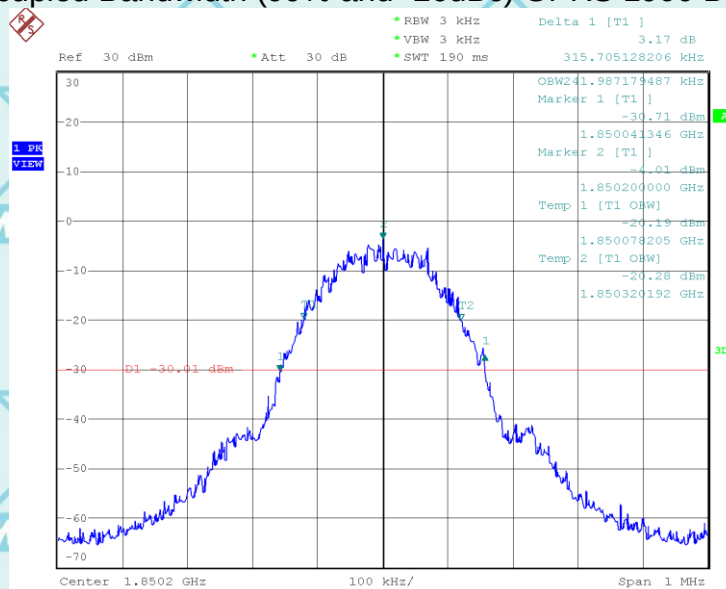


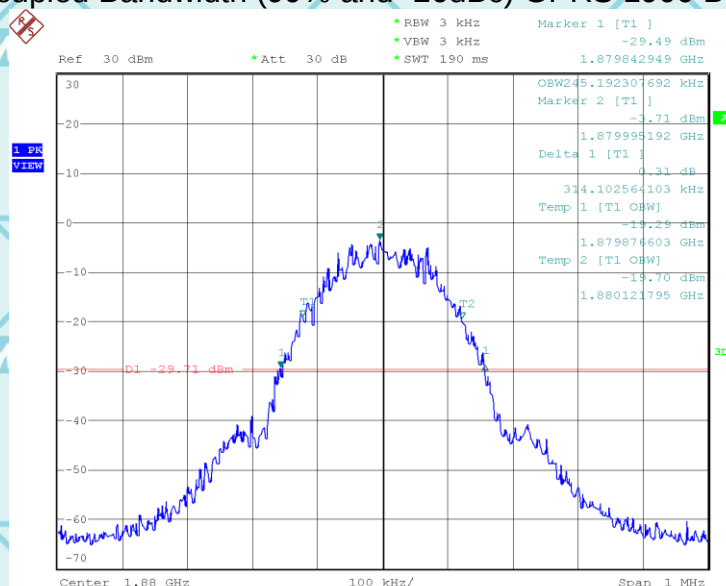
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99% and -26dBc) GPRS 1900 Band CH 512



