

FCC Part 22/24 Compliance Test Report

Test Report no.:	FCC_Cellular_RM-1135_04.docx	Date of Report:	15-Jun-2015
Number of pages:	17	Customer's Contact person:	Hu Dongji
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FCC listing no.:	975940		
IC recognition no.:	661AH-1		
Tested devices/ accessories:	Phone RM-1135 / Dummy battery SD-4		
FCC ID:	PYARM-1135	IC:	-
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 4, November 2014), RSS-133 (Issue 6, January 2013), RSS-132 (Issue 3, January 2013). 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:			

Ma Emma, Specialist, EMC

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

Date of receipt	02-Jun-2014
Testing completed	10-Jun-2015
The customer's contact person	Hu Dongji
Test Plan referred to	T:\Projects\RM-1135\TestPlan\RS_testplan_RM-1135.xlsm
Notes	-
Document name	FCC_Cellular_RM-1135_04.docx

1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:

GSM The EUT is tested with maximum rated TX power.

Devices under tests

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-1135	004402741722643	0240	-	10.02.14	55006
Dummy battery	SD-4	03618	-	-	-	54236

1.2. Summary of Test Results

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	NP
N/A	6.4	Peak to average power ratio	PASSED
§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	NP
§24.238(a), §2.1053	6.5	Spurious radiated emissions	NP
§2.1055(a)	6.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	6.3	Frequency stability, voltage variation	PASSED

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	NP
N/A	5.4	Peak to average power ratio	PASSED
§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	NP
§22.917(a), §2.1053	4.5	Spurious radiated emissions	NP
§2.1055(a)	4.3	Frequency stability, temperature variation	PASSED
§2.1055(d)	4.3	Frequency stability, voltage variation	PASSED

PASSED

FAILED

NP

The EUT complies with the essential requirements in the standard.

The EUT does not comply with the essential requirements in the standard.

The test was not performed by the TCC Microsoft Laboratory.

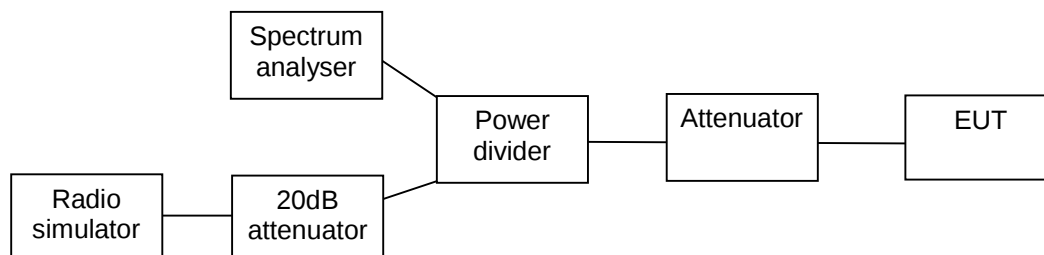
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2. Peak to average power ratio (FCC N/A, RSS-133 6.4, RSS-132 5.4)

EUT with DUT number	RM-1135, DUT 55006
Accessories with DUT numbers	SD-4, DUT 54236
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/51/99.5
Date of measurements	10-Jun-2015
Measured by	Gao Sherina

2.1. Test Setup



2.2. Test method and limit

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

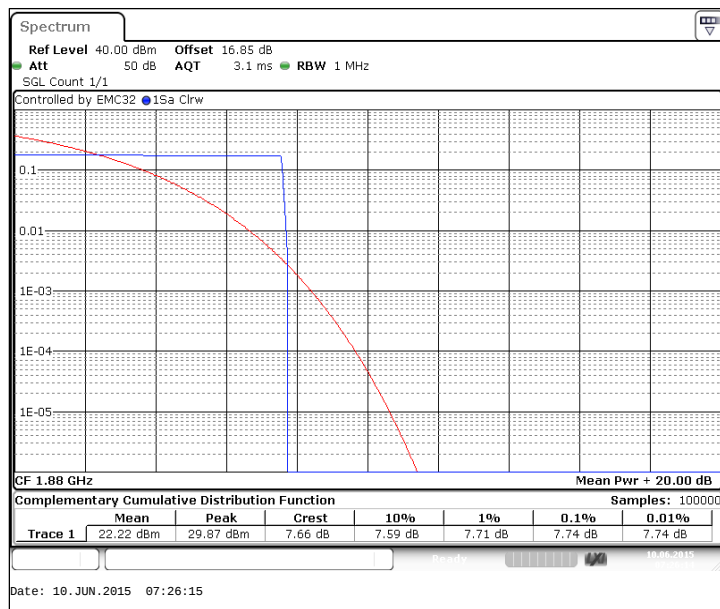
Limits for Peak to average power ratio measurements

