

FCC Part 22/24 Compliance Test Report

Test Report no.:	Tre_FCC_0922_07.doc	Date of Report:	25-May-2009
Number of pages:	30	Customer's Contact person:	Asko Pasanen
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FCC listing no.:	533467		
IC recognition no.:	661V-1		
Tested devices/ accessories:	Phone RM-485 / Battery BL-5K / Audio Adapter AD-54 / Headset HS-44 / AC-Charger AC-10C / Data Cable CA-101		
FCC ID:	QURRM-485	IC:	661AC-RM485
Supplement reports:	-		
Testing has been carried out in accordance with:	CFR 47, FCC rules Parts 22, 24, TIA-603-C-2004 and IC standards RSS-GEN (Issue 2, June 2007), RSS-132 (Issue 2, September 2005), RSS-133 (Issue 5, February 2009) and RSS-139 (Issue 1, February 2008). 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 Nokia.		
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:			

Jari Jantunen, Test System Manager

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

Date of receipt	23-Mar-2009
Testing completed	28-Mar-2009
The customer's contact person	Asko Pasanen
Test Plan referred to	T:\Projects\RM-484\TestPlan_RS\RS_testplan_RM-484.xlsT:\Projects\
Notes	-
Document name	T:\Projects\RM-484\EMC\Results\FCC\Salo_FCC_0913_05.doc

1.1. EUT and Accessory Information

The EUT is a 7-band (GSM850/900/1800/1900 and WCDMA Band I/II(1900)/V) mobile phone with GPRS, EGPRS, Bluetooth, WLAN and FM transmitter. The EUT is tested with maximum rated TX power, modulated with pseudo random bit sequence (PRBS9).

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-484	004401105659300	0800	-	0.527	13623
Battery	BL-5K	4620408441L1010299960670580	-	-	-	13626
Audio Adapter	AD-54	0751156841581R20897	-	-	-	13621
Headset	HS-44	0694557820318603062	-	-	-	13625
AC-Charger	AC-10C	3997918271100200421;0675412	-	-	-	13521
Data Cable	CA-101	07306348221M1206557	-	-	-	13522

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	NP
§22.913(a)	4.4	Radiated RF output power	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§22.917(a)	4.5	Band edge compliance	PASSED
§22.917(a), §2.1051	4.5	Spurious emissions at antenna terminals	NP
§22.917(a), §2.1053	4.5	Spurious radiated emissions	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	NP
§2.1055(d)	4.3	Frequency stability, voltage variation	NP

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	NP
§24.232(b)	6.4	Radiated RF output power	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§24.238(a)	6.5	Band edge compliance	PASSED
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.5	Spurious radiated emissions	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	NP
§2.1055(d)	6.3	Frequency stability, voltage variation	NP

WCDMA 1900 (Band II):

Section in CFR 47	Section in RSS-GEN or RSS-133	Name of the test	Result
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§2.1046(a)	6.4	Conducted RF output power	NP
§24.232(b)	6.4	Radiated RF output power	PASSED
§2.1049(h)	4.6.1	99 % occupied bandwidth	NP
§24.238(a)	6.5	Band edge compliance	PASSED
§24.238(a), §2.1051	6.5	Spurious emissions at antenna terminals	NP
§24.238(a), §2.1053	6.5	Spurious radiated emissions	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	NP
§2.1055(d)	6.3	Frequency stability, voltage variation	NP

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 Nokia Salo LaboratoryNokia.

The test results of QURRM-484 are re-used for certification of the QURRM-485. The table above indicates the results, which will be re-used.

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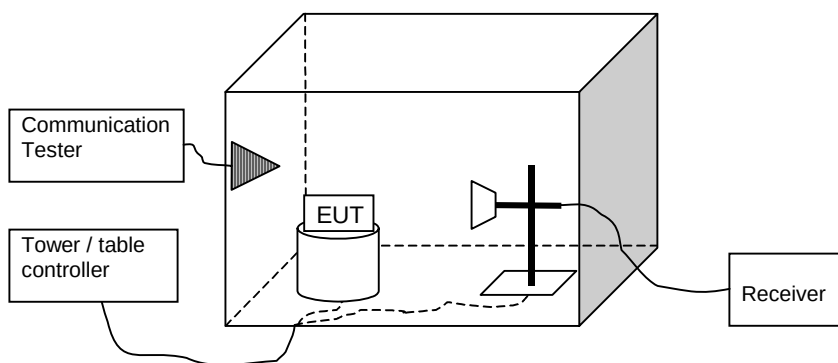
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2. Radiated RF output power

(FCC §22.913(a), §24.232(b), RSS-132 4.4, RSS-133 6.4, RSS-139 6.4)

EUT with DUT number	RM-484, DUT 13623
Accessories with DUT numbers	BL-5K, DUT 13626; AD-54, DUT 13621; HS-44, DUT 13625; AC-10C, DUT 13521; CA-101, DUT 13522
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested slide open, slide closed and slide mp3 mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 106.1
Date of measurements	24-Mar-2009 – 27-Mar-2009
Measured by	Sami Lehtonen / Kalle Hannila

2.1. 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. Substitution values at each frequencies are measured beforehand and saved to the test software.

The substitution corrections are obtained as described below:

$$A_{SUBST} = P_{SUBST_TX} - P_{SUBST_RX} - L_{SUBST_CABLES} + G_{SUBST_TX_ANT}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain. P_{SUBST_TX} is signal generator level, P_{SUBST_RX} is receiver level, L_{SUBST_CABLES} is cable losses including both TX and RX cables and $G_{SUBST_TX_ANT}$ is substitution antenna gain.

The measurement results are obtained as described below:

$$P [dBm] = P_{MEAS} + A_{TOT}$$

Where P_{MEAS} is receiver reading in dBm and A_{TOT} is total correction factor including cable loss and substitution correction ($A_{TOT} = L_{CABLES} + A_{SUBST}$).

Limits for radiated RF output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]
824 - 849	7	38.5
1850 - 1910	2	33

2.3. GSM 850 Test results

Slide Closed:

GSM mode

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	23.50	0.224	- 10.20	33.70	HORIZONTAL	PASSED
190 / 836.6	24.20	0.263	- 9.40	33.60	HORIZONTAL	PASSED
251 / 848.8	24.40	0.275	- 9.30	33.70	VERTICAL	PASSED

GPRS mode, 1 TX Slot

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	23.80	0.240	- 9.90	33.70	HORIZONTAL	PASSED
190 / 836.6	24.20	0.263	- 9.40	33.60	HORIZONTAL	PASSED
251 / 848.8	24.40	0.275	- 9.30	33.70	VERTICAL	PASSED

GPRS mode, 2 TX Slots

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	21.50	0.141	- 12.20	33.70	HORIZONTAL	PASSED
190 / 836.6	21.70	0.148	- 11.90	33.60	HORIZONTAL	PASSED
251 / 848.8	21.70	0.148	- 12.00	33.70	VERTICAL	PASSED

GPRS mode, 3 TX Slots

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	21.40	0.138	- 12.30	33.70	HORIZONTAL	PASSED
190 / 836.6	21.40	0.138	- 12.20	33.60	HORIZONTAL	PASSED
251 / 848.8	19.30	0.085	- 14.40	33.70	VERTICAL	PASSED

EGPRS mode, 1 TX Slot

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	15.70	0.037	- 18.00	33.70	HORIZONTAL	PASSED

190 / 836.6	16.70	0.047	- 16.90	33.60	HORIZONTAL	PASSED
251 / 848.8	17.50	0.056	- 15.50	33.00	HORIZONTAL	PASSED

EGPRS mode, 2 TX Slots

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	15.60	0.036	- 18.10	33.70	HORIZONTAL	PASSED
190 / 836.6	16.20	0.042	- 17.40	33.60	HORIZONTAL	PASSED
251 / 848.8	16.10	0.041	- 17.60	33.70	VERTICAL	PASSED

EGPRS mode, 3 TX Slots

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	15.10	0.032	- 18.60	33.70	HORIZONTAL	PASSED
190 / 836.6	16.40	0.044	- 17.20	33.60	HORIZONTAL	PASSED
251 / 848.8	14.80	0.030	- 18.90	33.70	VERTICAL	PASSED

Slide Open:

GSM mode

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	28.30	0.676	- 6.10	34.40	VERTICAL	PASSED
190 / 836.6	28.50	0.708	- 5.10	33.60	HORIZONTAL	PASSED
251 / 848.8	27.30	0.537	- 5.70	33.00	HORIZONTAL	PASSED

GPRS mode, 1 TX Slot

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	28.60	0.724	- 5.80	34.40	VERTICAL	PASSED
190 / 836.6	28.40	0.692	- 5.20	33.60	HORIZONTAL	PASSED
251 / 848.8	27.20	0.525	- 5.80	33.00	HORIZONTAL	PASSED

GPRS mode, 2 TX Slots

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	25.90	0.389	- 8.50	34.40	VERTICAL	PASSED
190 / 836.6	25.80	0.380	- 7.80	33.60	HORIZONTAL	PASSED
251 / 848.8	24.70	0.295	- 8.30	33.00	HORIZONTAL	PASSED

GPRS mode, 3 TX Slots

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	22.00	0.158	- 12.40	34.40	VERTICAL	PASSED
190 / 836.6	24.80	0.302	- 8.80	33.60	HORIZONTAL	PASSED
251 / 848.8	21.50	0.141	- 11.50	33.00	HORIZONTAL	PASSED

EGPRS mode, 1 TX Slot

Channel / f_c [MHz]	ERP [dBm]	ERP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
128 / 824.2	18.50	0.071	- 15.90	34.40	VERTICAL	PASSED
190 / 836.6	19.00	0.079	- 14.60	33.60	HORIZONTAL	PASSED
251 / 848.8	19.60	0.091	- 13.40	33.00	HORIZONTAL	PASSED