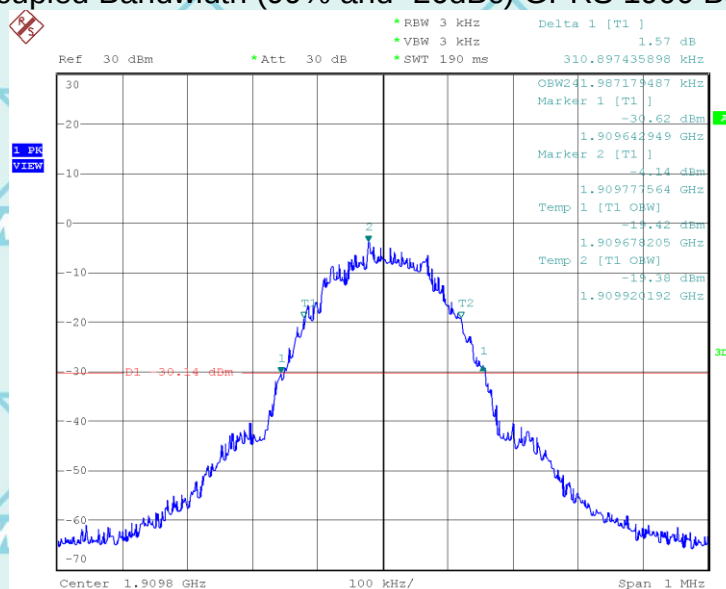
Date: 26.NOV.2024 15:08:48

Occupied Bandwidth (99% and -26dBc) GPRS 1900 Band CH 661



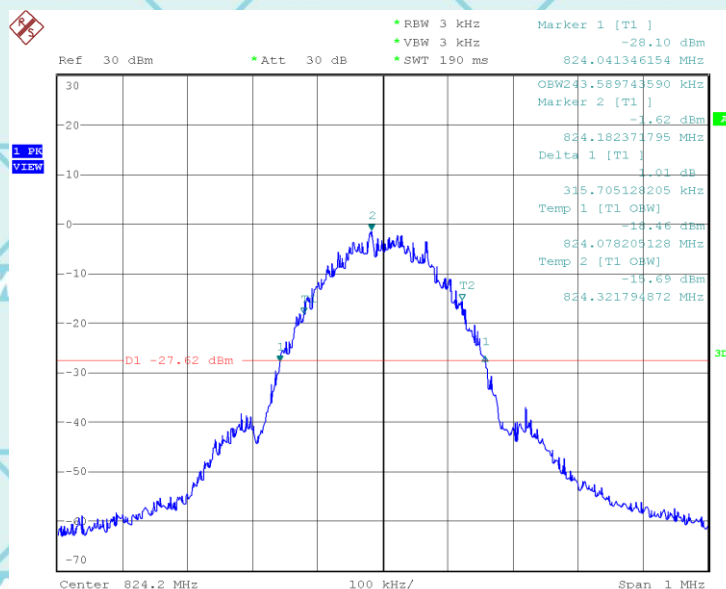
Date: 26.NOV.2024 15:10:36

Occupied Bandwidth (99% and -26dBc) GPRS 1900 Band CH 810



Date: 26.NOV.2024 15:12:00

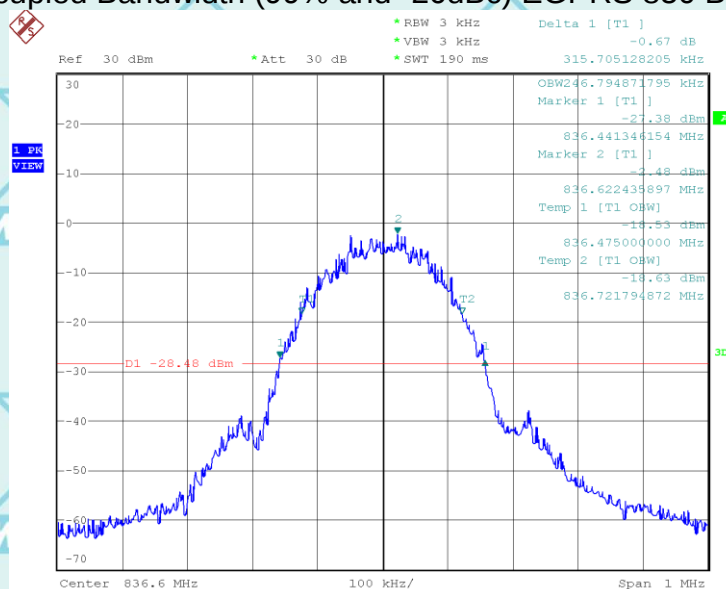
Occupied Bandwidth (99% and -26dBc) EGPRS 850 Band CH 128



Date: 26.NOV.2024 14:18:34

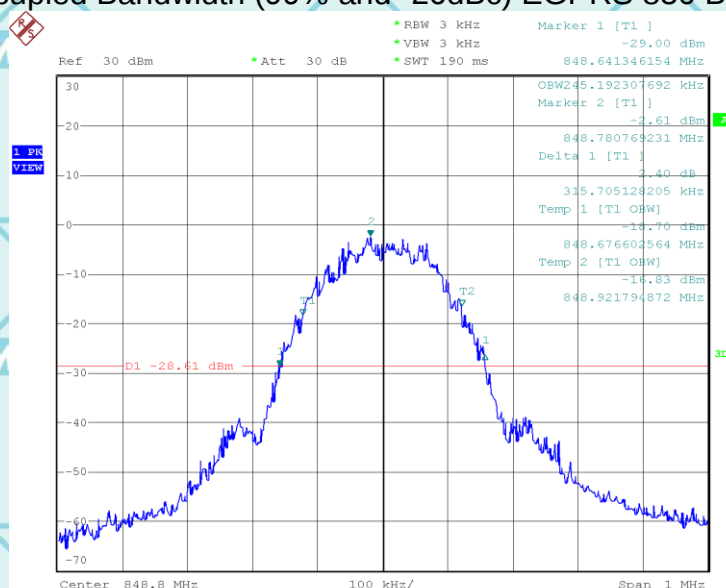
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99% and -26dBc) EGPRS 850 Band CH 190



Date: 26.NOV.2024 14:17:10

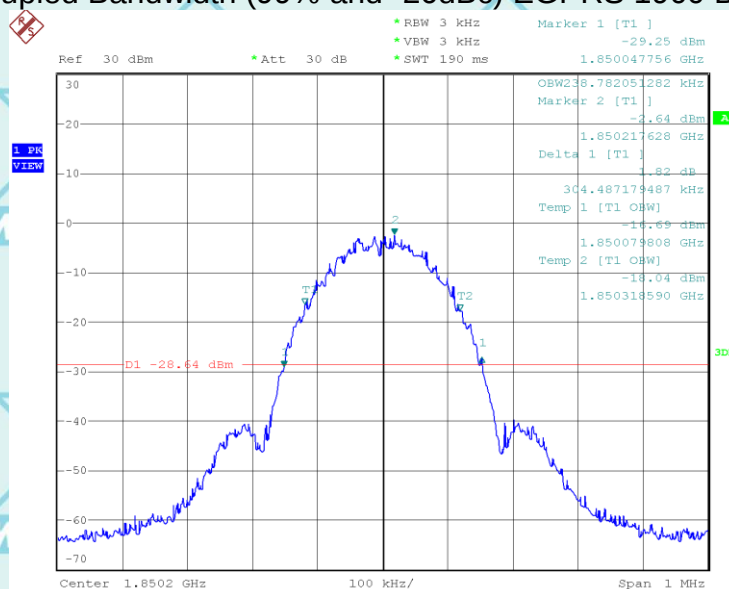
Occupied Bandwidth (99% and -26dBc) EGPRS 850 Band CH 251