Peak to average power ratio [dB]
≤ 13

2.3. GSM 1900 Test results

Operation mode (TX on)	Channel / f _c [MHz]	Peak to average power ratio [dB]	Result
GSM	661 / 1880.0	7.66	PASSED

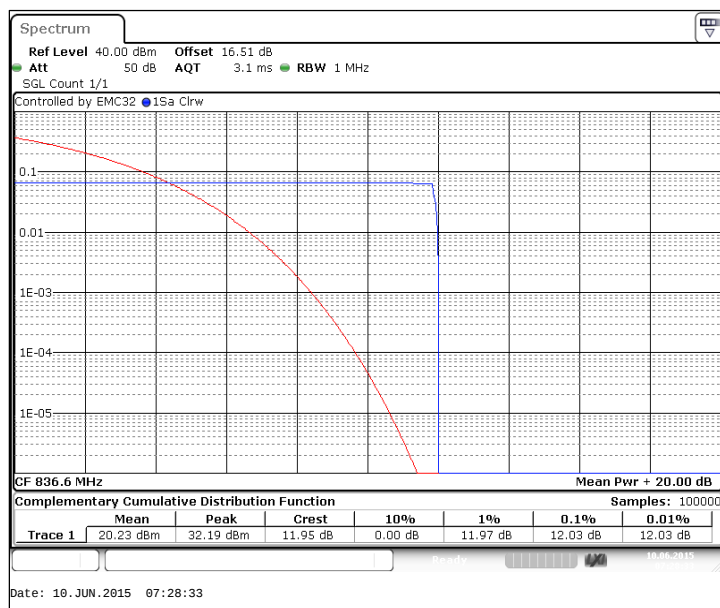
GSM1900



2.4. GSM 850 Test results

Operation mode (TX on)	Channel / f _c [MHz]	Peak to average power ratio [dB]	Result
GSM	190 / 836.6	11.95	PASSED

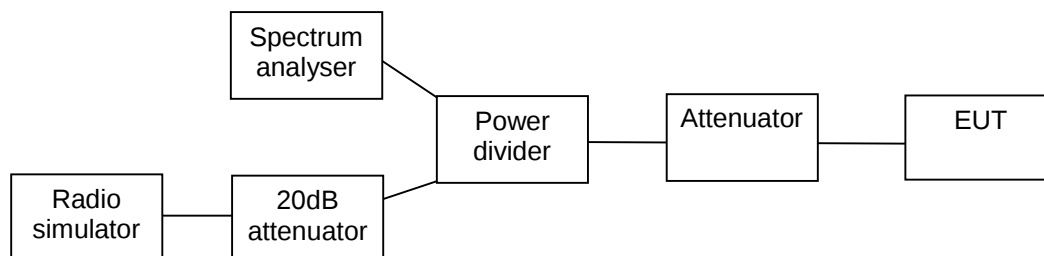
GSM850



3. 99 % occupied bandwidth (FCC §2.1049(h), RSS-133 6.6, RSS-132 6.6)

EUT with DUT number	RM-1135, DUT 55006
Accessories with DUT numbers	SD-4, DUT 54236
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/51/99.5
Date of measurements	10-Jun-2015
Measured by	Gao Sherina

