBm]	ERP [W]	PMEAS [dBm]	ATOT [dB]	Polarisation	Results
23205 / 779.5	18.87	0.077	-12.52	31.39	VERTICAL	PASSED
23230 / 782	19.48	0.089	-11.73	31.21	VERTICAL	PASSED
23255 / 784.5	18.48	0.07	-12.48	30.96	VERTICAL	PASSED

FDD, CBW 10MHz, 16QAM, 1RB mid, RMS detector

Channel / fc [MHz]	ERP [dBm]	ERP [W]	PMEAS [dBm]	ATOT [dB]	Polarisation	Results
23230 / 782	19.67	0.093	-11.54	31.21	VERTICAL	PASSED

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2.16. LTE17 test results

FDD, CBW 5MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
23755 / 706.5	20.93	0.124	-9.16	30.09	HORIZONTAL	PASSED
23790 / 710	21.58	0.144	-8.71	30.29	HORIZONTAL	PASSED
23825 / 713.5	20.79	0.12	-9.53	30.32	HORIZONTAL	PASSED

FDD, CBW 10MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
23780 / 709	21.15	0.13	-9.08	30.23	HORIZONTAL	PASSED
23790 / 710	21.62	0.145	-8.67	30.29	HORIZONTAL	PASSED
23800 / 711	21.03	0.127	-9.27	30.3	HORIZONTAL	PASSED

FDD, CBW 5MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
23755 / 706.5	20.79	0.12	-9.92	30.71	VERTICAL	PASSED
23790 / 710	20.98	0.125	-9.31	30.29	HORIZONTAL	PASSED
23825 / 713.5	20.84	0.121	-9.48	30.32	HORIZONTAL	PASSED

FDD, CBW 10MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
23780 / 709	21.44	0.139	-8.79	30.23	HORIZONTAL	PASSED
23790 / 710	21.41	0.138	-8.88	30.29	HORIZONTAL	PASSED
23800 / 711	20.73	0.118	-9.9	30.63	VERTICAL	PASSED

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2.17. LTE30 test results

FDD, CBW 5MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
27685 / 2307.5	19.29	0.085	-26.35	45.64	HORIZONTAL	PASSED
27710 / 2310	23.46	0.222	-22.16	45.62	HORIZONTAL	PASSED
27735 / 2312.5	19.94	0.099	-25.63	45.57	HORIZONTAL	PASSED

FDD, CBW 10MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
27710 / 2310	23.18	0.208	-22.44	45.62	HORIZONTAL	PASSED

FDD, CBW 5MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
27685 / 2307.5	19.28	0.085	-26.36	45.64	HORIZONTAL	PASSED
27710 / 2310	23.12	0.205	-22.5	45.62	HORIZONTAL	PASSED
27735 / 2312.5	20.23	0.105	-25.34	45.57	HORIZONTAL	PASSED

FDD, CBW 10MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
27710 / 2310	23.83	0.242	-21.79	45.62	HORIZONTAL	PASSED

2.18. LTE41 test results

FDD, CBW 10MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2501	24.7	0.295	-21.79	46.49	HORIZONTAL	PASSED
40620 / 2593	22.02	0.159	-24.97	46.99	HORIZONTAL	PASSED
40620 / 2685	20.21	0.105	-26.66	46.87	HORIZONTAL	PASSED

FDD, CBW 20MHz, QPSK, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2506	24.13	0.259	-22.47	46.6	HORIZONTAL	PASSED
40620 / 2593	22.17	0.165	-24.82	46.99	HORIZONTAL	PASSED
40620 / 2680	20.4	0.11	-26.53	46.93	HORIZONTAL	PASSED

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FDD, CBW 10MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2501	24.15	0.26	-22.34	46.49	HORIZONTAL	PASSED
40620 / 2593	21.7	0.148	-25.29	46.99	HORIZONTAL	PASSED
40620 / 2685	20.1	0.102	-26.77	46.87	HORIZONTAL	PASSED

FDD, CBW 20MHz, 16QAM, 1RB mid, RMS detector

Channel / f_C [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
0 / 2506	24.02	0.252	-22.58	46.6	HORIZONTAL	PASSED
40620 / 2593	21.4	0.138	-25.59	46.99	HORIZONTAL	PASSED
40620 / 2680	20.16	0.104	-26.77	46.93	HORIZONTAL	PASSED

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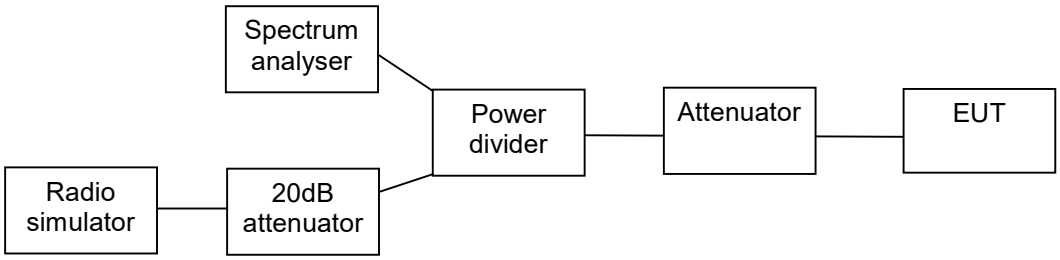
3. 99 % occupied bandwidth

(FCC §2.1049(h), RSS-133 6.6, RSS-132 6.6, RSS-139 6.6, RSS-130 6.6, RSS-199 6.6, RSS-195 6.6)

EUT with DUT number	RM-1105, DUT 400036
Accessories with DUT numbers	BV-T5E, DUT 400027, AC-100E, DUT 400013, WH-308, DUT 400014
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 56 / 102.0
Date of measurements	11-Aug-2015
Measured by	Timo Raiskio

3.1. Test Setup



3.2. Test method and limit

The measurement is made according to applicable FCC rule parts and IC standards.

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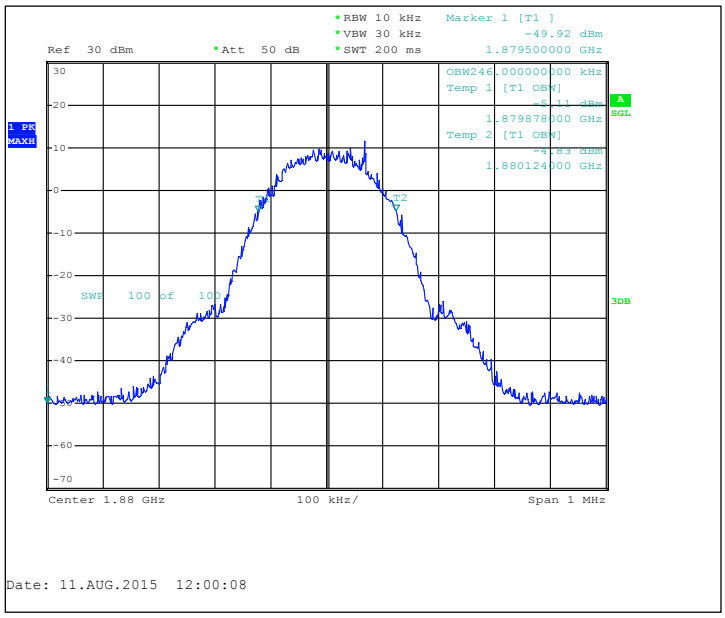
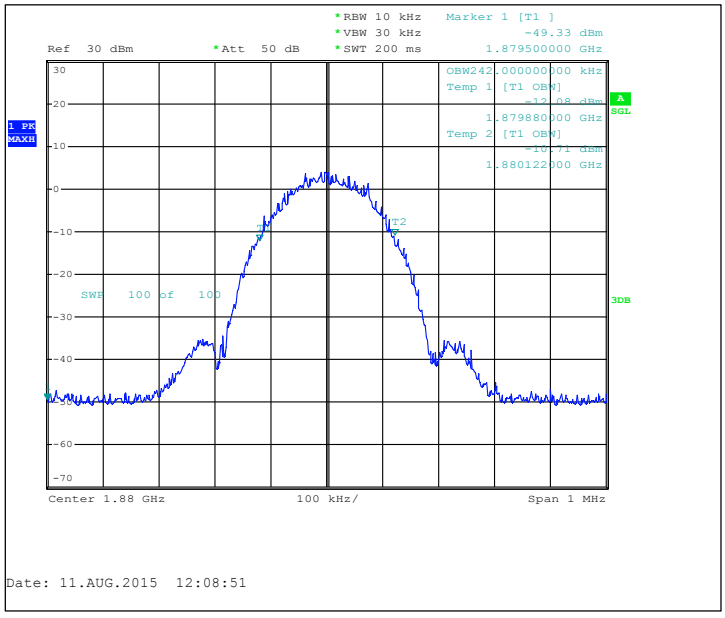
3.3. GSM 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
GSM	246
EGPRS	242

GSM, Channel 661 / 1880.0 MHz



EGPRS, Channel 661 / 1880.0 MHz



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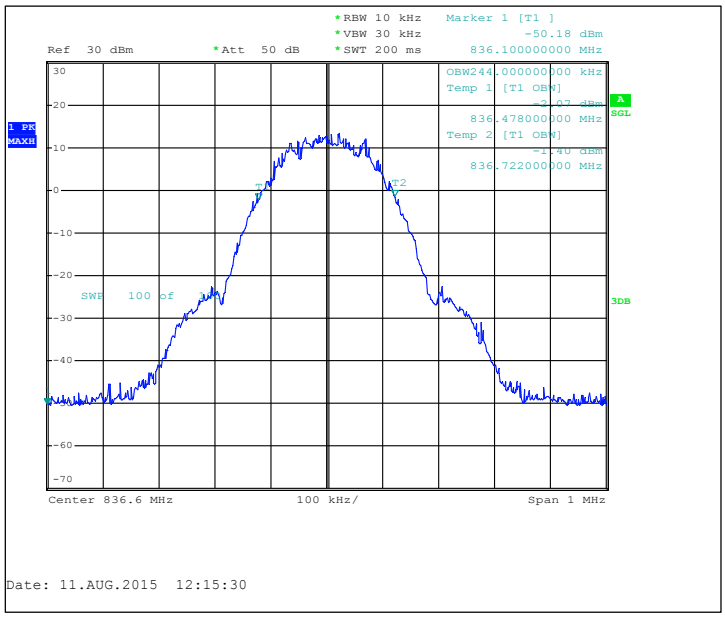
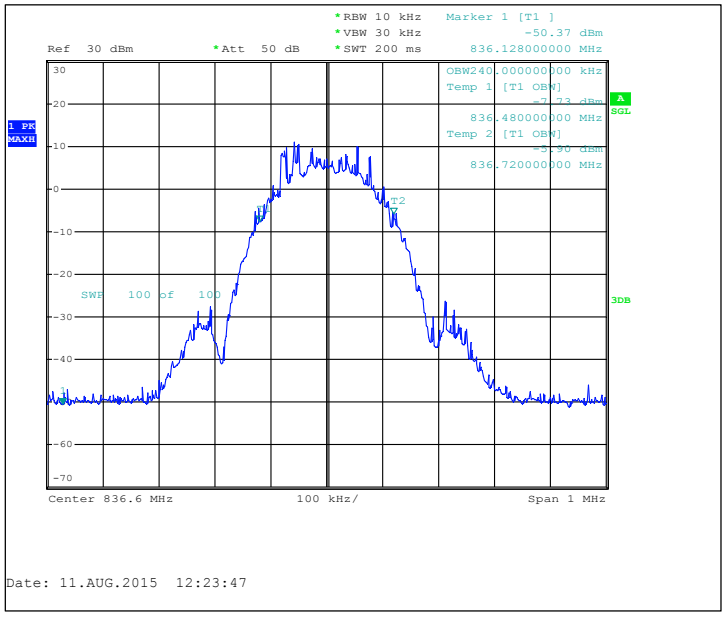
3.4. GSM 850 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
GSM	244
EGPRS	240

GSM, Channel 190 / 836.6 MHz



EGPRS, Channel 190 / 836.6 MHz



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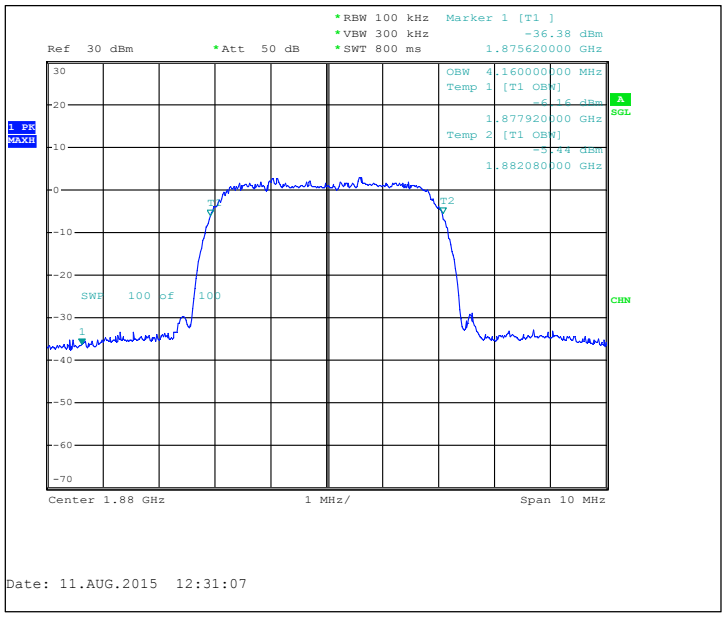
3.5. WCDMA2 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4160

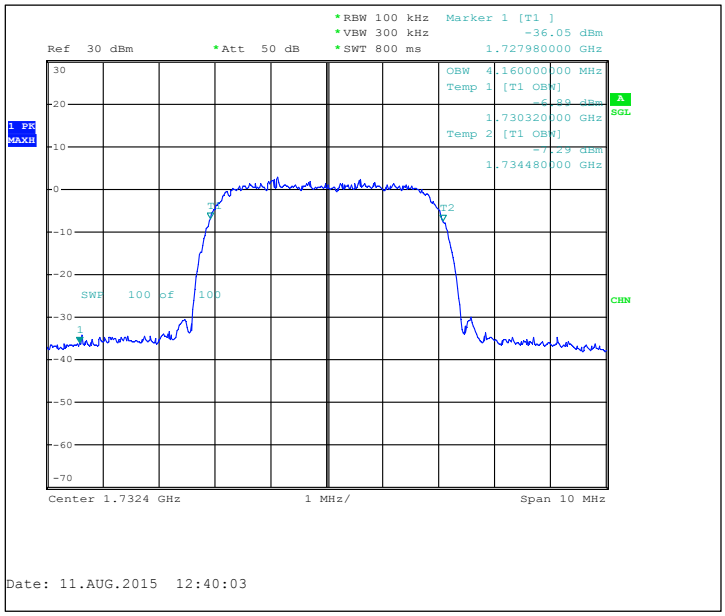
FDD, Channel 9400 / 1880.0 MHz



3.6. WCDMA4 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4160

FDD, Channel 1412 / 1732.4 MHz



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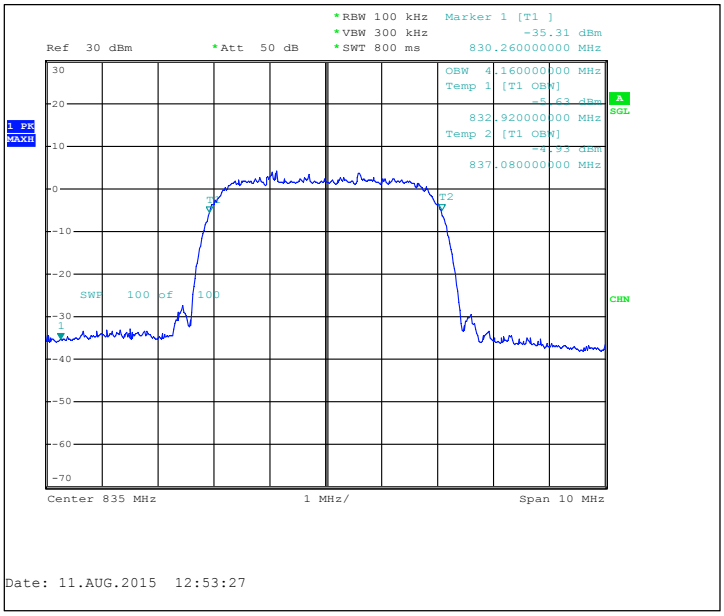
3.7. WCDMA5 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD	4160

FDD, Channel 4175 / 835.0 MHz



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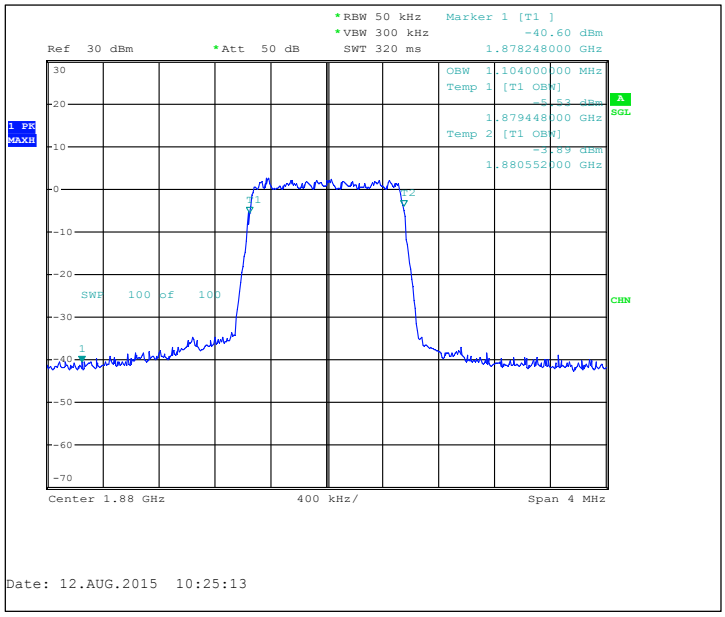
3.8. LTE2 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 1.4MHz, QPSK, 6 RB	1104
FDD, CBW 3MHz, QPSK, 15 RB	2696
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	8970
FDD, CBW 15MHz, QPSK, 75 RB	13480
FDD, CBW 20MHz, QPSK, 100 RB	17950
FDD, CBW 1.4MHz, 16QAM, 6 RB	1104
FDD, CBW 3MHz, 16QAM, 15 RB	2688
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8970
FDD, CBW 15MHz, 16QAM, 75 RB	13440
FDD, CBW 20MHz, 16QAM, 100 RB	17950

FDD, CBW 1.4MHz, QPSK, 6 RB, Channel 18900 / 1880.0 MHz



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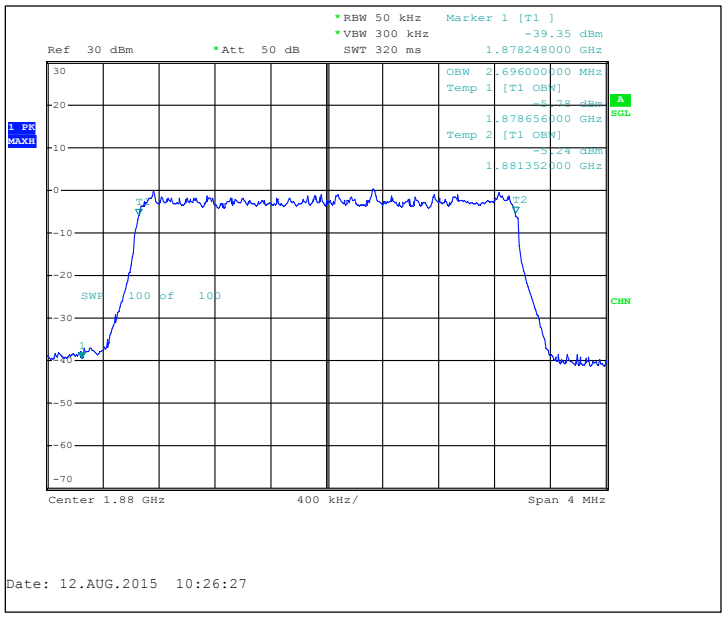
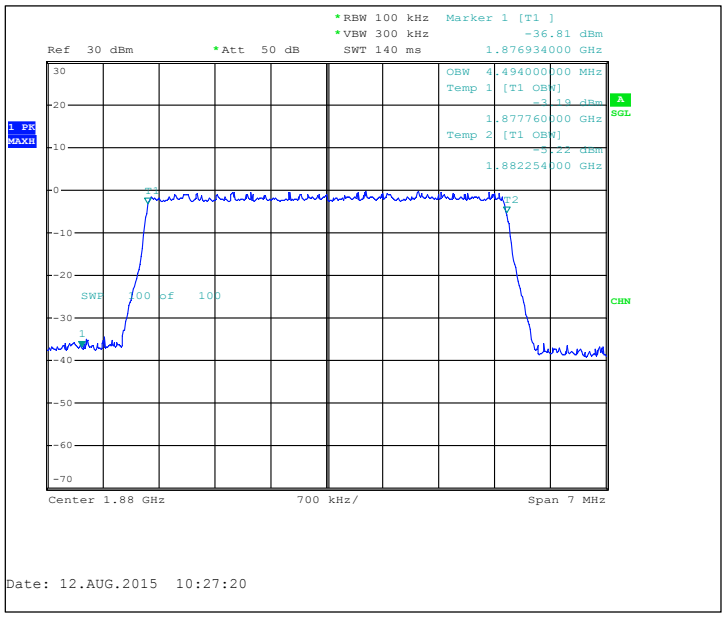
FDD, CBW 3MHz, QPSK, 15 RB, Channel 18900 / 1880.0 MHz



FDD, CBW 5MHz, QPSK, 25 RB, Channel 18900 / 1880.0 MHz



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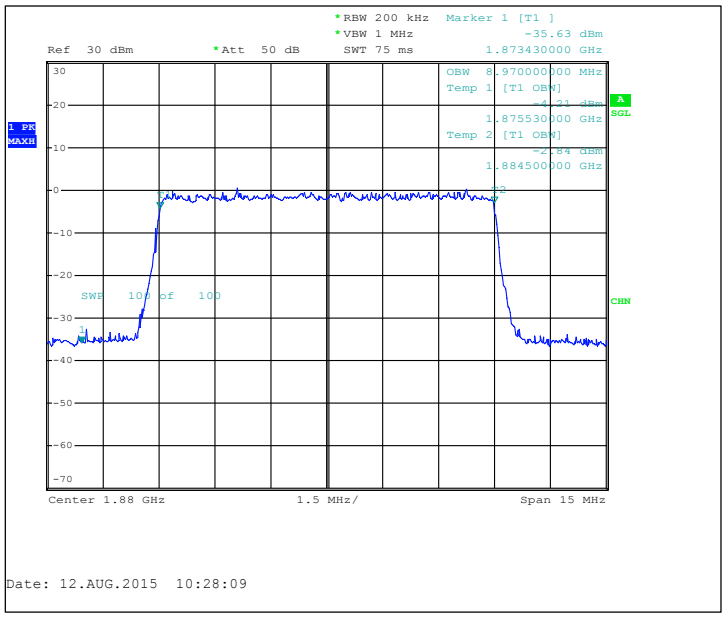
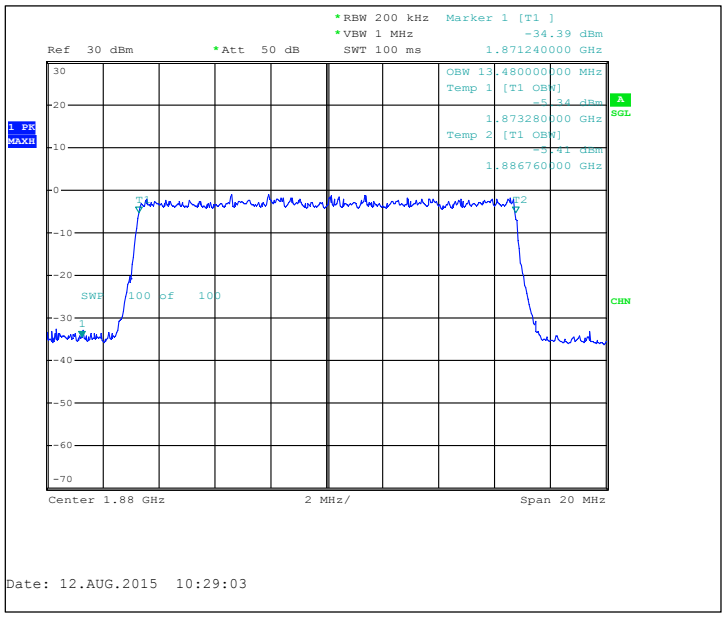
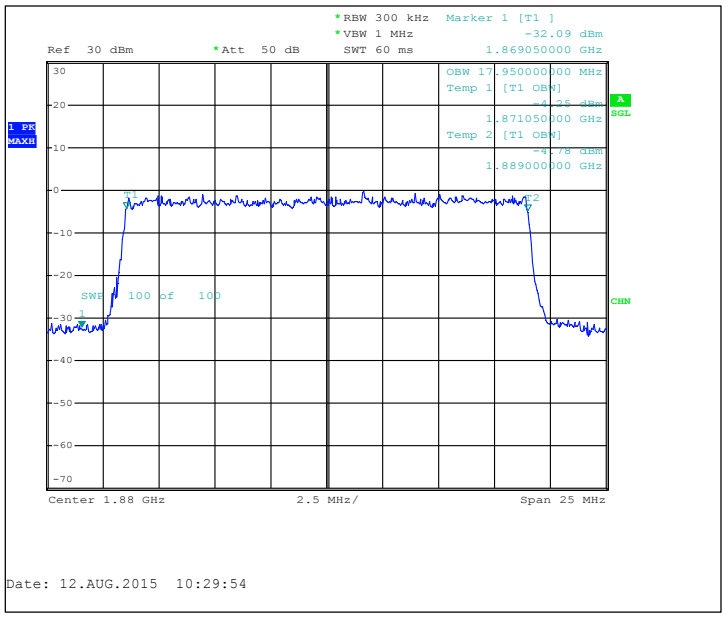
FDD, CBW 10MHz, QPSK, 50 RB, Channel 18900 / 1880.0 MHz



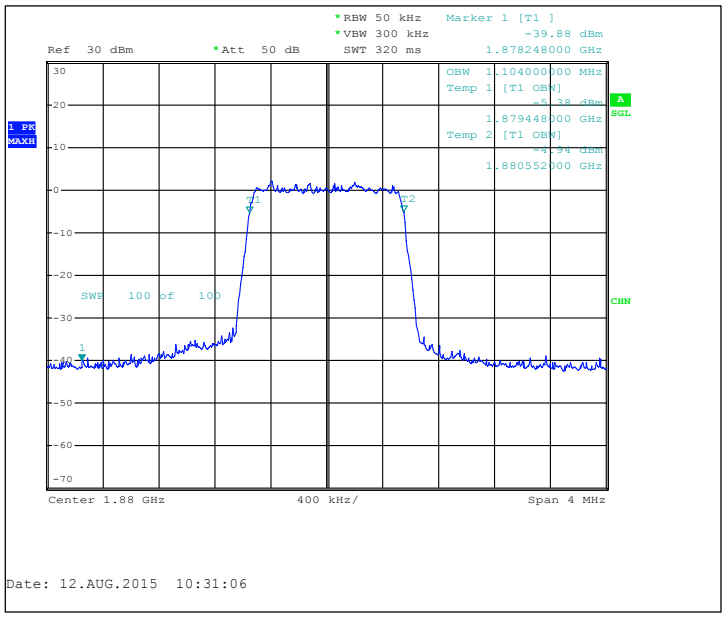
FDD, CBW 15MHz, QPSK, 75 RB, Channel 18900 / 1880.0 MHz



FDD, CBW 20MHz, QPSK, 100 RB, Channel 18900 / 1880.0 MHz



FDD, CBW 1.4MHz, 16QAM, 6 RB, Channel 18900 / 1880.0 MHz



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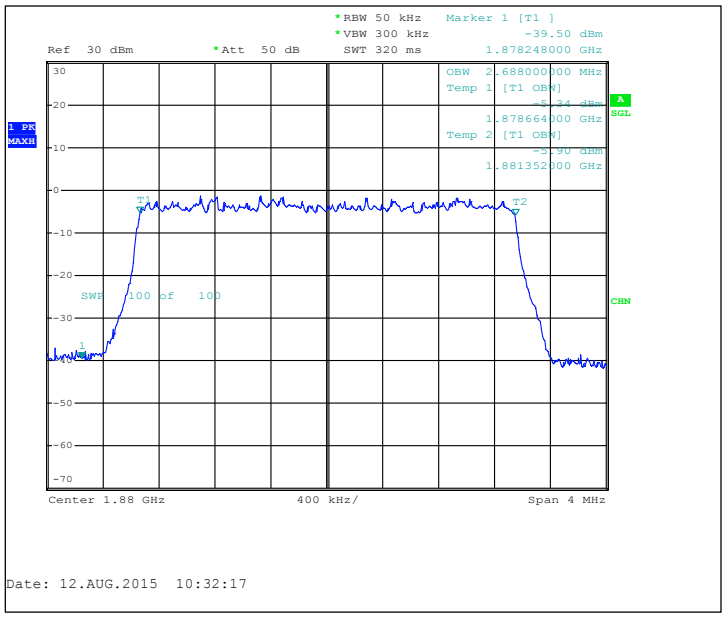
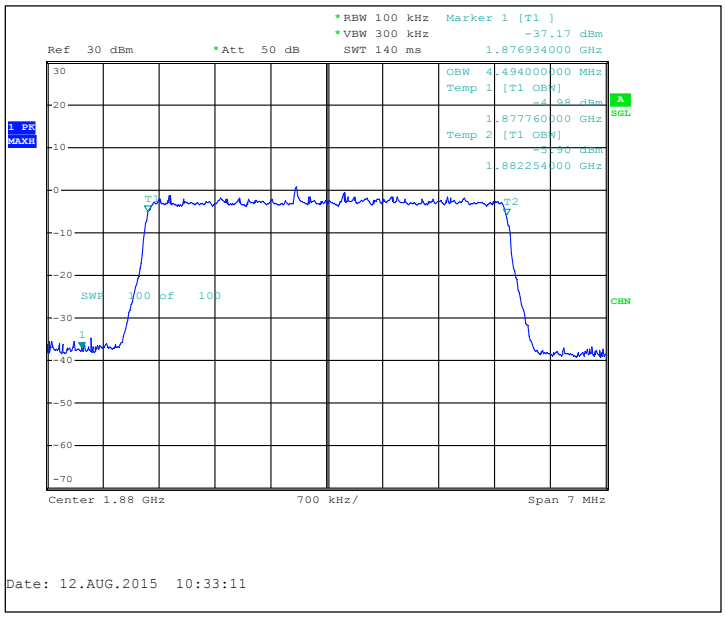
FDD, CBW 3MHz, 16QAM, 15 RB, Channel 18900 / 1880.0 MHz



FDD, CBW 5MHz, 16QAM, 25 RB, Channel 18900 / 1880.0 MHz



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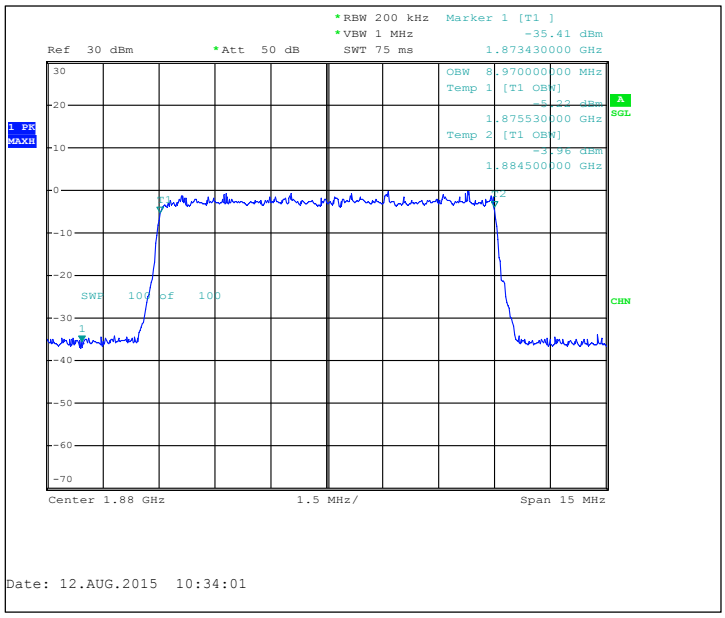
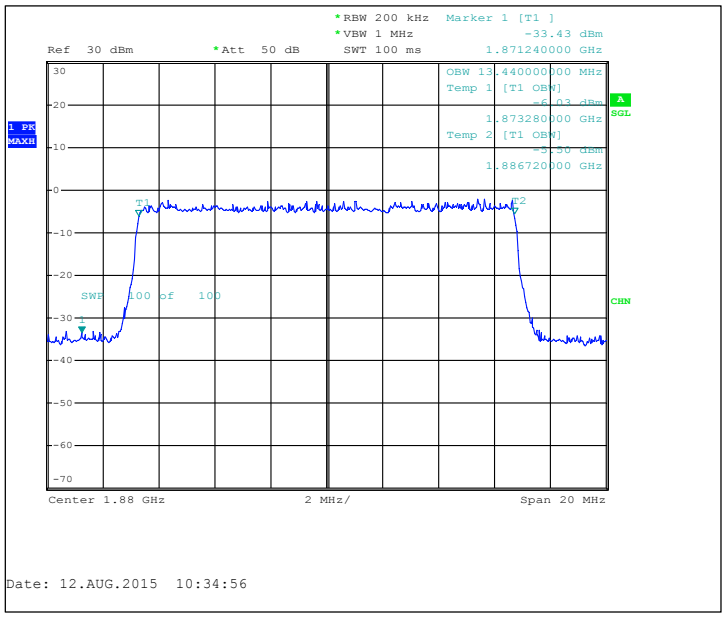
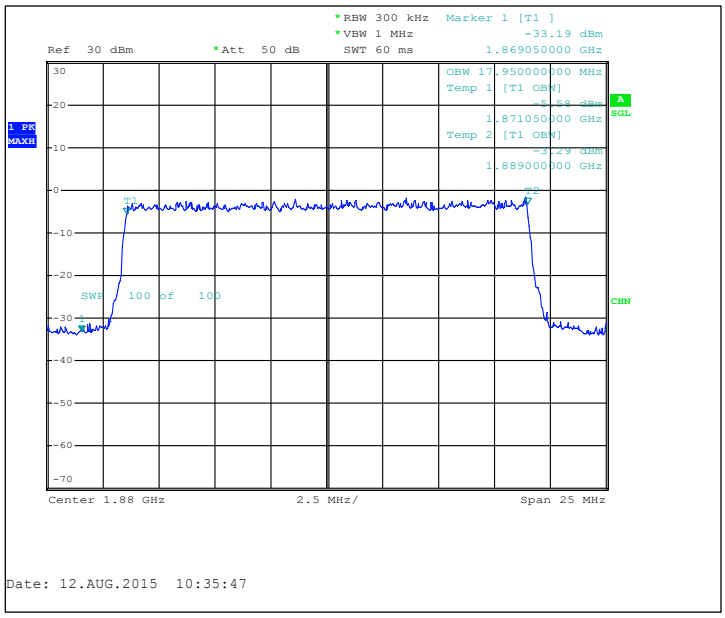
FDD, CBW 10MHz, 16QAM, 50 RB, Channel 18900 / 1880.0 MHz