Date: 26.NOV.2024 14:15:55

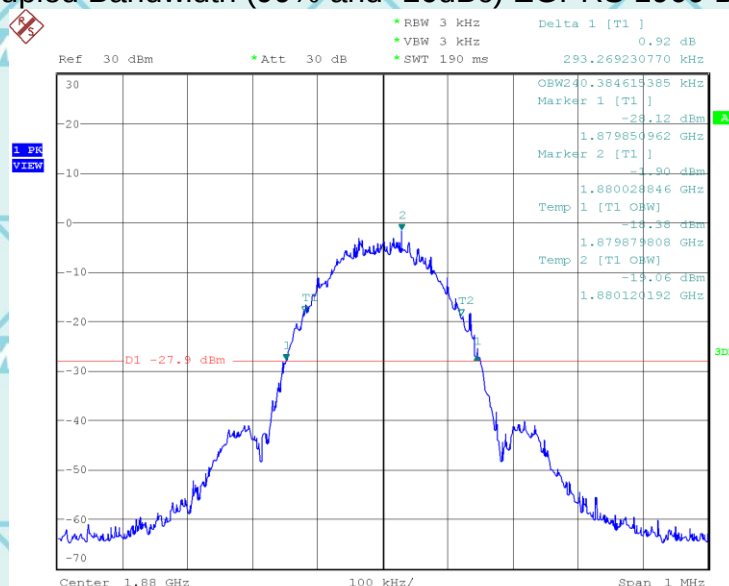
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99% and -26dBc) EGPRS 1900 Band CH 512



Date: 26.NOV.2024 15:25:27

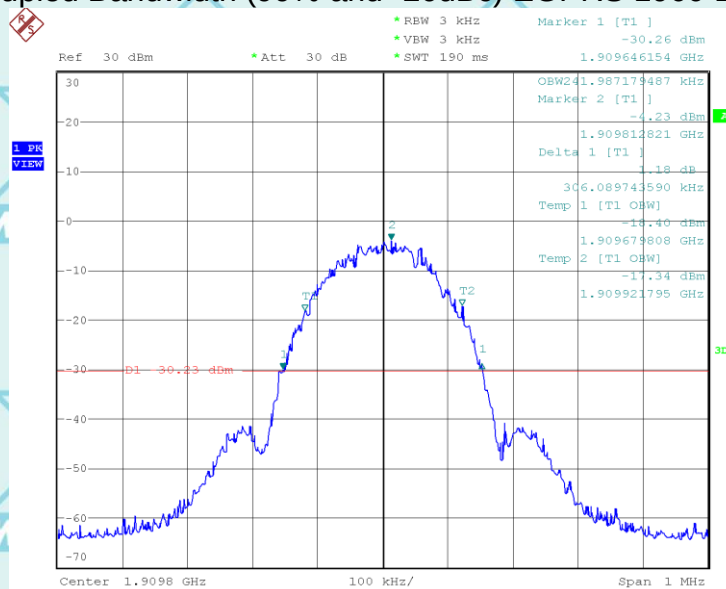
Occupied Bandwidth (99% and -26dBc) EGPRS 1900 Band CH 661



Date: 26.NOV.2024 15:19:35

Report No.: WSCT-ANAB-R&E241100063A-RF

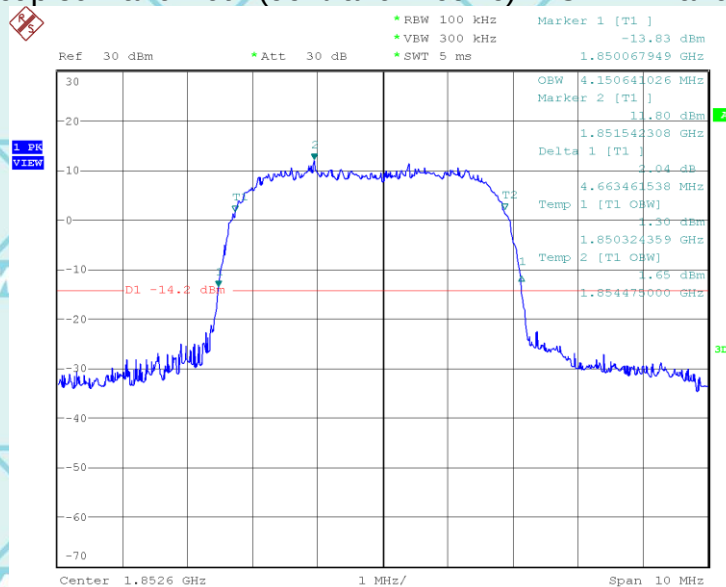
Occupied Bandwidth (99% and -26dBc) EGPRS 1900 Band CH 810