3.1. Test Setup



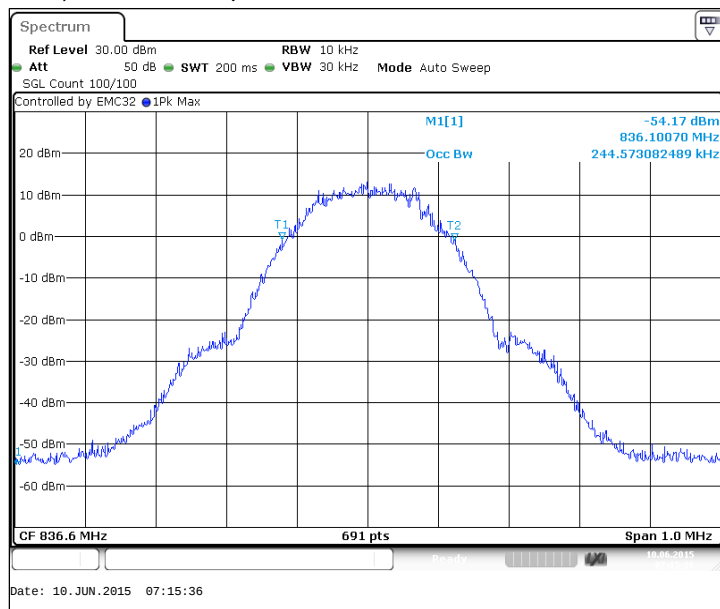
3.2. Test method and limit

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

3.3. GSM 1900 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
GSM	244.6

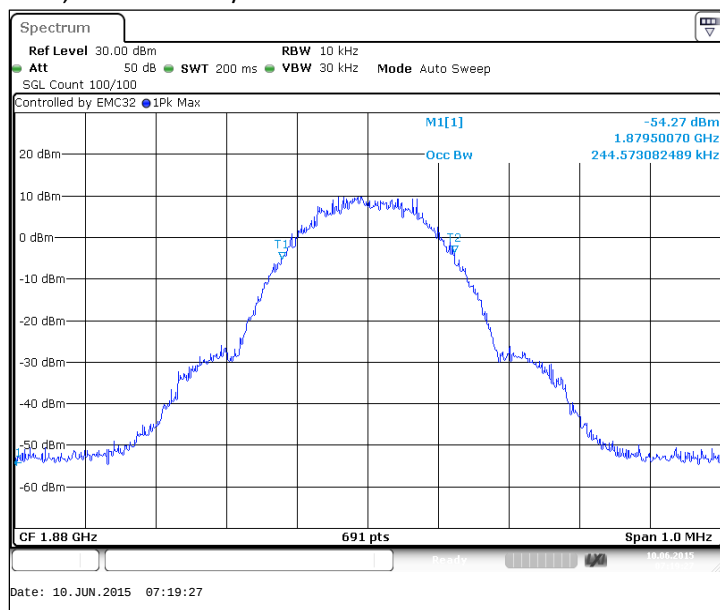
GSM, Channel 661 / 1880.0 MHz



3.4. GSM 850 Test results

Operation mode (TX on)	99% Occupied bandwidth [kHz]
GSM	244.6

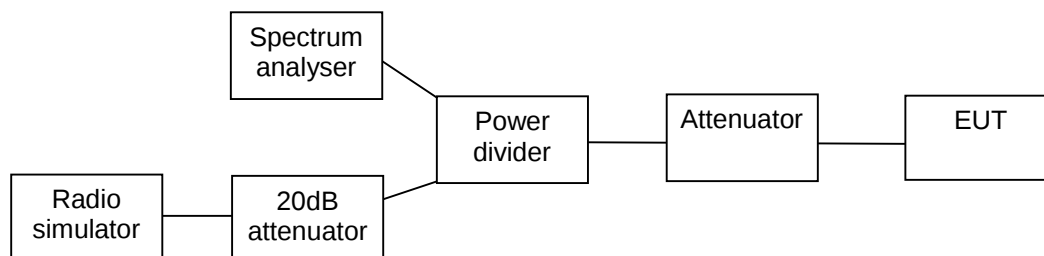
GSM, Channel 190 / 836.6 MHz



4. Band edge compliance (FCC §24.238(a), §22.917(a), RSS-133 6.5, RSS-132 4.5)

EUT with DUT number	RM-1135, DUT 55006
Accessories with DUT numbers	SD-4, DUT 54236
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/51/99.5
Date of measurements	10-Jun-2015
Measured by	Gao Sherina