EGPRS mode, 2 TX Slots

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	19.00	0.079	- 15.40	34.40	VERTICAL	PASSED
190 / 836.6	19.90	0.098	- 13.70	33.60	HORIZONTAL	PASSED
251 / 848.8	19.50	0.089	- 13.50	33.00	HORIZONTAL	PASSED

EGPRS mode, 3 TX Slots

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	17.00	0.050	- 17.40	34.40	VERTICAL	PASSED
190 / 836.6	20.90	0.123	- 12.70	33.60	HORIZONTAL	PASSED
251 / 848.8	18.20	0.066	- 14.80	33.00	HORIZONTAL	PASSED

Slide MP3 :

GSM mode

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	21.60	0.145	- 12.10	33.70	HORIZONTAL	PASSED
190 / 836.6	23.10	0.204	- 10.50	33.60	HORIZONTAL	PASSED
251 / 848.8	22.50	0.178	- 10.50	33.00	HORIZONTAL	PASSED

GPRS mode, 1 TX Slot

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	21.80	0.151	- 11.90	33.70	HORIZONTAL	PASSED
190 / 836.6	23.20	0.209	- 10.40	33.60	HORIZONTAL	PASSED
251 / 848.8	22.60	0.182	- 10.40	33.00	HORIZONTAL	PASSED

GPRS mode, 2 TX Slots

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	19.30	0.085	- 14.40	33.70	HORIZONTAL	PASSED
190 / 836.6	20.50	0.112	- 13.10	33.60	HORIZONTAL	PASSED
251 / 848.8	20.20	0.105	- 12.80	33.00	HORIZONTAL	PASSED

GPRS mode, 3 TX Slots

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	17.40	0.055	- 16.30	33.70	HORIZONTAL	PASSED
190 / 836.6	18.40	0.069	- 15.20	33.60	HORIZONTAL	PASSED
251 / 848.8	17.60	0.058	- 15.40	33.00	HORIZONTAL	PASSED

EGPRS mode, 1 TX Slot

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	13.00	0.020	- 20.70	33.70	HORIZONTAL	PASSED
190 / 836.6	14.10	0.026	- 19.50	33.60	HORIZONTAL	PASSED
251 / 848.8	13.80	0.024	- 19.20	33.00	HORIZONTAL	PASSED

EGPRS mode, 2 TX Slots

Channel / f _c [MHz]	ERP [dBm]	ERP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	12.70	0.019	- 21.00	33.70	HORIZONTAL	PASSED
190 / 836.6	13.90	0.025	- 19.70	33.60	HORIZONTAL	PASSED
251 / 848.8	13.50	0.022	- 19.50	33.00	HORIZONTAL	PASSED

EGPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
128 / 824.2	11.90	0.015	- 21.80	33.70	HORIZONTAL	PASSED
190 / 836.6	14.40	0.028	- 19.20	33.60	HORIZONTAL	PASSED
251 / 848.8	13.70	0.023	- 19.30	33.00	HORIZONTAL	PASSED

2.4. GSM 1900 Test results

Slide Closed:

GSM mode

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	23.00	0.200	- 17.90	40.90	VERTICAL	PASSED
661 / 1880.0	26.10	0.407	- 16.80	42.90	HORIZONTAL	PASSED
810 / 1909.8	24.60	0.288	- 17.90	42.50	VERTICAL	PASSED

GPRS mode, 1 TX Slot

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	17.60	0.058	- 23.30	40.90	VERTICAL	PASSED
661 / 1880.0	16.90	0.049	- 26.00	42.90	HORIZONTAL	PASSED
810 / 1909.8	19.40	0.087	- 23.10	42.50	VERTICAL	PASSED

GPRS mode, 2 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	17.70	0.059	- 23.20	40.90	VERTICAL	PASSED
661 / 1880.0	17.00	0.050	- 25.90	42.90	HORIZONTAL	PASSED
810 / 1909.8	19.50	0.089	- 23.00	42.50	VERTICAL	PASSED

GPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	15.70	0.037	- 25.20	40.90	VERTICAL	PASSED
661 / 1880.0	15.30	0.034	- 27.60	42.90	HORIZONTAL	PASSED
810 / 1909.8	17.20	0.052	- 25.30	42.50	VERTICAL	PASSED

EGPRS mode, 1 TX Slot

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	11.70	0.015	- 29.20	40.90	VERTICAL	PASSED
661 / 1880.0	10.90	0.012	- 32.00	42.90	HORIZONTAL	PASSED
810 / 1909.8	13.60	0.023	- 28.90	42.50	VERTICAL	PASSED

EGPRS mode, 2 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	11.00	0.013	- 29.90	40.90	VERTICAL	PASSED
661 / 1880.0	11.60	0.014	- 31.30	42.90	HORIZONTAL	PASSED
810 / 1909.8	13.00	0.020	- 29.50	42.50	VERTICAL	PASSED

EGPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	10.70	0.012	- 30.20	40.90	VERTICAL	PASSED
661 / 1880.0	11.00	0.013	- 31.90	42.90	HORIZONTAL	PASSED
810 / 1909.8	11.60	0.014	- 30.90	42.50	VERTICAL	PASSED

Slide Open:

GSM mode

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	27.10	0.513	- 13.80	40.90	VERTICAL	PASSED
661 / 1880.0	30.40	1.096	- 12.80	43.20	VERTICAL	PASSED
810 / 1909.8	27.50	0.562	- 15.00	42.50	VERTICAL	PASSED

GPRS mode, 1 TX Slot

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	27.30	0.537	- 13.60	40.90	VERTICAL	PASSED
661 / 1880.0	30.50	1.122	- 12.70	43.20	VERTICAL	PASSED
810 / 1909.8	27.50	0.562	- 15.00	42.50	VERTICAL	PASSED

GPRS mode, 2 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	27.30	0.537	- 13.60	40.90	VERTICAL	PASSED
661 / 1880.0	30.50	1.122	- 12.70	43.20	VERTICAL	PASSED
810 / 1909.8	27.40	0.550	- 15.10	42.50	VERTICAL	PASSED

GPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	25.30	0.339	- 15.60	40.90	VERTICAL	PASSED
661 / 1880.0	28.50	0.708	- 14.70	43.20	VERTICAL	PASSED
810 / 1909.8	25.40	0.347	- 17.10	42.50	VERTICAL	PASSED

EGPRS mode, 1 TX Slot

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	22.00	0.158	- 18.90	40.90	VERTICAL	PASSED
661 / 1880.0	25.10	0.324	- 18.10	43.20	VERTICAL	PASSED
810 / 1909.8	21.60	0.145	- 20.90	42.50	VERTICAL	PASSED

EGPRS mode, 2 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	22.20	0.166	- 18.70	40.90	VERTICAL	PASSED
661 / 1880.0	25.50	0.355	- 17.70	43.20	VERTICAL	PASSED
810 / 1909.8	21.90	0.155	- 20.60	42.50	VERTICAL	PASSED

EGPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	21.30	0.135	- 19.60	40.90	VERTICAL	PASSED
661 / 1880.0	24.40	0.275	- 18.80	43.20	VERTICAL	PASSED
810 / 1909.8	20.40	0.110	- 22.10	42.50	VERTICAL	PASSED

Slide MP3:

GSM mode

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	20.90	0.123	- 20.00	40.90	VERTICAL	PASSED
661 / 1880.0	22.60	0.182	- 20.60	43.20	VERTICAL	PASSED
810 / 1909.8	22.00	0.158	- 20.50	42.50	VERTICAL	PASSED

GPRS mode, 1 TX Slot

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	20.80	0.120	- 20.10	40.90	VERTICAL	PASSED
661 / 1880.0	22.30	0.170	- 20.90	43.20	VERTICAL	PASSED
810 / 1909.8	22.00	0.158	- 20.50	42.50	VERTICAL	PASSED

GPRS mode, 2 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	21.00	0.126	- 19.90	40.90	VERTICAL	PASSED
661 / 1880.0	22.40	0.174	- 20.80	43.20	VERTICAL	PASSED
810 / 1909.8	22.00	0.158	- 20.50	42.50	VERTICAL	PASSED

GPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	19.10	0.081	- 21.80	40.90	VERTICAL	PASSED
661 / 1880.0	20.30	0.107	- 22.90	43.20	VERTICAL	PASSED
810 / 1909.8	19.80	0.095	- 22.70	42.50	VERTICAL	PASSED

EGPRS mode, 1 TX Slot

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	15.30	0.034	- 25.60	40.90	VERTICAL	PASSED
661 / 1880.0	17.30	0.054	- 25.90	43.20	VERTICAL	PASSED
810 / 1909.8	16.10	0.041	- 26.40	42.50	VERTICAL	PASSED

EGPRS mode, 2 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	15.90	0.039	- 25.00	40.90	VERTICAL	PASSED
661 / 1880.0	17.10	0.051	- 26.10	43.20	VERTICAL	PASSED
810 / 1909.8	15.80	0.038	- 26.70	42.50	VERTICAL	PASSED

EGPRS mode, 3 TX Slots

Channel / f _c [MHz]	EIRP [dBm]	EIRP [W]	P _{MEAS} [dBm]	A _{TOT} [dB]	Polarisation	Result
512 / 1850.2	15.10	0.032	- 25.80	40.90	VERTICAL	PASSED
661 / 1880.0	16.50	0.045	- 26.70	43.20	VERTICAL	PASSED
810 / 1909.8	14.60	0.029	- 27.90	42.50	VERTICAL	PASSED

2.5. WCDMA 1900 Test results

Slide Closed:

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
9262 / 1852.4	15.80	0.038	- 24.70	40.50	VERTICAL	PASSED
9400 / 1880.0	16.40	0.044	- 24.60	41.00	VERTICAL	PASSED
9538 / 1907.6	15.60	0.036	- 25.90	41.50	VERTICAL	PASSED