FDD, CBW 15MHz, 16QAM, 75 RB, Channel 18900 / 1880.0 MHz



FDD, CBW 20MHz, 16QAM, 100 RB, Channel 18900 / 1880.0 MHz



3.9. LTE4 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 1.4MHz, QPSK, 6 RB	1104
FDD, CBW 3MHz, QPSK, 15 RB	2696
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	8970
FDD, CBW 15MHz, QPSK, 75 RB	13480
FDD, CBW 20MHz, QPSK, 100 RB	17900
FDD, CBW 1.4MHz, 16QAM, 6 RB	1104
FDD, CBW 3MHz, 16QAM, 15 RB	2688
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8970
FDD, CBW 15MHz, 16QAM, 75 RB	13400
FDD, CBW 20MHz, 16QAM, 100 RB	17950

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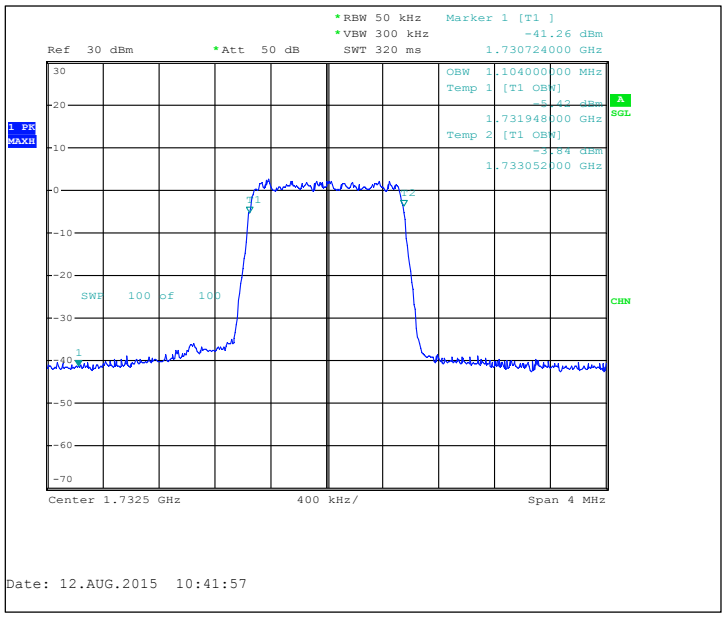
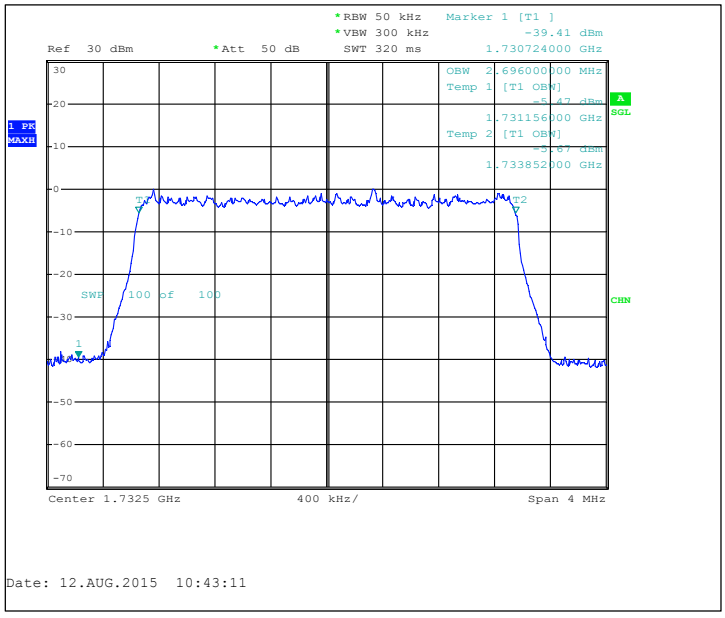
FDD, CBW 1.4MHz, QPSK, 6 RB, Channel 20175 / 1732.5 MHz



FDD, CBW 3MHz, QPSK, 15 RB, Channel 20175 / 1732.5 MHz



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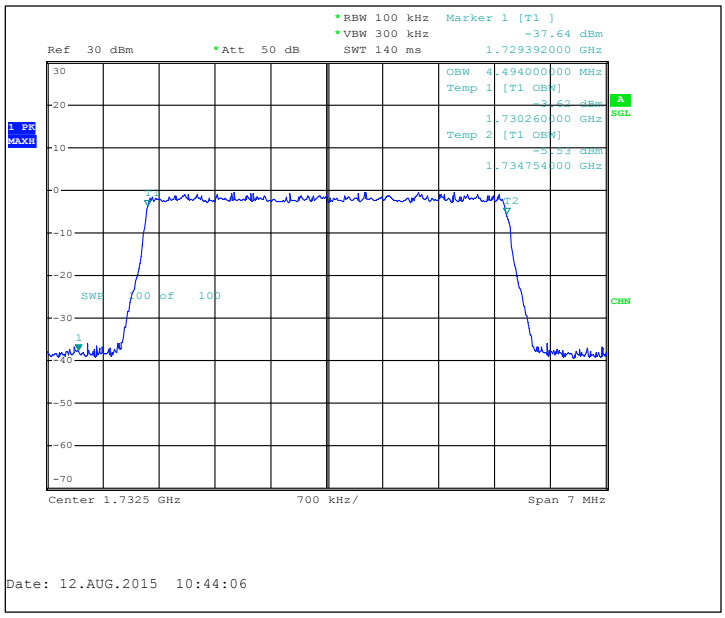
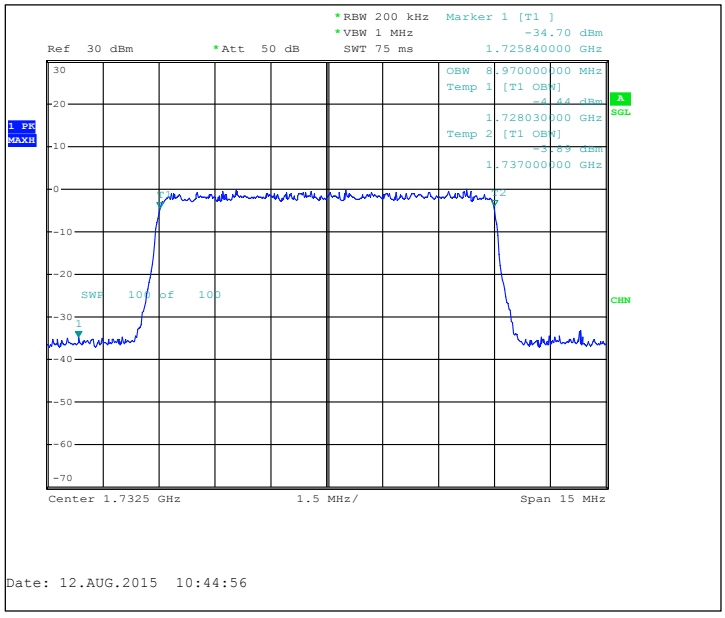
FDD, CBW 5MHz, QPSK, 25 RB, Channel 20175 / 1732.5 MHz



FDD, CBW 10MHz, QPSK, 50 RB, Channel 20175 / 1732.5 MHz



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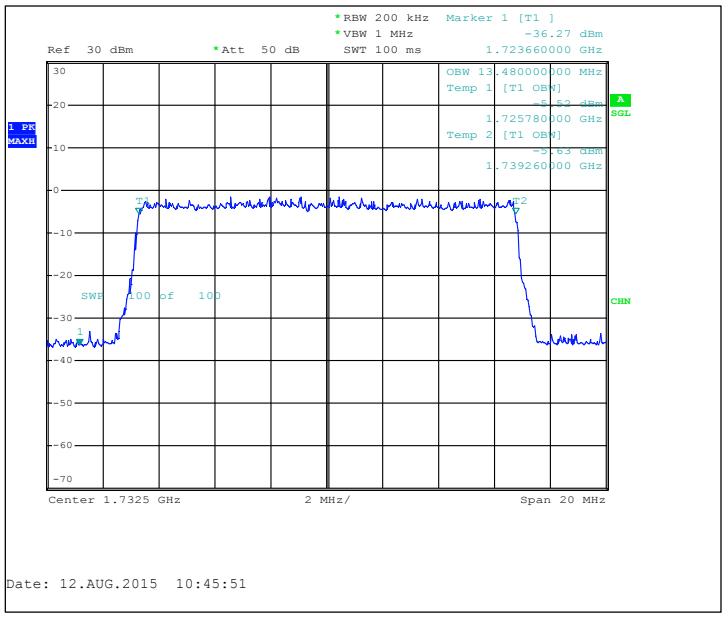
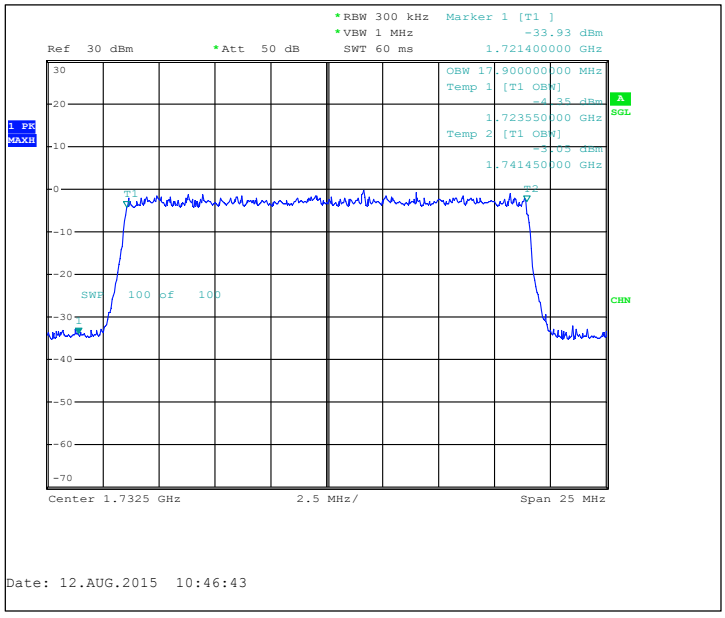
FDD, CBW 15MHz, QPSK, 75 RB, Channel 20175 / 1732.5 MHz



FDD, CBW 20MHz, QPSK, 100 RB, Channel 20175 / 1732.5 MHz



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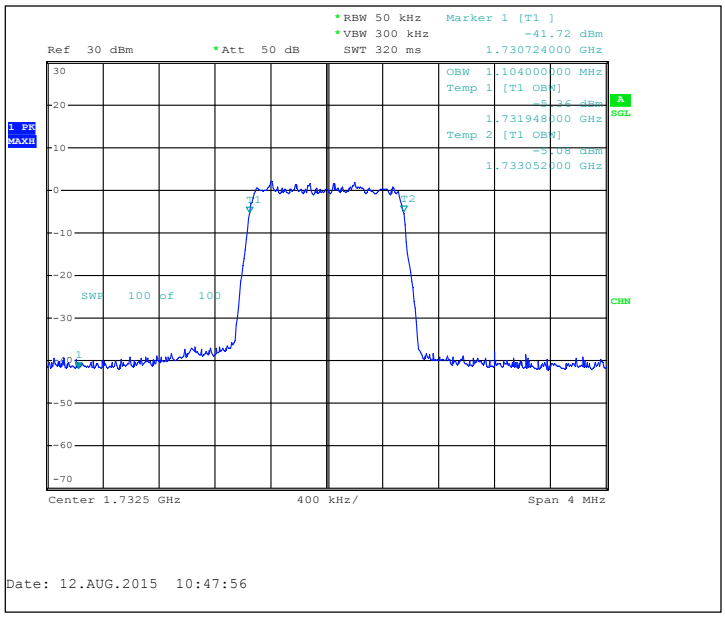
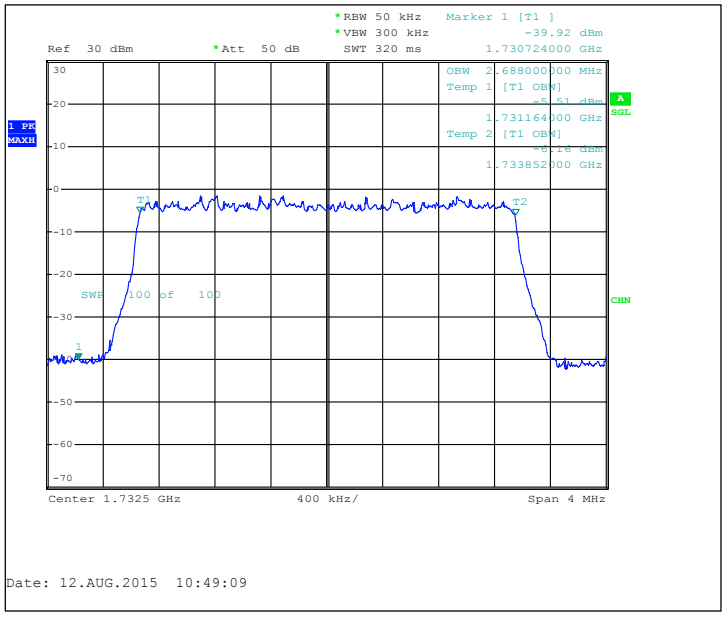
FDD, CBW 1.4MHz, 16QAM, 6 RB, Channel 20175 / 1732.5 MHz



FDD, CBW 3MHz, 16QAM, 15 RB, Channel 20175 / 1732.5 MHz



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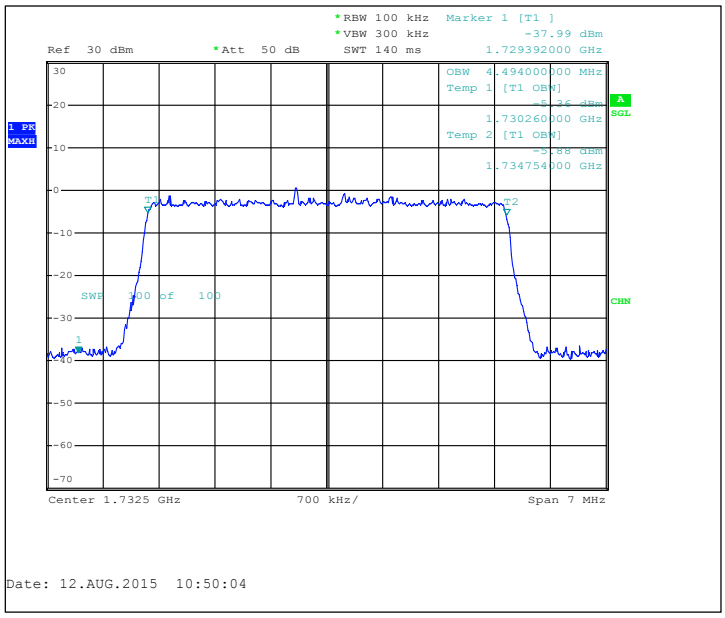
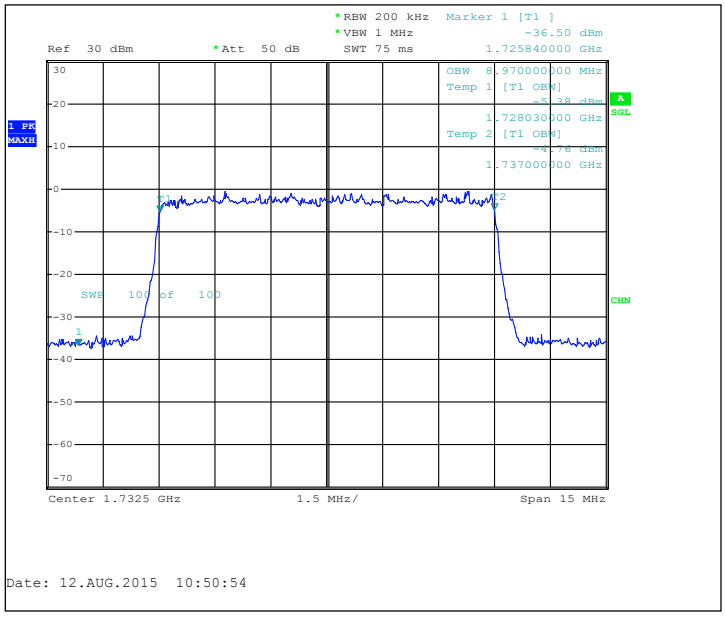
FDD, CBW 5MHz, 16QAM, 25 RB, Channel 20175 / 1732.5 MHz



FDD, CBW 10MHz, 16QAM, 50 RB, Channel 20175 / 1732.5 MHz



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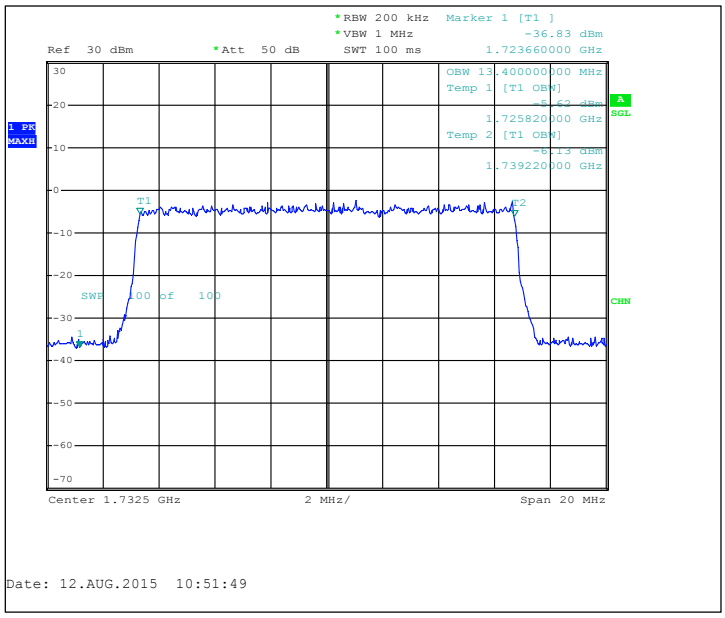
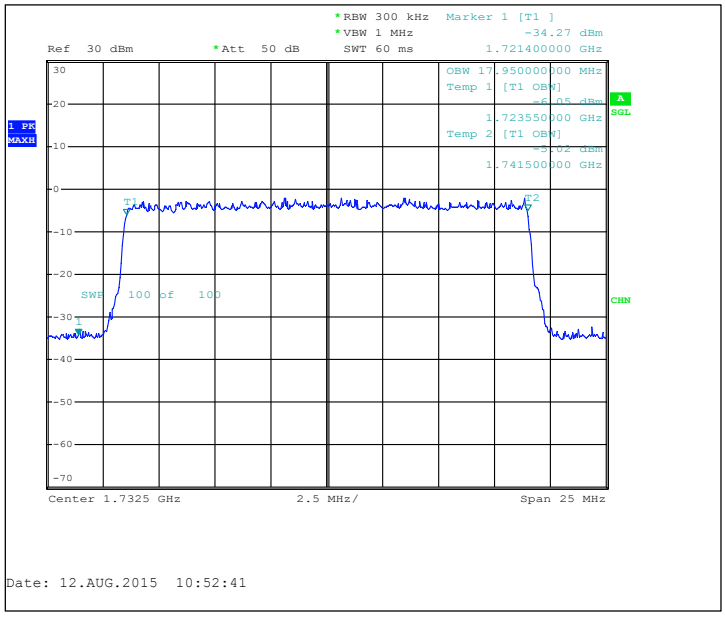
FDD, CBW 15MHz, 16QAM, 75 RB, Channel 20175 / 1732.5 MHz



FDD, CBW 20MHz, 16QAM, 100 RB, Channel 20175 / 1732.5 MHz



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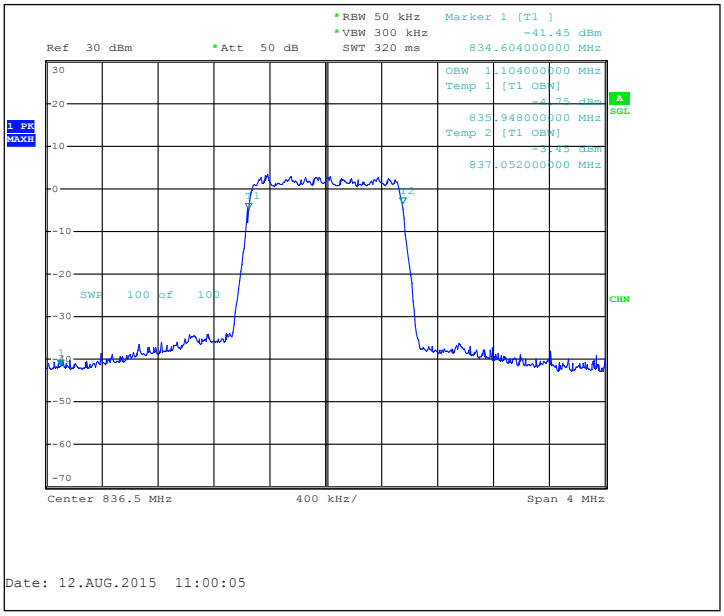
3.10. LTE5 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 1.4MHz, QPSK, 6 RB	1104
FDD, CBW 3MHz, QPSK, 15 RB	2696
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	8970
FDD, CBW 1.4MHz, 16QAM, 6 RB	1104
FDD, CBW 3MHz, 16QAM, 15 RB	2688
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8970

FDD, CBW 1.4MHz, QPSK, 6 RB, Channel 20525 / 836.5 MHz



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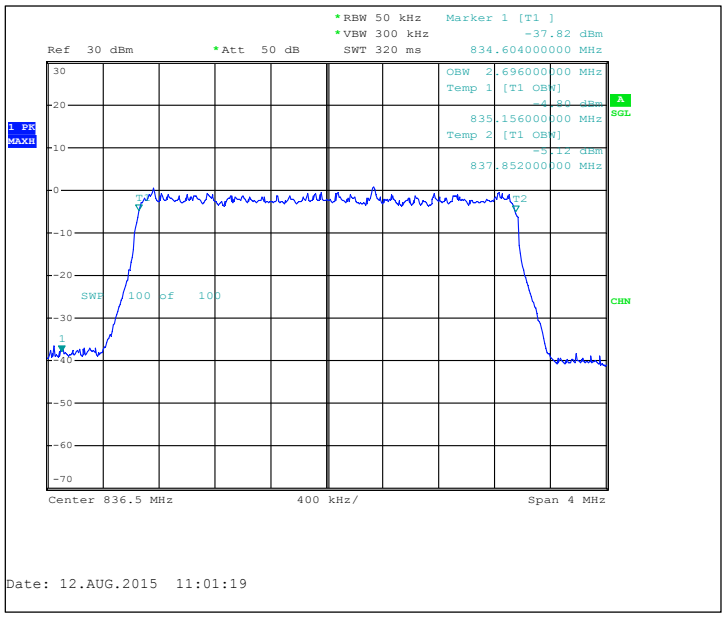
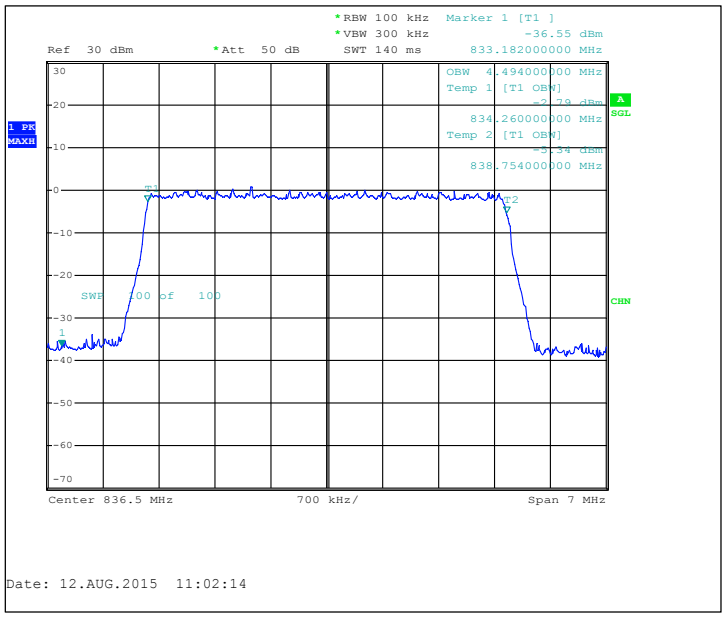
FDD, CBW 3MHz, QPSK, 15 RB, Channel 20525 / 836.5 MHz



FDD, CBW 5MHz, QPSK, 25 RB, Channel 20525 / 836.5 MHz



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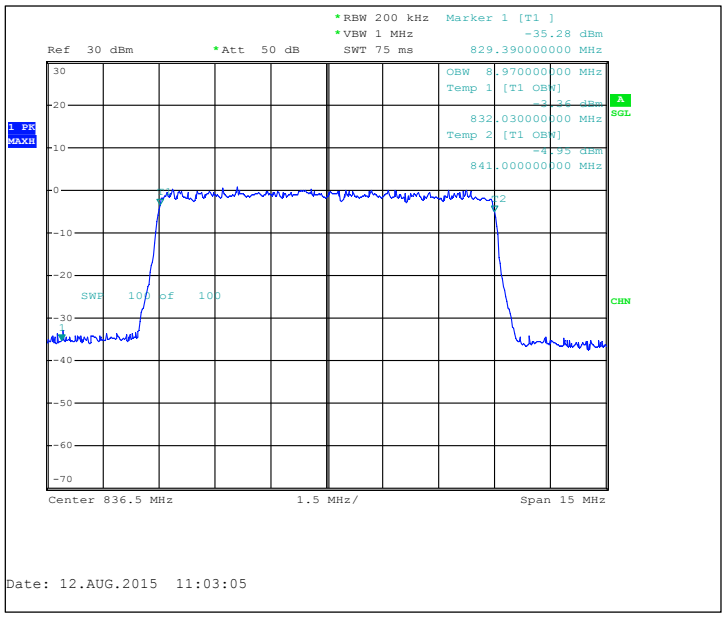
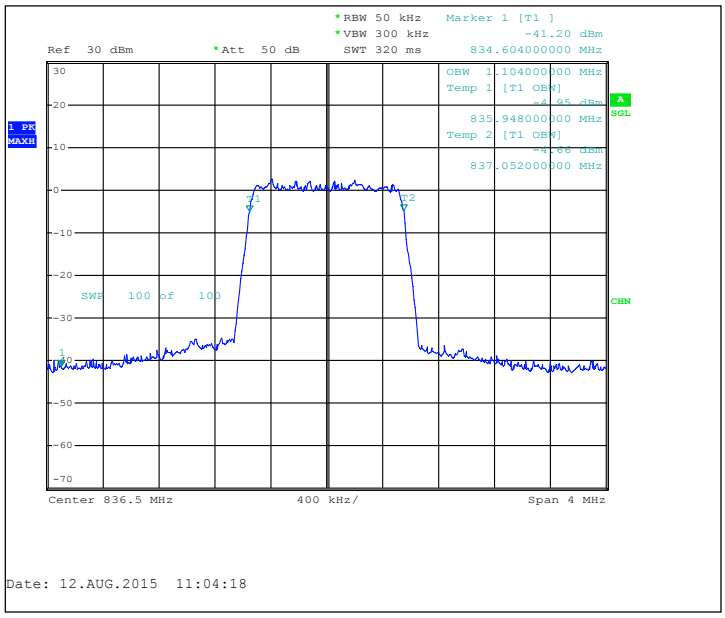
FDD, CBW 10MHz, QPSK, 50 RB, Channel 20525 / 836.5 MHz



FDD, CBW 1.4MHz, 16QAM, 6 RB, Channel 20525 / 836.5 MHz



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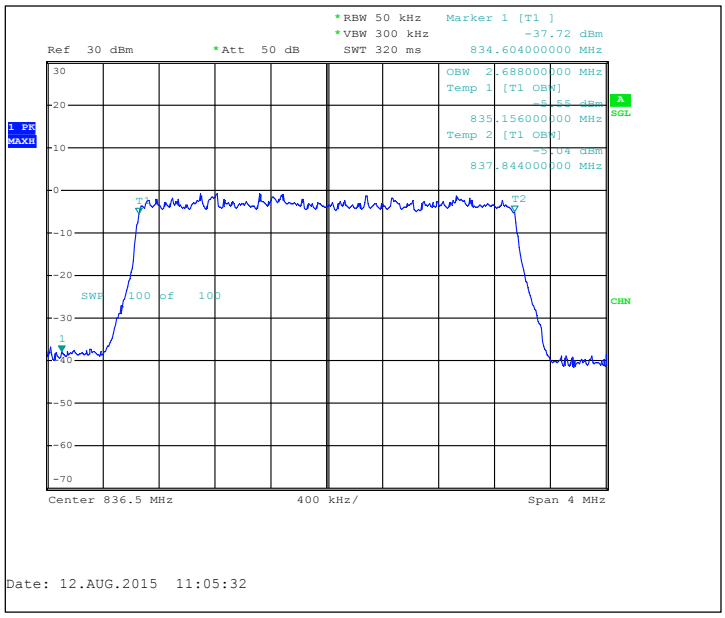
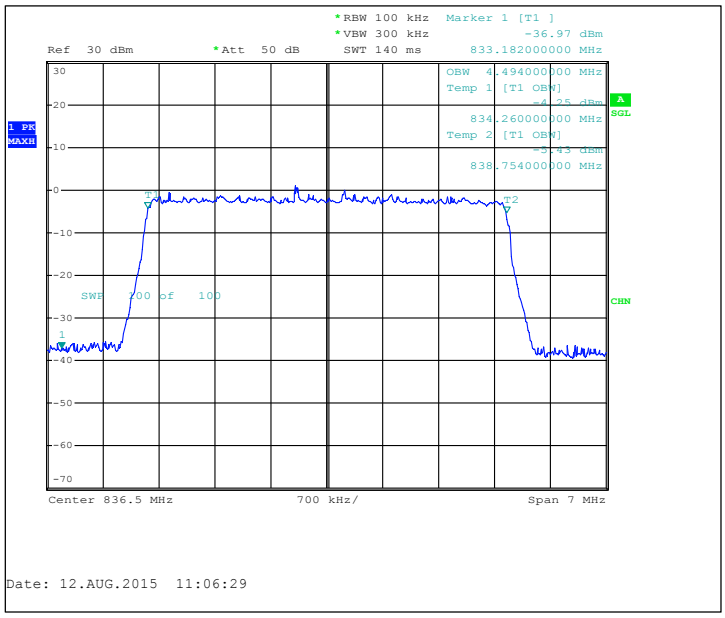
FDD, CBW 3MHz, 16QAM, 15 RB, Channel 20525 / 836.5 MHz



FDD, CBW 5MHz, 16QAM, 25 RB, Channel 20525 / 836.5 MHz



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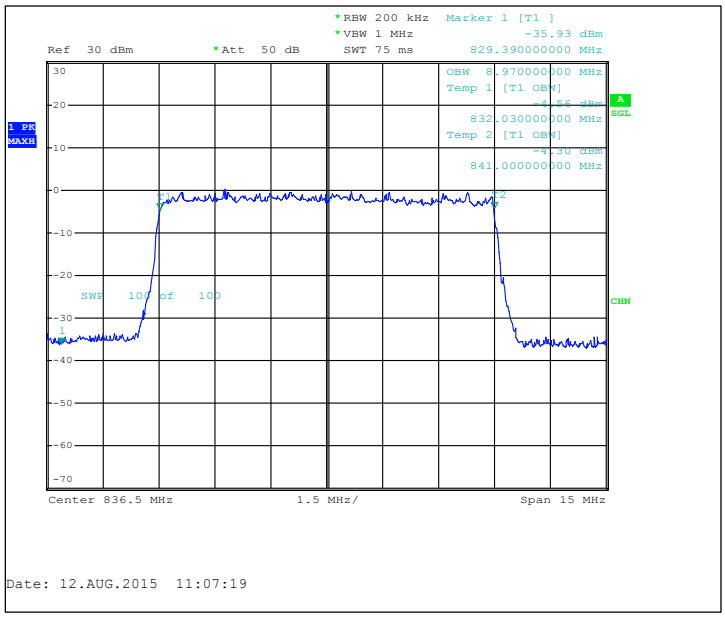
FDD, CBW 10MHz, 16QAM, 50 RB, Channel 20525 / 836.5 MHz