4.1. Test Setup



4.2. Test method and limit

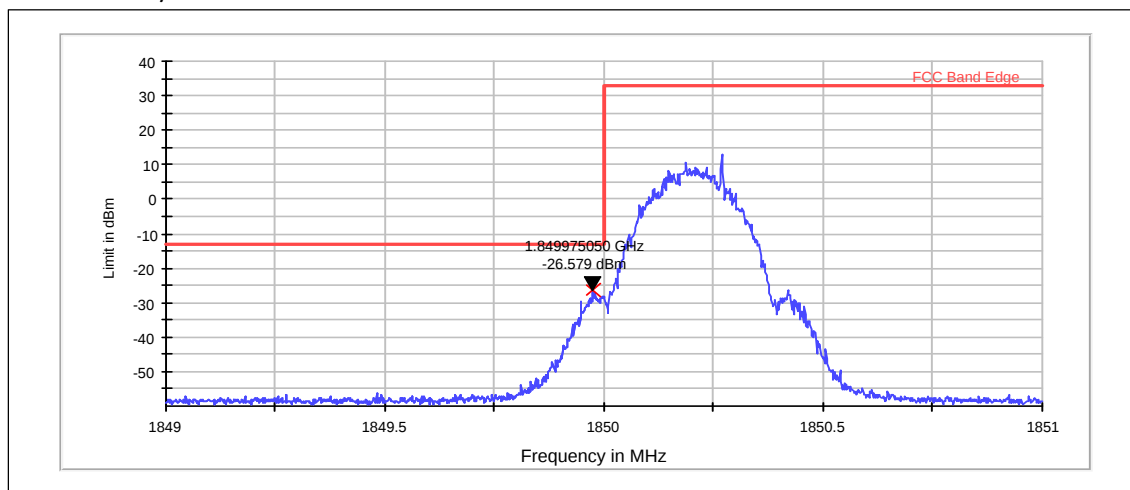
The measurement is made according to applicable FCC rule parts and IC standards.

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

4.3. GSM 1900 Test results

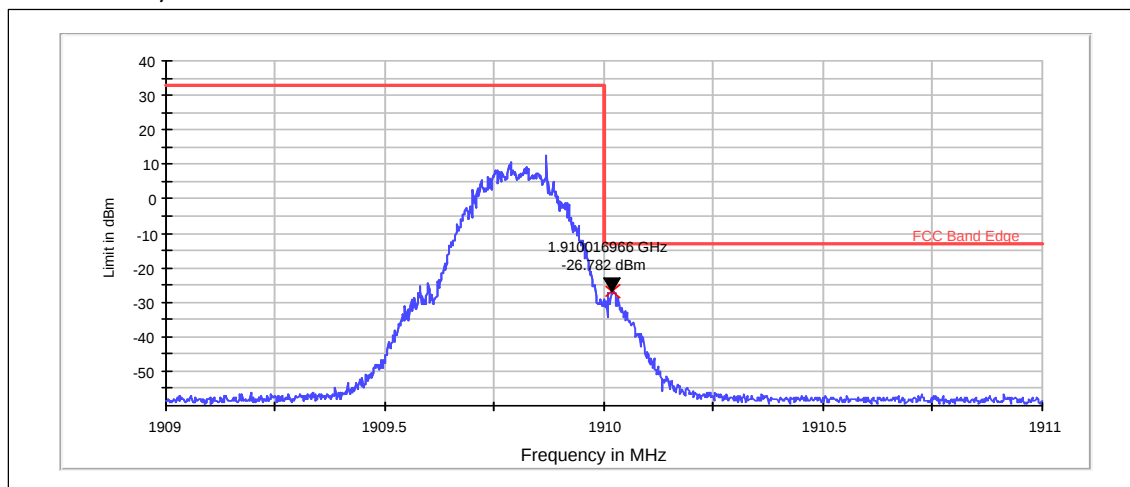
Channel 512 / 1850.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1849.975	-26.58	PASSED