Slide Open:

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
9262 / 1852.4	19.30	0.085	- 21.20	40.50	VERTICAL	PASSED
9400 / 1880.0	21.30	0.135	- 19.70	41.00	VERTICAL	PASSED
9538 / 1907.6	19.80	0.095	- 21.70	41.50	VERTICAL	PASSED

Slide MP3:

Channel / f_c [MHz]	EIRP [dBm]	EIRP [W]	P_{MEAS} [dBm]	A_{TOT} [dB]	Polarisation	Result
9262 / 1852.4	13.90	0.025	- 26.60	40.50	VERTICAL	PASSED
9400 / 1880.0	12.90	0.019	- 28.10	41.00	VERTICAL	PASSED
9538 / 1907.6	13.70	0.023	- 27.80	41.50	VERTICAL	PASSED

(FCC §22.917(a), 24.238(a), RSS-132 4.5, RSS-133 6.5, RSS-139 6.5)

EUT with DUT number	RM-484, DUT 13623
Accessories with DUT numbers	BL-5K, DUT 13626; AD-54, DUT 13621; HS-44, DUT 13625; AC-10C. DUT 13521; CA-101, DUT 13522
Operation Voltage [V] / [Hz]	115 / 60
Result	PASSED
Remarks	Phone tested slide open, slide closed and slide mp3 mode.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	22 / 42 / 106.1
Date of measurements	24-Mar-2009 – 27-Mar-2009
Measured by	Sami Lehtonen / Kalle Hannila

The diagram illustrates a 3D anechoic chamber used for antenna testing. The chamber is a large cube with dashed lines indicating its internal structure. Inside the chamber, there is a cylindrical object labeled 'EUT' (Equipment Under Test) on the left. To the right of the EUT, there is a vertical structure representing an antenna, consisting of a horizontal crossbar and a vertical mast. A small horn antenna is mounted on the mast. A dashed line connects the EUT to the antenna structure. Outside the chamber, on the left, is a box labeled 'Communication Tester' with a shaded horn antenna pointing towards the chamber. Below it is a box labeled 'Tower / table controller' connected to the chamber by a solid line. On the right side, outside the chamber, is a box labeled 'Receiver' connected to the antenna structure by a solid line.

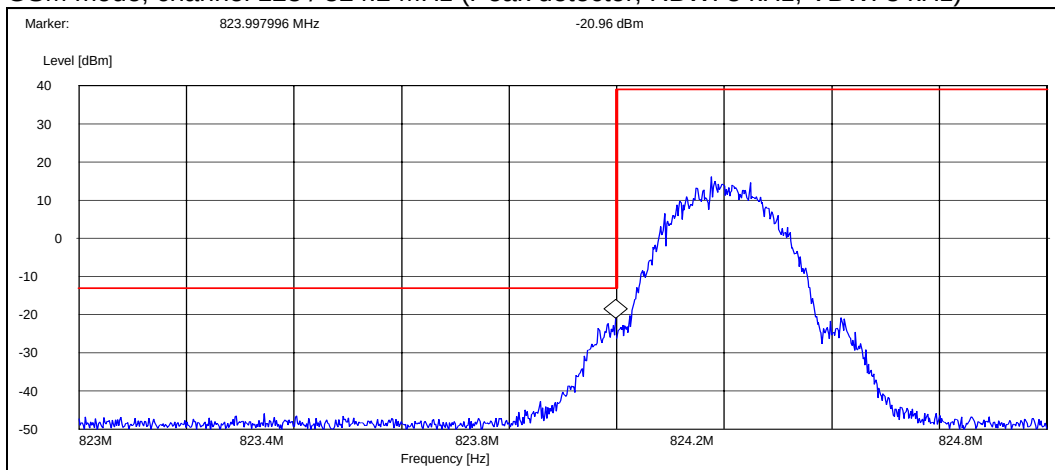
The measurement is made according to FCC rules parts 22 and 24 and IC standards RSS-132 and RSS-133. FCC rules parts 22, 24 and IC standards RSS-132, RSS-133 and RSS-139.

Operation band	Frequency range [MHz]	Limit [dBm]
GSM 850	Below 824 and above 849	-13
GSM 1900 / WCDMA 1900	Below 1850 and above 1910	-13

3.3. GSM 850 Test results

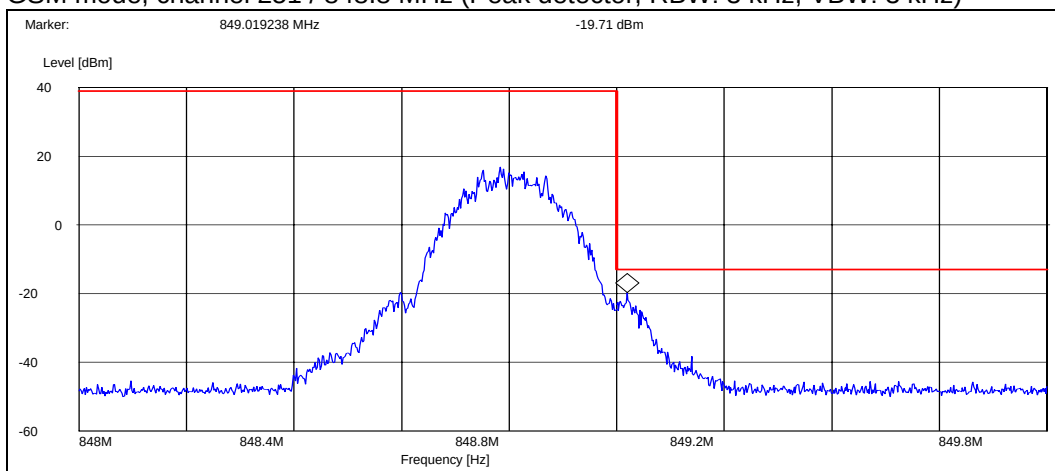
Slide Closed:

GSM mode, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



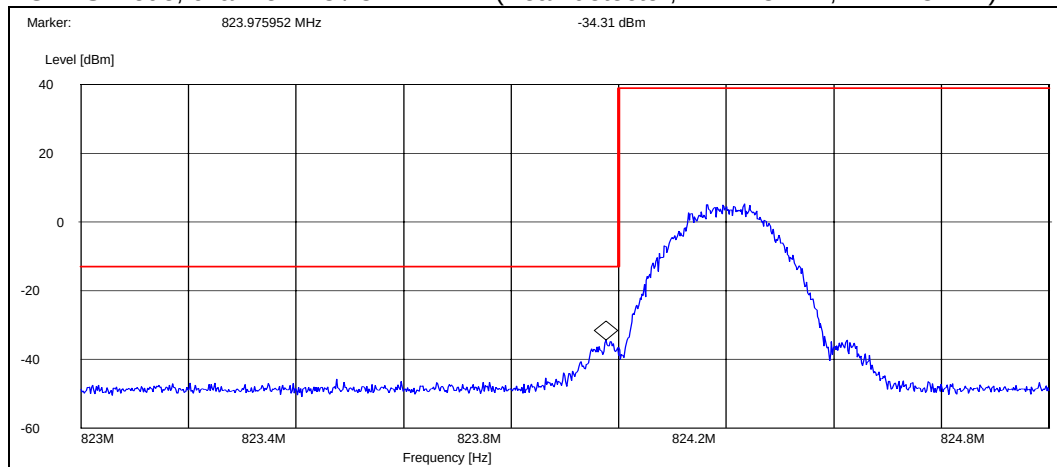
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	128 / 824.2	-21.00

GSM mode, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



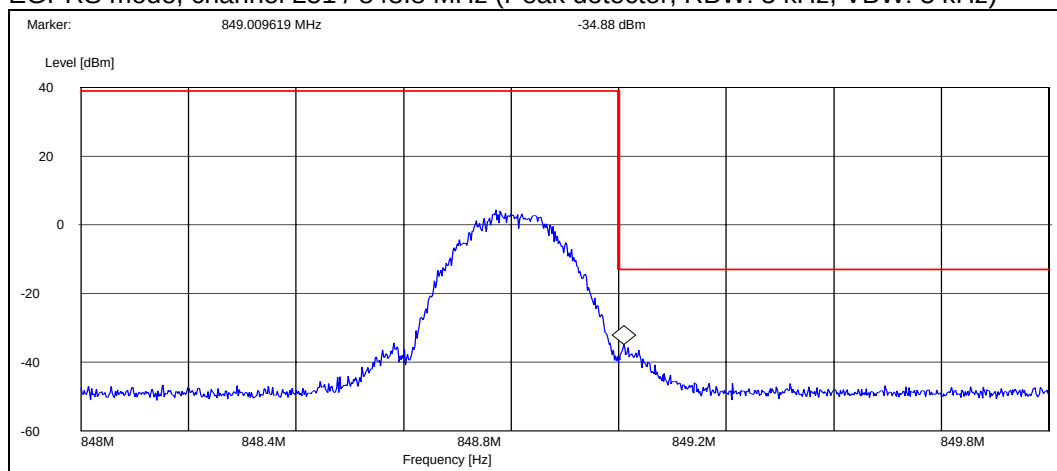
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	251 / 848.8	-19.70

EGPRS mode, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	128 / 824.2	-34.30