3.11. LTE12 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 1.4MHz, QPSK, 6 RB	1104
FDD, CBW 3MHz, QPSK, 15 RB	2696
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	8970
FDD, CBW 1.4MHz, 16QAM, 6 RB	1104
FDD, CBW 3MHz, 16QAM, 15 RB	2680
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8970

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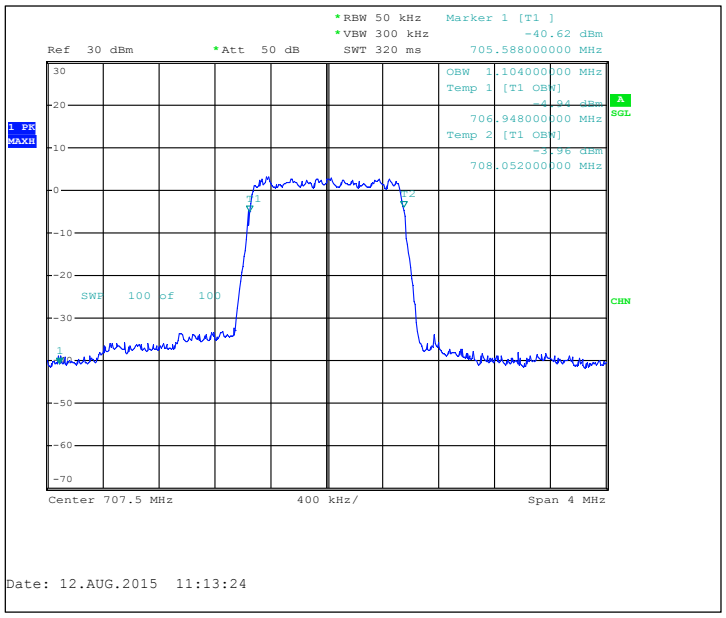
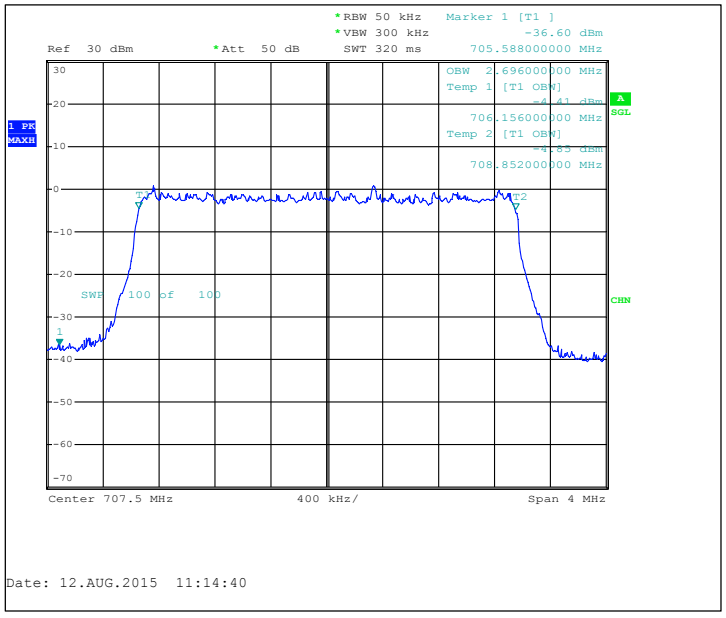
FDD, CBW 1.4MHz, QPSK, 6 RB, Channel 23095 / 707.5 MHz



FDD, CBW 3MHz, QPSK, 15 RB, Channel 23095 / 707.5 MHz



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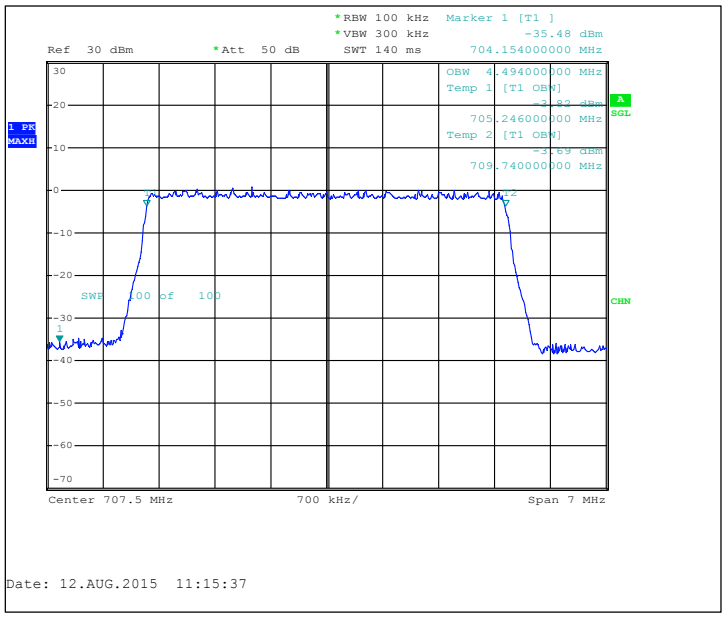
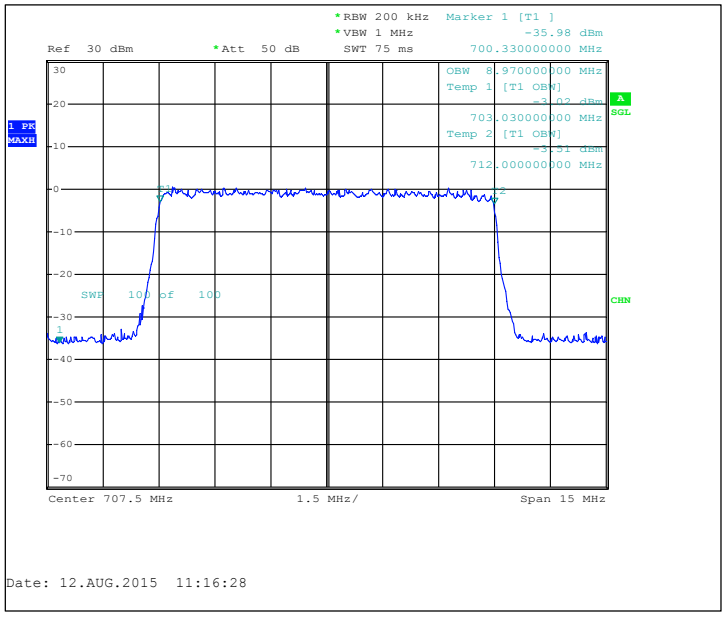
FDD, CBW 5MHz, QPSK, 25 RB, Channel 23095 / 707.5 MHz



FDD, CBW 10MHz, QPSK, 50 RB, Channel 23095 / 707.5 MHz



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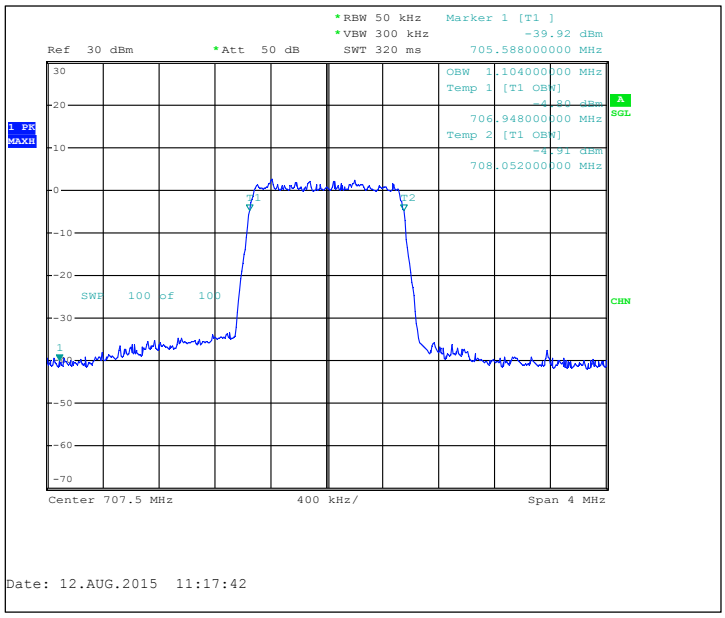
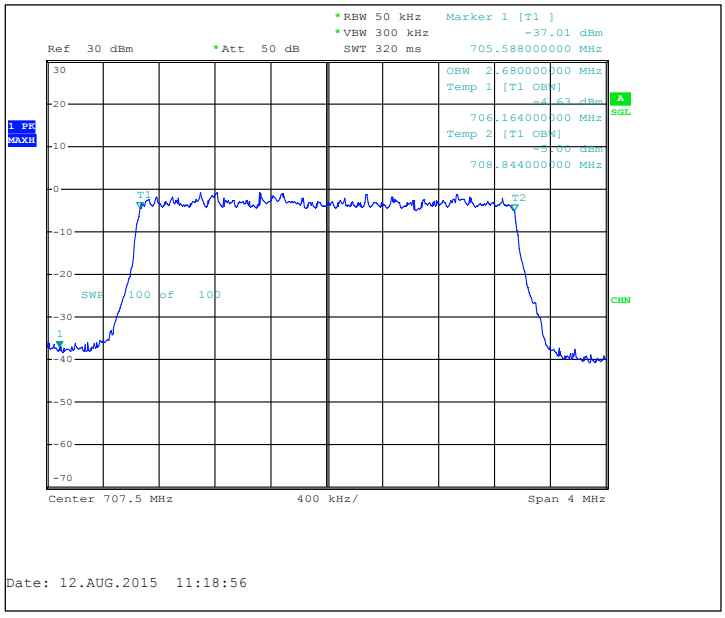
FDD, CBW 1.4MHz, 16QAM, 6 RB, Channel 23095 / 707.5 MHz



FDD, CBW 3MHz, 16QAM, 15 RB, Channel 23095 / 707.5 MHz



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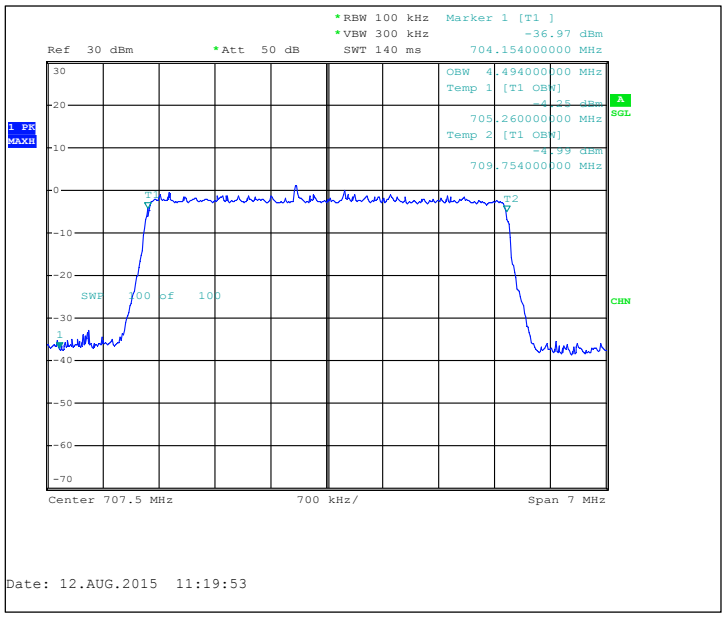
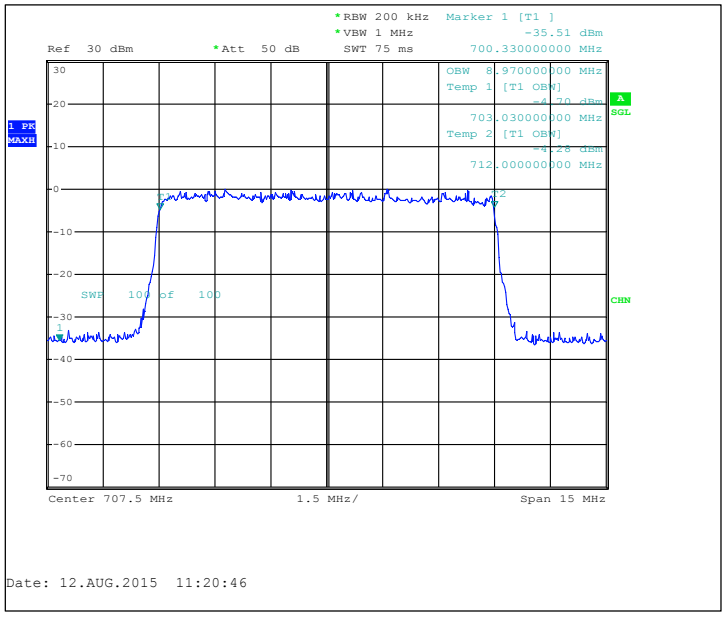
FDD, CBW 5MHz, 16QAM, 25 RB, Channel 23095 / 707.5 MHz



FDD, CBW 10MHz, 16QAM, 50 RB, Channel 23095 / 707.5 MHz



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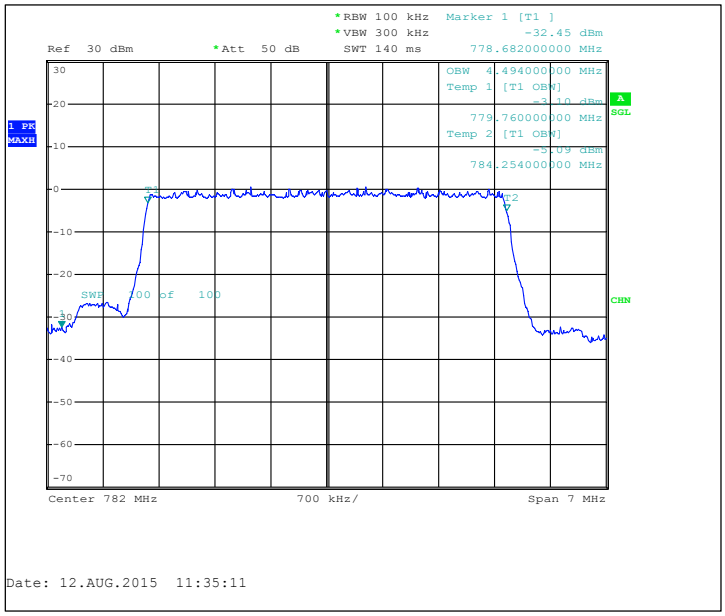
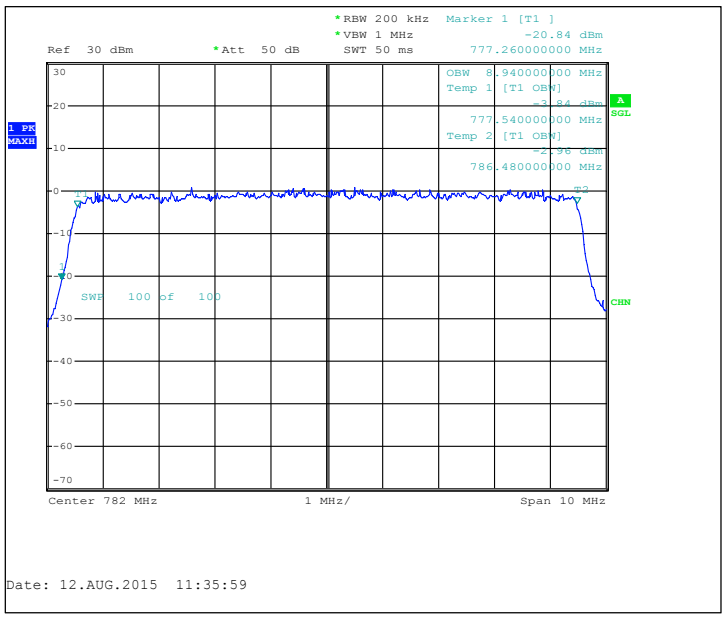
3.12. LTE13 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	8940
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8940

FDD, CBW 5MHz, QPSK, 25 RB, Channel 23230 / 782.0 MHz



FDD, CBW 10MHz, QPSK, 50 RB, Channel 23230 / 782.0 MHz



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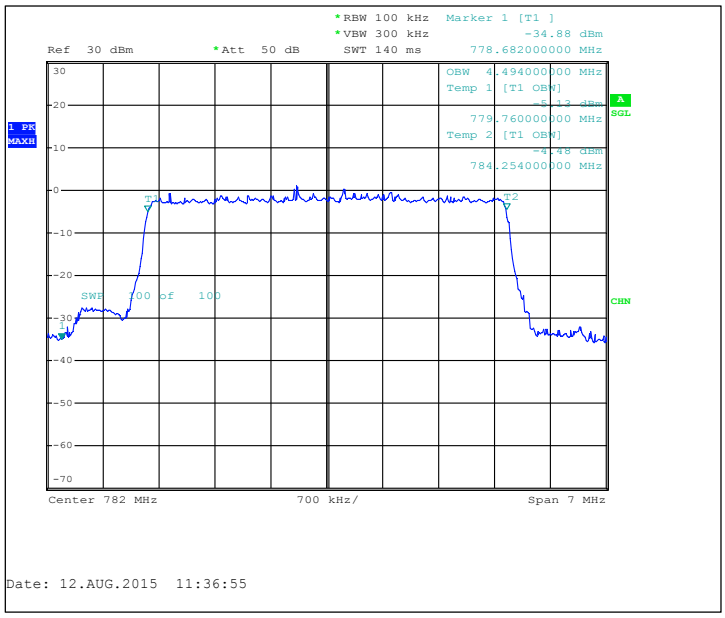
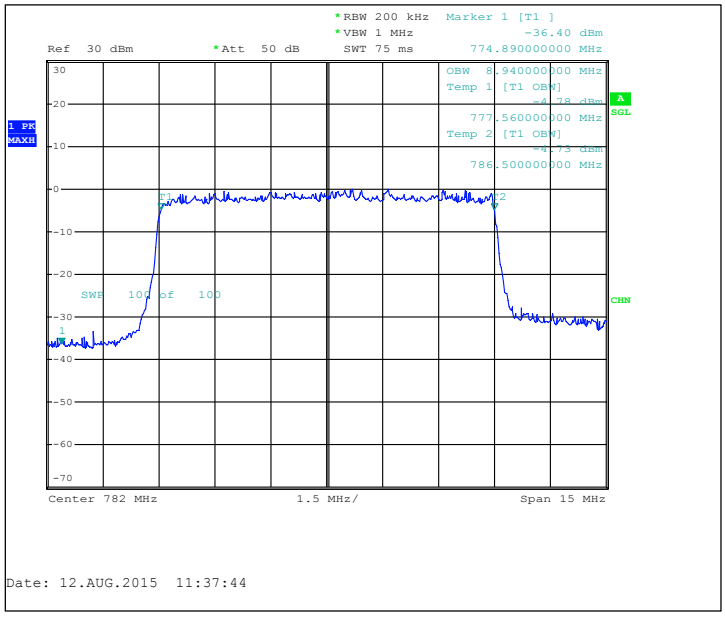
FDD, CBW 5MHz, 16QAM, 25 RB, Channel 23230 / 782.0 MHz



FDD, CBW 10MHz, 16QAM, 50 RB, Channel 23230 / 782.0 MHz



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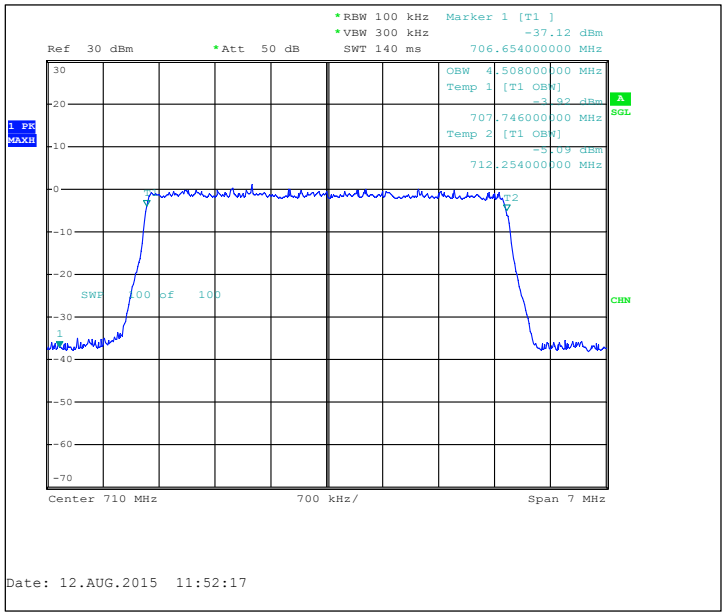
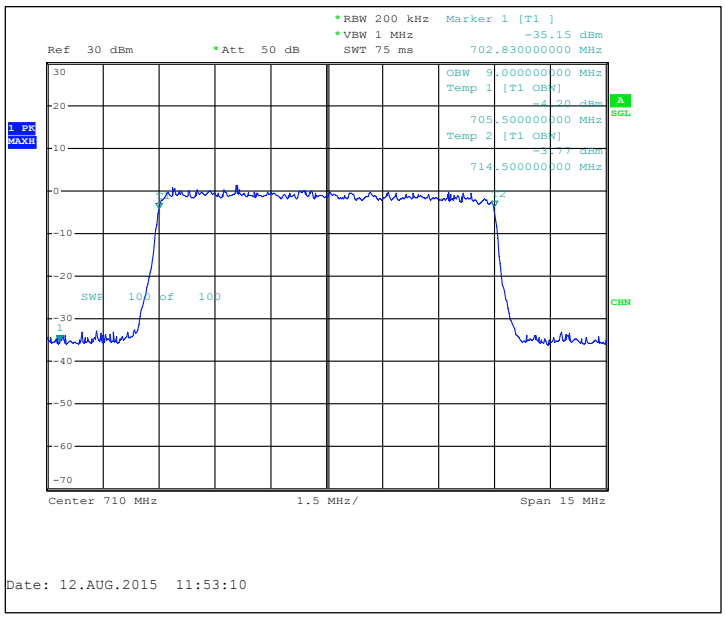
3.13. LTE17 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 5MHz, QPSK, 25 RB	4508
FDD, CBW 10MHz, QPSK, 50 RB	9000
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8970

FDD, CBW 5MHz, QPSK, 25 RB, Channel 23790 / 710.0 MHz



FDD, CBW 10MHz, QPSK, 50 RB, Channel 23790 / 710.0 MHz



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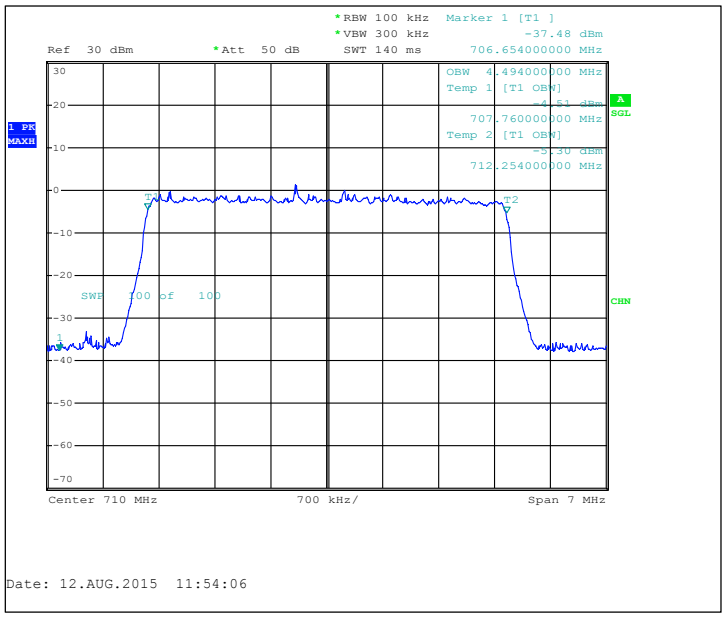
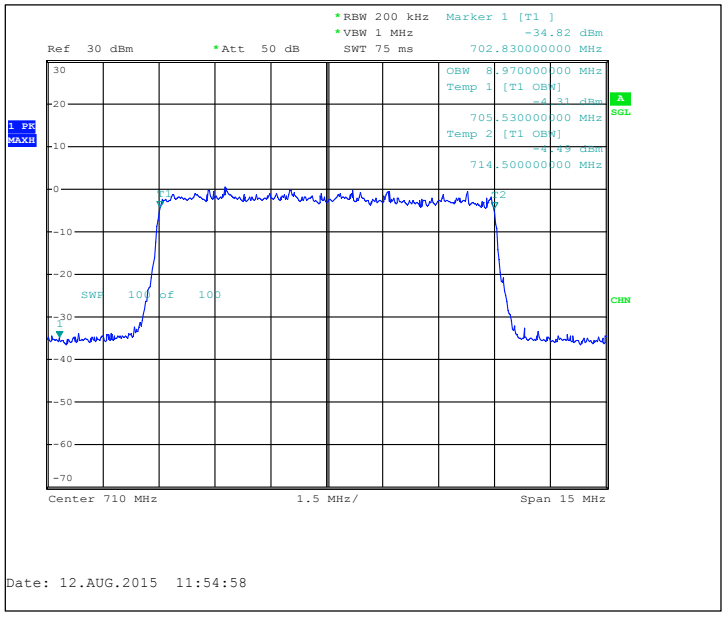
FDD, CBW 5MHz, 16QAM, 25 RB, Channel 23790 / 710.0 MHz



FDD, CBW 10MHz, 16QAM, 50 RB, Channel 23790 / 710.0 MHz



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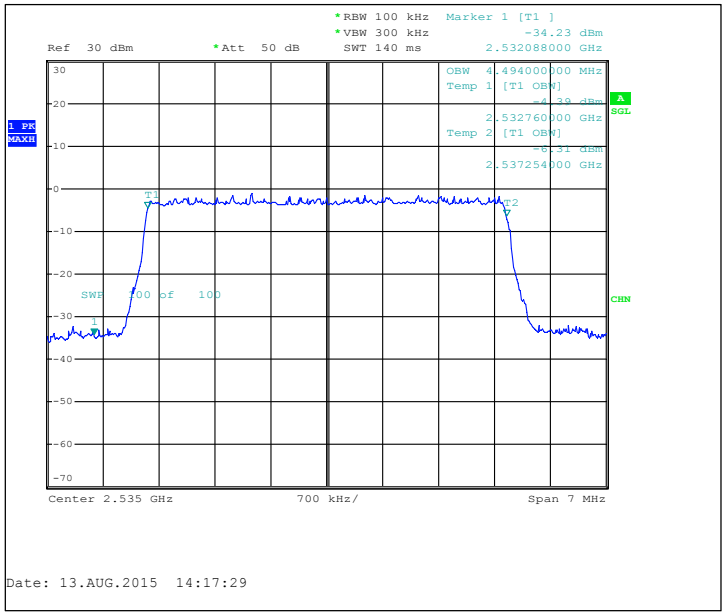
3.14. LTE7 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	8970
FDD, CBW 15MHz, QPSK, 75 RB	13480
FDD, CBW 20MHz, QPSK, 100 RB	17950
FDD, CBW 5MHz, 16QAM, 25 RB	4494
FDD, CBW 10MHz, 16QAM, 50 RB	8970
FDD, CBW 15MHz, 16QAM, 75 RB	13480
FDD, CBW 20MHz, 16QAM, 100 RB	17950

FDD, CBW 5MHz, QPSK, 25 RB, Channel 21100 / 2535.0 MHz



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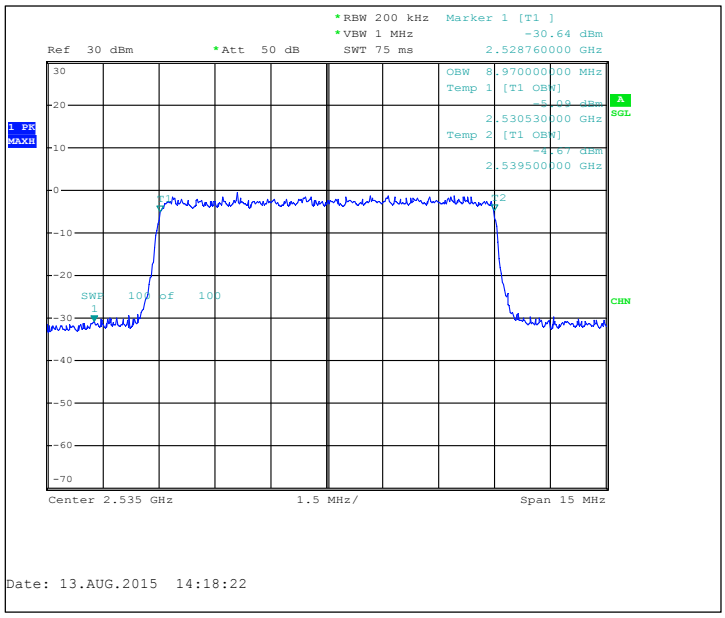
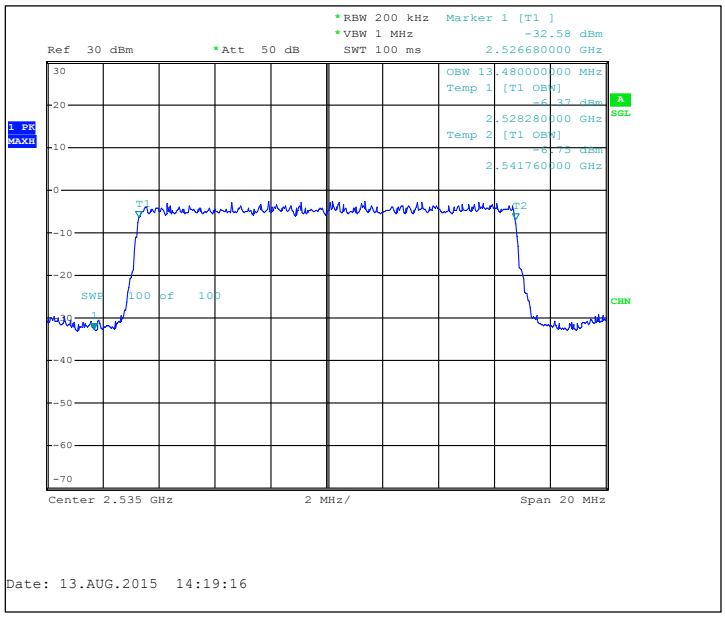
FDD, CBW 10MHz, QPSK, 50 RB, Channel 21100 / 2535.0 MHz



FDD, CBW 15MHz, QPSK, 75 RB, Channel 21100 / 2535.0 MHz



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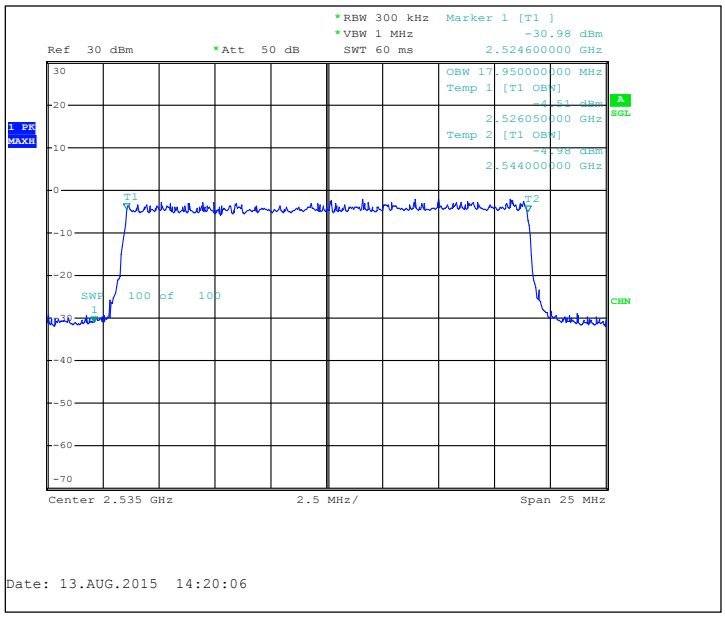
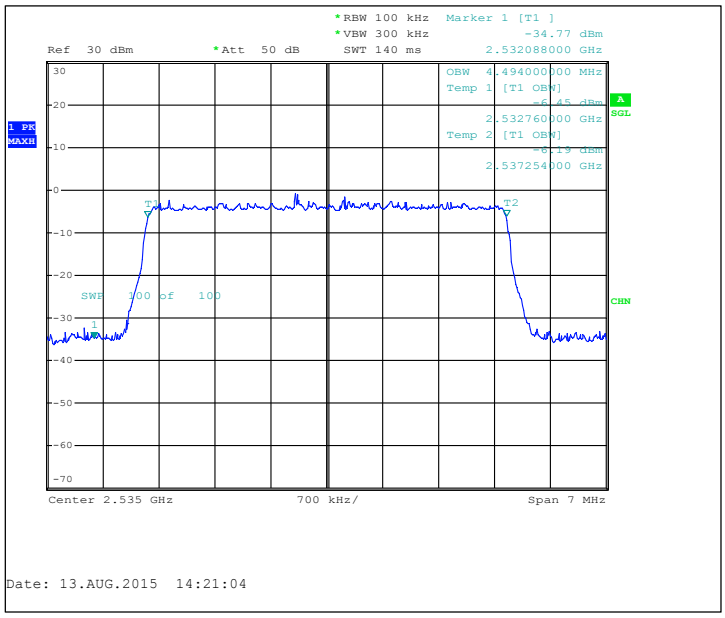
FDD, CBW 20MHz, QPSK, 100 RB, Channel 21100 / 2535.0 MHz