Channel 810 / 1909.8 MHz

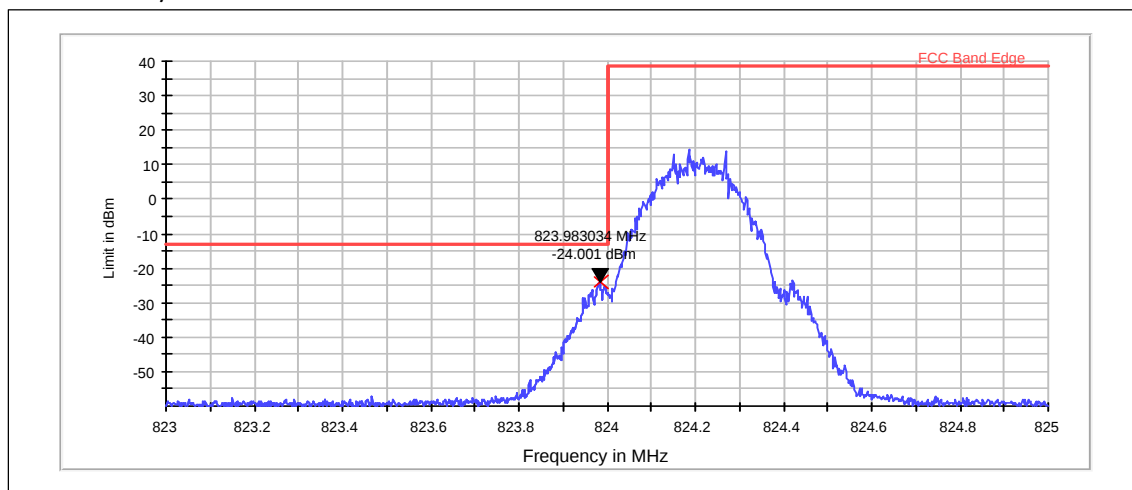


RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	1910.017	-26.78	PASSED

4.4. GSM 850 Test results

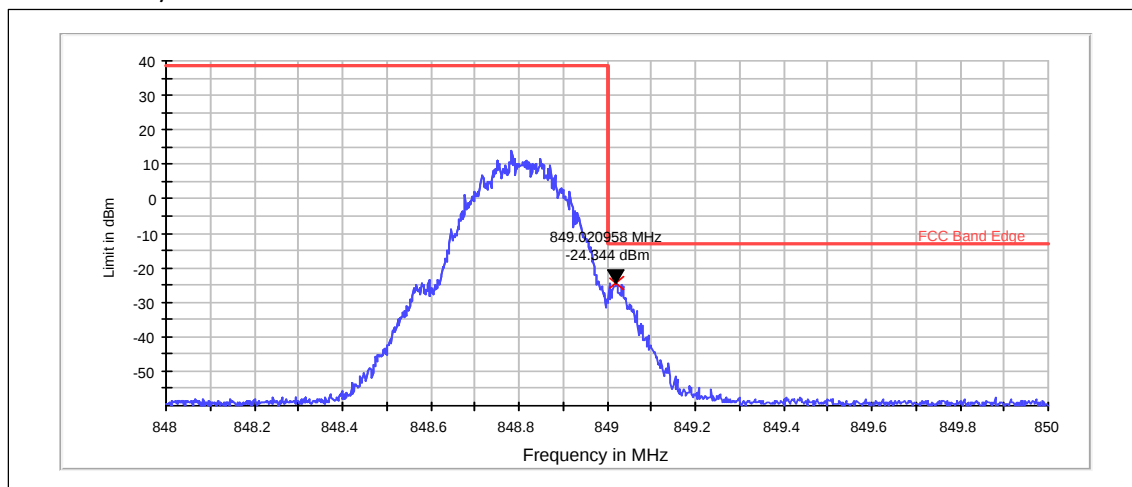
Channel 128 / 824.2 MHz



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

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	823.983	-24.00	PASSED

Channel 251 / 848.8 MHz



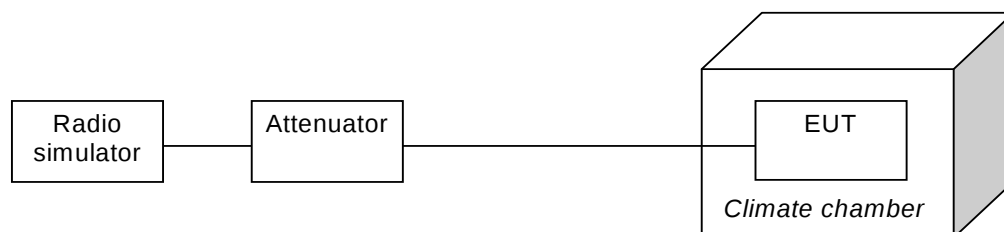
RMS (RBW: 3 kHz, VBW: 3 kHz, Max hold)

Operation mode (TX on)	Frequency [MHz]	Level [dBm]	Result
GSM	849.021	-24.34	PASSED

5. Frequency stability, temperature variation (FCC §2.1055(a), RSS-133 6.3)

EUT with DUT number	RM-1135, DUT 55006
Accessories with DUT numbers	SD-4, DUT 54236
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in RF2 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/51/99.5
Date of measurements	10-Jun-2015
Measured by	Gao Sherina

5.1. Test Setup



5.2. 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

5.3. GSM 1900 Test results

GSM, Channel 661 / 1880.0 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	1880.00	-41.71000	-0.0222	PASSED
40	1880.00	-41.13000	-0.0219	PASSED
30	1880.00	-42.36000	-0.0225	PASSED
20	1880.00	-36.03000	-0.0192	PASSED
10	1880.00	-39.13000	-0.0208	PASSED
0	1880.00	-32.93000	-0.0175	PASSED
-10	1880.00	-29.90000	-0.0159	PASSED
-20	1880.00	-23.12000	-0.0123	PASSED
-30	1880.00	-15.43000	-0.0082	PASSED

5.4. GSM 850 Test results