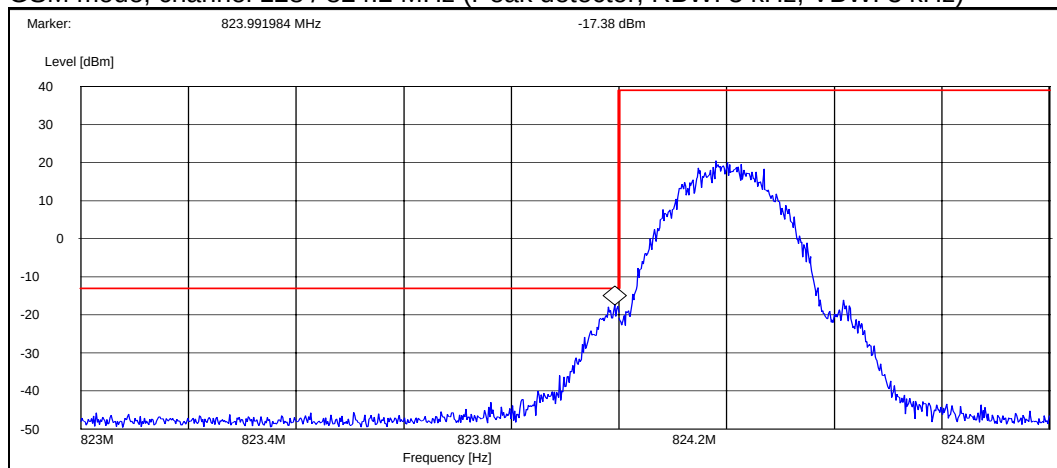
EGPRS mode, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	251 / 848.8	-34.90

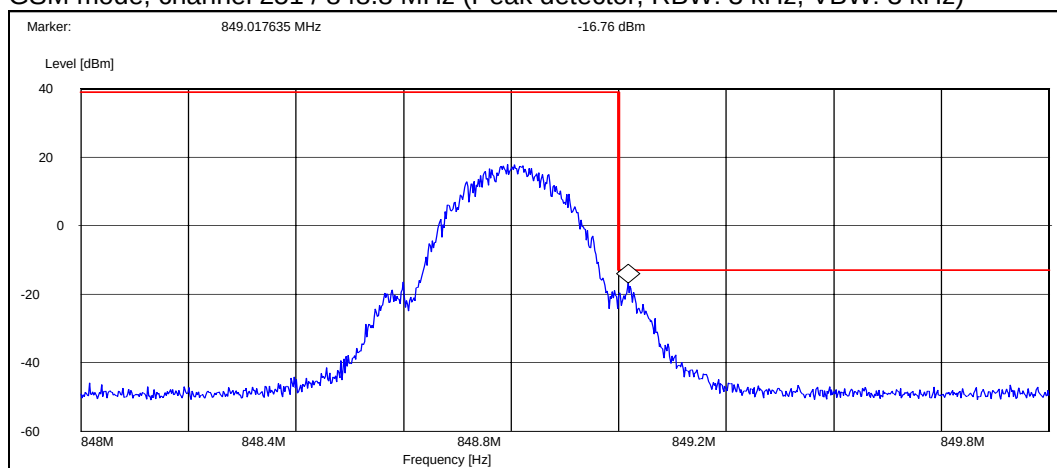
Slide Open:

GSM mode, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



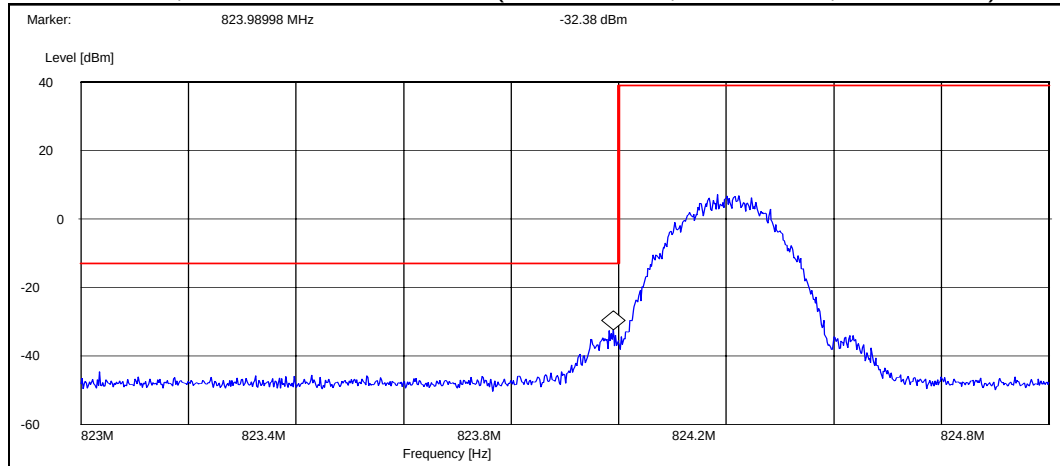
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	128 / 824.2	-17.40

GSM mode, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



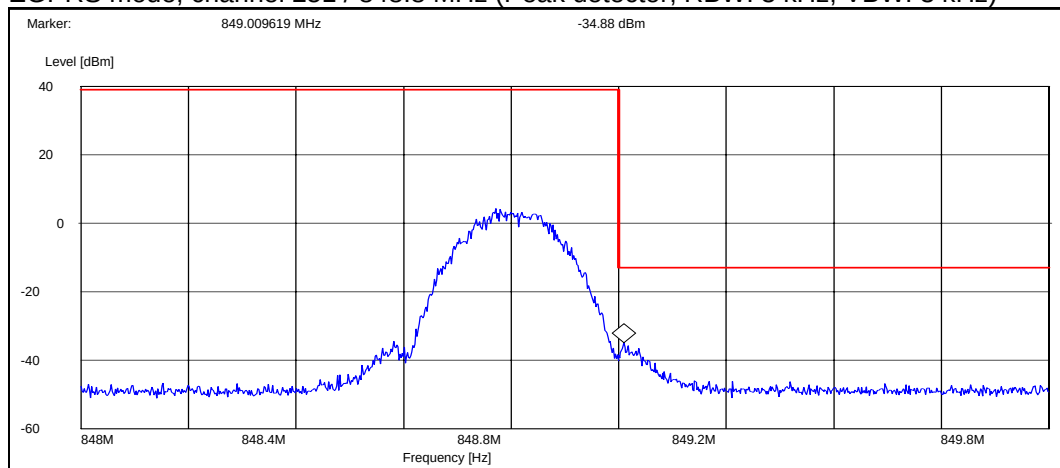
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	251 / 848.8	-16.80

EGPRS mode, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	128 / 824.2	-32.40

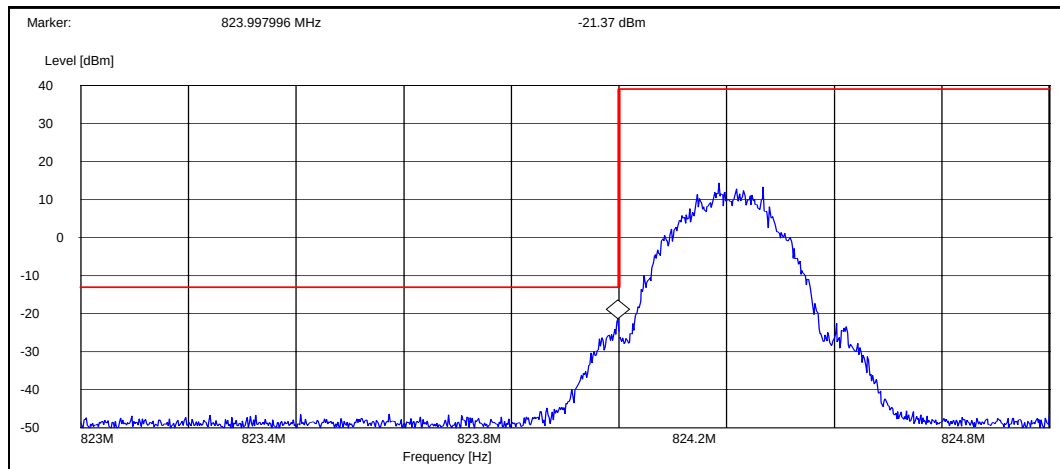
EGPRS mode, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	251 / 848.8	-34.90

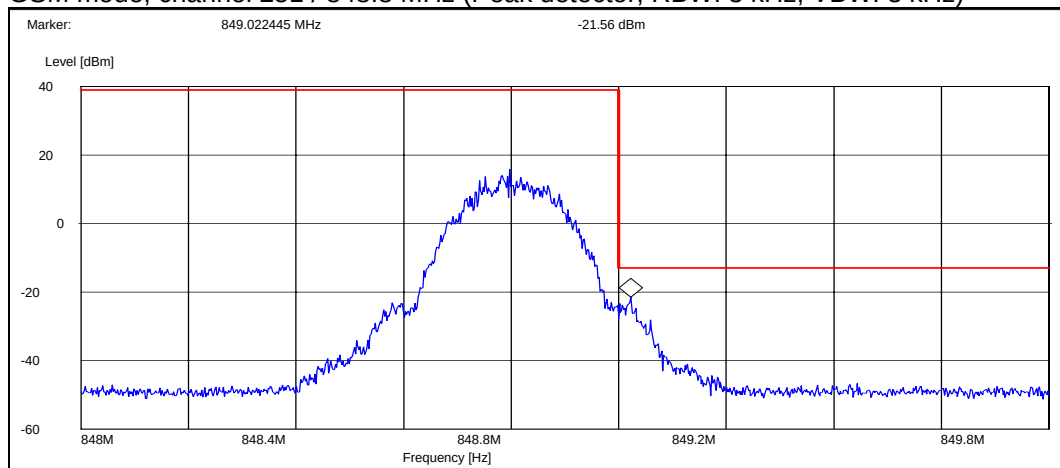
Slide MP3:

GSM mode, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



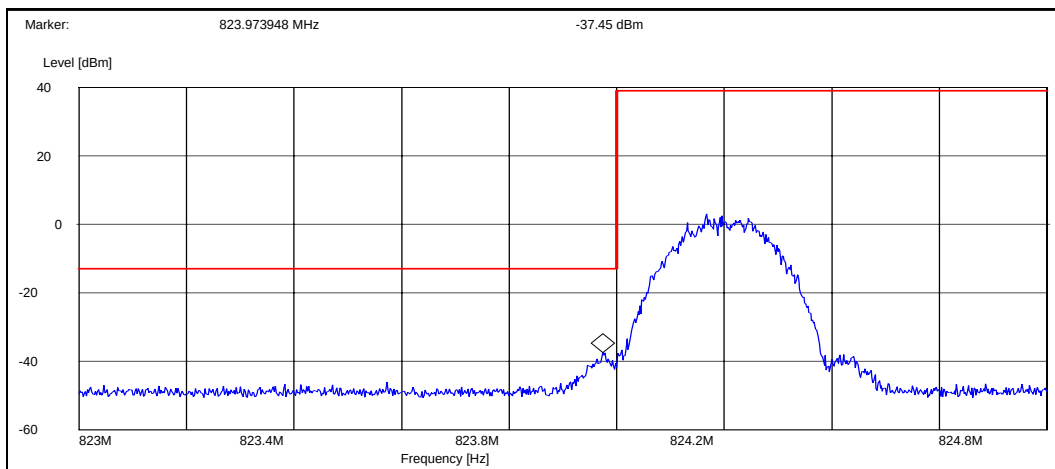
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	128 / 824.2	-21.40

GSM mode, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



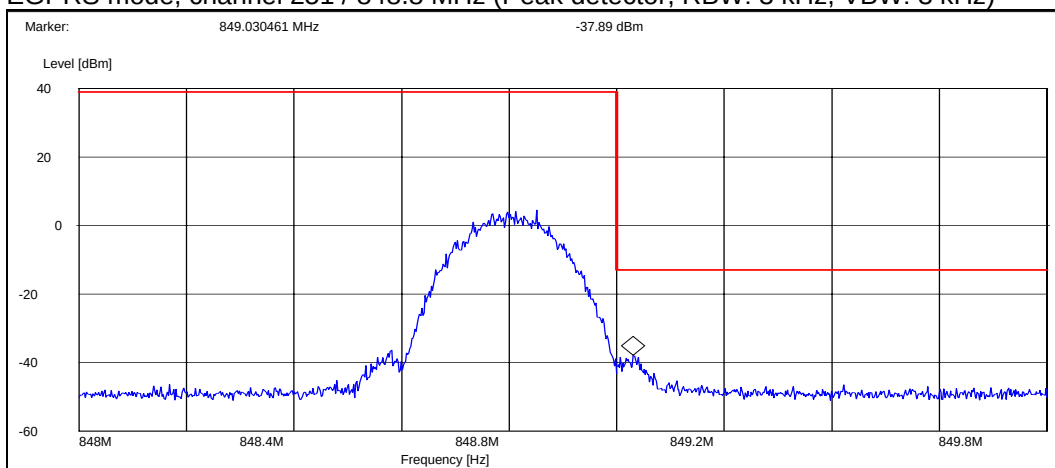
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	251 / 848.8	-21.60

EGPRS mode, channel 128 / 824.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	128 / 824.2	-37.50

EGPRS mode, channel 251 / 848.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)

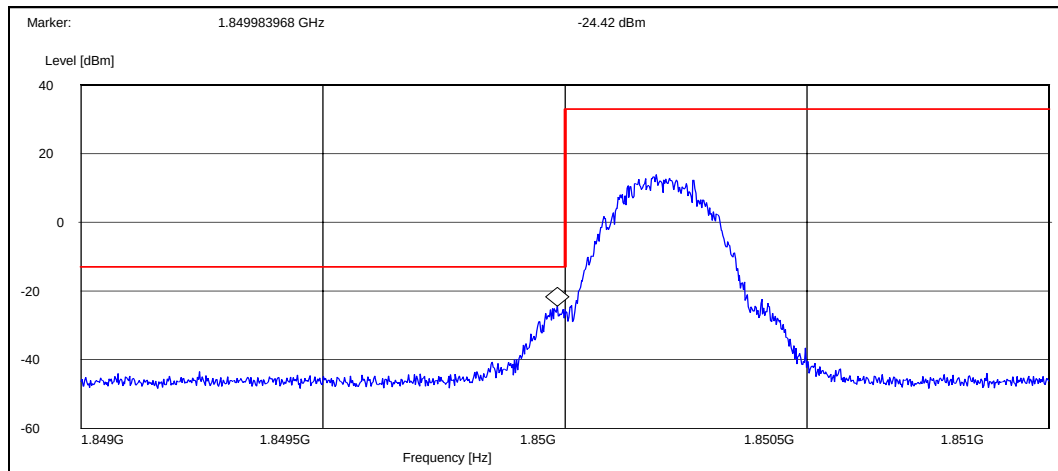


Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	251 / 848.8	-37.90

3.4. GSM 1900 Test results

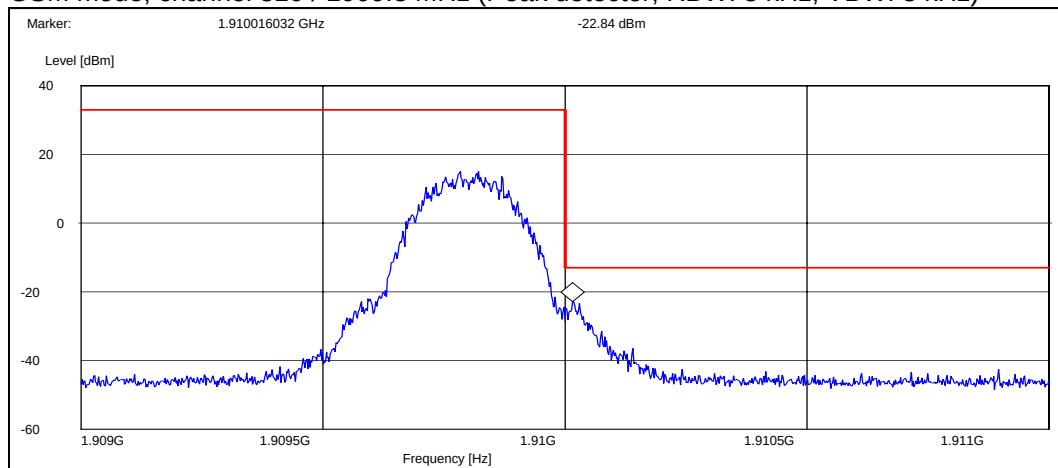
Slide Closed:

GSM mode, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



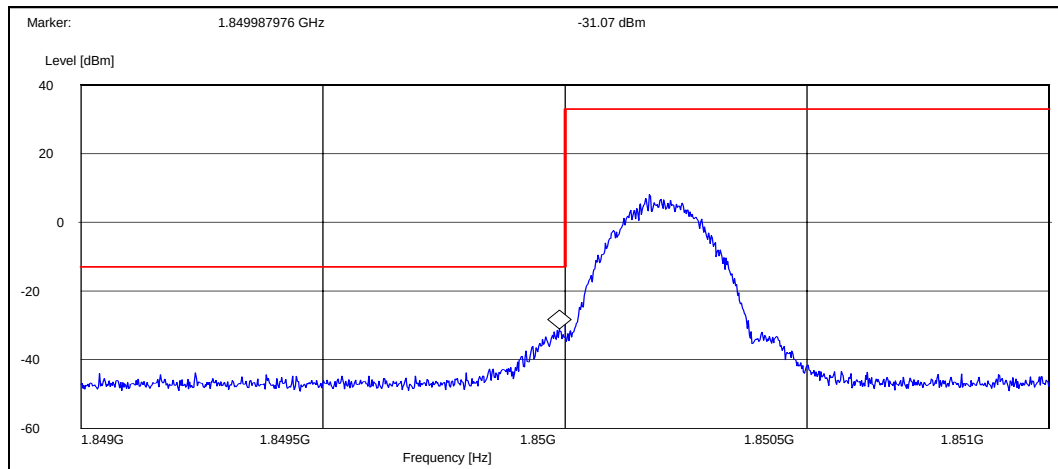
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	512 / 1850.2	-24.40

GSM mode, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



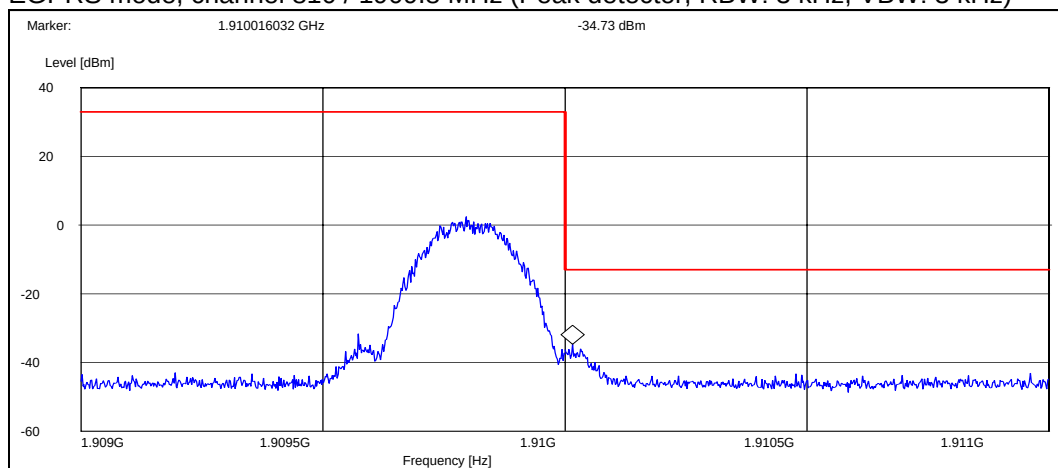
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	810 / 1909.8	-22.80

EGPRS mode, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	512 / 1850.2	-31.10