FDD, CBW 5MHz, 16QAM, 25 RB, Channel 21100 / 2535.0 MHz



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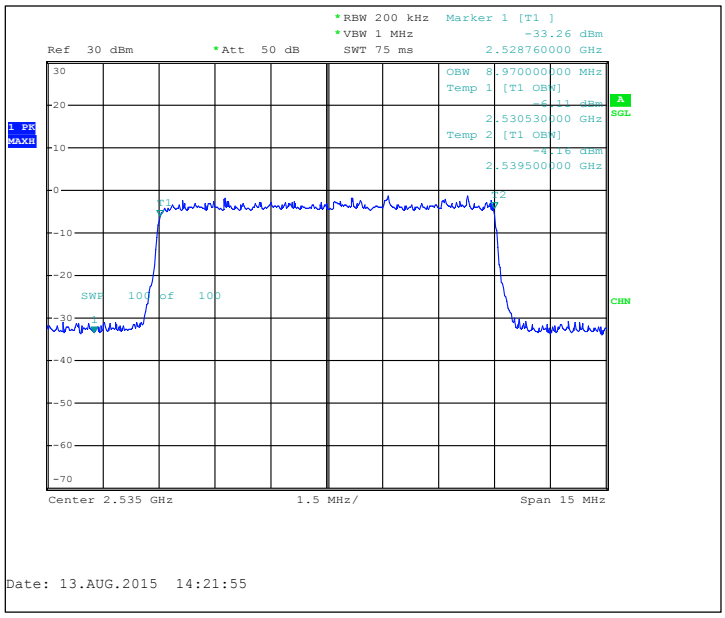
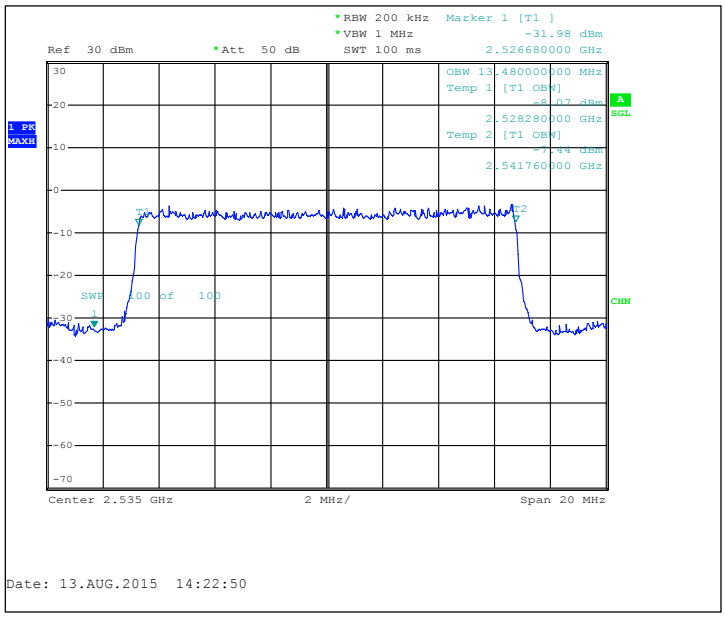
FDD, CBW 10MHz, 16QAM, 50 RB, Channel 21100 / 2535.0 MHz



FDD, CBW 15MHz, 16QAM, 75 RB, Channel 21100 / 2535.0 MHz



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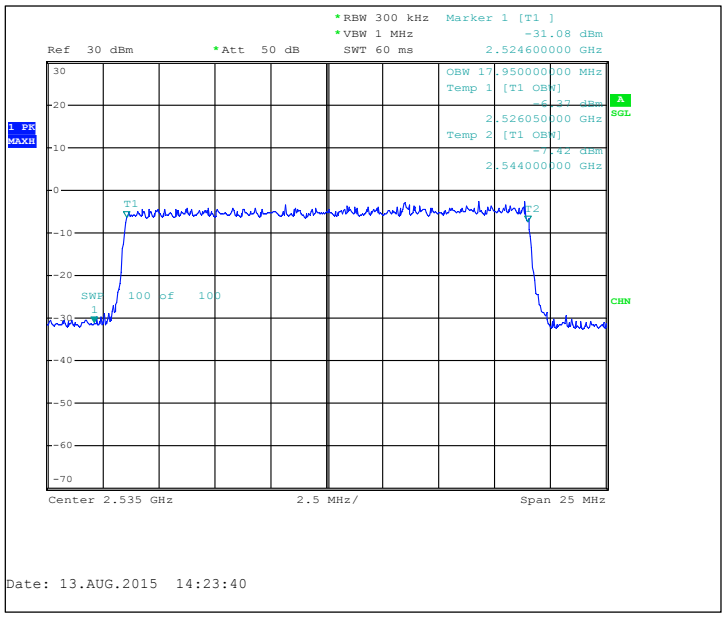
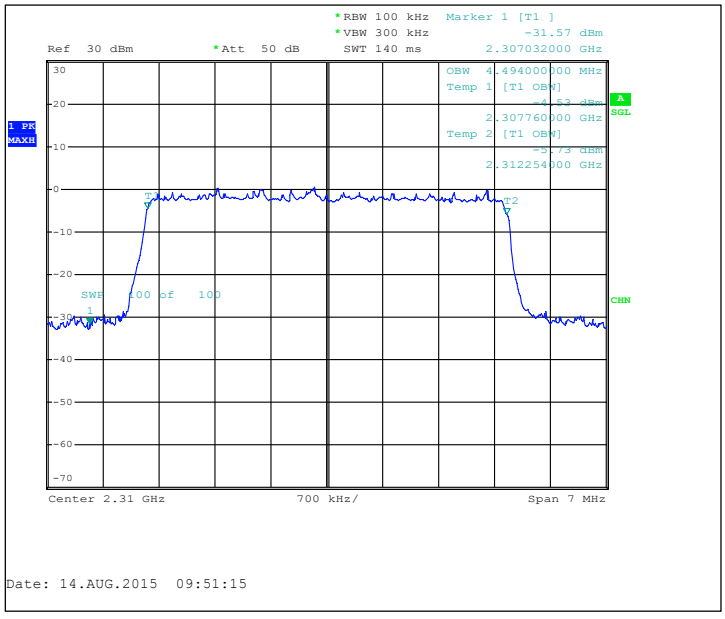
FDD, CBW 20MHz, 16QAM, 100 RB, Channel 21100 / 2535.0 MHz



3.15. LTE30 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
FDD, CBW 5MHz, QPSK, 25 RB	4494
FDD, CBW 10MHz, QPSK, 50 RB	9000
FDD, CBW 5MHz, 16QAM, 25 RB	4480
FDD, CBW 10MHz, 16QAM, 50 RB	8970

FDD, CBW 5MHz, QPSK, 25 RB, Channel 27710 / 2310.0 MHz



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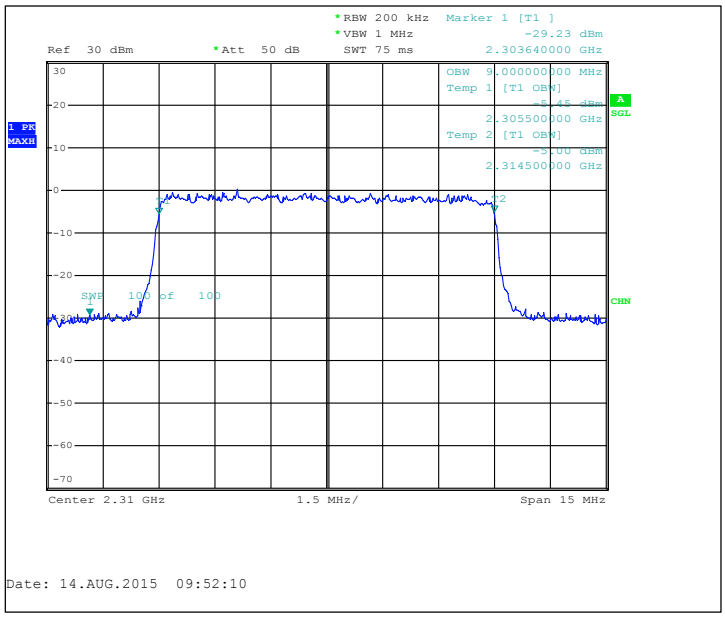
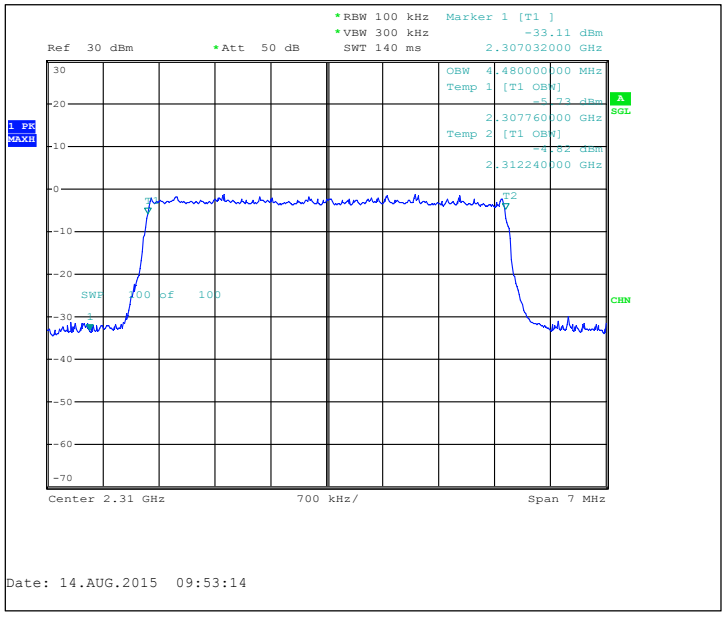
FDD, CBW 10MHz, QPSK, 50 RB, Channel 27710 / 2310.0 MHz



FDD, CBW 5MHz, 16QAM, 25 RB, Channel 27710 / 2310.0 MHz



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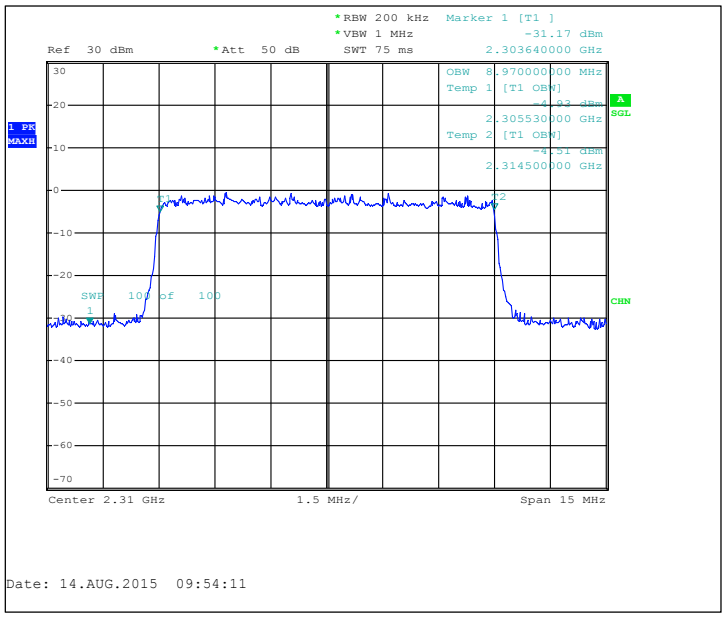
FDD, CBW 10MHz, 16QAM, 50 RB, Channel 27710 / 2310.0 MHz



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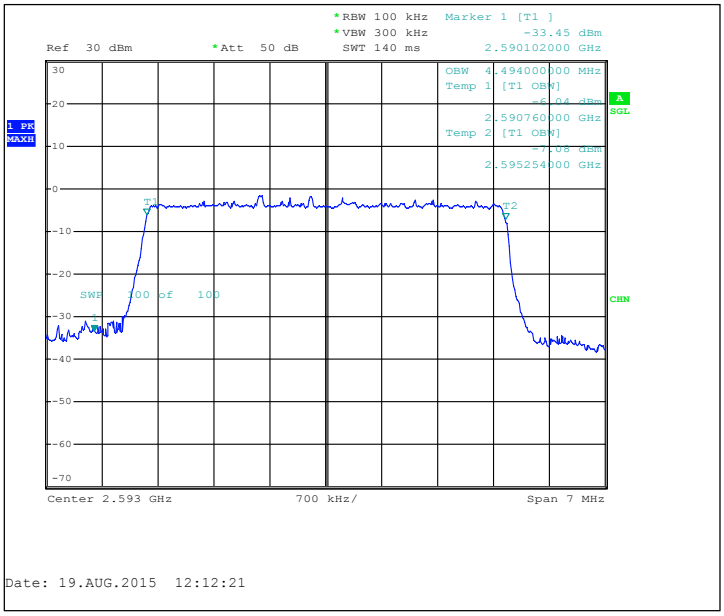
3.16. LTE41 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
TDD, CBW 5MHz, QPSK, 25 RB	4494
TDD, CBW 10MHz, QPSK, 50 RB	8970
TDD, CBW 15MHz, QPSK, 75 RB	13440
TDD, CBW 20MHz, QPSK, 100 RB	17900
TDD, CBW 5MHz, 16QAM, INV RB	4494
TDD, CBW 10MHz, 16QAM, INV RB	8970
TDD, CBW 15MHz, 16QAM, INV RB	13440
TDD, CBW 20MHz, 16QAM, INV RB	17900

TDD, CBW 5MHz, QPSK, 25 RB, Channel 40620 / 2593.0 MHz



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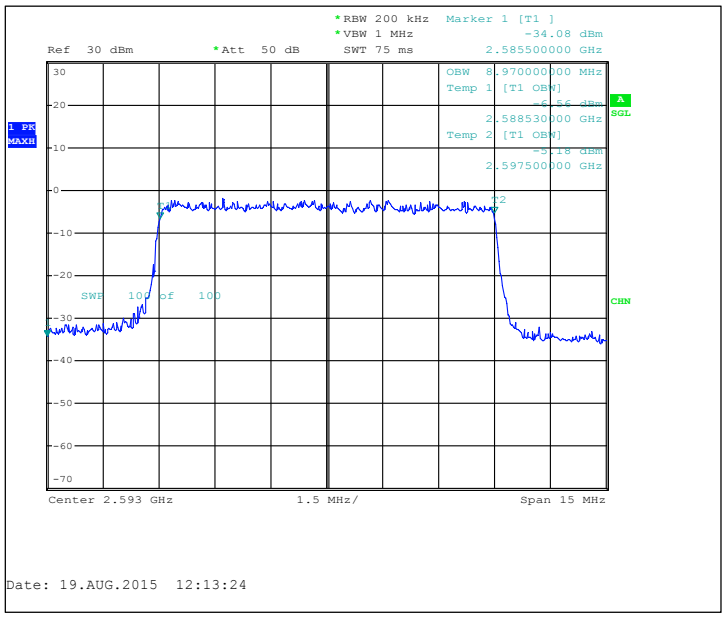
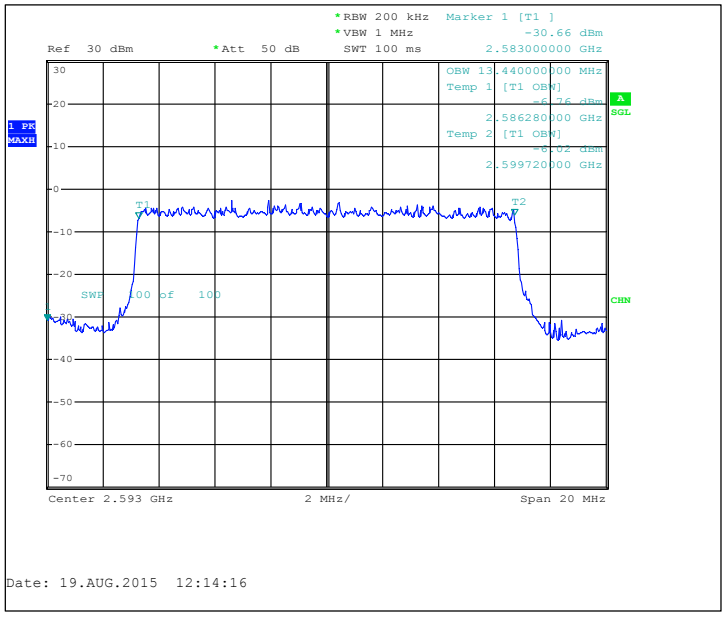
TDD, CBW 10MHz, QPSK, 50 RB, Channel 40620 / 2593.0 MHz



TDD, CBW 15MHz, QPSK, 75 RB, Channel 40620 / 2593.0 MHz



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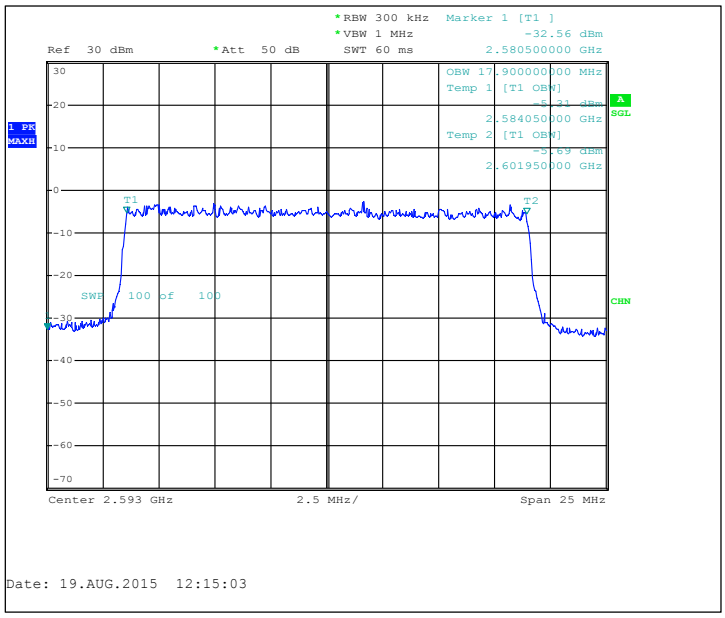
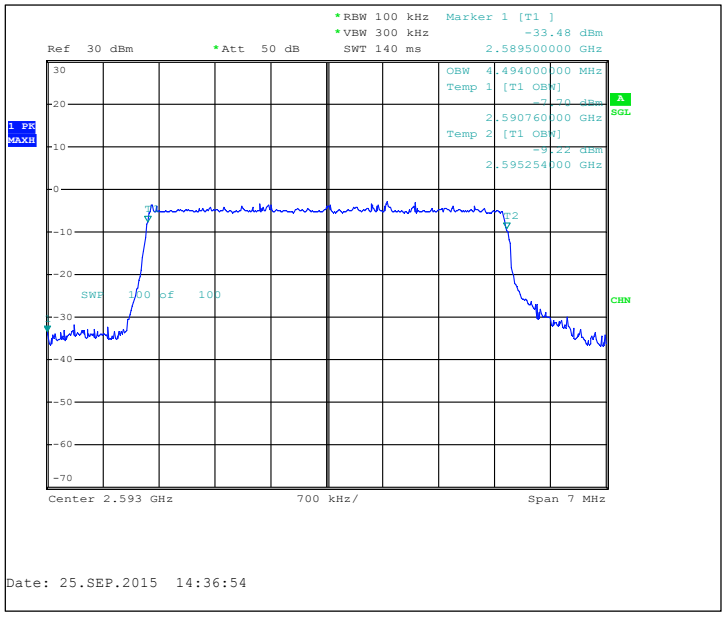
TDD, CBW 20MHz, QPSK, 100 RB, Channel 40620 / 2593.0 MHz



TDD, CBW 5MHz, 16QAM, INV RB, Channel 40620 / 2593.0 MHz



TDD, CBW 10MHz, 16QAM, INV RB, Channel 40620 / 2593.0 MHz

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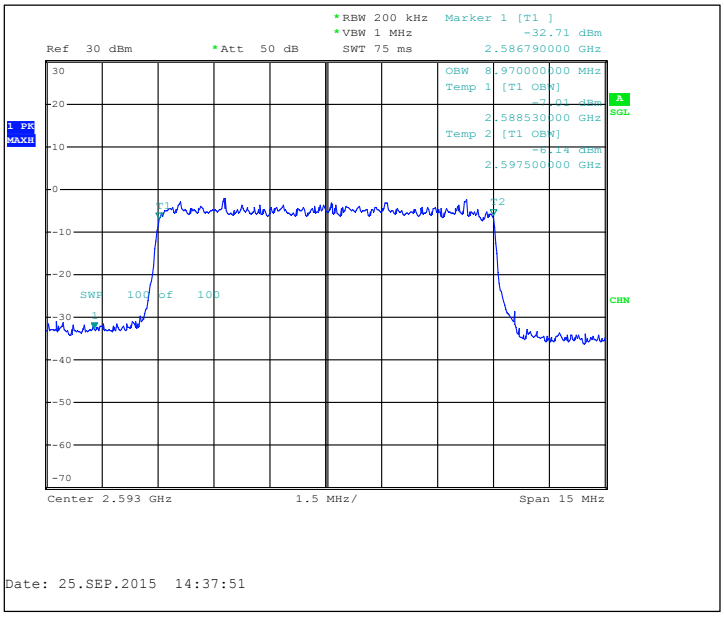

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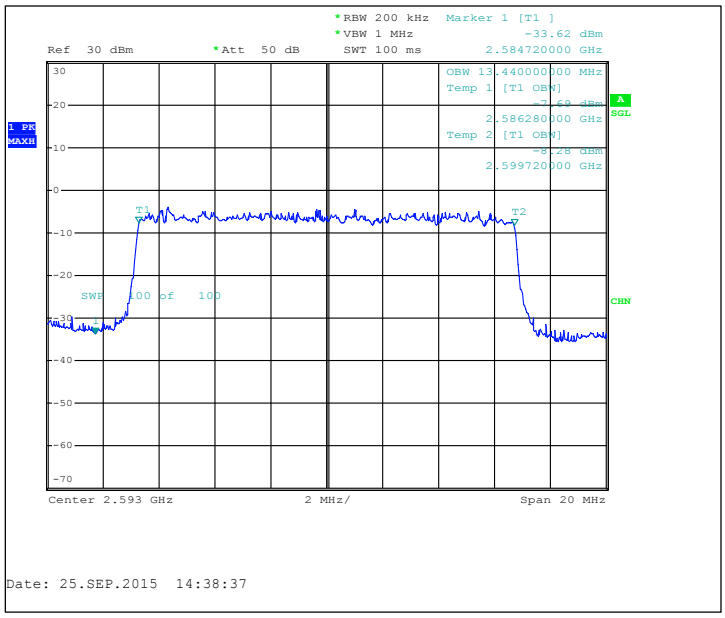
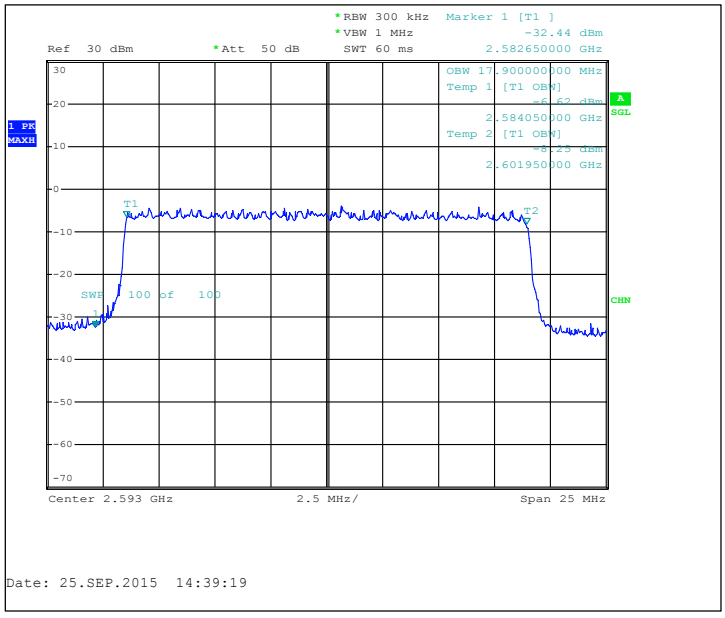
TDD, CBW 15MHz, 16QAM, INV RB, Channel 40620 / 2593.0 MHz



TDD, CBW 20MHz, 16QAM, INV RB, Channel 40620 / 2593.0 MHz



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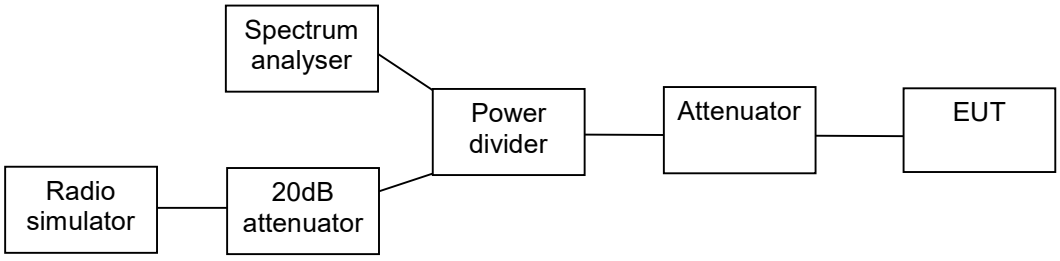
4. Band edge compliance

(FCC §24.238(a), §27.53 a 4 i ii iii, §27.53(l), §27.53(c)(2)(4), §27.53(f), §27.53(h), §27.53(g), §22.917(a), RSS-133 6.5, RSS-132 4.5, RSS-139 6.5, RSS-130 4.6, RSS-199 4.5(b), RSS-195 5.6.2)

EUT with DUT number	RM-1105, DUT 400036
Accessories with DUT numbers	BV-T5E, DUT 400027, AC-100E, DUT 400013, WH-308, DUT 400014
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 56 / 102.0
Date of measurements	11-Aug-2015
Measured by	Timo Raiskio

4.1. Test Setup



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4.2. Test method and limit

The measurement is made according to applicable FCC rule parts and IC standards.

Limits for band edge compliance measurements

Operation band	Frequency range [MHz]	Limit [dBm]
GSM 1900	Below 1850 and above 1910	-13
GSM 850	Below 824 and above 849	-13
WCDMA2	Below 1850 and above 1910	-13
WCDMA4	Below 1710 and above 1755	-13
WCDMA5	Below 824 and above 849	-13
LTE5	Below 824 and above 849	-13
LTE2	Below 1850 and above 1910	-13
LTE4	Below 1710 and above 1755	-13
LTE12	698.9 – 699.0 and 716.0 – 716.1 Below 698.9 and above 716.1	-13 (RBW = 30 kHz, VBW = 100 kHz) -13 (RBW = 100 kHz, VBW = 300 kHz)
LTE13	776.9 -777 and 787 - 787.1 Below 776.9 and above 787.1 763-775 and 793-805	-13 (RBW = 30 kHz, VBW = 100 kHz) -13 (RBW = 100 kHz, VBW = 300 kHz) -35 (RBW = 10 kHz, VBW = 30 kHz)
LTE17	703.9 – 704 and 716 – 716.1 Below 703.9 and above 716.1	-13 (RBW = 30 kHz, VBW = 100 kHz) -13 (RBW = 100 kHz, VBW = 300 kHz)
LTE7	2496 - 2499 2499 – 2500 2570 – 2571 2571 – 2575	-10 (RBW = 1 MHz, VBW = 3 MHz) -10 (RBW = 500 kHz, VBW = 2 MHz) -10 (RBW = 500 kHz, VBW = 2 MHz) -10 (RBW = 1 MHz, VBW = 3 MHz)
LTE30	< 2200 2200 - 2288 2288 - 2292 2292 - 2296 2296 - 2300 2300 – 2304 2304 - 2305 2315 – 2316 2316 - 2320 2320 - 2324 2324 - 2328 2328 - 2337 2337 - 2341 2341 - 2345 2345 - 2360 2360 - 2365 2365 - 2395 > 2395	-13 (RBW = 1 MHz, VBW = 3 MHz) -40 (RBW = 1 MHz, VBW = 3 MHz) -37 (RBW = 1 MHz, VBW = 3 MHz) -31 (RBW = 1 MHz, VBW = 3 MHz) -25 (RBW = 1 MHz, VBW = 3 MHz) -13 (RBW = 1 MHz, VBW = 3 MHz) -13 (RBW = 100 kHz, VBW = 300 kHz) -13 (RBW = 100 kHz, VBW = 300 kHz) -13 (RBW = 1 MHz, VBW = 3 MHz) -25 (RBW = 1 MHz, VBW = 3 MHz) -31 (RBW = 1 MHz, VBW = 3 MHz) -37 (RBW = 1 MHz, VBW = 3 MHz) -31 (RBW = 1 MHz, VBW = 3 MHz) -25 (RBW = 1 MHz, VBW = 3 MHz) -13 (RBW = 1 MHz, VBW = 3 MHz) -13 (RBW = 1 MHz, VBW = 3 MHz) -40 (RBW = 1 MHz, VBW = 3 MHz) -13 (RBW = 1 MHz, VBW = 3 MHz)
LTE41	2490.5 - 2495 2495 – 2496 2690 – 2691 2691 – 2695	-13 (RBW = 1 MHz, VBW = 3 MHz) -13 (RBW = 500 kHz, VBW = 2 MHz) -10 (RBW = 500 kHz, VBW = 2 MHz) -10 (RBW = 1 MHz, VBW = 3 MHz)

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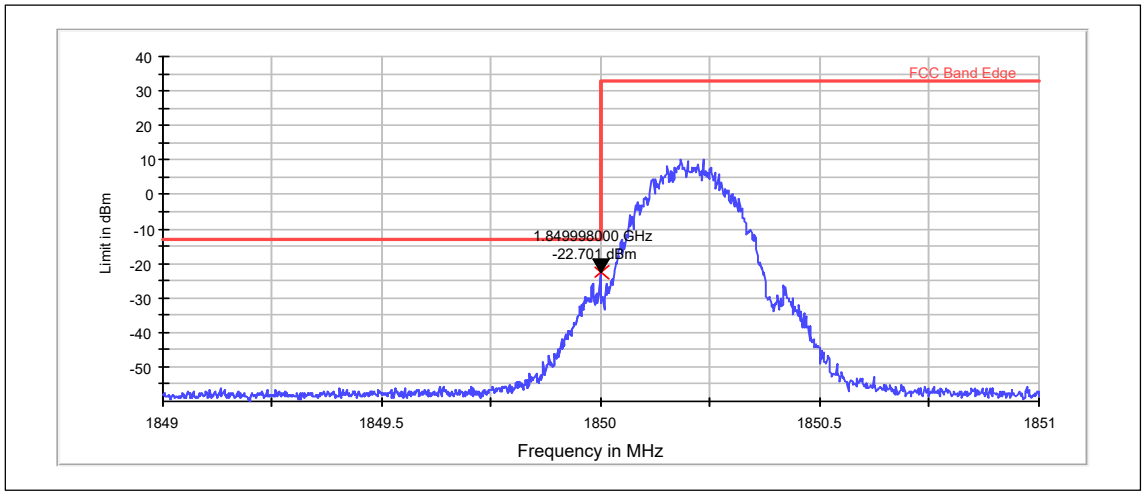
4.3. GSM 1900 Test results

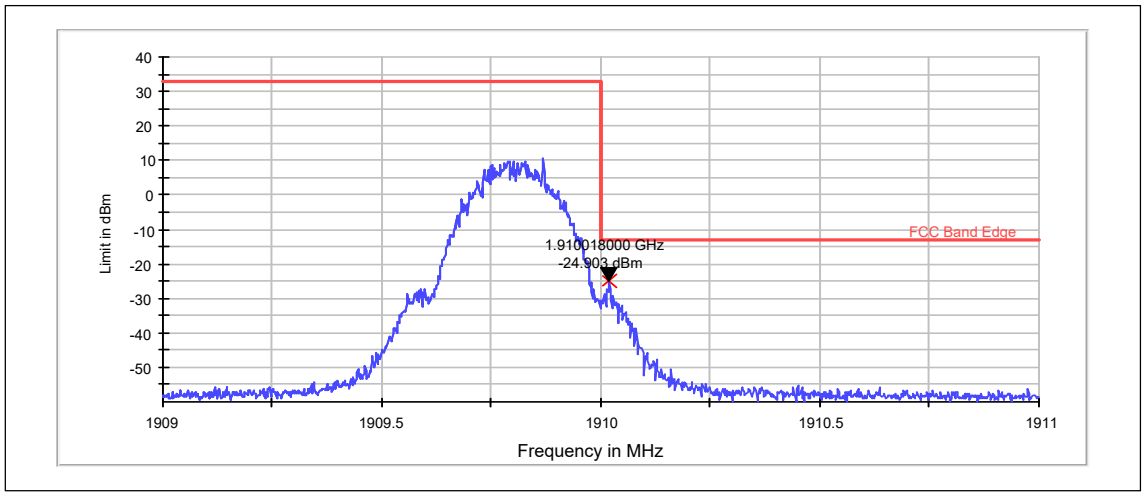
Channel 512 / 1850.2 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1849.998	-22.70	PASSED

Channel 810 / 1909.8 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1910.018	-24.90	PASSED