Date: 26.NOV.2024 15:16:36

UTRA BANDS

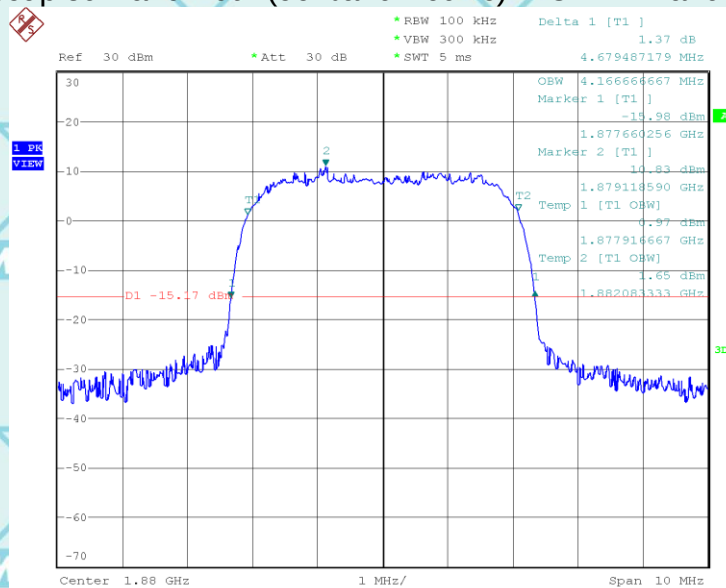
Occupied Bandwidth (99% and -26dBc) WCDMA Band 2 CH 9262



Date: 26.NOV.2024 11:01:42

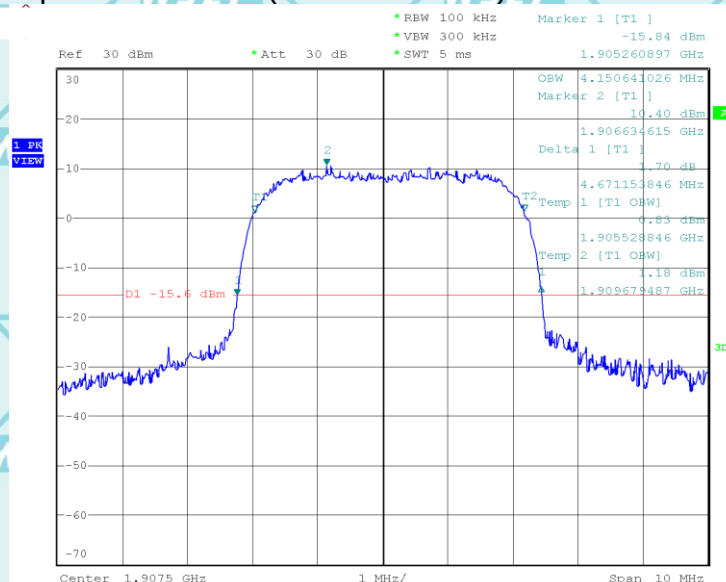
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99%and-26dBc) WCDMA Band 2 CH 9400



Date: 26.NOV.2024 11:00:23

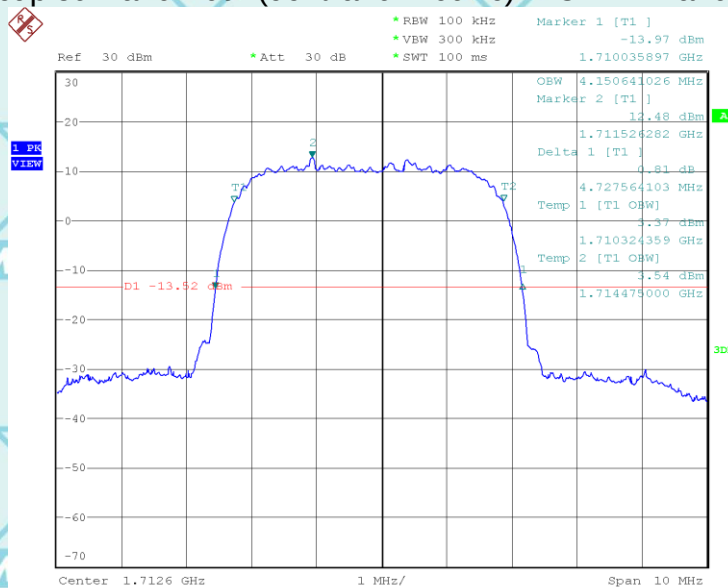
Occupied Bandwidth (99%and-26dBc) WCDMA Band 2 CH 9538



Date: 26.NOV.2024 10:58:46

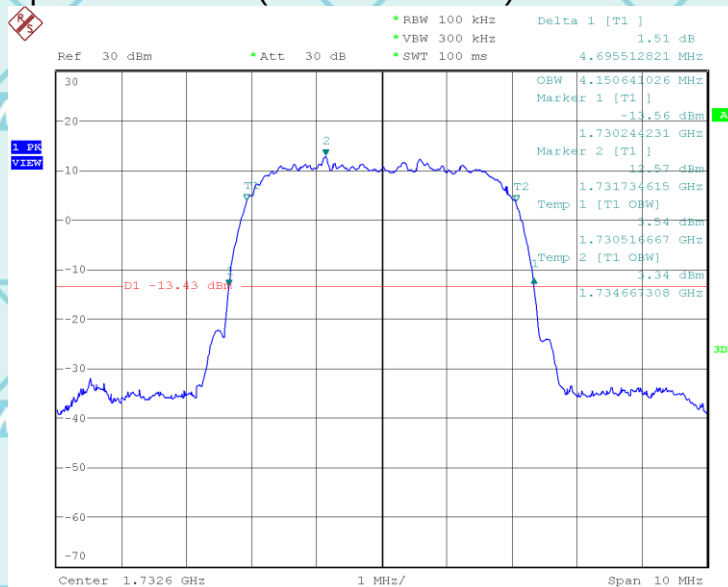
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99% and -26dBc) WCDMA Band 4 CH 1312