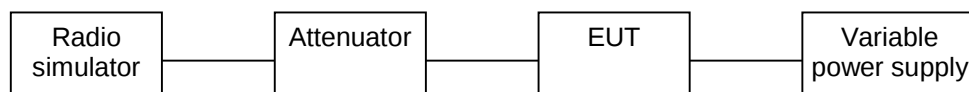
GSM, Channel 190 / 836.6 MHz

Temperature [°C]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
50	836.60	-22.41000	-0.0268	PASSED
40	836.60	-21.57000	-0.0258	PASSED
30	836.60	-19.76000	-0.0236	PASSED
20	836.60	-18.08000	-0.0216	PASSED
10	836.60	-15.17000	-0.0181	PASSED
0	836.60	-15.43000	-0.0184	PASSED
-10	836.60	-15.24000	-0.0182	PASSED
-20	836.60	-13.62000	-0.0163	PASSED
-30	836.60	-10.59000	-0.0127	PASSED

6. Frequency stability, voltage variation (FCC §2.1055(d), RSS-133 6.3, RSS-132 4.3)

EUT with DUT number	RM-1135, DUT 55006
Accessories with DUT numbers	SD-4, DUT 54236
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	Test was done in RF1 system.
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23/46/100.7
Date of measurements	03-Jun-2015
Measured by	Gao Sherina

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 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

6.3. GSM 1900 Test results

GSM 1900,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.3	1880.00	-40.87000	-0.0217	PASSED
Battery cut-off point / 3.3	1880.00	-41.33000	-0.022	PASSED
Nominal / 3.9	1880.00	-40.29000	-0.0214	PASSED

6.4. GSM 850 Test results

GSM 850,

Voltage level [V]	Frequency [MHz]	Deviation [Hz]	Deviation [ppm]	Result
Max / 4.3	836.60	-21.95000	-0.0262	PASSED
Battery cut-off point / 3.3	836.60	-18.53000	-0.0221	PASSED
Nominal / 3.9	836.60	-18.66000	-0.0223	PASSED