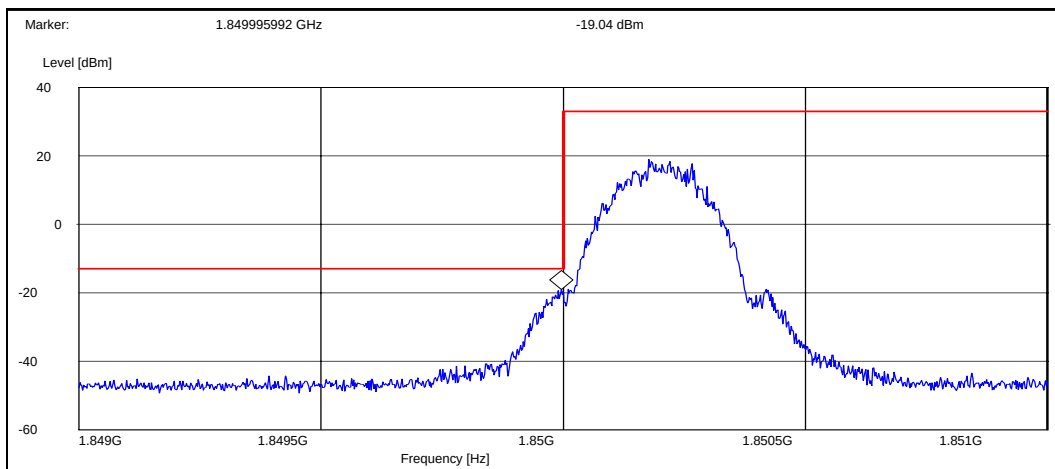
EGPRS mode, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	810 / 1909.8	-34.70

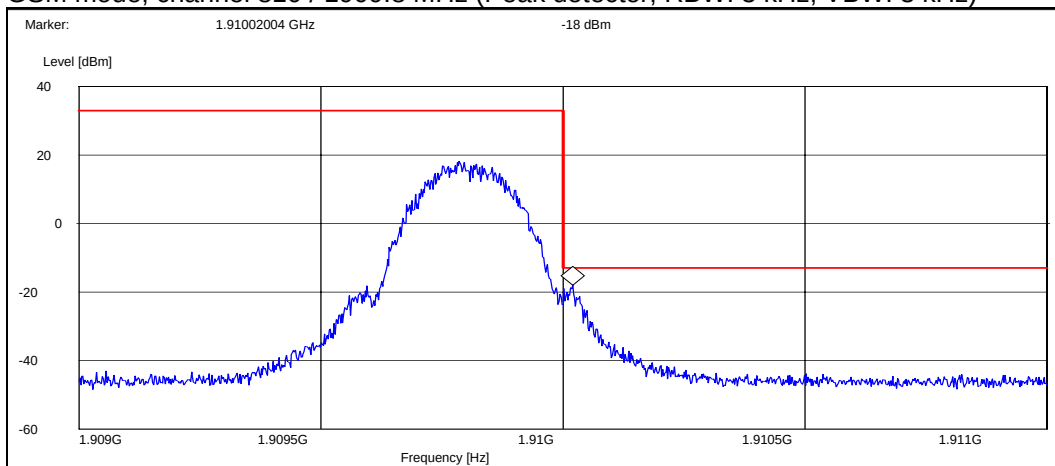
Slide Open:

GSM mode, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



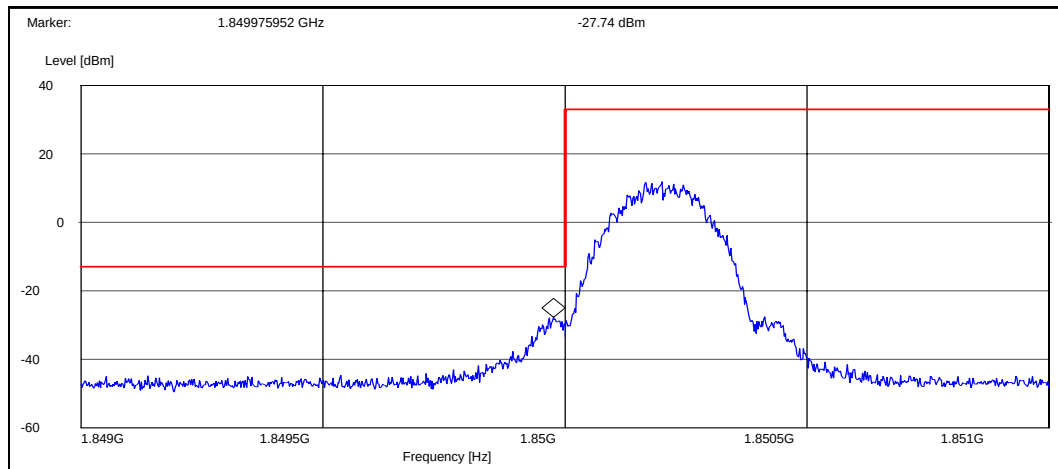
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	512 / 1850.2	-19.00

GSM mode, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



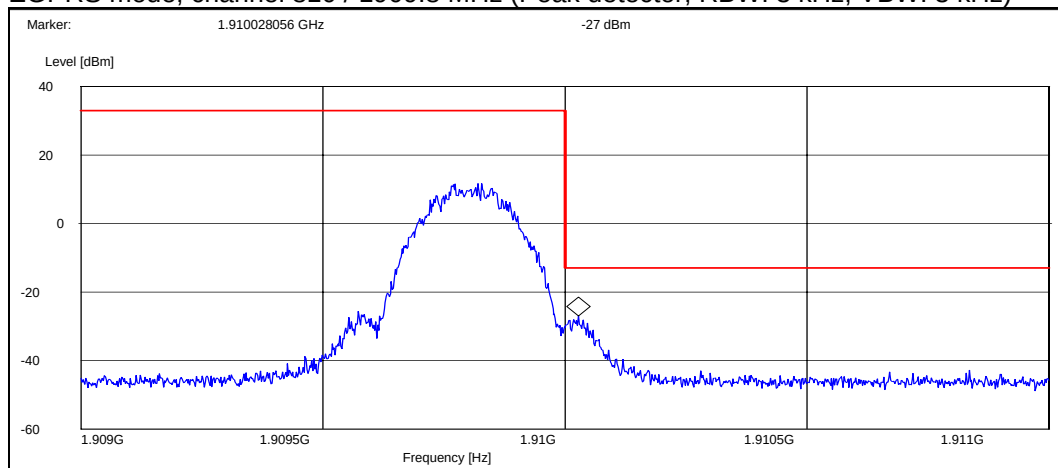
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	810 / 1909.8	-18.00

EGPRS mode, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	512 / 1850.2	-27.70

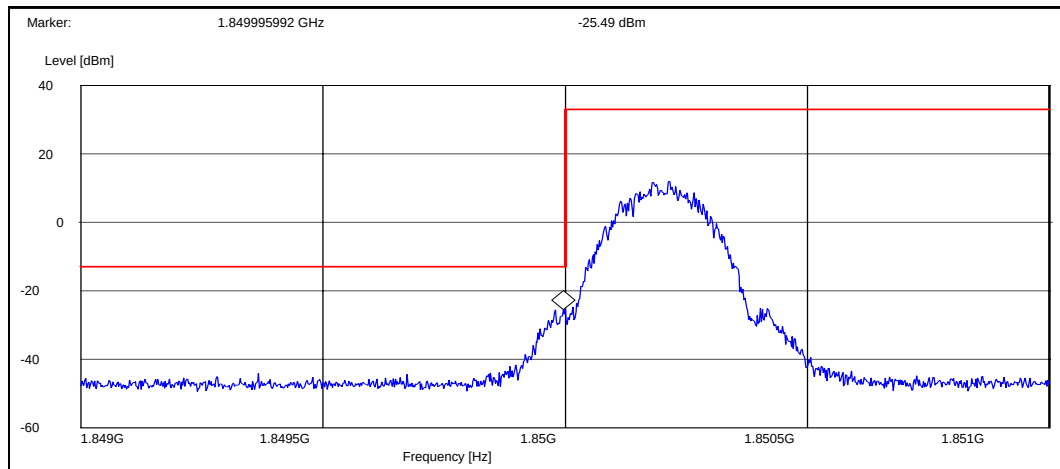
EGPRS mode, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	810 / 1909.8	-27.00

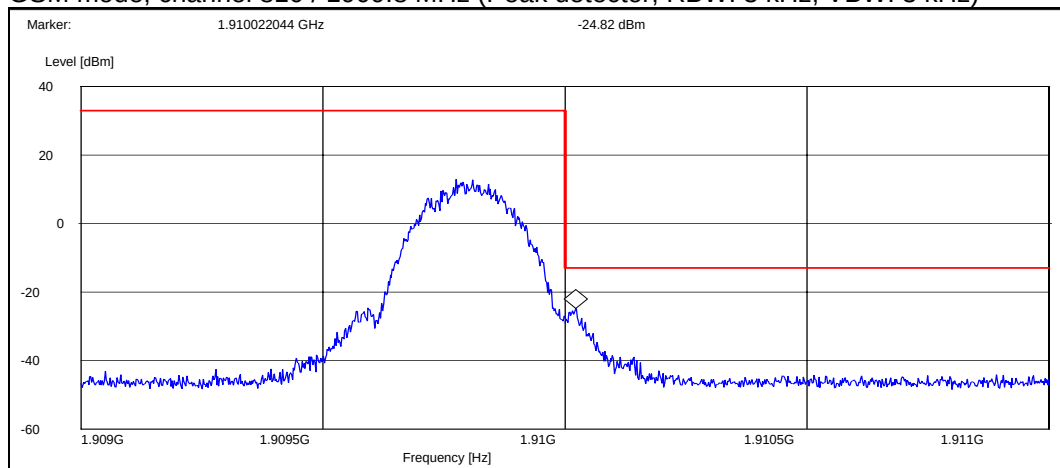
Slide MP3:

GSM mode, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



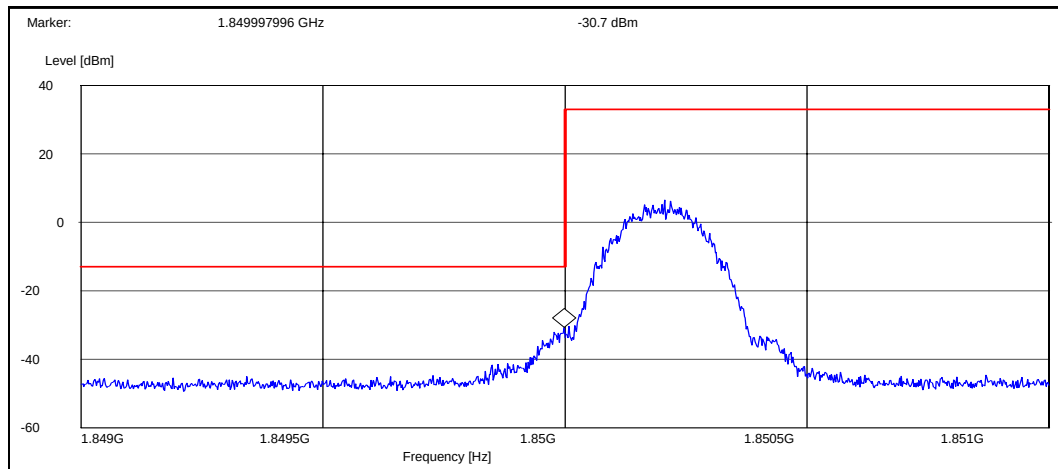
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	512 / 1850.2	-25.50

GSM mode, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



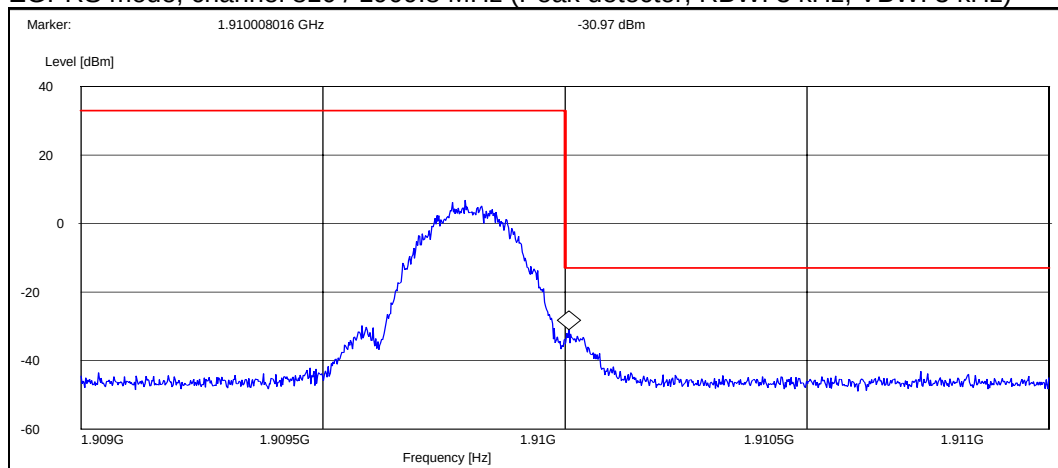
Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
GSM	810 / 1909.8	-24.80

EGPRS mode, channel 512 / 1850.2 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	512 / 1850.2	-30.70

EGPRS mode, channel 810 / 1909.8 MHz (Peak detector, RBW: 3 kHz, VBW: 3 kHz)

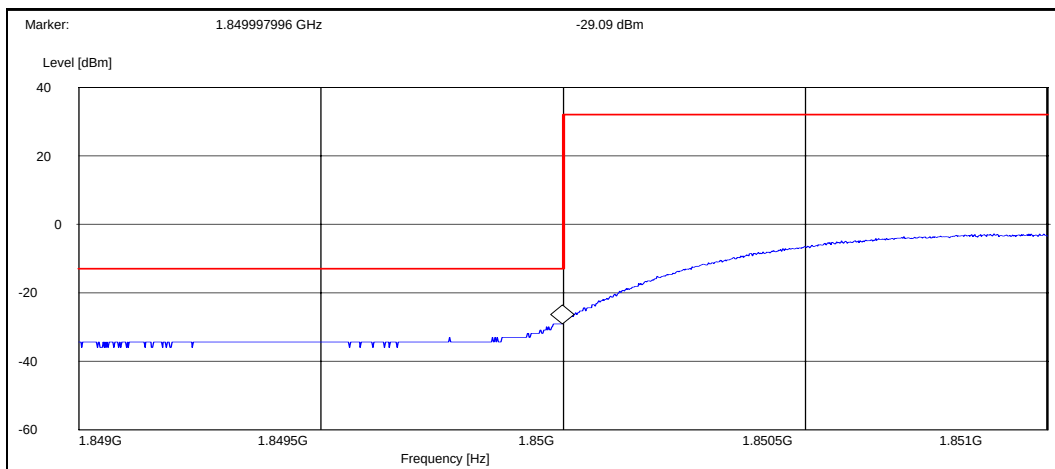


Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
EGPRS	810 / 1909.8	-31.00

3.5. WCDMA 1900 Test results

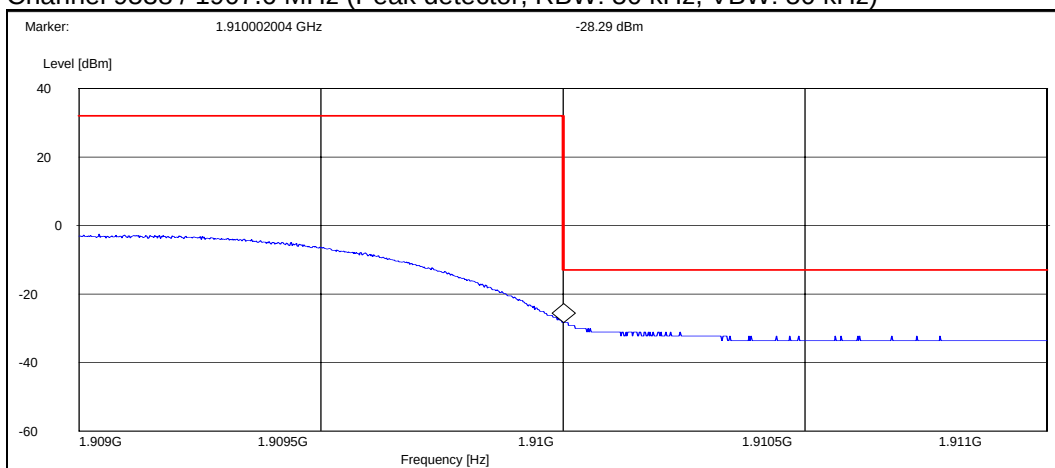
Slide Closed:

Channel 9262 / 1852.4 MHz (Peak detector, RBW: 50 kHz, VBW: 50 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
FDD	9262 / 1852.4	-29.10

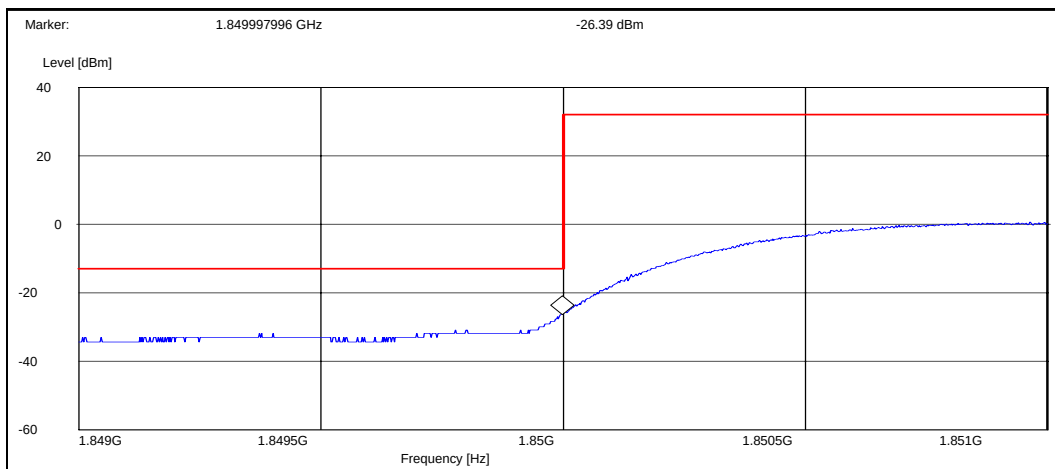
Channel 9538 / 1907.6 MHz (Peak detector, RBW: 50 kHz, VBW: 50 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
FDD	9538 / 1907.6	-28.30

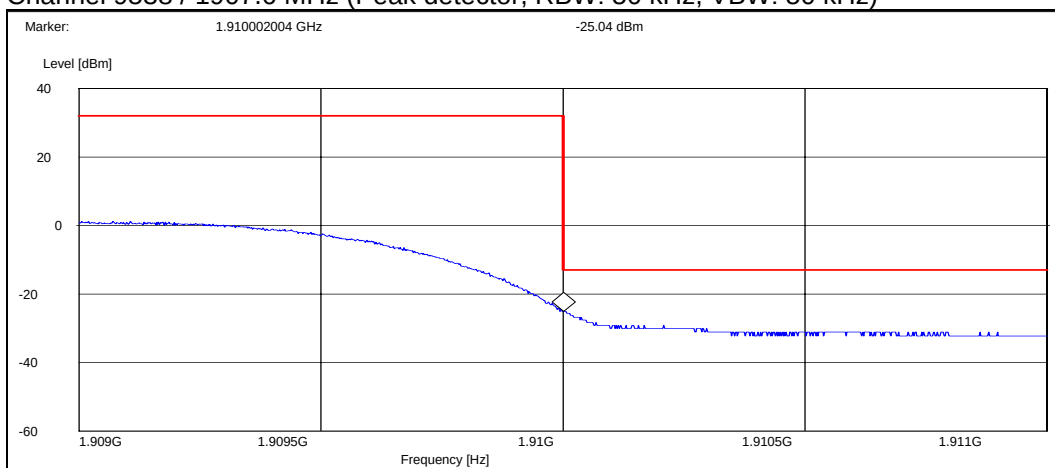
Slide Open:

Channel 9262 / 1852.4 MHz (Peak detector, RBW: 50 kHz, VBW: 50 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
FDD	9262 / 1852.4	-26.40

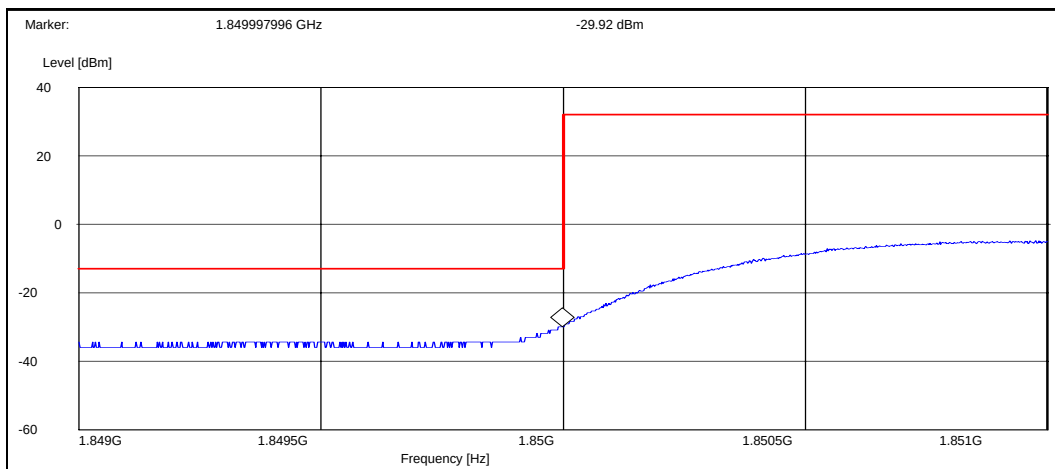
Channel 9538 / 1907.6 MHz (Peak detector, RBW: 50 kHz, VBW: 50 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
FDD	9538 / 1907.6	-25.00

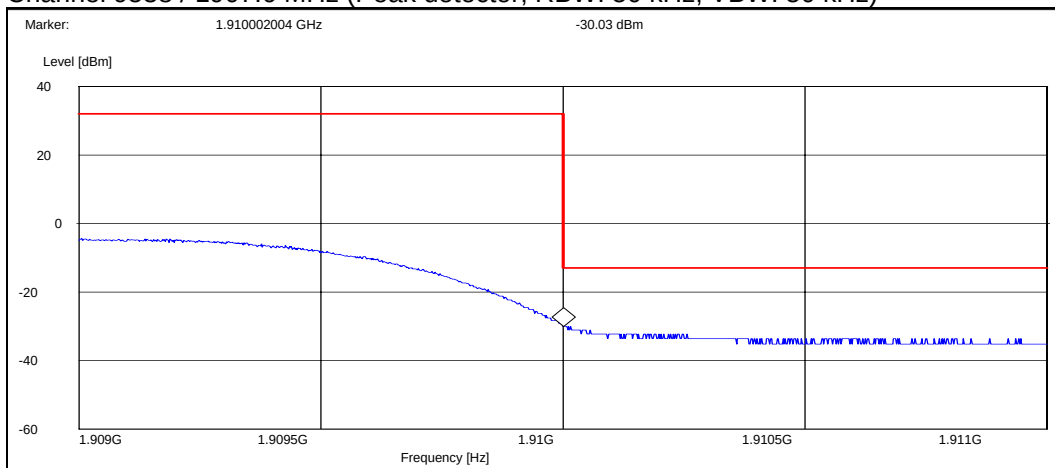
Slide MP3:

Channel 9262 / 1852.4 MHz (Peak detector, RBW: 50 kHz, VBW: 50 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
FDD	9262 / 1852.4	-29.90

Channel 9538 / 1907.6 MHz (Peak detector, RBW: 50 kHz, VBW: 50 kHz)



Operation mode (TX on)	Channel / f_c [MHz]	P [dBm]
FDD	9538 / 1907.6	-30.00

4. Test Equipment

4.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1742	EMI Test Receiver	ESMI	R&S	15C, 15B
1759	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
1872	Thermo- Hygrograph	00.02520.150700	Lambrecht	15C, 15B
1916	Radio Communication tester	CMTA84	R&S	15C, 15B
2039	Power Supply	PL330QMD	THURLBY	15C, 15B
2060	LISN 50 µH	ESH3-Z5	R&S	15C, 15B
2068	CDN-Antenna line	S1	NMP	15C, 15B
2097	Pulse Limiter	ESH3-Z2	R&S	15C, 15B
2111	Multimeter	TX3	Tektronix	15C, 15B
2156	Digital Radio Communication Tester	CMU200	R&S	15C, 15B
2206	Signal generator	SMX	R&S	15C, 15B
2335	GPIB Switch 2 to 1	-	National Instruments	15C, 15B
2347	Digital Radio Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2352	Spectrum Analyzer	FSP	R&S	22/24/27, 15C
2359	Temperature Test system	VT4002	Vötsch Industrietechnik	22/24/27
2360	Serial Bus Converter	Serial 488A	IO Tech	22/24/27
2362	Power Supply	NGPX 70/5	R&S	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B

4.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
1748	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1749	Log. per. Antenna	HL025	R&S	22/24/27, 15C
1875	Thermo- Hygrograph	00.02520.150700	Lambrecht	22/24/27, 15C, 15B
1917	Radio Communication tester	CMTA84	R&S	22/24/27, 15C, 15B
1933	Precision half-wave dipole antennas	HZ-13	R&S	22/24/27, 15C
1938	Precision half-wave dipole antennas	HZ-12	R&S	22/24/27, 15C
2006	Radiation Reference Source	VSQ	MEB	22/24/27, 15C, 15B
2009	Signal generator	SMP 22	R&S	22/24/27, 15C, 15B
2019	Multimeter	34401A	HP	22/24/27, 15C, 15B
2027	Coupling and Decoupling Network	M2 (modified) DC1	MEB	22/24/27, 15C, 15B
2028	Coupling and Decoupling Network	M3 (modified) DC2	MEB	22/24/27, 15C, 15B
2029	Power Supply	PL330	THURLBY	22/24/27, 15C, 15B
2043	Band Reject Filter	WRCA824/849-0.2-6SS	Wainwright	22, 15C, 15B
2047	Band Reject Filter	WRCC1800/2000-0.2-10SS	Wainwright	24, 15C, 15B
2048	Band Reject Filter	WRCC1700/1800-0.2-10SS	Wainwright	27, 15C, 15B
2051	High Pass Filter	4HC1700-1-KK	R&S	22/24/27, 15C
2057	Log. per. Antenna	HL025	R&S	22/24/27, 15C
2109	Power Supply	PL330QMD	THURLBY	22/24/27, 15C, 15B
2110	Multimeter	34401A	HP	22/24/27, 15C, 15B
2112	Multimeter	TX3	Tektronix	22/24/27, 15C, 15B
2116	Controller	EMCO MODEL 2090	ETS	22/24/27, 15C, 15B
2133	Power Meter	NRVS	R&S	22/24/27, 15C
2134	Power Sensor	NRV-Z32	R&S	22/24/27, 15C
2135	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
2138	Ultra Broadband Antenna	HL562	R&S	22/24/27, 15C, 15B
2140	Biconical Antenna	EMCO93110B	EMCO	22/24/27, 15C
2142	Log.-per.-dipol Antenna	3146	EMCO	22/24/27, 15C
2144	Attenuator	6803.17B	Huber-Suhner	22/24/27, 15C, 15B
2150	High Pass Filter	F-15041	RLC ELECTRONICS	22/24/27, 15C
2176	Coupling and Decoupling Network	CDN 801-M3	LÜTHI	22/24/27, 15C, 15B
2180	Digital Radio Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
2188	Preamplifier	AFS4-00100300-20-23P-6	MITEQ	22/24/27, 15C, 15B
2330	EMI Test receiver	ESIB26	R&S	22/24/27, 15C, 15B
2334	GPIB Switch 2 to 1	-	National Instruments	22/24/27, 15C, 15B
2348	Yaesu controller	G-1000DXC	YAESU	22/24/27, 15C, 15B
2349	Computer controller (Yaesu)	GS-232B	YAESU	22/24/27, 15C, 15B
2350	Preamplifier	AMF-6D-020180-29-20P	MITEQ	22/24/27, 15C
2361	Anechoic chamber	3 meter semi/full anechoic chamber	Euroshield	22/24/27, 15C, 15B
2398	Horn antenna	HF906	R&S	22/24/27, 15C
2363	Band Reject Filter	WRCG 832/838-825/845/5SS	Wainwright	22/24/27
2364	Band Reject Filter	WRCG1877/1883 - 1870/1890-40/6SS	Wainwright	22/24/27
2365	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2366	Relay Switch Unit	TS-RSP	R&S	22/24/27, 15C, 15B
2384	Band Reject Filter	WRCG832/838-825/845-40/5SS	Wainwright	22/24/27
2388	Bluetooth Tester	CBT	R&S	15C, 15B
-	RF Emission Software	ES-K1 v.1.71	R&S	22/24/27, 15C, 15B