Date: 2.DEC.2024 14:05:21

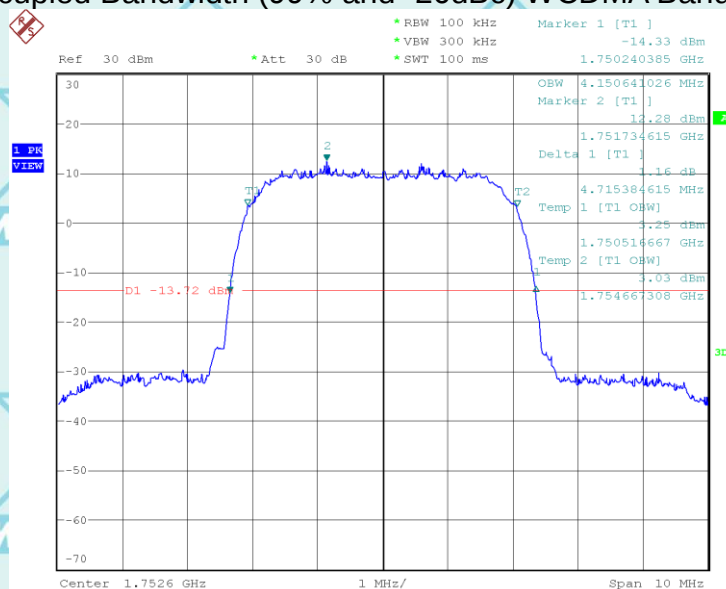
Occupied Bandwidth (99% and -26dBc) WCDMA Band 4 CH 1413



Date: 2.DEC.2024 14:02:08

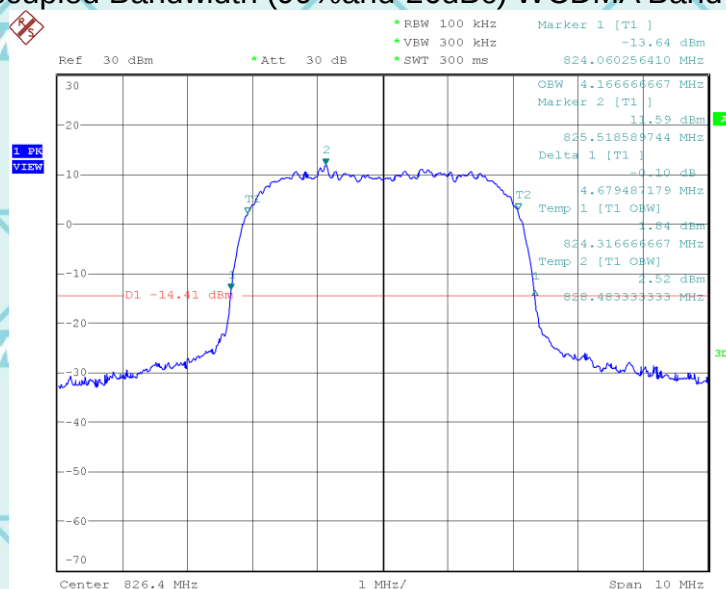
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99% and -26dBc) WCDMA Band 4 CH 1513



Date: 2.DEC.2024 14:00:20

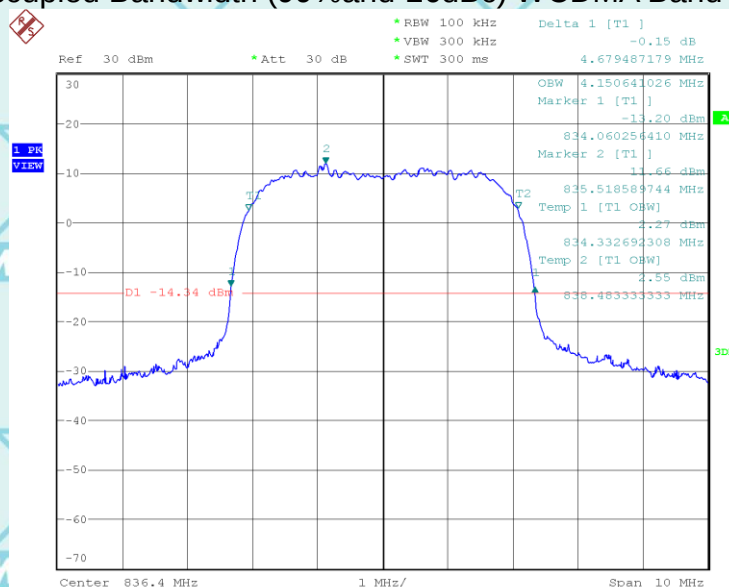
Occupied Bandwidth (99% and -26dBc) WCDMA Band 5 CH 4132