7. Test Equipment

7.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B
BJPCHW0020	DC Power supply	HP6632B	HP	22/24/27, 15C
BJPCPT0040	Receiver	ESCS30	R&S	15C,15B
BJPCPT0069	LISN 50 μ H	ESH3-Z5	R&S	15C,15B
BJPCTC0323	Signal Generator	SMR 27	R&S	22/24/27, 15C, 15B
BJPCPT0073	Signal Generator	SMR 20	R&S	22/24/27, 15C, 15B
BJPCPT0191	Pulse Limiter	ESH3-Z2	R&S	15C,15B
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C.15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C.15R
BJPCTC0017	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C.15B
BJPCTC0067	Bluetooth Tester	CBT	R&S	22/24/27, 15C
BJPCTC0082	Humidity and Temperature Sensor	175-H2	Testo	15B,15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B,15C
BJPCTC0089	Tempreture Test chamber	VT4002	Votsch industrietechnik	22/24/27, 15C
BJPCTC0090	FSP spectrum analyzer	FSP30	R&S	22/24/27, 15C
BJPCTC0094	GPB-RS232 convertor	GPB-RS232	NI	22/24/27, 15C
BJPCTC0112	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0127	AC Power source	SOYI-500VA	SOYI	15B 15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0306	Power Splitter	11667B	Agilent	22/24/27, 15C
BJPCTC0305	GPB converter	GPB-RS232	NI	22/24/27, 15C
BJPCTC0304	Spectrum Analyser	FSV30	R&S	22/24/27, 15C
BJPCTC0309	GPB-RS232 convertor	RS232	NI	22/24/27, 15C
BJPCTC0307	Dual channel battery/charger simulator	2306	KEITHLEY	22/24/27, 15C
BJPCTC0308	Dual channel battery/charger simulator	2306	KEITHLEY	22/24/27, 15C
BJPCTC0352	Signal Generator 20GHz	MG3692B	Anritsu	22/24/27, 15C
BJBDATC0169	Tempreture Test chamber	VT4002	Votsch	22/24/27, 15C
BJPCTC0334	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0342	Communication Tester	CMU200	R&S	15B, 15C
BJPCTC0343	Power Splitter	1167A	Agilent	EN300328
BJPCTC0344	Power Splitter	1167A	Agilent	EN300328
BJPCTC0345	Power Splitter	1167A	Agilent	EN300328
BJPCTC0346	Attenuator	8496A	Agilent	EN300328
BJPCTC0347	Directional Coupler	4226-20	Narda	EN300328
BJPCTC0348	Signal generator	E4438C	Agilent	EN300328
BJPCTC0336	Signal Generator	SMP22	R&S	22/24/27, 15C
BJPCTC0357	Signal Generator	SMB100A	R&S	-

7.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	BT / WLAN Antenna	SPA 2400/75/9/0/V	Huber-Suhner	15C, 15B
-	RF Emission Software	EMC32 Test Software	R&S	22/24/27, 15C, 15B