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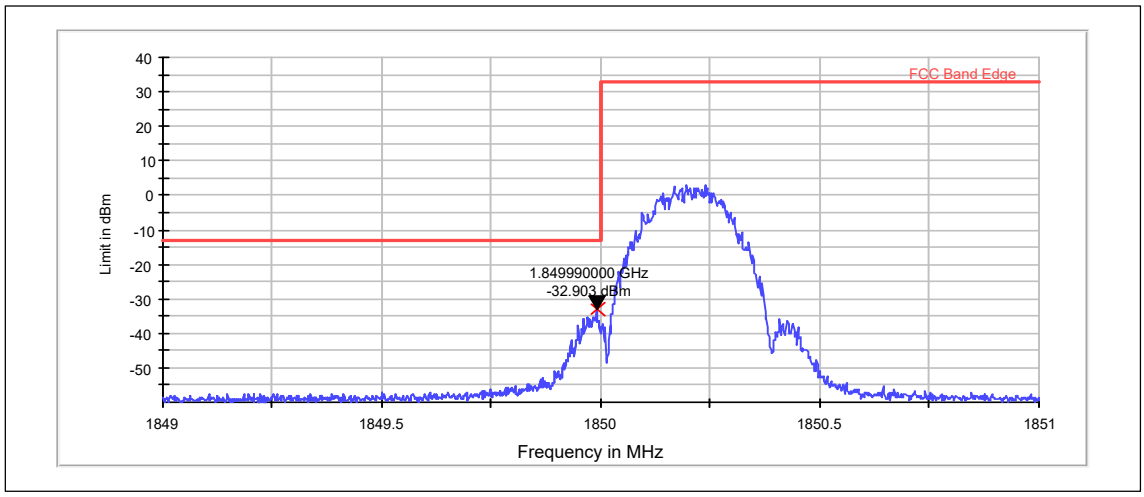
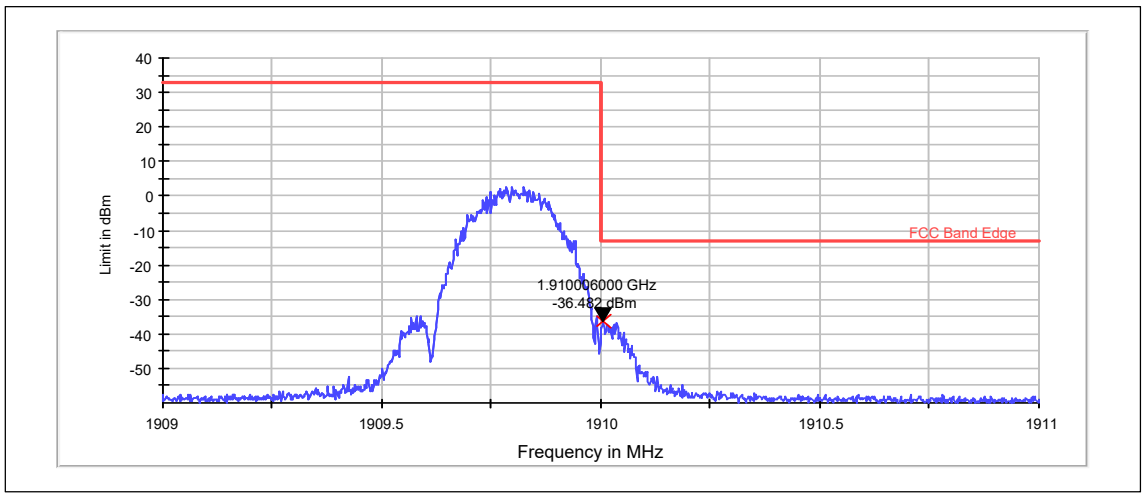
Channel 512 / 1850.2 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1849.990	-32.90	PASSED

Channel 810 / 1909.8 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	1910.006	-36.48	PASSED

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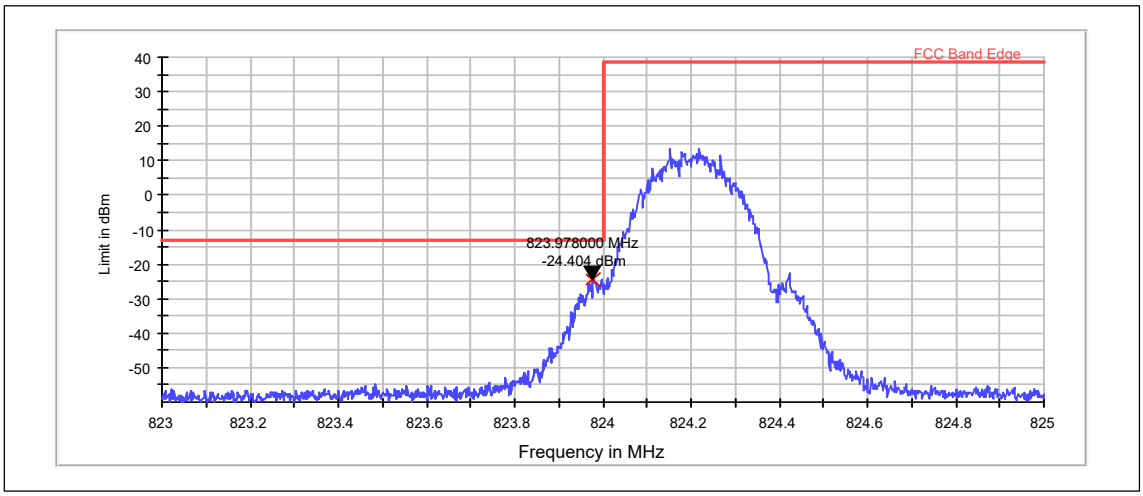
4.4. GSM 850 Test results

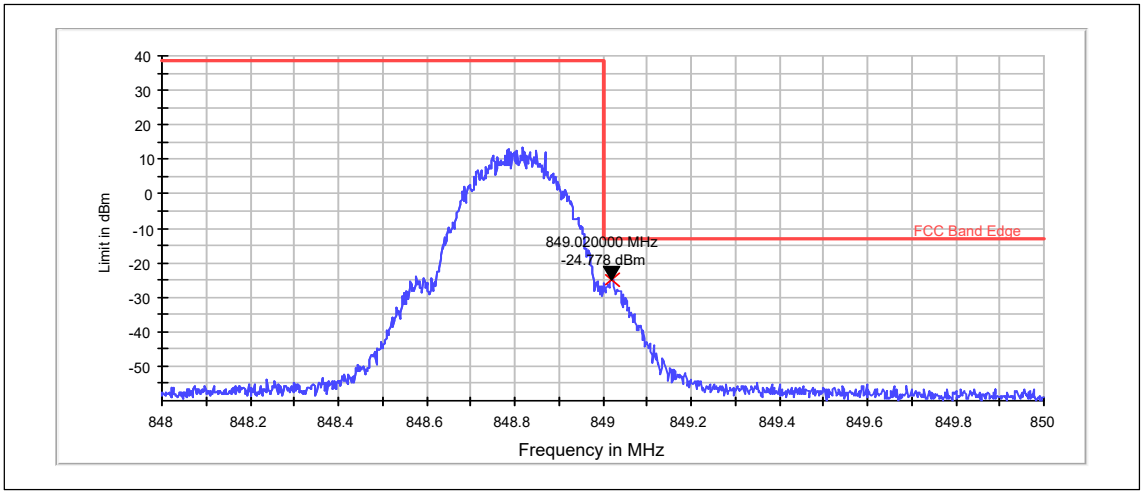
Channel 128 / 824.2 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	823.978	-24.40	PASSED

Channel 251 / 848.8 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	849.020	-24.78	PASSED

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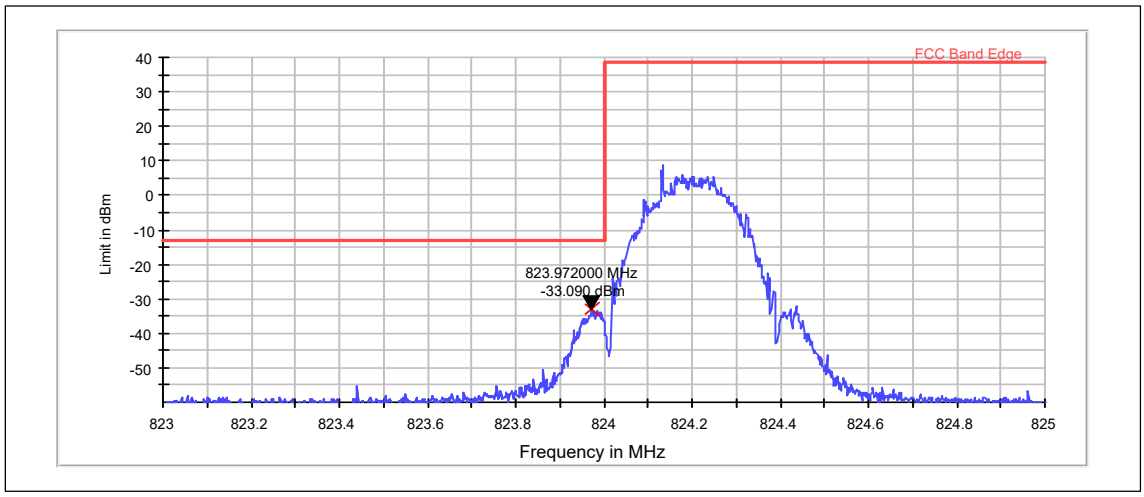
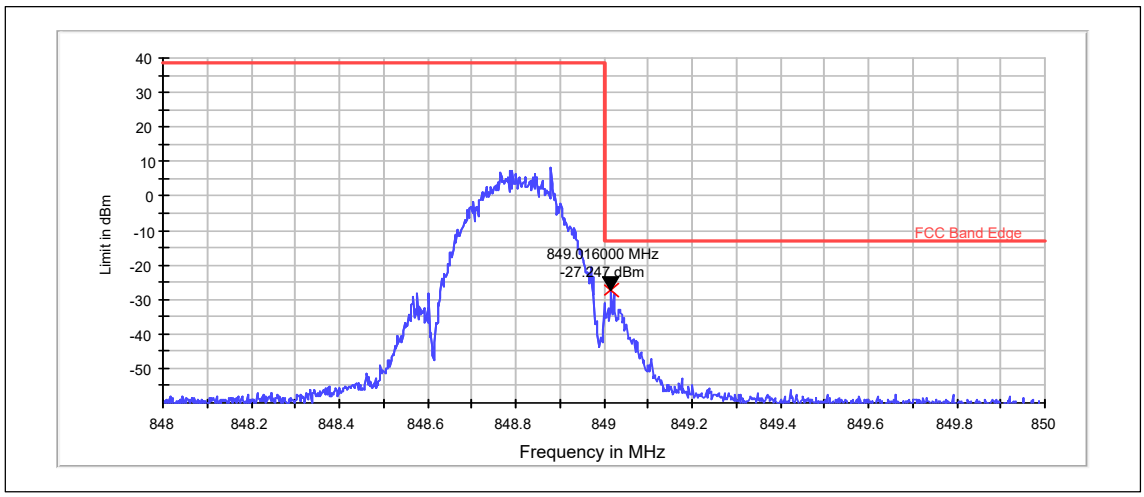
Channel 128 / 824.2 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	823.972	-33.09	PASSED

Channel 251 / 848.8 MHz



RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
EGPRS	849.016	-27.25	PASSED

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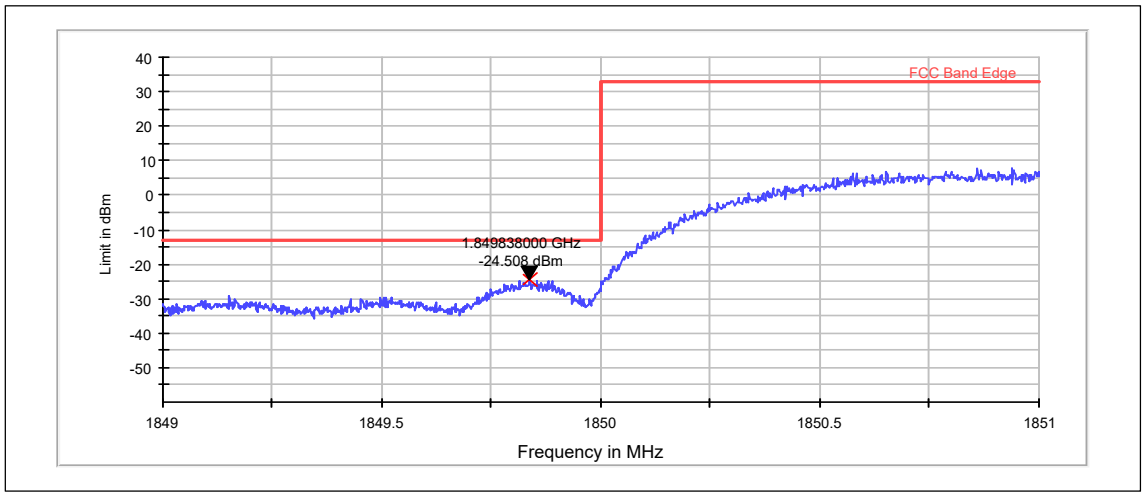
4.5. WCDMA2 Test results

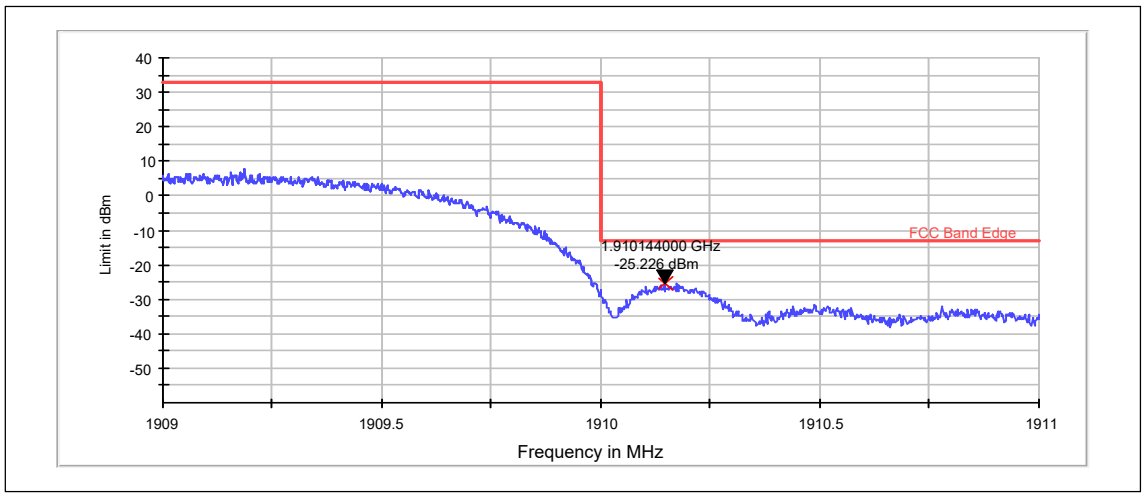
Channel 9262 / 1852.4 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1849.838	-24.51	PASSED

Channel 9538 / 1907.6 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1910.144	-25.23	PASSED

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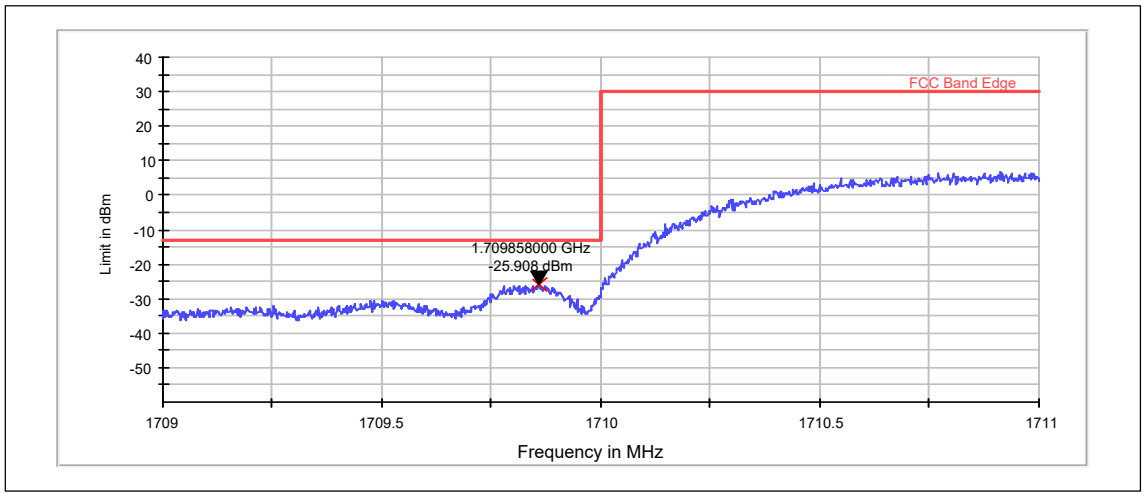
4.6. WCDMA4 Test results

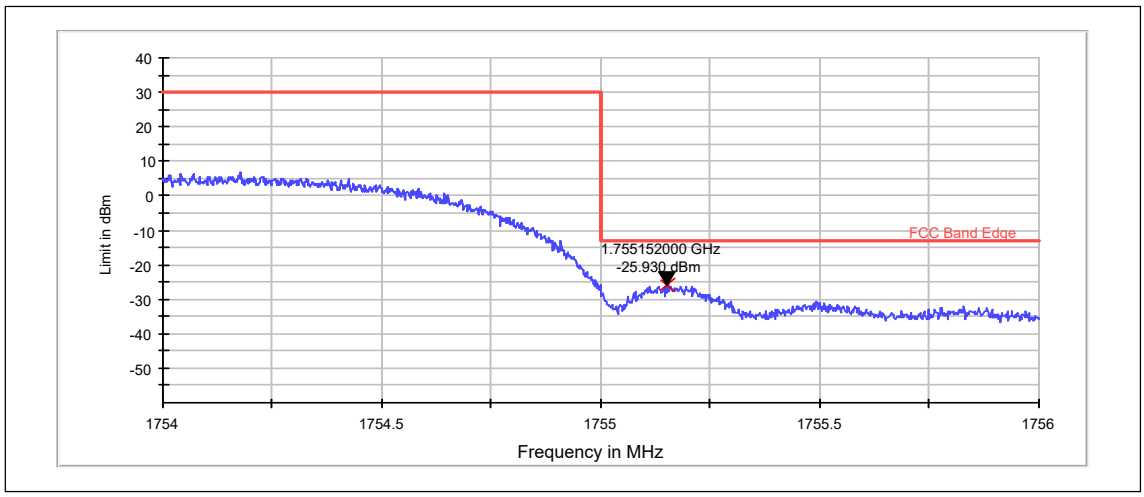
Channel 1312 / 1712.4 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1709.858	-25.91	PASSED

Channel 1513 / 1752.6 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	1755.152	-25.93	PASSED

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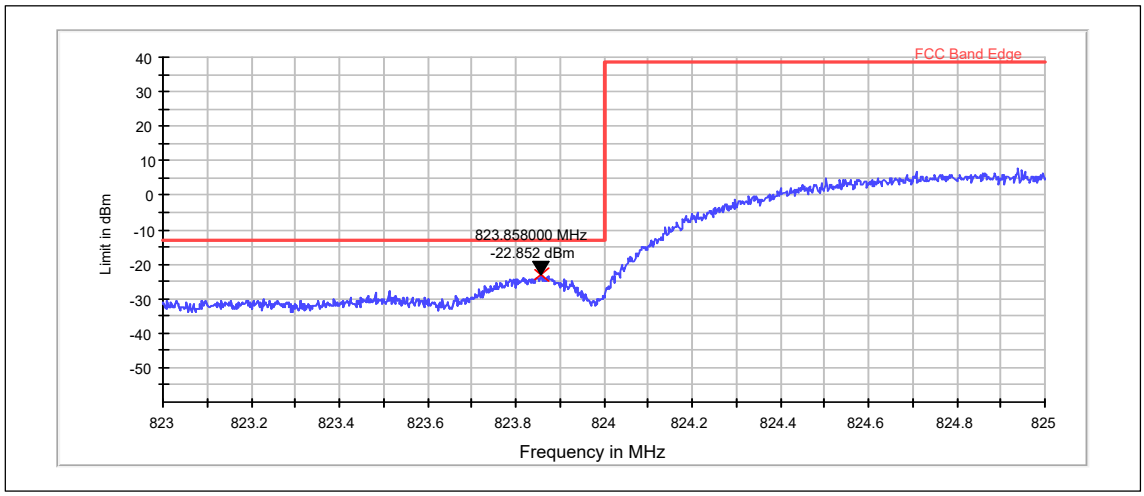
4.7. WCDMA5 Test results

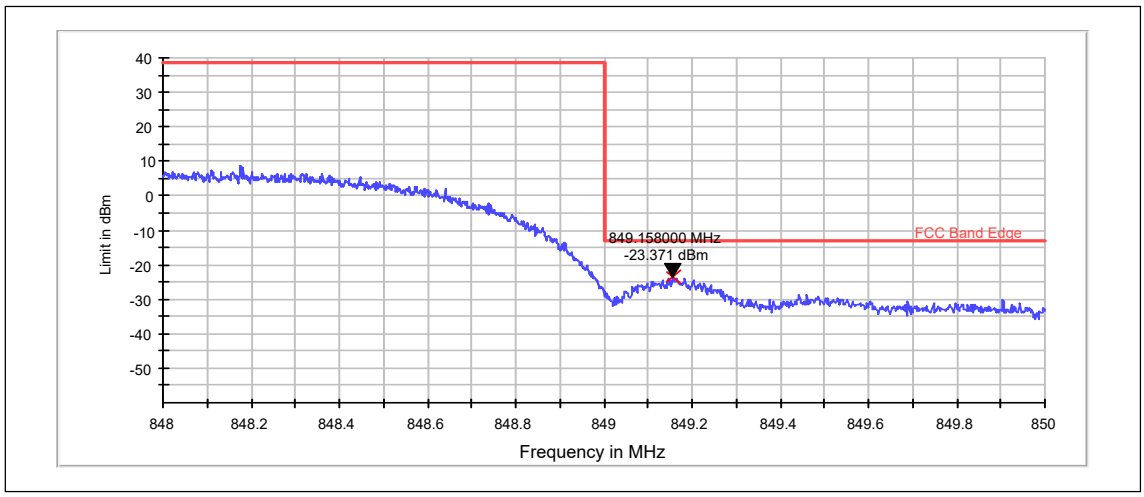
Channel 4132 / 826.4 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	823.858	-22.85	PASSED

Channel 4233 / 846.6 MHz



RMS (RBW: 50 kHz, VBW: 50 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD	849.158	-23.37	PASSED

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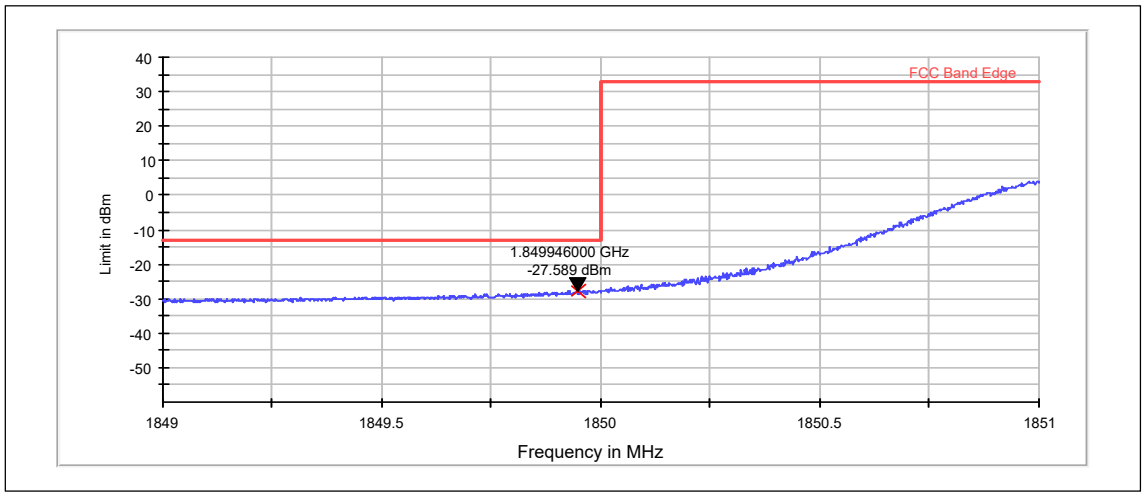
4.8. LTE2 Test results

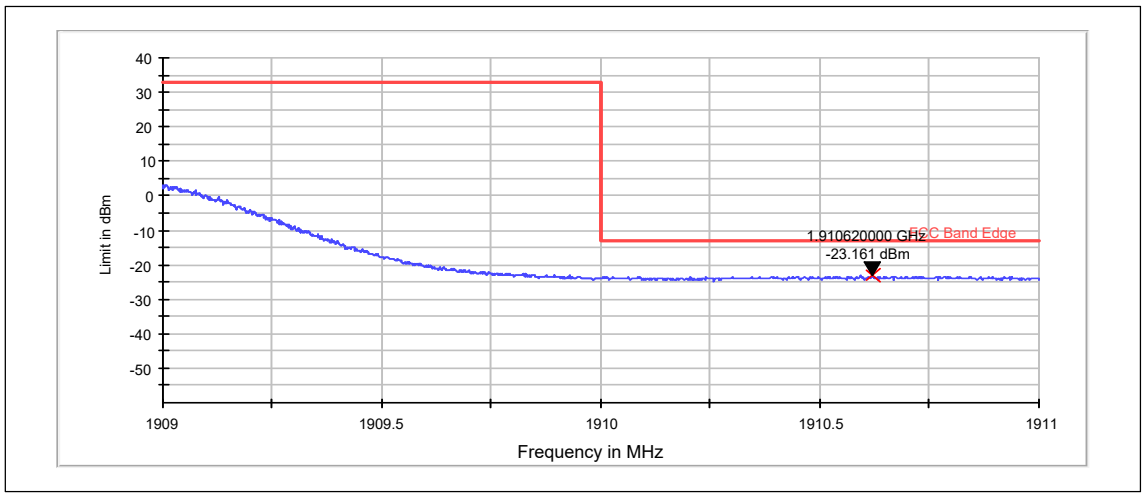
Channel 18700 / 1860 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	1849.946	-27.59	PASSED

Channel 19100 / 1900 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	1910.620	-23.16	PASSED

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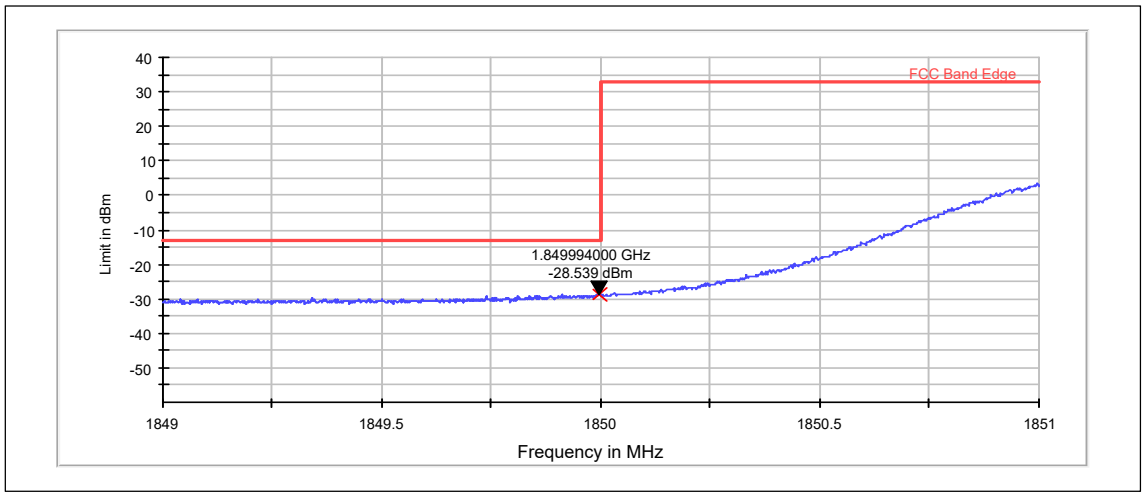
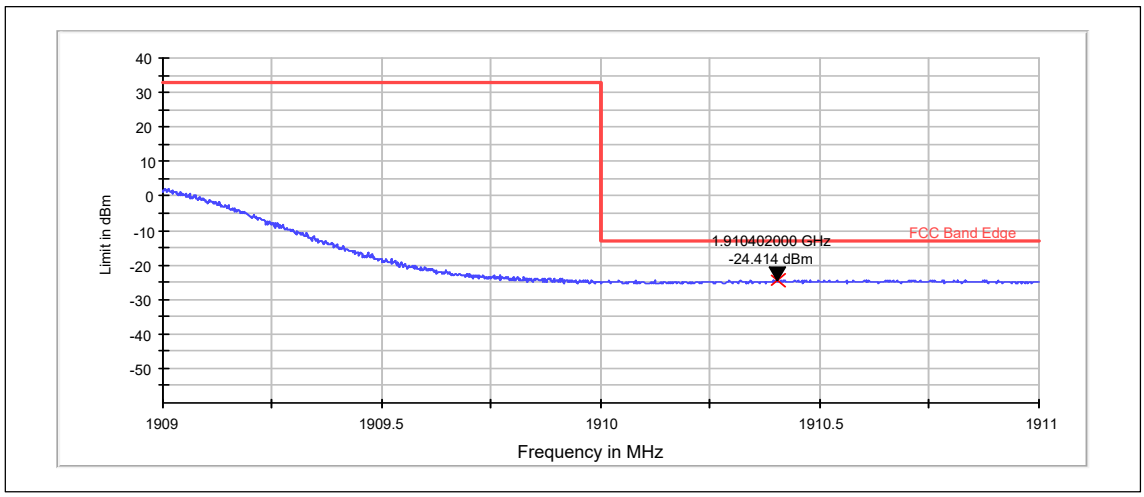
Channel 18700 / 1860 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	1849.994	-28.54	PASSED

Channel 19100 / 1900 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	1910.402	-24.41	PASSED

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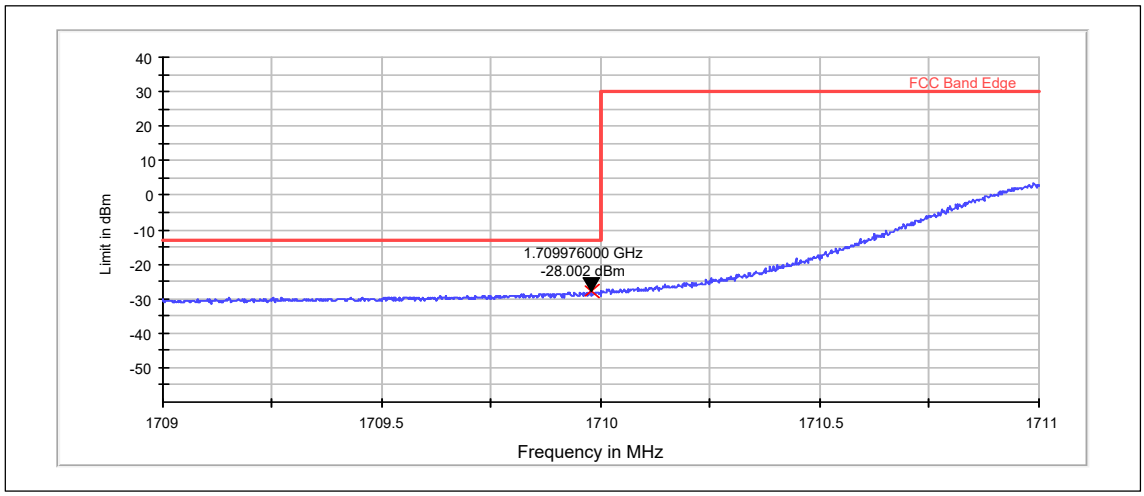
4.9. LTE4 Test results

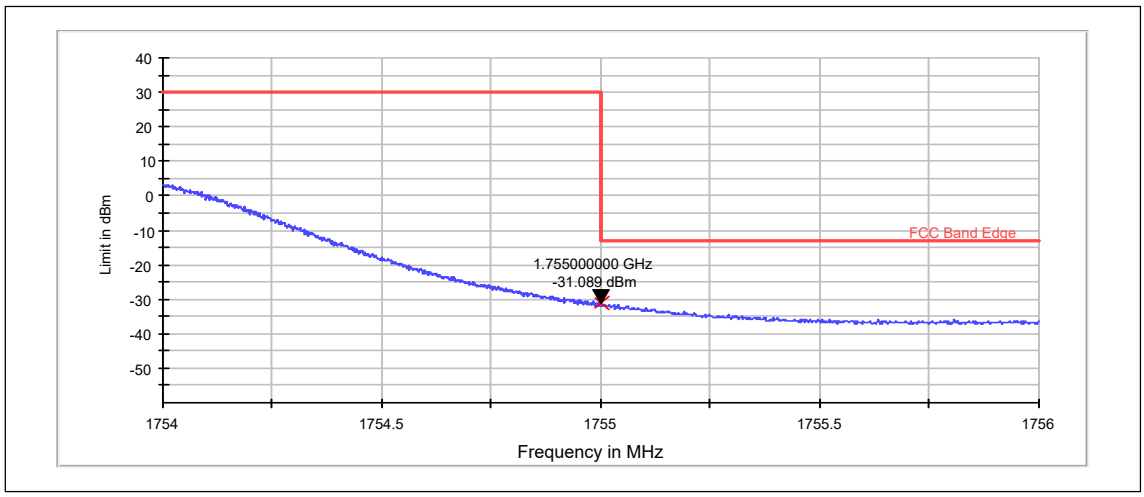
Channel 20050 / 1720 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	1709.976	-28.00	PASSED