Date: 26.NOV.2024 09:49:23

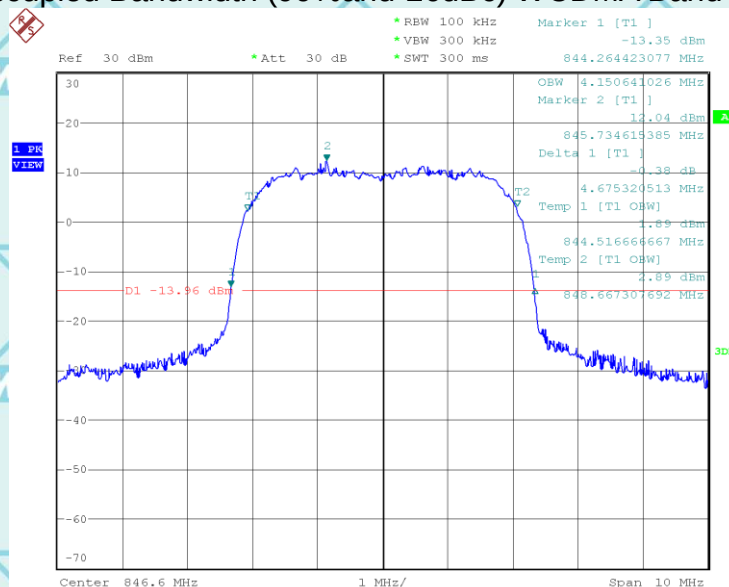
Report No.: WSCT-ANAB-R&E241100063A-RF

Occupied Bandwidth (99%and-26dBc) WCDMA Band 5 CH 4182



Date: 26.NOV.2024 09:45:40

Occupied Bandwidth (99%and-26dBc) WCDMA Band 5 CH 4233



Date: 26.NOV.2024 09:39:53

Note: Please refer to Annex (LTE Occupied Bandwidth) for more test data

10. BAND EDGE

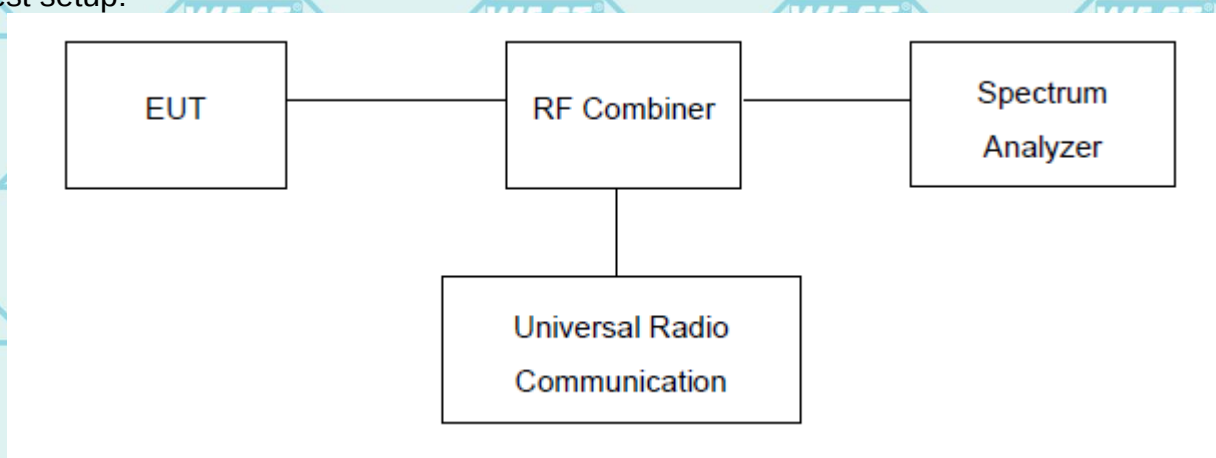
Test Limit:

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in §2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified. See section 4.

Test procedure:

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

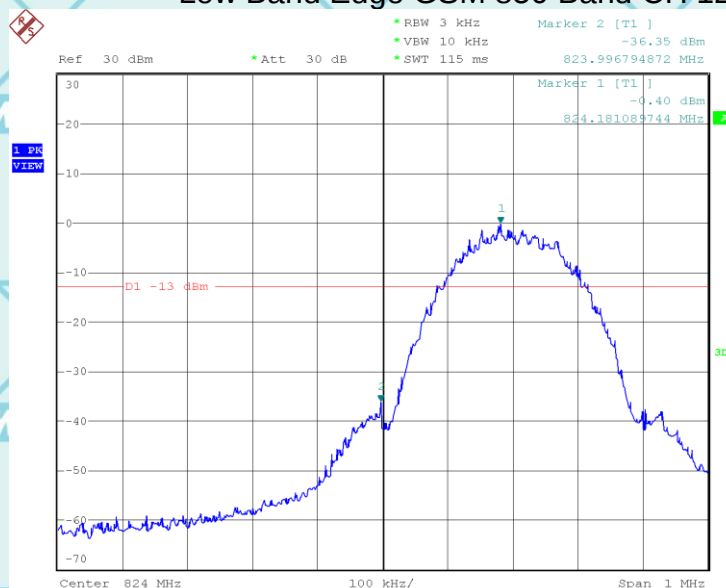
Test setup:



10.1. Measurement Result

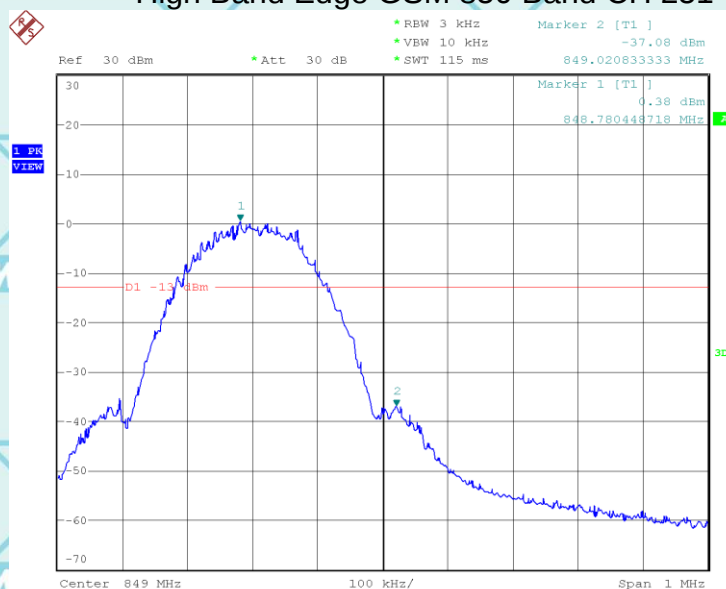
Test Plot(s)