Eq. No	Equipment	Type	Manufacturer	Used in
BJPCPT0072	Receiver	ESI B26	R&S	22/24/27, 15C, 15B
BJPCPT0150	High Pass Filter	WHKS1200-10SS	Wainwright	22/24/27, 15C, 15B
BJPCPT0151	Band Reject Filter	WRCD1880/2000-0.2/40-5SSK	Wainwright	24, 15B
BJPCPT0154	Band Reject Filter	WRCT2402/2480-2400/2483.5-30-20SS	Wainwright	15C, 15B
BJPCPT0166	Antenna	VUBA 9117	Swarzbeck	22/24/27
BJPCPT0208	UPS	PULSAR RX10	Merlin gerin	15C, 15B
BJPCTC0001	DIGITAL CAMERA	PC1015	CANON	15C, 15R
BJPCTC0007	Antenna	HL562	R&S	22/24/27, 15C, 15B
BJPCTC0029	Antenna	HF906	R&S	22/24/27, 15C, 15B
BJPCTC0034	Band Reject Filter	WRCT 800/880-0.2/40-5SSK	Wainwright	22, 15B
BJPCTC0049	Preamplifier	Blma 0118-1A-Bt	Bonn	22/24/27, 15C, 15B
BJPCTC0055	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0058	Bluetooth Tester	CBT	R&S	15C, 15B
BJPCTC0062	AC Power source	6812B	Hp	15C, 15B
BJPCTC0064	Band Reject Filter	WRCG1877/1883-1870/1890-40/6SS	Wainwright	24, 15B
BJPCTC0071	Multi-Device Controller	2090	EMCO	22/24/27, 15C, 15B
BJPCTC0072	Anechoic Chamber	3 m Semi / Full Anechoic Chamber	ETS	22/24/27, 15C, 15B
BJPCTC0073	MAST	Model-TR/POL	ETS	22/24/27, 15C, 15B
BJPCTC0074	MAST	Model 2070-2	ETS	22/24/27, 15C, 15B
BJPCTC0075	Turntable	Model 2188	ETS-EMCO	22/24/27, 15C, 15B
BJPCTC0081	Humidity and Temperature Sensor	175-H2	Testo	15B, 15C
BJPCTC0088	Absolut pressure meter	testo 511	Testo	22/24/27, 15B, 15C
BJPCTC0115	Communication Tester	CMU200	R&S	22/24/27, 15B, 15C
BJPCTC0124	Attenuator	SA18N200W-40	Fairview Microwave	-
BJPCTC0125	Loop Antenna	HFH2-Z2	R&S	15C
BJPCTC0126	Tripod	FHU-Z	R&S	15C
BJPCTC0128	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0129	Communication antenna	JXTXLB-10180	A-INFOMW	22/24/27 15B 15C
BJPCTC0131	Communication tester	CMW500	R&S	22/24/27 15B 15C
BJPCTC0133	Open Swith and contril unit	OSP 150	R&S	15B, 15C
BJPCTC0134	Open Swith and contril unit	OSP 150	R&S	15B, 15C
BJPCTC0135	Open Swith and contril unit	OSP 130	R&S	15B, 15C
BJPCTC0136	Communication antenna	JXTXLB-880-NF	A-INFOMW	15B 15C
BJPCTC0171	Broad-band Horn Antenna	BBHA9120 D	SCHWARZBECK MESS - ELEKTRONIK	22/24/27, 15C, 15B
BJPCTC0310	Horn Antenna	QSH20SMA	Q-par	22/24/27, 15C, 15B
BJPCTC0311	Horn Antenna	QSH18SMA	Q-par	22/24/27, 15C, 15B
BJPCTC0312	Relay Switch Unit	-	-	22/24/27, 15C, 15B
BJPCTC0313	High Pass Filter	WHKX1.0/15G-12SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0314	High Pass Filter	WHKX8.0/18G-88SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0315	High Pass Filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15B
BJPCTC0316	Preamplifier	AMT-5F-18002550-25-108	-	22/24/27, 15C, 15B
BJPCTC0317	Preamplifier	AMF-6D-02001800-29-20P	-	22/24/27, 15C, 15B
BJPCTC0350	Preamplifier	AMF-4D-01000800-30-29P	Miteq	22/24/27, 15C, 15B
BJPCTC0324	Preamplifier	AFS4-00100300-20-23P-6	Miteq	22/24/27, 15C, 15B
BJPCTC0329	Relay Switch Unit	-	-	22/24/27, 15C, 15B
BJPCTC0334	Communication Tester	CMU200	R&S	22/24/27, 15C, 15B
BJPCTC0342	Communication Tester	CMU200	R&S	15B, 15C

Eq. No	Equipment	Type	Manufacturer	Used in
BJPCTC0349	Preamplifier	AMF-4D-01000800-30-79P	Miteg	22/24/27, 15C, 15B
BJPCTC0350	Preamplifier	AMF-4D-01000800-30-29P	Miteg	22/24/27, 15C, 15B
BJPCTC0351	Preamplifier	AFS4-00101800	-	22/24/27, 15C, 15B
BJPCTC0113	Receiver	ESI B26	R&S	22/24/27, 15B, 15C