Channel 20300 / 1745 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	1755.000	-31.09	PASSED

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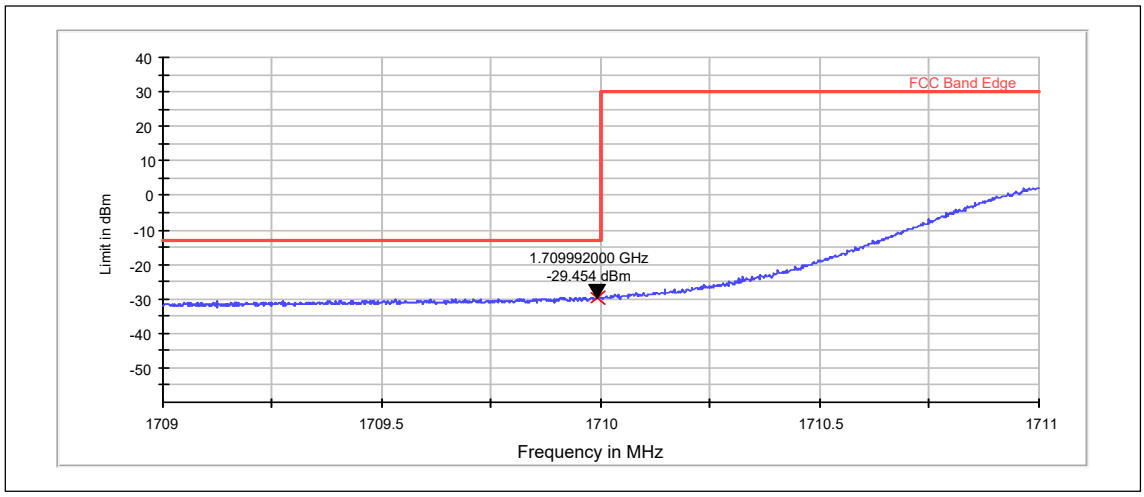
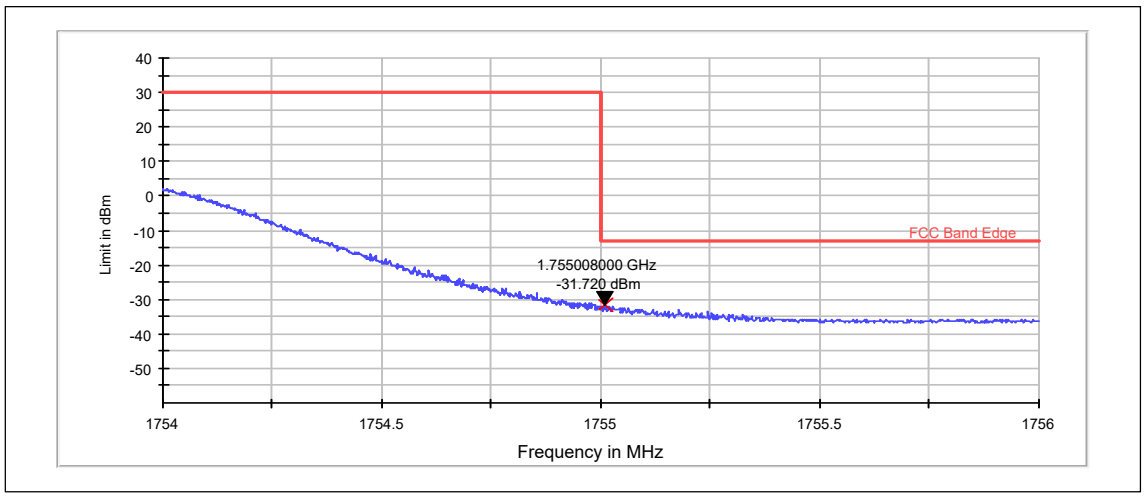
Channel 20050 / 1720 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	1709.992	-29.45	PASSED

Channel 20300 / 1745 MHz



RMS (RBW: 200 kHz, VBW: 1 MHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	1755.008	-31.72	PASSED

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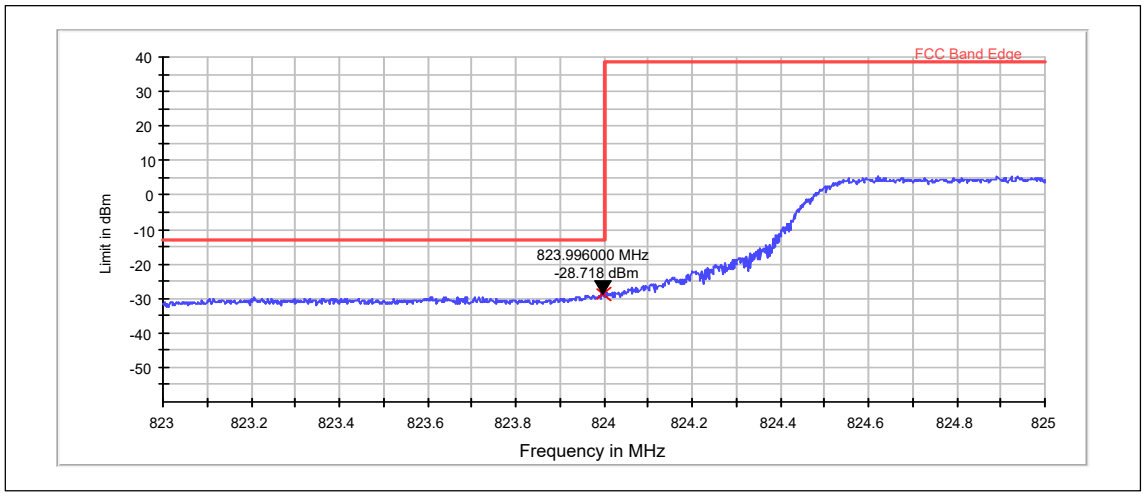
4.10. LTE5 Test results

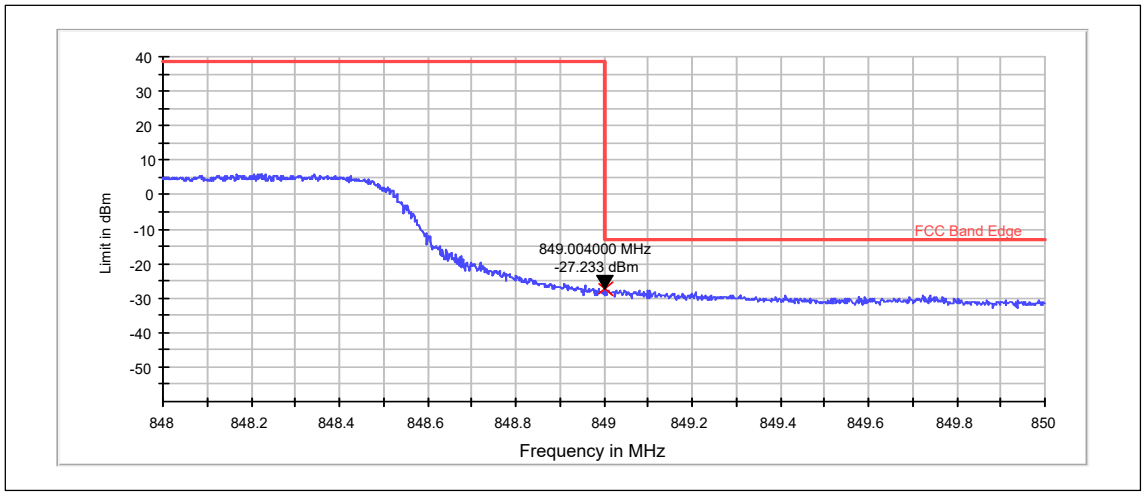
Channel 20450 / 829 MHz



RMS (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	823.996	-28.72	PASSED

Channel 20600 / 844 MHz



RMS (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	849.004	-27.23	PASSED

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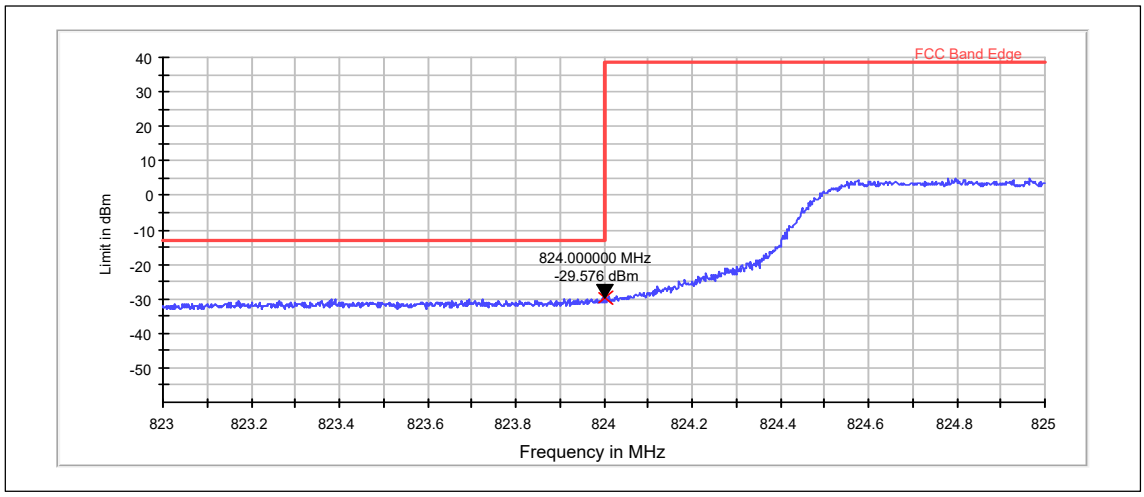
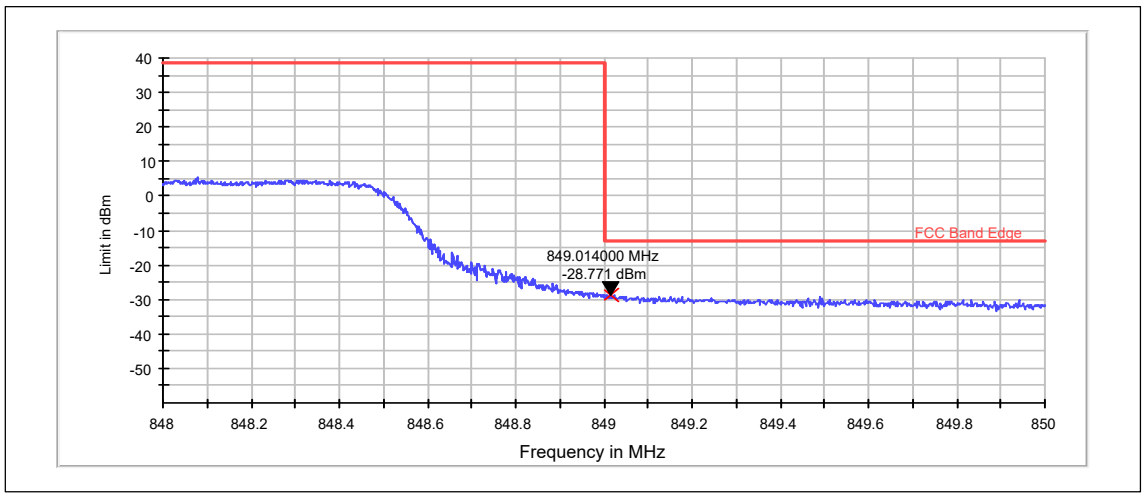
Channel 20450 / 829 MHz



RMS (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	824.000	-29.58	PASSED

Channel 20600 / 844 MHz



RMS (RBW: 100 kHz, VBW: 300 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	849.014	-28.77	PASSED

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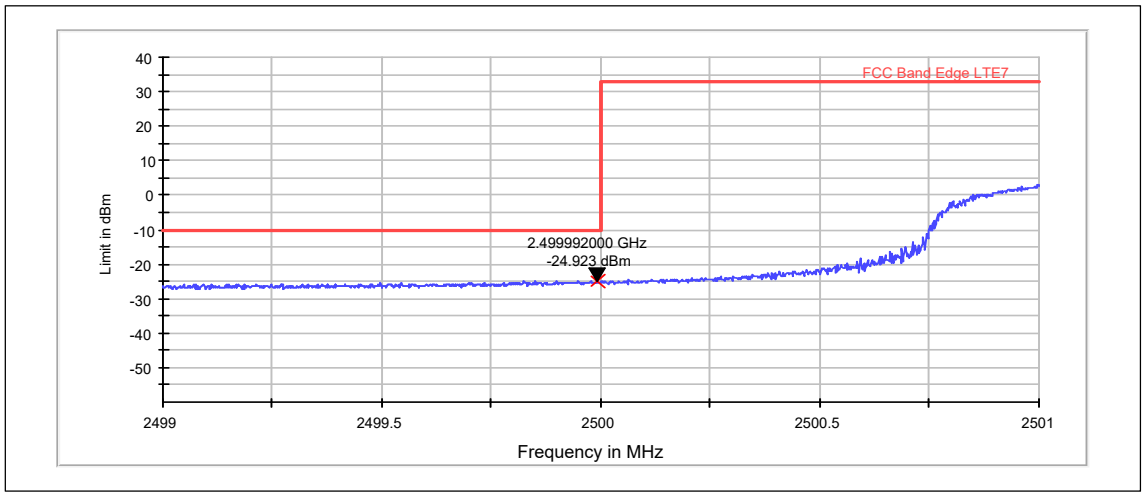
4.11. LTE7 Test results

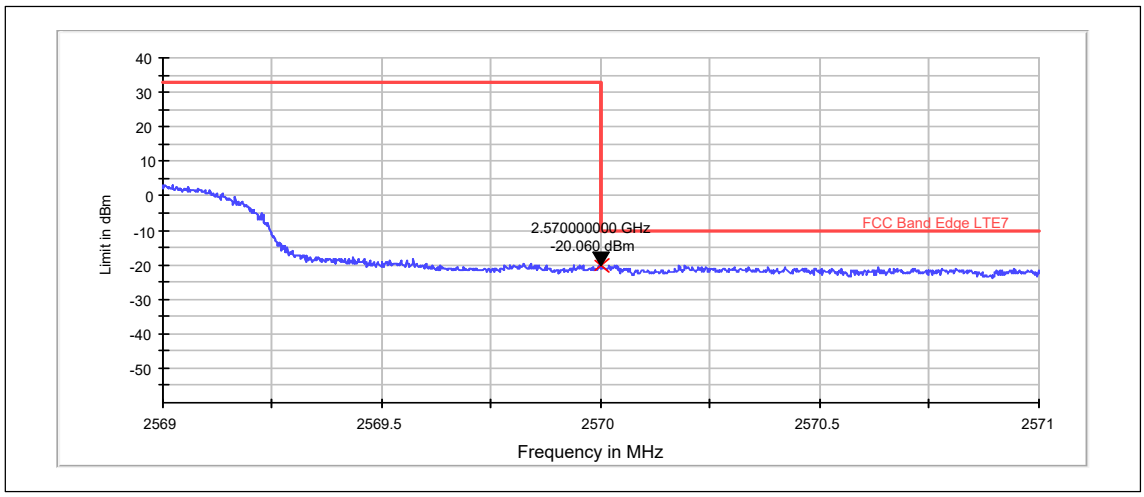
Channel 20850 / 2510 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	2499.992	-24.92	PASSED

Channel 21350 / 2560 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	2570.000	-20.06	PASSED

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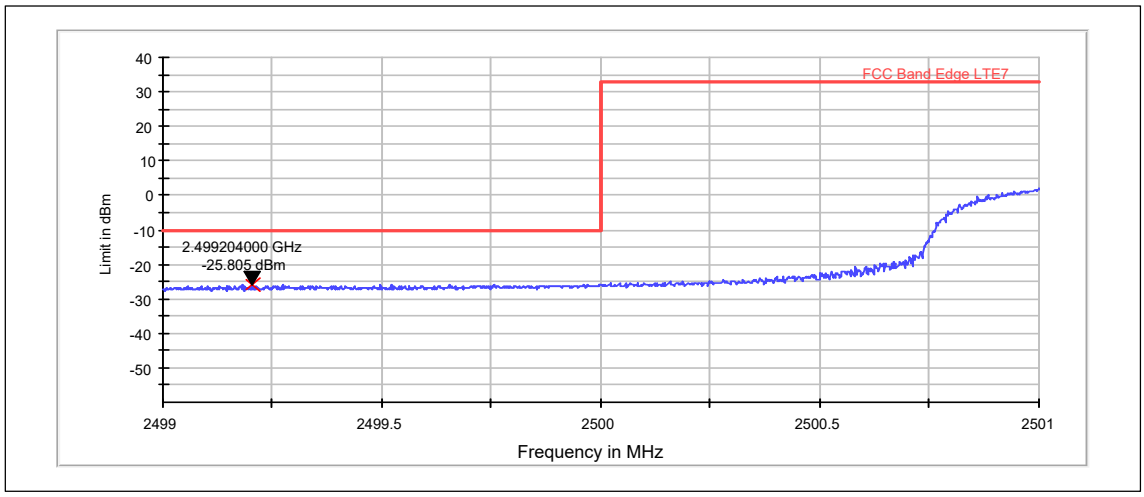
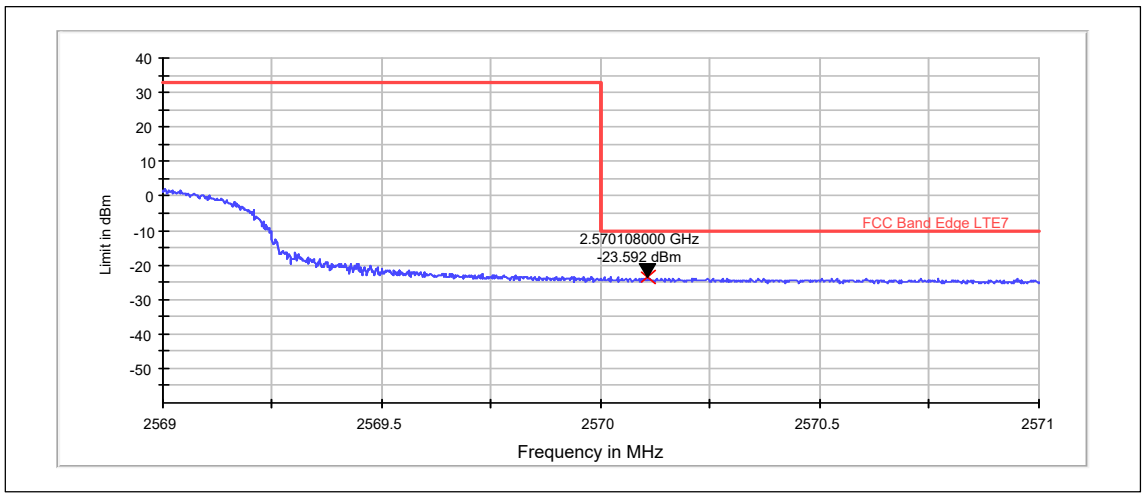
Channel 20850 / 2510 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	2499.204	-25.81	PASSED

Channel 21350 / 2560 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	2570.108	-23.59	PASSED

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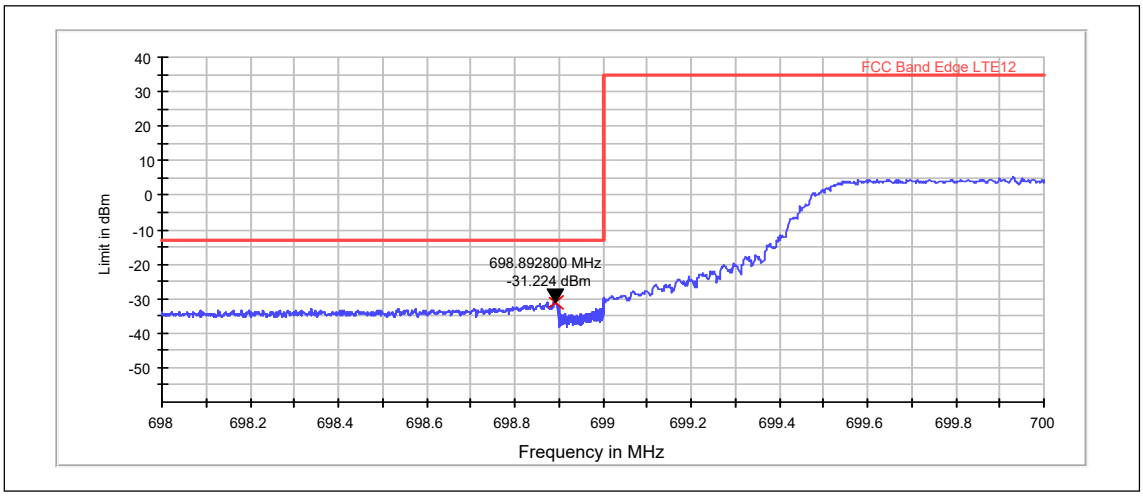
4.12. LTE12 Test results

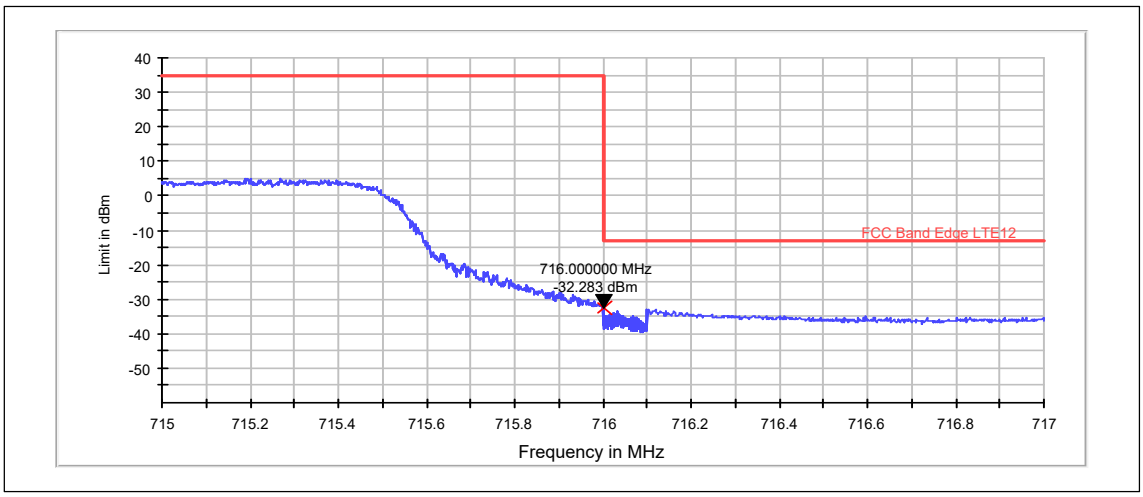
Channel 23060 / 704 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	698.893	-31.22	PASSED

Channel 23130 / 711 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	716.000	-32.28	PASSED

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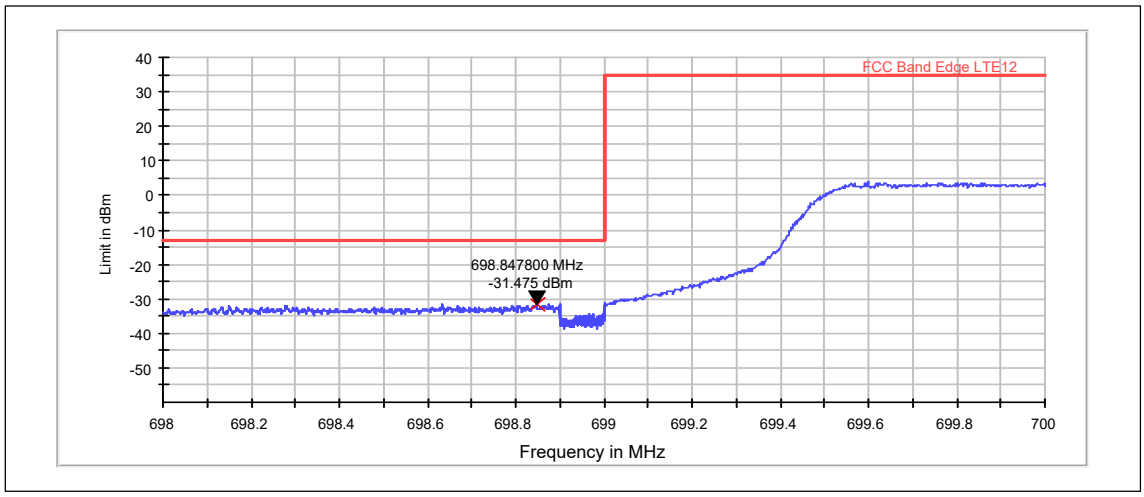
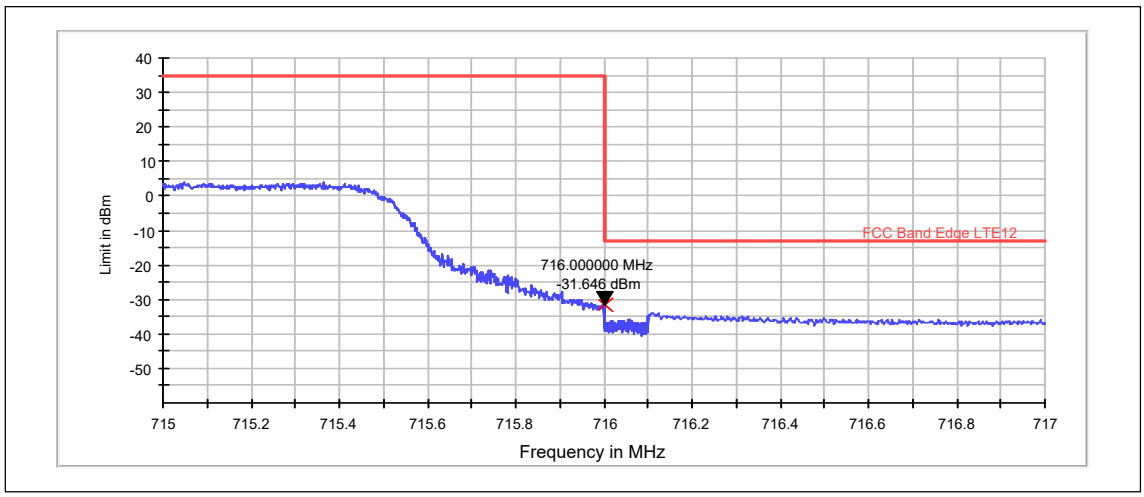
Channel 23060 / 704 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	698.848	-31.48	PASSED

Channel 23130 / 711 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	716.000	-31.65	PASSED

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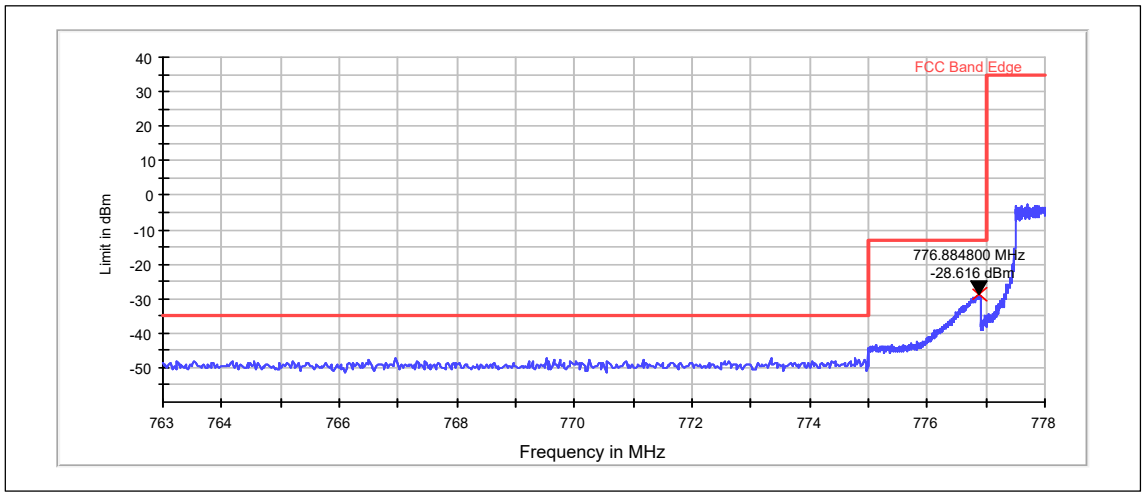
4.13. LTE13 Test results

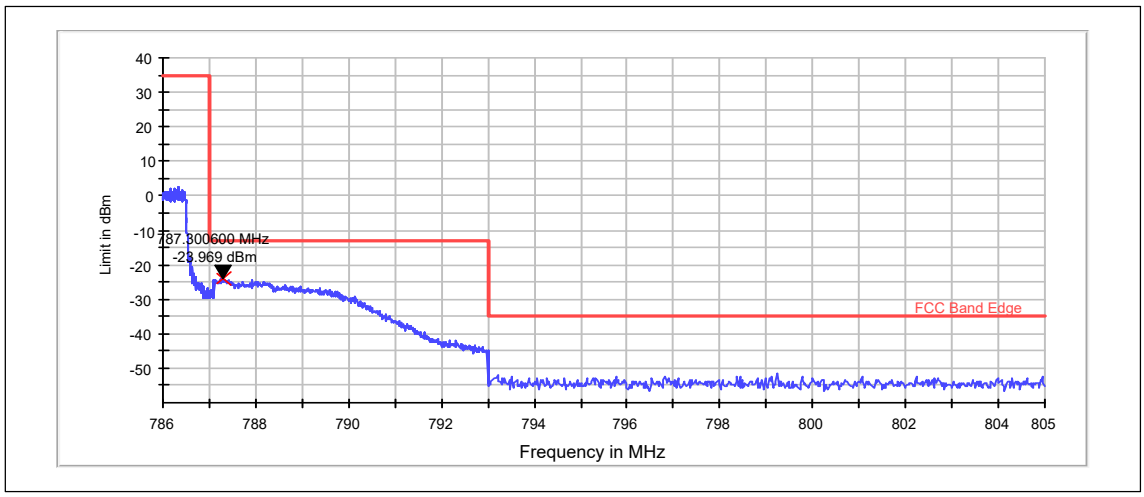
Channel 23230 / 782 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	776.885	-28.62	PASSED

Channel 23230 / 782 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	787.301	-23.97	PASSED

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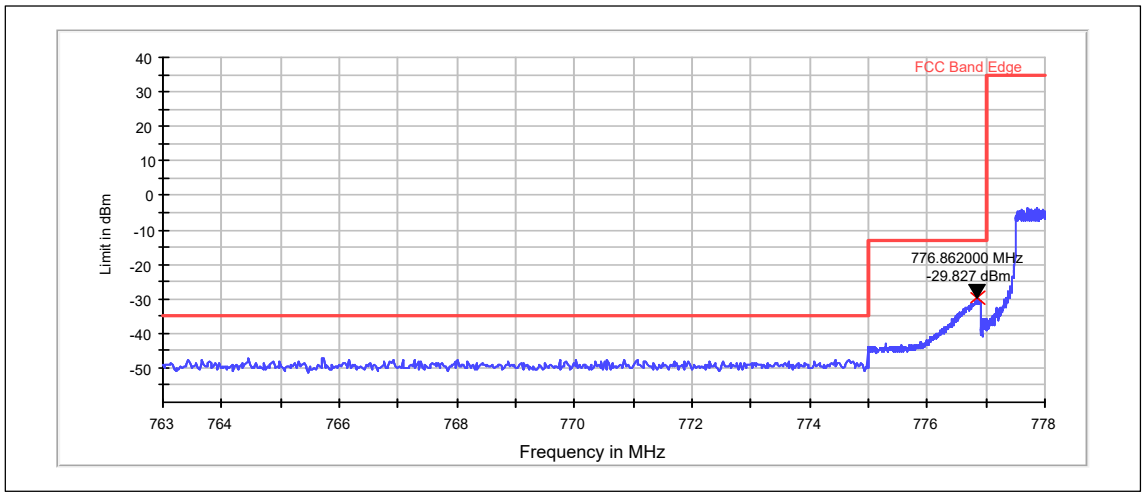
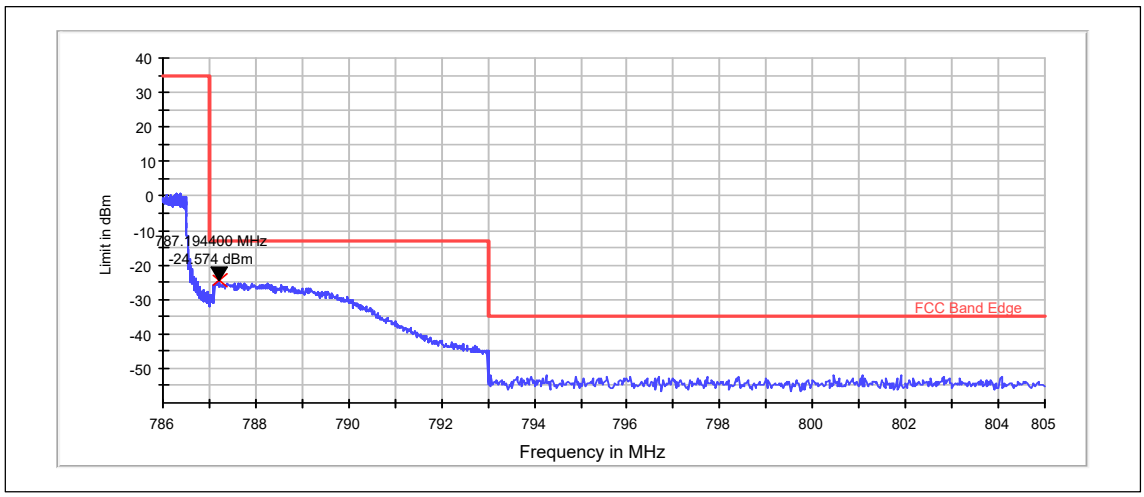
Channel 23230 / 782 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	776.862	-29.83	PASSED