Low Band Edge GSM 850 Band CH 128



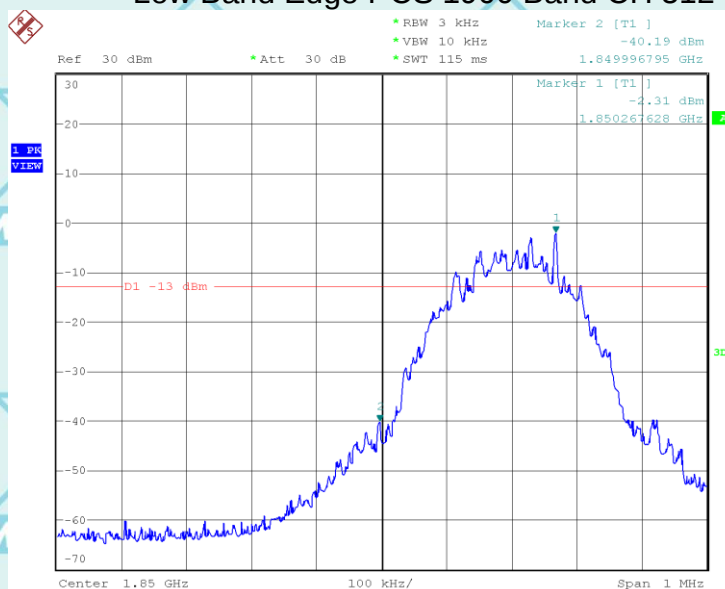
Date: 26.NOV.2024 13:39:45

High Band Edge GSM 850 Band CH 251



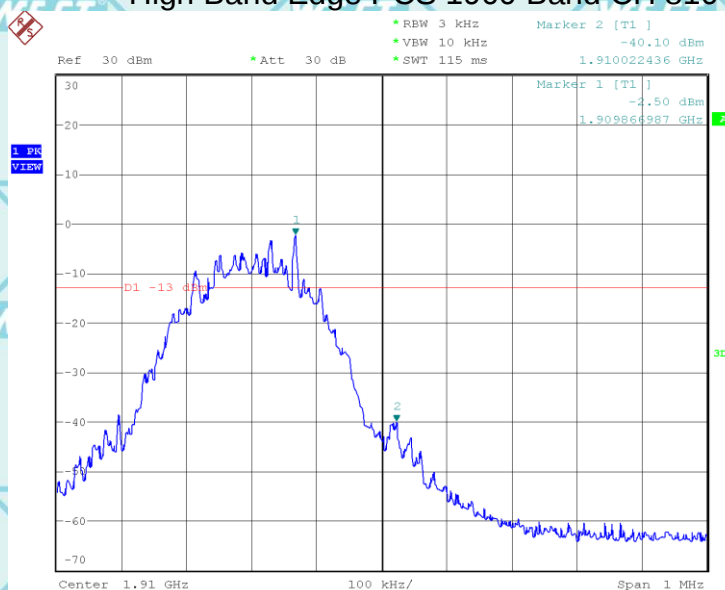
Date: 26.NOV.2024 13:56:07

Low Band Edge PCS 1900 Band CH 512



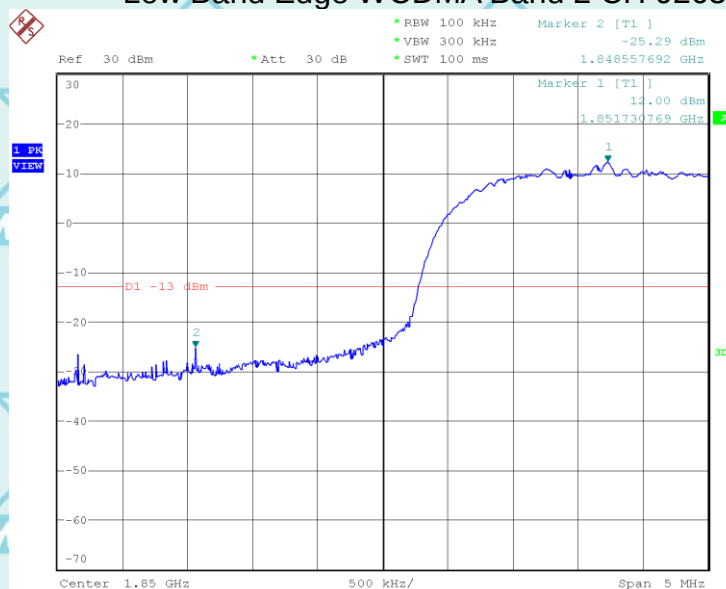
Date: 26.NOV.2024 14:44:47