Channel 23230 / 782 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	787.194	-24.57	PASSED

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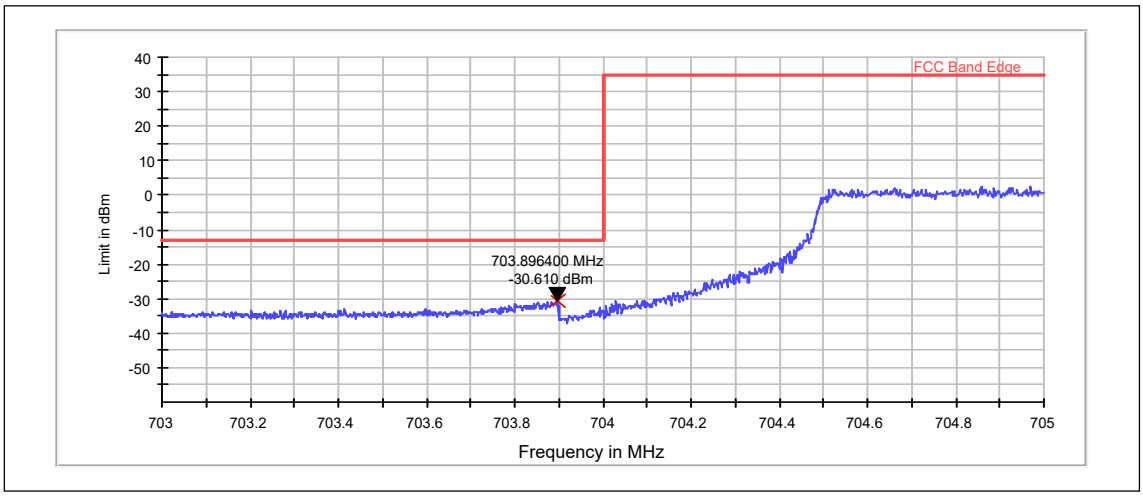
4.14. LTE17 Test results

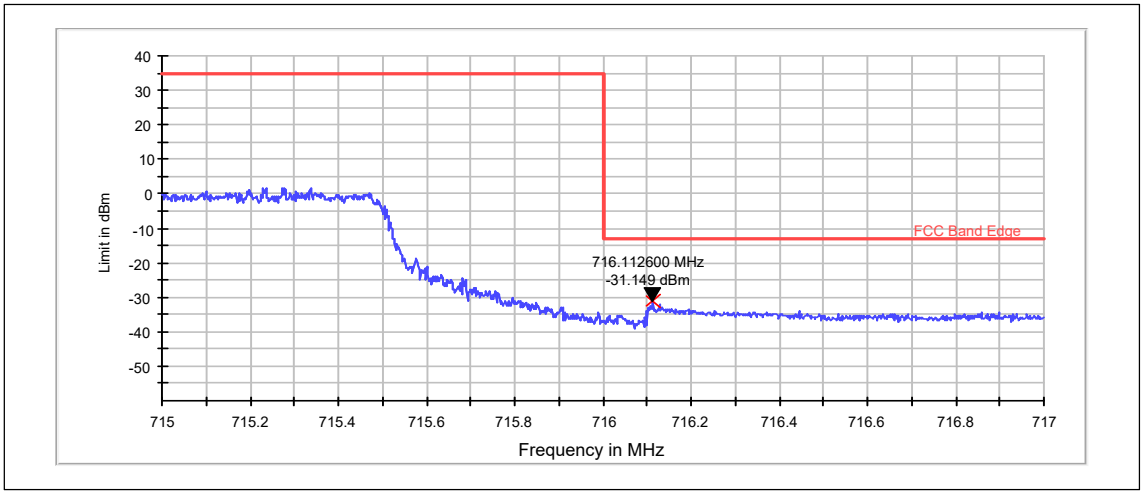
Channel 23780 / 709 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	703.896	-30.61	PASSED

Channel 23800 / 711 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	716.113	-31.15	PASSED

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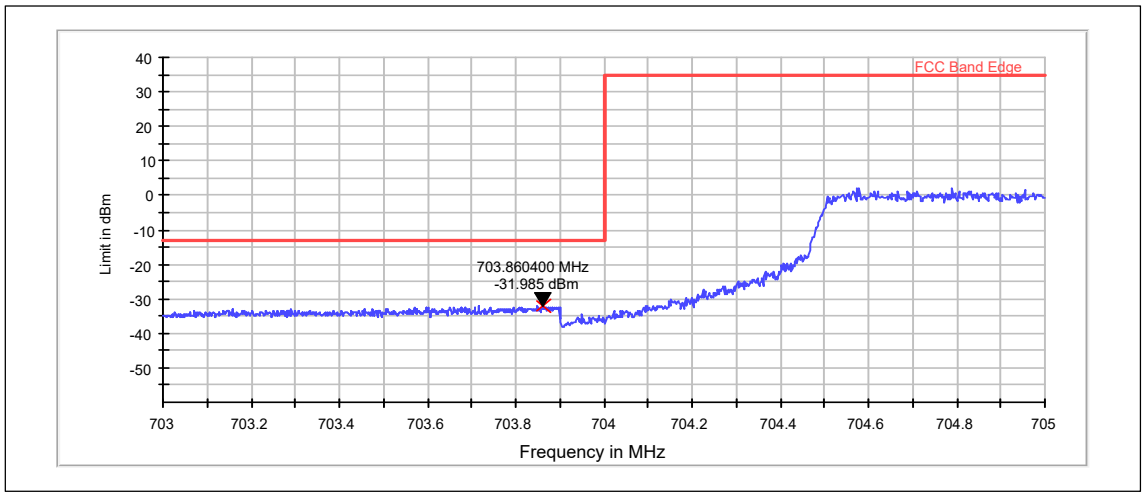
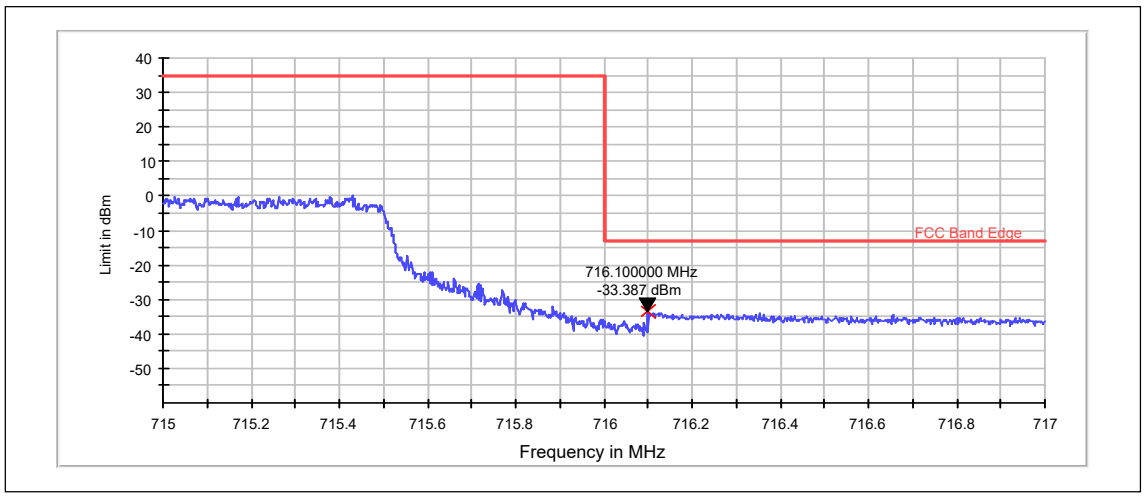
Channel 23780 / 709 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	703.860	-31.98	PASSED

Channel 23800 / 711 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	716.100	-33.39	PASSED

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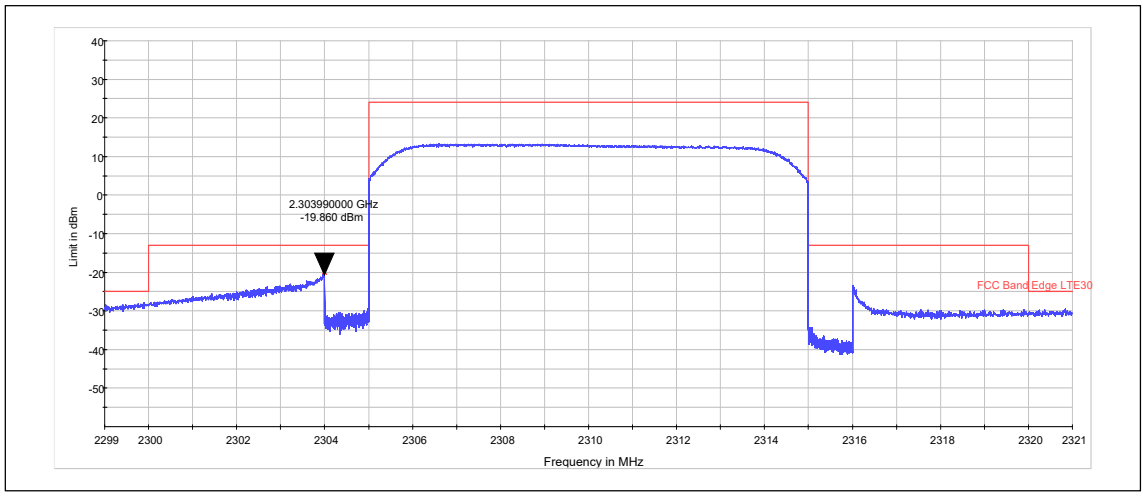
4.15. LTE30 Test results

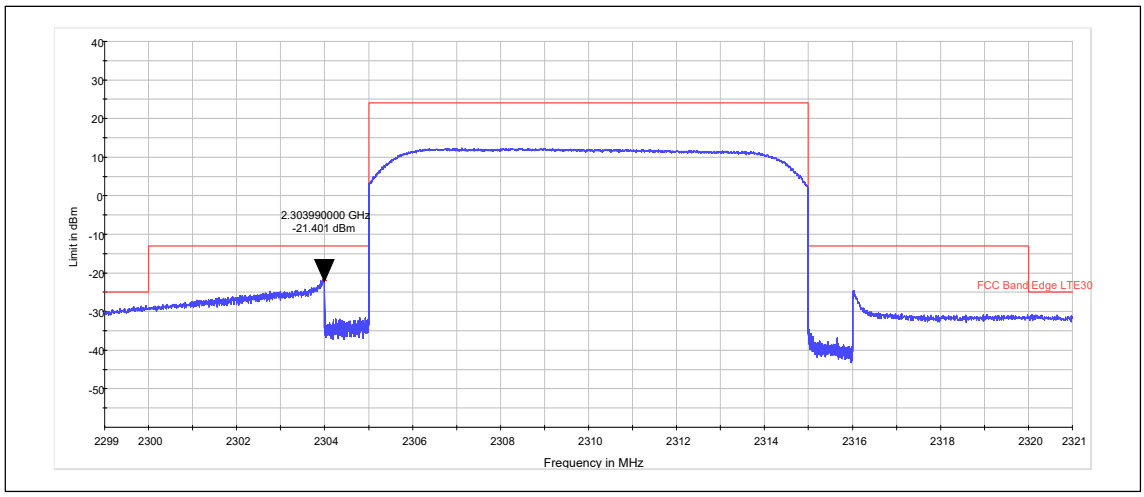
Channel 27710 / 2310 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, QPSK, 50 RB	2303.990	-19.86	PASSED

Channel 27710 / 2310 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 10MHz, 16QAM, 50 RB	2303.990	-21.40	PASSED

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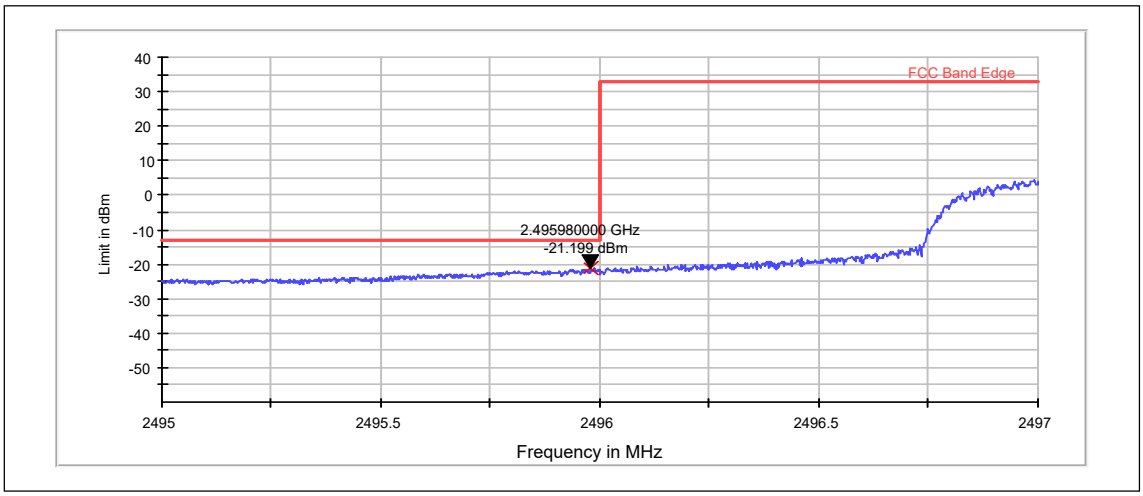
4.16. LTE41 Test results

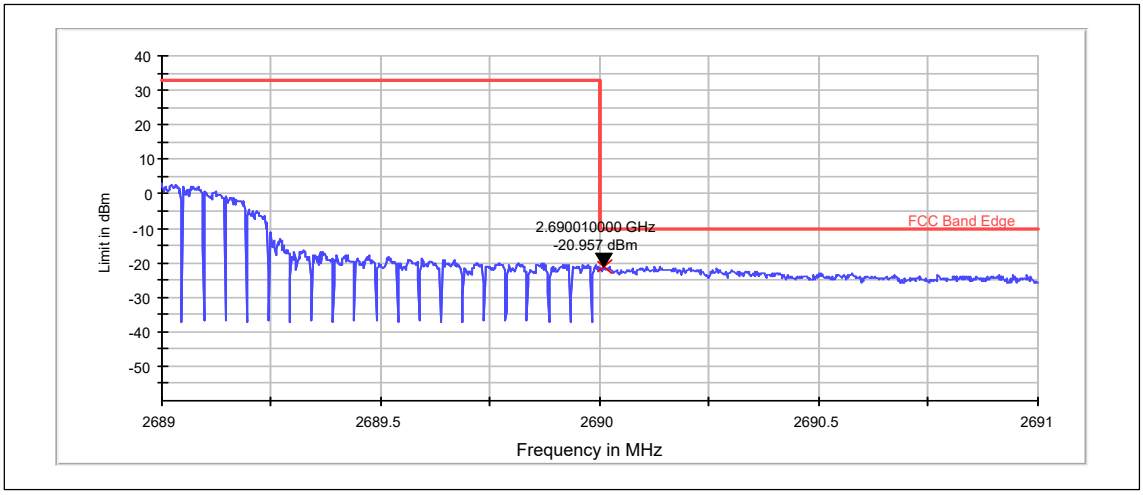
Channel 39750 / 2506 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	2495.980	-21.20	PASSED

Channel 41490 / 2680 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, QPSK, 100 RB	2690.010	-20.96	PASSED

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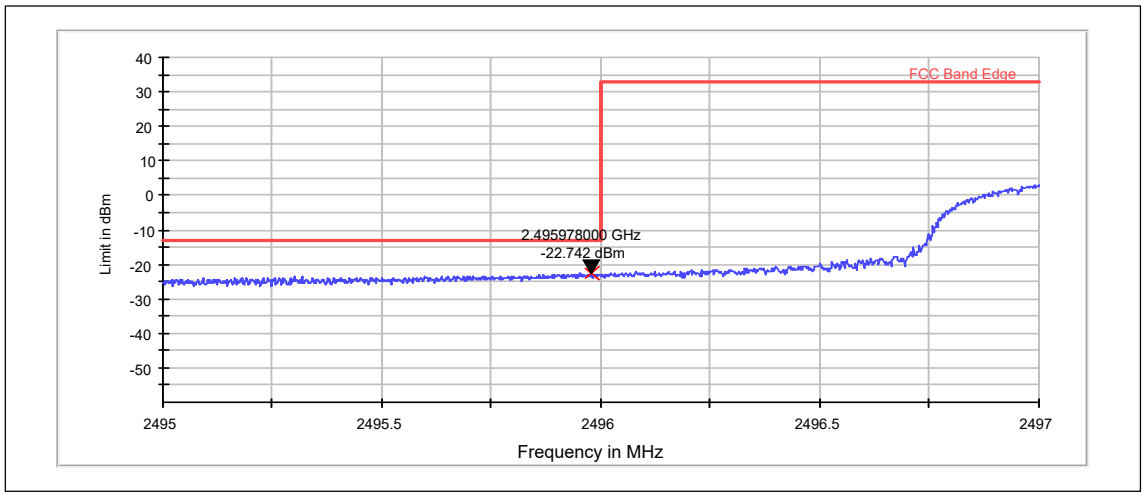
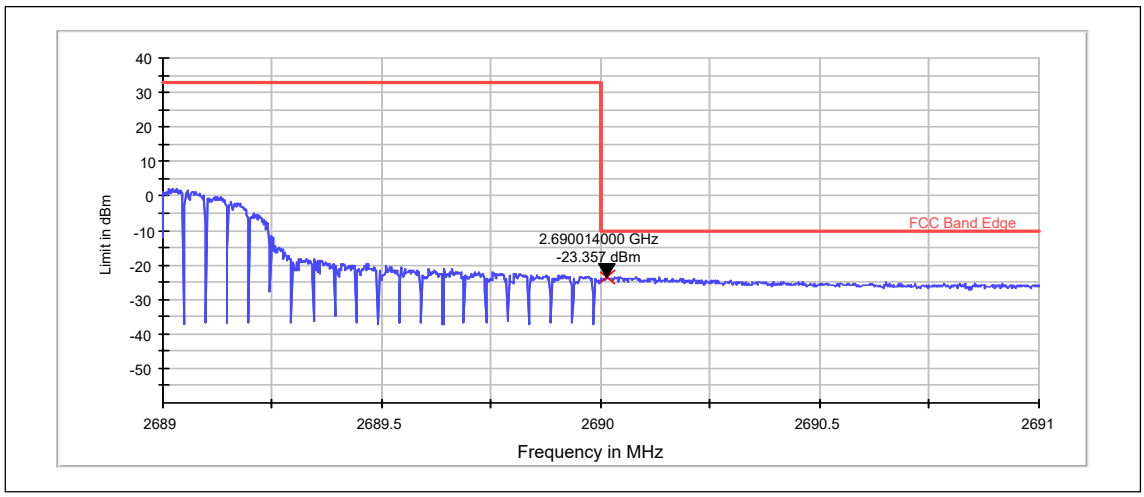
Channel 39750 / 2506 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	2495.978	-22.74	PASSED

Channel 41490 / 2680 MHz



RMS detector, Max hold

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
FDD, CBW 20MHz, 16QAM, 100 RB	2690.014	-23.36	PASSED

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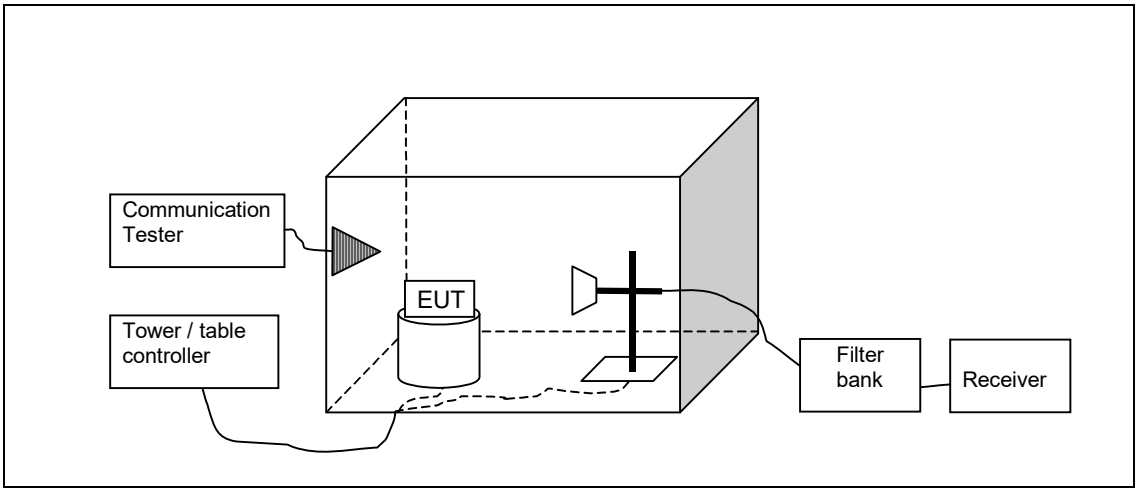
5. Spurious radiated emissions

(FCC §24.238(a), §24.238(a), §2.1053, §27.53(l), §2.1053, §27.53 a 4 i ii iii, §27.53(g), §2.1051, §27.53(c)(2)(4),(f), §2.1053, §27.53(f), §27.53(l), §2.1053, §22.917(a), §2.1053, §27.53(h), §2.1053, §2.1053, RSS-133 6.5, RSS-139 6.5, RSS-132 4.5, RSS-199 4.5(b), RSS-130 4.6, RSS-195 5.6.2)

EUT with DUT number	RM-1105, DUT 400035
Accessories with DUT numbers	BV-T5E, DUT 400027 ; AC-100E, DUT 400013 ; WH-308, DUT 400014
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 50 / 101.8
Date of measurements	12-Aug-2015
Measured by	Timo Raiskio

5.1.1 Test setup



5.2. Test method and limit

The measurement is made according to TIA-603-C-2004 as follows:
The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor and measuring antenna at fixed height using 2-axis EUT position system.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

The EUT is placed at nonconductive plate at the turntable center.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.
The measurement is made up to 10th harmonic of the EUT highest TX channel.

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The substitution method is used.

The measurement results are obtained as described below:

$P\ [dBm] = P_{SUBST\ TX} + G_{SUBST\ TX\ ANT} - L_{SUBST\ CABLE}$

Where $P_{SUBST\ TX}$ is signal generator level, which produces the same receiver reading P_{MEAS} in dBm as EUT. $G_{SUBST\ TX\ ANT}$ is substitution antenna gain and $L_{SUBST\ CABLE}$ is the loss of the cable between the signal generator and the substitution antenna.

Limits for spurious radiated emissions measurements

Operation band	Frequency range [MHz]	Limit [dBm]
LTE2	30 - 19100	-13
LTE4	30 - 17500	-13
LTE5	30 - 8500	-13
LTE7	30 - 25700	-13
LTE12	30 - 7200	-13
LTE13	30 – 8000 763-775 and 793-805 1559 – 1610 1559 – 1610	-13 (RBW = 100 kHz, ERP) -35 (RBW = 6.25 kHz, ERP) -40 (RBW = 1 MHz) -50 (RBW = 700 Hz)
LTE17	30 - 7200	-13 (RBW = 100 kHz, ERP)
LTE30	30 - 23100	-13
LTE41	30 - 25700	-13
GSM 850	30 - 8500	-13
GSM 1900	30 - 19100	-13
WCDMA2	30 - 19100	-13
WCDMA4	30 - 17500	-13
WCDMA5	30 - 8500	-13

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5.3. GSM 850 test results

Channel 190 / 836.6 MHz

Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1673.106	-48.72	0.01343	-42.12	-6.6	VERTICAL	PASSED
1673.307	-49.11	0.01227	-42.51	-6.6	VERTICAL	PASSED
2509.94	-36.2	0.23988	-36.4	0.2	HORIZONTAL	PASSED
2509.98	-36.35	0.23174	-36.55	0.2	HORIZONTAL	PASSED
3355.792	-59.5	0.00112	-60.1	0.6	HORIZONTAL	PASSED

5.4. GSM 850 E-GPRS (MSC9) test results

Channel 190 / 836.6 MHz

Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1673.22	-58.35	0.00146	-51.65	-6.7	HORIZONTAL	PASSED
2509.58	-49.45	0.01135	-49.75	0.3	VERTICAL	PASSED

5.5. GSM 1900 test results

Channel 661 / 1880.0 MHz

Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
7573.146	-48.79	0.01321	-63.29	14.5	VERTICAL	PASSED
7575.03	-48.98	0.01265	-63.58	14.6	VERTICAL	PASSED
8168.176	-46.57	0.02203	-62.37	15.8	VERTICAL	PASSED
9332.104	-44.58	0.03483	-63.28	18.7	VERTICAL	PASSED
9354.549	-45.05	0.03126	-63.75	18.7	VERTICAL	PASSED
9439.279	-45.46	0.02844	-63.56	18.1	VERTICAL	PASSED

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5.6. GSM 1900 E-GPRS (MSC9) test results

Channel 661 / 1880.0 MHz

Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
3760.06	-54.71	0.00338	-59.21	4.5	HORIZONTAL	PASSED
5639.86	-47.51	0.01774	-55.71	8.2	HORIZONTAL	PASSED

5.7. WCDMA2 test results

Channel 9400 / 1880.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1910.301	-42.99	0.05023	-39.79	-3.2	HORIZONTAL	PASSED
3758.898	-53.92	0.00406	-58.42	4.5	VERTICAL	PASSED
5642.986	-49.99	0.01002	-58.09	8.1	HORIZONTAL	PASSED
5643.788	-47.85	0.01641	-55.65	7.8	VERTICAL	PASSED
7527.715	-47.86	0.01637	-62.26	14.4	VERTICAL	PASSED
7533.808	-47.77	0.01671	-62.17	14.4	VERTICAL	PASSED
8385.752	-47.64	0.01722	-63.14	15.5	HORIZONTAL	PASSED
9319.699	-44.16	0.03837	-63.36	19.2	VERTICAL	PASSED
9393.848	-44.54	0.03516	-62.94	18.4	VERTICAL	PASSED
9888.958	-44.69	0.03396	-63.19	18.5	VERTICAL	PASSED
11289.359	-44.61	0.03459	-63.41	18.8	HORIZONTAL	PASSED
13155.892	-52.4	0.00575	-63.9	11.5	VERTICAL	PASSED
15041.583	-51.39	0.00726	-65.79	14.4	VERTICAL	PASSED
16914.128	-51.2	0.00759	-67.4	16.2	HORIZONTAL	PASSED

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5.8. WCDMA4 test results

Channel 1412 / 1732.4 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1714.92	-32.07	0.62087	-27.57	-4.5	HORIZONTAL	PASSED
1755.461	-44.71	0.03381	-40.31	-4.4	VERTICAL	PASSED
1763.617	-39.7	0.10715	-35.3	-4.4	HORIZONTAL	PASSED
3459.209	-57.01	0.00199	-60.61	3.6	VERTICAL	PASSED
5193.573	-51.8	0.00661	-59.6	7.8	HORIZONTAL	PASSED
6928.778	-47.85	0.01641	-58.95	11.1	VERTICAL	PASSED
8671.359	-46.62	0.02178	-63.62	17	VERTICAL	PASSED
8905.391	-45.52	0.02805	-63.32	17.8	VERTICAL	PASSED
9435.852	-44.38	0.03648	-62.48	18.1	VERTICAL	PASSED
9865.471	-44.76	0.03342	-63.16	18.4	VERTICAL	PASSED
10390.131	-44.34	0.03681	-62.34	18	VERTICAL	PASSED
12133.313	-45.6	0.02754	-64.1	18.5	HORIZONTAL	PASSED
13860.583	-52.24	0.00597	-64.04	11.8	VERTICAL	PASSED
15591.139	-50.28	0.00938	-65.88	15.6	VERTICAL	PASSED
17330.633	-49.39	0.01151	-67.39	18	VERTICAL	PASSED

5.9. WCDMA5 test results

Channel 4175 / 835.0 MHz

FDD mode, Peak detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
821.518	-41.34	0.07345	-73.64	32.3	VERTICAL	PASSED
821.681	-41.82	0.06577	-74.12	32.3	VERTICAL	PASSED
847.66	-49.19	0.01205	-79.59	30.4	HORIZONTAL	PASSED
851.797	-50.66	0.00859	-81.66	31	VERTICAL	PASSED
1006.934	-63.14	0.00049	-52.84	-10.3	VERTICAL	PASSED
1670.982	-58.73	0.00134	-52.03	-6.7	HORIZONTAL	PASSED
2507.024	-53.7	0.00427	-53.9	0.2	VERTICAL	PASSED
2517.615	-54.62	0.00345	-55.22	0.6	VERTICAL	PASSED
3340.261	-59.17	0.00121	-59.97	0.8	VERTICAL	PASSED
4173.938	-57.56	0.00175	-61.26	3.7	HORIZONTAL	PASSED
5010.621	-54.95	0.0032	-60.95	6	VERTICAL	PASSED
5842.816	-54.09	0.0039	-60.09	6	VERTICAL	PASSED
6676.453	-50.19	0.00957	-58.39	8.2	VERTICAL	PASSED
7517.184	-50.87	0.00818	-62.77	11.9	HORIZONTAL	PASSED
8355.511	-50.12	0.00973	-63.62	13.5	VERTICAL	PASSED

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5.10. LTE2 test results

Channel 18900 / 1880.0 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1865.476	-53.99	0.00399	-50.79	-3.2	HORIZONTAL	PASSED
1895.292	-52.38	0.00578	-49.08	-3.3	HORIZONTAL	PASSED
3760.381	-63.91	0.00041	-68.41	4.5	HORIZONTAL	PASSED
5644.028	-62.62	0.00055	-70.72	8.1	HORIZONTAL	PASSED
7518.858	-59.64	0.00109	-73.64	14	HORIZONTAL	PASSED

Channel 18900 / 1880.0 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1865.055	-53.53	0.00444	-50.33	-3.2	HORIZONTAL	PASSED
1894.703	-50.86	0.0082	-47.56	-3.3	HORIZONTAL	PASSED
1895.085	-51.36	0.00731	-48.06	-3.3	HORIZONTAL	PASSED
3760.982	-65.81	0.00026	-70.31	4.5	HORIZONTAL	PASSED
5643.307	-62.6	0.00055	-70.7	8.1	HORIZONTAL	PASSED
7515.451	-59.88	0.00103	-73.98	14.1	HORIZONTAL	PASSED

5.11. LTE4 test results

Channel 20175 / 1732.5 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
3465.621	-66.3	0.00023	-70.3	4	HORIZONTAL	PASSED
5197.761	-63.01	0.0005	-70.71	7.7	HORIZONTAL	PASSED
6924.93	-58.49	0.00142	-69.69	11.2	VERTICAL	PASSED
8672.179	-57.22	0.0019	-74.22	17	VERTICAL	PASSED
10388.928	-56.57	0.0022	-74.57	18	VERTICAL	PASSED

Channel 20175 / 1732.5 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
3465.541	-66.52	0.00022	-70.52	4	HORIZONTAL	PASSED
5197.72	-63.01	0.0005	-70.71	7.7	HORIZONTAL	PASSED
6925.05	-58.49	0.00142	-69.69	11.2	VERTICAL	PASSED
8652.5	-57.36	0.00184	-74.26	16.9	HORIZONTAL	PASSED
10388.126	-56.23	0.00238	-74.23	18	VERTICAL	PASSED

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5.12. LTE5 test results

Channel 20525 / 836.5 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
857.637	-61.88	0.00065	-92.98	31.1	HORIZONTAL	PASSED
1673.341	-73.67	4E-05	-66.97	-6.7	HORIZONTAL	PASSED
2510.121	-68.19	0.00015	-68.39	0.2	HORIZONTAL	PASSED
3339.126	-78.48	1E-05	-79.08	0.6	HORIZONTAL	PASSED

Channel 20525 / 836.5 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
856.595	-62	0.00063	-93	31	HORIZONTAL	PASSED
1673.501	-75.79	3E-05	-69.09	-6.7	HORIZONTAL	PASSED
2510.001	-67.86	0.00016	-68.06	0.2	HORIZONTAL	PASSED
3345.058	-77.97	2E-05	-78.47	0.5	HORIZONTAL	PASSED

5.13. LTE7 test results

Channel 21100 / 2535.0 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
2554.494	-63.18	0.00048	-64.38	1.2	HORIZONTAL	PASSED
5070.1	-57.53	0.00177	-66.03	8.5	HORIZONTAL	PASSED
7606.743	-59.64	0.00109	-73.64	14	HORIZONTAL	PASSED
10137.896	-56.79	0.00209	-73.29	16.5	HORIZONTAL	PASSED

Channel 21100 / 2535.0 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
2548.101	-62.64	0.00054	-63.84	1.2	HORIZONTAL	PASSED
5070.461	-57.66	0.00171	-66.16	8.5	HORIZONTAL	PASSED
7605.501	-59.62	0.00109	-73.62	14	HORIZONTAL	PASSED
10134.649	-56.5	0.00224	-73	16.5	HORIZONTAL	PASSED

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5.14. LTE12 test results

Channel 23095 / 707.5 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1415.381	-71.1	8E-05	-62.4	-8.7	VERTICAL	PASSED
2123.041	-46.39	0.02296	-42.99	-3.4	HORIZONTAL	PASSED
2839.76	-71.64	7E-05	-74.24	2.6	HORIZONTAL	PASSED

Channel 23095 / 707.5 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1415.341	-71.19	8E-05	-62.49	-8.7	VERTICAL	PASSED
2123.121	-47.82	0.01652	-44.42	-3.4	HORIZONTAL	PASSED
2839.439	-71.42	7E-05	-74.22	2.8	VERTICAL	PASSED

5.15. LTE13 test results

Channel 23230 / 782 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
750.461	-55.87	0.00259	-86.97	31.1	VERTICAL	PASSED
764.998	-74.43	4E-05	-107.03	32.6	HORIZONTAL	PASSED
795.001	-75.23	3E-05	-107.03	31.8	HORIZONTAL	PASSED
1572.277	-70.29	9E-05	-62.79	-7.5	HORIZONTAL	PASSED
1609.8	-69.32	0.00012	-62.82	-6.5	HORIZONTAL	PASSED
2354.798	-75.1	3E-05	-73.9	-1.2	HORIZONTAL	PASSED
2969.198	-70.86	8E-05	-73.96	3.1	HORIZONTAL	PASSED
3118.281	-78.18	2E-05	-79.68	1.5	HORIZONTAL	PASSED
7998.617	-68.51	0.00014	-81.71	13.2	HORIZONTAL	PASSED

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Channel 23230 / 782 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
750.621	-55.87	0.00259	-86.97	31.1	VERTICAL	PASSED
764.865	-74.45	4E-05	-107.05	32.6	HORIZONTAL	PASSED
795.001	-75.23	3E-05	-107.03	31.8	HORIZONTAL	PASSED
1572.838	-70.4	9E-05	-62.8	-7.6	HORIZONTAL	PASSED
1609.88	-69.02	0.00013	-62.72	-6.3	VERTICAL	PASSED
2353.756	-74.58	3E-05	-73.28	-1.3	HORIZONTAL	PASSED
2969.679	-71.55	7E-05	-74.65	3.1	HORIZONTAL	PASSED
3118.401	-78.18	2E-05	-79.68	1.5	HORIZONTAL	PASSED
7999.038	-69.33	0.00012	-82.53	13.2	HORIZONTAL	PASSED

5.16. LTE17 test results

Channel 23790 / 710 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1420.341	-66.46	0.00023	-57.76	-8.7	HORIZONTAL	PASSED
2130.541	-46.55	0.02213	-43.25	-3.3	HORIZONTAL	PASSED
2846.192	-71.67	7E-05	-74.57	2.9	VERTICAL	PASSED

Channel 23790 / 710 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
1420.341	-67.64	0.00017	-58.94	-8.7	HORIZONTAL	PASSED
2130.541	-46.91	0.02037	-43.61	-3.3	HORIZONTAL	PASSED
2844.99	-71.63	7E-05	-74.63	3	VERTICAL	PASSED

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5.17. LTE30 test results

Channel 27710 / 2310.0 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
2296.558	-52.63	0.00546	-51.73	-0.9	HORIZONTAL	PASSED
2322.901	-61.31	0.00074	-60.31	-1	HORIZONTAL	PASSED
4615.772	-54.92	0.00322	-61.42	6.5	HORIZONTAL	PASSED
6931.543	-59.02	0.00125	-69.72	10.7	HORIZONTAL	PASSED
9234.93	-55.6	0.00275	-74.6	19	HORIZONTAL	PASSED

Channel 27710 / 2310.0 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
2296.919	-53.66	0.00431	-52.76	-0.9	HORIZONTAL	PASSED
2323.221	-59.18	0.00121	-58.18	-1	HORIZONTAL	PASSED
4615.571	-55.71	0.00269	-62.21	6.5	HORIZONTAL	PASSED
6935.19	-58.96	0.00127	-69.66	10.7	HORIZONTAL	PASSED
9247.315	-55.44	0.00286	-74.64	19.2	HORIZONTAL	PASSED

5.18. LTE41 test results

Channel 40620 / 2593.0 MHz

FDD, CBW 5MHz, QPSK, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
2580.48	-57.75	0.00168	-58.55	0.8	HORIZONTAL	PASSED
2605.52	-49.36	0.01159	-50.86	1.5	HORIZONTAL	PASSED
5186.581	-62.28	0.00059	-70.08	7.8	HORIZONTAL	PASSED
7773.89	-58.35	0.00146	-73.05	14.7	HORIZONTAL	PASSED
10367.411	-56.41	0.00229	-74.31	17.9	HORIZONTAL	PASSED

Channel 40620 / 2593.0 MHz

FDD, CBW 5MHz, 16QAM, 1 RB, RMS detector

Frequency [MHz]	P [dBm]	P [µW]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Results
2580.4	-57.08	0.00196	-57.88	0.8	HORIZONTAL	PASSED
2605.6	-49.8	0.01047	-51.3	1.5	HORIZONTAL	PASSED
5177.002	-62.94	0.00051	-70.74	7.8	HORIZONTAL	PASSED
7778.579	-58.63	0.00137	-73.33	14.7	HORIZONTAL	PASSED
10376.108	-56.52	0.00223	-74.22	17.7	HORIZONTAL	PASSED

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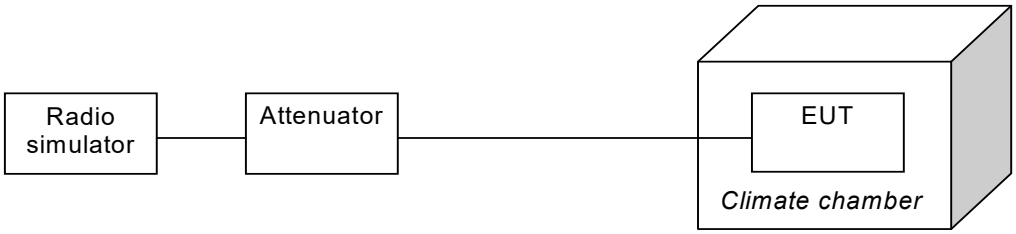
6. Frequency stability, temperature variation

(FCC §2.1055(a), §27.54, RSS-133 6.3, RSS-132 4.3, RSS-139 6.3, RSS-130 4.3, RSS-130 4.3 (a), RSS-199 4.3, RSS-195 5.4)

EUT with DUT number	RM-1105, DUT 400036
Accessories with DUT numbers	BV-T5E, DUT 400027, AC-100E, DUT 400013, WH-308, DUT 400014
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 56 / 102.0
Date of measurements	11-Aug-2015
Measured by	Timo Raiskio

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to applicable FCC rule parts and IC standards as follows:

The climate chamber temperature is set to the maximum value and the temperature is allowed to stabilize.
The EUT is placed in the chamber.
The EUT is set in idle mode for 15 minutes.
The EUT is set to transmit.
The transmit frequency error was measured immediately.
The steps c - e were repeated for each temperature. Limits for frequency stability, temperature variation measurements

Frequency deviation [ppm]
+\- 2.5

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6.3. GSM 850 Test results

GSM, Channel 190 / 836.6 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	836.60	-2.26000	-0.0027	PASSED
40	836.60	-3.62000	-0.0043	PASSED
30	836.60	1.36000	0.0016	PASSED
20	836.60	-3.94000	-0.0047	PASSED
10	836.60	-0.52000	-0.0006	PASSED
0	836.60	-2.52000	-0.003	PASSED
-10	836.60	0.26000	0.0003	PASSED
-20	836.60	-1.36000	-0.0016	PASSED
-30	836.60	-7.30000	-0.0087	PASSED

6.4. GSM 1900 Test results

GSM, Channel 661 / 1880.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1880.00	11.95000	0.0064	PASSED
40	1880.00	18.40000	0.0098	PASSED
30	1880.00	18.47000	0.0098	PASSED
20	1880.00	35.00000	0.0186	PASSED
10	1880.00	26.60000	0.0141	PASSED
0	1880.00	27.12000	0.0144	PASSED
-10	1880.00	18.02000	0.0096	PASSED
-20	1880.00	17.37000	0.0092	PASSED
-30	1880.00	32.09000	0.0171	PASSED

6.5. WCDMA4 Test results

FDD, Channel 1412 / 1732.4 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1732.40	-1.38855	-0.0008	PASSED
40	1732.40	0.54932	0.0003	PASSED
30	1732.40	-3.06702	-0.0018	PASSED
20	1732.40	-3.35693	-0.0019	PASSED
10	1732.40	-0.96130	-0.0006	PASSED
0	1732.40	-2.63977	-0.0015	PASSED
-10	1732.40	-3.05176	-0.0018	PASSED
-20	1732.40	-1.89209	-0.0011	PASSED
-30	1732.40	-1.02234	-0.0006	PASSED

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6.6. LTE7 Test results

FDD, CBW 20MHz, QPSK, 100 RB, Channel 21100 / 2535.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	2535.00	-3.37601	-0.0013	PASSED
40	2535.00	-4.90665	-0.0019	PASSED
30	2535.00	-3.81947	-0.0015	PASSED
20	2535.00	-1.93119	-0.0008	PASSED
10	2535.00	-2.84672	-0.0011	PASSED
0	2535.00	-2.98977	-0.0012	PASSED
-10	2535.00	-1.68800	-0.0007	PASSED
-20	2535.00	-2.83241	-0.0011	PASSED
-30	2535.00	-1.95980	-0.0008	PASSED

6.7. LTE12 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 23095 / 707.5 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	707.50	-1.87397	-0.0026	PASSED
40	707.50	-0.97275	-0.0014	PASSED
30	707.50	0.81539	0.0012	PASSED
20	707.50	0.87261	0.0012	PASSED
10	707.50	1.23024	0.0017	PASSED
0	707.50	-1.24455	-0.0018	PASSED
-10	707.50	0.98705	0.0014	PASSED
-20	707.50	0.51498	0.0007	PASSED
-30	707.50	1.15871	0.0016	PASSED

6.8. LTE13 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 23230 / 782.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	782.00	-1.05858	-0.0014	PASSED
40	782.00	0.37193	0.0005	PASSED
30	782.00	1.68800	0.0022	PASSED
20	782.00	-0.25749	-0.0003	PASSED
10	782.00	0.75817	0.001	PASSED
0	782.00	0.97275	0.0012	PASSED
-10	782.00	-0.02861	0	PASSED
-20	782.00	-0.95844	-0.0012	PASSED
-30	782.00	1.54495	0.002	PASSED

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6.9. LTE17 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 23790 / 710.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	710.00	-0.52929	-0.0007	PASSED
40	710.00	-1.38760	-0.002	PASSED
30	710.00	-0.12875	-0.0002	PASSED
20	710.00	0.51498	0.0007	PASSED
10	710.00	0.90122	0.0013	PASSED
0	710.00	0.11444	0.0002	PASSED
-10	710.00	1.48773	0.0021	PASSED
-20	710.00	-0.81539	-0.0012	PASSED
-30	710.00	0.51498	0.0007	PASSED

6.10. LTE30 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 27710 / 2310.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	2310.00	-4.20570	-0.0018	PASSED
40	2310.00	-2.30312	-0.001	PASSED
30	2310.00	-1.21594	-0.0005	PASSED
20	2310.00	-2.68936	-0.0012	PASSED
10	2310.00	-2.24590	-0.001	PASSED
0	2310.00	-1.05858	-0.0005	PASSED
-10	2310.00	-1.08719	-0.0005	PASSED
-20	2310.00	-3.30448	-0.0014	PASSED
-30	2310.00	-2.41756	-0.001	PASSED

6.11. LTE41 Test results

TDD, CBW 20MHz, QPSK, 100 RB, Channel 40620 / 2593.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	2593.00	-4.60244	-0.0018	PASSED
40	2593.00	-4.71066	-0.0018	PASSED
30	2593.00	-4.24450	-0.0016	PASSED
20	2593.00	-3.65482	-0.0014	PASSED
10	2593.00	-3.67633	-0.0014	PASSED
0	2593.00	-4.01410	-0.0015	PASSED
-10	2593.00	-3.77214	-0.0015	PASSED
-20	2593.00	-3.90073	-0.0015	PASSED
-30	2593.00	-4.42955	-0.0017	PASSED

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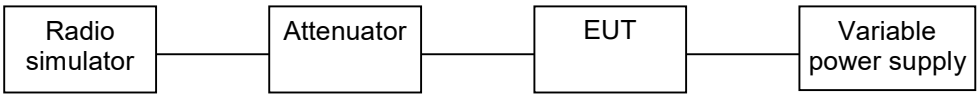
7. Frequency stability, voltage variation

(FCC §2.1055(d), §27.54, RSS-133 6.3, RSS-132 4.3, RSS-139 6.3, RSS-130 4.3 (a), RSS-199 4.3, RSS-195 5.4)

EUT with DUT number	RM-1105, DUT 400036
Accessories with DUT numbers	Dummy Battery
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 56 / 102.0
Date of measurements	11-Aug-2015
Measured by	Timo Raiskio

7.1. Test Setup



7.2. Test method and limit

The measurement is made according to applicable FCC rule parts and IC standards as follows:

The EUT battery was replaced with an adjustable power supply. The frequency stability was measured at nominal voltage and at the battery cut-off point.

Limits for frequency stability, voltage variation measurements

Frequency deviation [ppm]
+\- 2.5

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7.3. GSM 850 Test results

GSM,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	836.60	1.61000	0.0019	PASSED
Battery cut-off point / 3.3	836.60	-5.36000	-0.0064	PASSED
Nominal / 3.9	836.60	-0.58000	-0.0007	PASSED

7.4. GSM 1900 Test results

GSM,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	1880.00	14.14000	0.0075	PASSED
Battery cut-off point / 3.3	1880.00	19.69000	0.0105	PASSED
Nominal / 3.9	1880.00	20.92000	0.0111	PASSED

7.5. WCDMA2 Test results

FDD,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	1880.00	-2.92969	-0.0016	PASSED
Battery cut-off point / 3.3	1880.00	0.99182	0.0005	PASSED
Nominal / 3.9	1880.00	-0.50354	-0.0003	PASSED

7.6. WCDMA4 Test results

FDD,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	1732.40	-1.90735	-0.0011	PASSED
Battery cut-off point / 3.3	1732.40	-1.78528	-0.001	PASSED
Nominal / 3.9	1732.40	-2.62451	-0.0015	PASSED

7.7. WCDMA5 Test results

FDD,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	835.00	0.85449	0.001	PASSED
Battery cut-off point / 3.3	835.00	-1.15967	-0.0014	PASSED
Nominal / 3.9	835.00	-0.91553	-0.0011	PASSED

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7.8. LTE7 Test results

FDD, CBW 20MHz, QPSK, 100 RB, Channel 21100 / 2535.0 MHz

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	2535.00	-2.41756	-0.001	PASSED
Battery cut-off point / 3.3	2535.00	-2.07424	-0.0008	PASSED
Nominal / 3.9	2535.00	-3.46184	-0.0014	PASSED

7.9. LTE12 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 23095 / 707.5 MHz

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	707.50	-0.20027	-0.0003	PASSED
Battery cut-off point / 3.3	707.50	0.10014	0.0001	PASSED
Nominal / 3.9	707.50	-0.37193	-0.0005	PASSED

7.10. LTE13 Test results

Channel 23230 / 782.0 MHz

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	782.00	0.04292	0.0001	PASSED
Battery cut-off point / 3.3	782.00	1.00136	0.0013	PASSED
Nominal / 3.9	782.00	-2.26021	-0.0029	PASSED

7.11. LTE17 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 23790 / 710.0 MHz

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	710.00	-1.58787	-0.0022	PASSED
Battery cut-off point / 3.3	710.00	-0.90122	-0.0013	PASSED
Nominal / 3.9	710.00	-0.67234	-0.0009	PASSED

7.12. LTE30 Test results

FDD, CBW 10MHz, QPSK, 50 RB, Channel 27710 / 2310.0 MHz

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	2310.00	-2.53201	-0.0011	PASSED
Battery cut-off point / 3.3	2310.00	-2.00272	-0.0009	PASSED
Nominal / 3.9	2310.00	-2.38895	-0.001	PASSED

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7.13. LTE41 Test results

TDD, CBW 20MHz, QPSK, 96 RB, Channel 40620 / 2593.0 MHz

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.4	2593.00	-3.50005	-0.0013	PASSED
Battery cut-off point / 3.3	2593.00	-3.00400	-0.0011	PASSED
Nominal / 3.9	2593.00	-3.96003	-0.0015	PASSED

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8. Test Equipment

8.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM38112	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM38114	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM210233	Communication Tester	CMU200	R&S	22/24/27
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM26490	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM26491	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
TM37610	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C, 15E
TM23007	Oscilloscope	TDS684B	Tektronix	15E
TM22806	Battery	BAT 20/E	Fiskars	15C, 15B
TM22805	UPS	PS 20/1.2	Fiskars	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
-	Temperature test chamber	VT 4002	Vötsch	22/24/27
2001	Bluetooth tester	CBT	R&S	15C, 15B
2009	LISN 50 µH	ENV216	R&S	15C, 15B
2010	LISN 50 µH	ENV216	R&S	15C, 15B
2012	Power splitter	11667B	Agilent	22/24/27, 15C
2013	Attenuator	8493C	Agilent	22/24/27, 15C
2014	Attenuator	8493C	Agilent	22/24/27, 15C
2019	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2020	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2021	Communication Tester	CMW500	R&S	22/24/27
2022	Communication Tester	CMU200	R&S	22/24/27
2023	Spectrum Analyzer	ESMI-RF	R&S	15B/15C
2024	Analyzer display unit	ESAI-D	R&S	15B/15C
2026	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
-	Bluetooth tester	CBT	R&S	15C, 15B
-	Communication Tester	CMU200	R&S	22/24/27, 15B

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8.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15E, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15E, 15B
-	Turntable	2188	EMCO	22/24/27, 15C, 15E, 15B
-	Turntable controller	2090	EMCO	22/24/27, 15C, 15E, 15B
-	RF system panel	OSP130	R&S	22/24/27, 15C, 15E, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	Emco	22/24/27, 15C, 15B
TM30643	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
TM30644	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C, 15B
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	Miteq	22/24/27, 15C, 15B
TM30599	Semi anechoic chamber	UNKNOWN	TDK	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	-	22/24/27, 15C, 15E, 15B
TM38066	High pass filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
2028	High pass filter	WHKX 1.0/15G-12SS	Wainwright	22/24/27, 15C,15E, 15B
TM37545	Tunable notch filter	800.0/960.0-0.2/40-8SSK	Wainwright	22
TM26512	Tunable notch filter	WRCD1850/1910-0.2/40-10SSK	Wainwright	24
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	24
-	Band reject filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
TM23892	Controller	G-1000SDX	Yaesu	22/24/27, 15C, 15E
2001	Bluetooth tester	CBT	R&S	15C, 15B
2002	Communication Tester	CMU200	R&S	22/24/27, 15B
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27
2021	Communication Tester	CMW500	R&S	22/24/27
2025	Antenna	HFH2-Z2	R&S	15C
2026	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
2052	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C, 15B, 15E
-	Antenna	QSH18S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Bluetooth tester	CBT	R&S	15C, 15B

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9. Appendix

9.1. Conducted LTE RF output power values measured by the customer

9.1.1 Tolerance

Tolerance [dB]	
Low	-0.5
High	0.4

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9.1.2 LTE 2

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch18607 / 1850.7 MHz	Ch18900 / 1880 MHz	Ch19193 / 1909.3 MHz	Ch18607 / 1850.7 MHz	Ch18900 / 1880 MHz	Ch19193 / 1909.3 MHz
LTE2	QPSK	1	2	23.8	23.6	23.2			
1.4 MHz	16QAM	1	2	22.7	22.7	22.4			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch18615 / 1851.5 MHz	Ch18900 / 1880 MHz	Ch19185 / 1908.5 MHz	Ch18615 / 1851.5 MHz	Ch18900 / 1880 MHz	Ch19185 / 1908.5 MHz
LTE2	QPSK	1	7	23.9	23.7	23.4	23.9	23.7	23.3
3 MHz	16QAM	1	7	23.3	23.1	22.9	23.1	23.2	22.9

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch18625 / 1852.5 MHz	Ch18900 / 1880 MHz	Ch19175 / 1907.5 MHz	Ch18625 / 1852.5 MHz	Ch18900 / 1880 MHz	Ch19175 / 1907.5 MHz
LTE2	QPSK	1	12	23.8	23.8	23.5	23.8	23.7	23.4
5 MHz	16QAM	1	12	23.0	23.0	22.8	23.0	23.0	22.7

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch18650 / 1855 MHz	Ch18900 / 1880 MHz	Ch19150 / 1905 MHz	Ch18650 / 1855 MHz	Ch18900 / 1880 MHz	Ch19150 / 1905 MHz
LTE2	QPSK	1	24	23.8	23.8	23.5	23.7	23.8	23.4
10 MHz	16QAM	1	24	23.3	22.9	22.5	23.2	22.8	22.4

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch18675 / 1857.5 MHz	Ch18900 / 1880 MHz	Ch19125 / 1902.5 MHz	Ch18675 / 1857.5 MHz	Ch18900 / 1880 MHz	Ch19125 / 1902.5 MHz
LTE2	QPSK	1	36	23.7	23.6	23.6	23.7	23.6	23.6
15 MHz	16QAM	1	36	22.7	22.9	23.1	22.9	22.7	22.8

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch18700 / 1860 MHz	Ch18900 / 1880 MHz	Ch19100 / 1900 MHz	Ch18700 / 1860 MHz	Ch18900 / 1880 MHz	Ch19100 / 1900 MHz
LTE2	QPSK	1	49	23.6	23.7	23.6	23.7	23.6	23.6
20 MHz	16QAM	1	49	23.1	22.8	22.9	23.2	23.1	22.9

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9.1.3 LTE 4

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch19957 / 1710.7 MHz	Ch20175 / 1732.5 MHz	Ch20393 / 1754.3 MHz	Ch19957 / 1710.7 MHz	Ch20175 / 1732.5 MHz	Ch20393 / 1754.3 MHz
LTE4	QPSK	1	2	23.9	23.7	23.7			
1.4 MHz	16QAM	1	2	23.0	23.0	23.1			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch19965 / 1711.5 MHz	Ch20175 / 1732.5 MHz	Ch20385 / 1753.5 MHz	Ch19965 / 1711.5 MHz	Ch20175 / 1732.5 MHz	Ch20385 / 1753.5 MHz
LTE4	QPSK	1	7	24.0	23.8	23.6	24.2	23.8	23.7
3 MHz	16QAM	1	7	23.1	22.8	22.6	23.1	23.3	23.2

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch19975 / 1712.5 MHz	Ch20175 / 1732.5 MHz	Ch20375 / 1752.5 MHz	Ch19975 / 1712.5 MHz	Ch20175 / 1732.5 MHz	Ch20375 / 1752.5 MHz
LTE4	QPSK	1	12	23.8	23.5	23.6	23.8	23.6	23.6
5 MHz	16QAM	1	12	23.0	22.8	23.2	23.3	22.9	23.0

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20000 / 1715 MHz	Ch20175 / 1732.5 MHz	Ch20350 / 1750 MHz	Ch20000 / 1715 MHz	Ch20175 / 1732.5 MHz	Ch20350 / 1750 MHz
LTE4	QPSK	1	24	23.7	23.6	23.6	23.8	23.7	23.7
10 MHz	16QAM	1	24	23.3	22.8	22.9	23.1	23.1	22.8

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20025 / 1717.5 MHz	Ch20175 / 1732.5 MHz	Ch20325 / 1747.5 MHz	Ch20025 / 1717.5 MHz	Ch20175 / 1732.5 MHz	Ch20325 / 1747.5 MHz
LTE4	QPSK	1	36	23.6	23.6	23.4	23.5	23.5	23.4
15 MHz	16QAM	1	36	23.0	22.9	22.7	22.6	22.4	22.5

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20050 / 1720 MHz	Ch20175 / 1732.5 MHz	Ch20300 / 1745 MHz	Ch20050 / 1720 MHz	Ch20175 / 1732.5 MHz	Ch20300 / 1745 MHz
LTE4	QPSK	1	49	23.6	23.5	23.5	23.6	23.5	23.5
20 MHz	16QAM	1	49	22.6	22.5	22.6	23.2	23.1	23.0

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9.1.4 LTE 5

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20407 / 824.7 MHz	Ch20525 / 836.5 MHz	Ch20643 / 848.3 MHz	Ch20407 / 824.7 MHz	Ch20525 / 836.5 MHz	Ch20643 / 848.3 MHz
LTE5	QPSK	1	2	23.9	24.0	24.1			
1.4 MHz	16QAM	1	2	23.2	23.5	23.7			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20415 / 825.5 MHz	Ch20525 / 836.5 MHz	Ch20635 / 847.5 MHz	Ch20415 / 825.5 MHz	Ch20525 / 836.5 MHz	Ch20635 / 847.5 MHz
LTE5	QPSK	1	7	24.1	24.1	24.4			
3 MHz	16QAM	1	7	23.1	23.2	23.6			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20425 / 826.5 MHz	Ch20525 / 836.5 MHz	Ch20625 / 846.5 MHz	Ch20425 / 826.5 MHz	Ch20525 / 836.5 MHz	Ch20625 / 846.5 MHz
LTE5	QPSK	1	12	23.9	23.9	24.0			
5 MHz	16QAM	1	12	23.3	23.1	23.1			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20450 / 829 MHz	Ch20525 / 836.5 MHz	Ch20600 / 844 MHz	Ch20450 / 829 MHz	Ch20525 / 836.5 MHz	Ch20600 / 844 MHz
LTE5	QPSK	1	24	24.0	23.9	23.9			
10 MHz	16QAM	1	24	22.9	23.2	23.1			

9.1.5 LTE 7

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20775 / 2502.5 MHz	Ch21100 / 2535 MHz	Ch21425 / 2567.5 MHz	Ch20775 / 2502.5 MHz	Ch21100 / 2535 MHz	Ch21425 / 2567.5 MHz
LTE7	QPSK	1	12	22.3	22.9	22.6			
5 MHz	16QAM	1	12	21.9	22.3	21.9			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20800 / 2505 MHz	Ch21100 / 2535 MHz	Ch21400 / 2565 MHz	Ch20800 / 2505 MHz	Ch21100 / 2535 MHz	Ch21400 / 2565 MHz
LTE7	QPSK	1	24	22.3	22.9	22.5			
10 MHz	16QAM	1	24	21.6	22.2	22.1			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20825 / 2507.5 MHz	Ch21100 / 2535 MHz	Ch21375 / 2562.5 MHz	Ch20825 / 2507.5 MHz	Ch21100 / 2535 MHz	Ch21375 / 2562.5 MHz
LTE7	QPSK	1	36	22.4	23.0	22.7			
15 MHz	16QAM	1	36	21.5	21.8	21.7			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch20850 / 2510 MHz	Ch21100 / 2535 MHz	Ch21350 / 2560 MHz	Ch20850 / 2510 MHz	Ch21100 / 2535 MHz	Ch21350 / 2560 MHz
LTE7	QPSK	1	49	22.6	22.8	22.7			
20 MHz	16QAM	1	49	21.8	22.3	22.3			

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9.1.6 LTE 12

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23017 / 699.7 MHz	Ch23095 / 707.5 MHz	Ch23173 / 715.3 MHz	Ch23017 / 699.7 MHz	Ch23095 / 707.5 MHz	Ch23173 / 715.3 MHz
LTE12	QPSK	1	2	24.3	24.5	24.6			
1.4 MHz	16QAM	1	2	23.8	23.9	23.8			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23025 / 700.5 MHz	Ch23095 / 707.5 MHz	Ch23165 / 714.5 MHz	Ch23025 / 700.5 MHz	Ch23095 / 707.5 MHz	Ch23165 / 714.5 MHz
LTE12	QPSK	1	7	24.5	24.6	24.7			
3 MHz	16QAM	1	7	23.6	23.9	24.1			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23035 / 701.5 MHz	Ch23095 / 707.5 MHz	Ch23155 / 713.5 MHz	Ch23035 / 701.5 MHz	Ch23095 / 707.5 MHz	Ch23155 / 713.5 MHz
LTE12	QPSK	1	12	24.3	24.5	24.6			
5 MHz	16QAM	1	12	23.5	23.4	23.7			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23060 / 704 MHz	Ch23095 / 707.5 MHz	Ch23130 / 711 MHz	Ch23060 / 704 MHz	Ch23095 / 707.5 MHz	Ch23130 / 711 MHz
LTE12	QPSK	1	24	24.5	24.5	24.6			
10 MHz	16QAM	1	24	23.7	24.0	24.2			

9.1.7 LTE 13

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23205 / 779.5 MHz	Ch23230 / 782 MHz	Ch23255 / 784.5 MHz	Ch23205 / 779.5 MHz	Ch23230 / 782 MHz	Ch23255 / 784.5 MHz
LTE13	QPSK	1	12	23.1	23.1	23.2			
5 MHz	16QAM	1	12	22.3	22.4	22.3			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23230 / 782 MHz	Ch23230 / 782 MHz	Ch23230 / 782 MHz	Ch23230 / 782 MHz	Ch23230 / 782 MHz	Ch23230 / 782 MHz
LTE13	QPSK	1	24			23.1			23.2
10 MHz	16QAM	1	24			22.3			21.5

9.1.8 LTE 17

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23755 / 706.5 MHz	Ch23790 / 710 MHz	Ch23825 / 713.5 MHz	Ch23755 / 706.5 MHz	Ch23790 / 710 MHz	Ch23825 / 713.5 MHz
LTE17	QPSK	1	12	24.2	24.4	24.4			
5 MHz	16QAM	1	12	23.3	23.5	23.5			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch23780 / 709 MHz	Ch23790 / 710 MHz	Ch23800 / 711 MHz	Ch23780 / 709 MHz	Ch23790 / 710 MHz	Ch23800 / 711 MHz
LTE17	QPSK	1	24	24.4	24.5	24.5			
10 MHz	16QAM	1	24	23.9	24.1	23.8			

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9.1.9 LTE 30

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch27685 / 2307.5 MHz	Ch27710 / 2310 MHz	Ch27735 / 2312.5 MHz	Ch27685 / 2307.5 MHz	Ch27710 / 2310 MHz	Ch27735 / 2312.5 MHz
LTE30	QPSK	1	12	22.8	22.8	22.8			
5 MHz	16QAM	1	12	22.3	22.2	22.4			

SN: 004402741813103				Nominal			A-MPR active		
Band / BW	Modulation	RB Allocation	RB Offset	Ch27710 / 2310 MHz	Ch27710 / 2310 MHz	Ch27710 / 2310 MHz	Ch27710 / 2310 MHz	Ch27710 / 2310 MHz	Ch27710 / 2310 MHz
LTE30	QPSK	1	24			23.0			
10 MHz	16QAM	1	24			22.4			

9.1.10 LTE 41

SN: 004402741813103				Nominal					A-MPR active				
Band / BW	Modulation	RB Allocation	RB Offset	Ch39675 / 2498.5 MHz	Ch40148 / 2545.8 MHz	Ch40620 / 2593 MHz	Ch41092 / 2640.2 MHz	Ch41565 / 2687.5 MHz	Ch39675 / 2498.5 MHz	Ch40148 / 2545.8 MHz	Ch40620 / 2593 MHz	Ch41092 / 2640.2 MHz	Ch41565 / 2687.5 MHz
LTE41	QPSK	1	12	22.3	22.5	22.4	22.6	22.5	22.4	22.5	22.4	22.6	22.5
5 MHz	16QAM	1	12	21.4	21.6	21.5	21.6	21.7	21.4	21.6	21.5	21.7	21.7

SN: 004402741813103				Nominal					A-MPR active				
Band / BW	Modulation	RB Allocation	RB Offset	Ch39700 / 2501 MHz	Ch40160 / 2547 MHz	Ch40620 / 2593 MHz	Ch41080 / 2639 MHz	Ch41540 / 2685 MHz	Ch39700 / 2501 MHz	Ch40160 / 2547 MHz	Ch40620 / 2593 MHz	Ch41080 / 2639 MHz	Ch41540 / 2685 MHz
LTE41	QPSK	1	24	22.3	22.4	22.3	22.3	22.6	22.3	22.3	22.2	22.3	22.6
10 MHz	16QAM	1	24	21.5	21.5	21.4	21.4	21.8	21.5	21.5	21.4	21.4	21.7

SN: 004402741813103				Nominal					A-MPR active				
Band / BW	Modulation	RB Allocation	RB Offset	Ch39725 / 2503.5 MHz	Ch40172 / 2548.2 MHz	Ch40620 / 2593 MHz	Ch41068 / 2637.8 MHz	Ch41515 / 2682.5 MHz	Ch39725 / 2503.5 MHz	Ch40172 / 2548.2 MHz	Ch40620 / 2593 MHz	Ch41068 / 2637.8 MHz	Ch41515 / 2682.5 MHz
LTE41	QPSK	1	36	22.1	22.4	22.2	22.1	21.9	22.0	22.4	22.1	22.2	21.9
15 MHz	16QAM	1	36	21.4	21.7	21.5	21.4	21.2	21.4	21.6	21.5	21.4	21.2

SN: 004402741813103				Nominal					A-MPR active				
Band / BW	Modulation	RB Allocation	RB Offset	Ch39750 / 2506 MHz	Ch40185 / 2549.5 MHz	Ch40620 / 2593 MHz	Ch41055 / 2636.5 MHz	Ch41490 / 2680 MHz	Ch39750 / 2506 MHz	Ch40185 / 2549.5 MHz	Ch40620 / 2593 MHz	Ch41055 / 2636.5 MHz	Ch41490 / 2680 MHz
LTE41	QPSK	1	49	22.0	22.3	22.2	22.1	21.9	22.0	22.3	22.2	22.0	21.9
20 MHz	16QAM	1	49	21.3	21.6	21.5	21.3	21.3	21.3	21.6	21.5	21.3	21.3

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