High Band Edge PCS 1900 Band CH 810



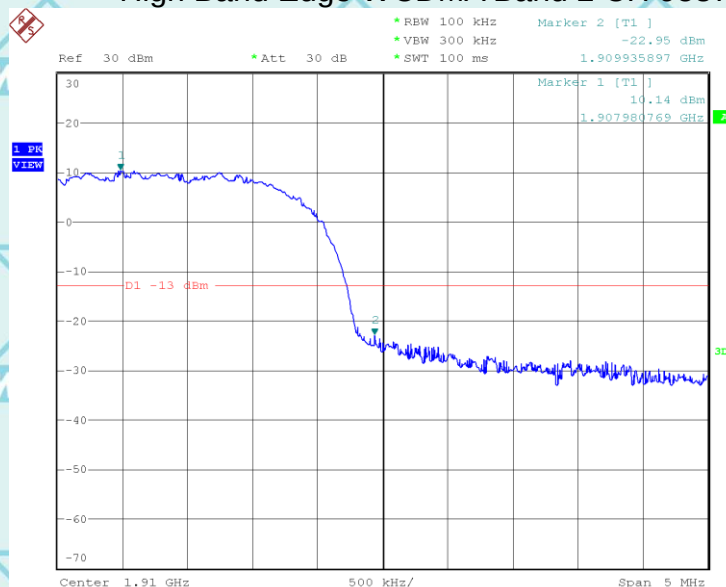
Date: 26.NOV.2024 14:46:55

Low Band Edge WCDMA Band 2 CH 9263



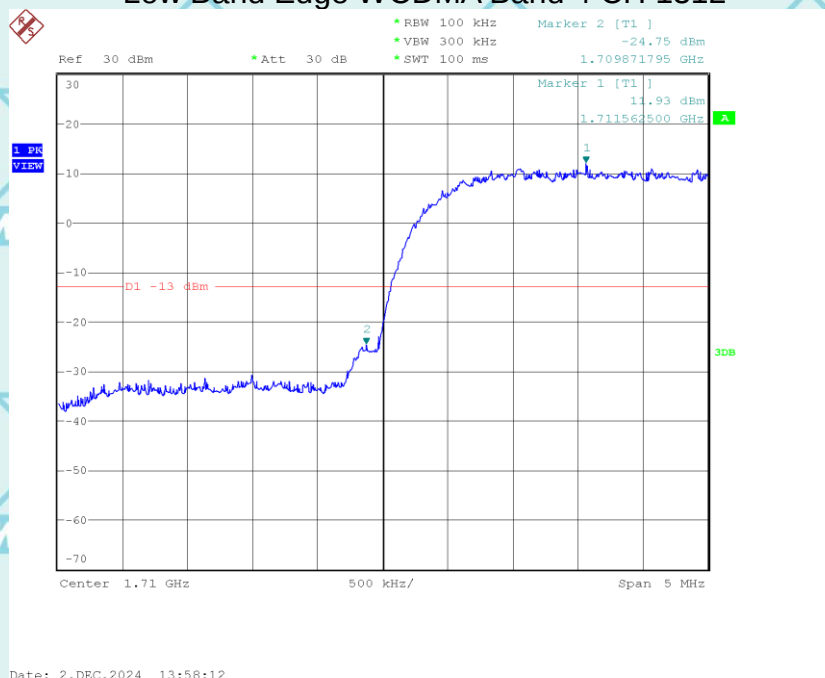
Date: 26.NOV.2024 10:51:52

High Band Edge WCDMA Band 2 CH 9537

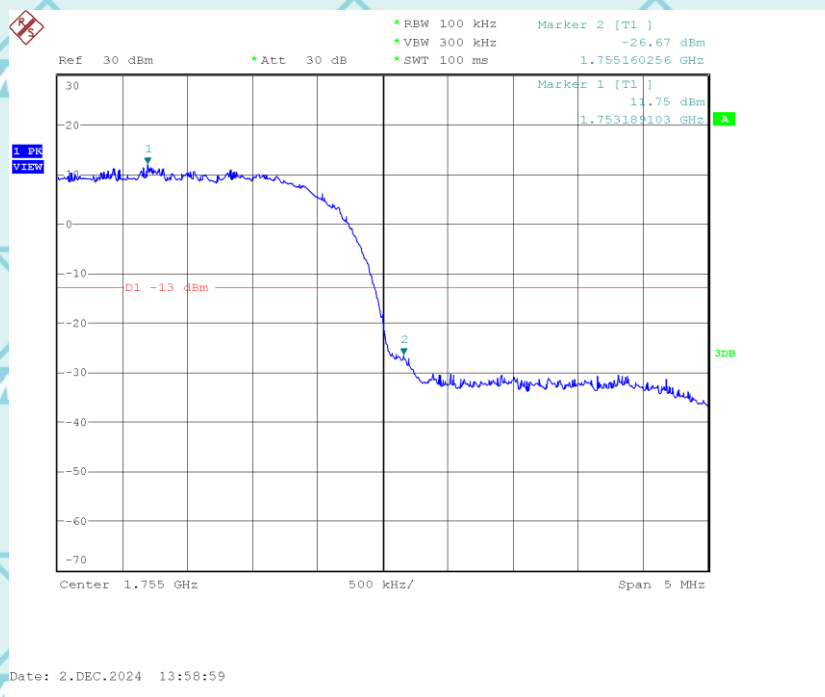


Date: 26.NOV.2024 10:54:28

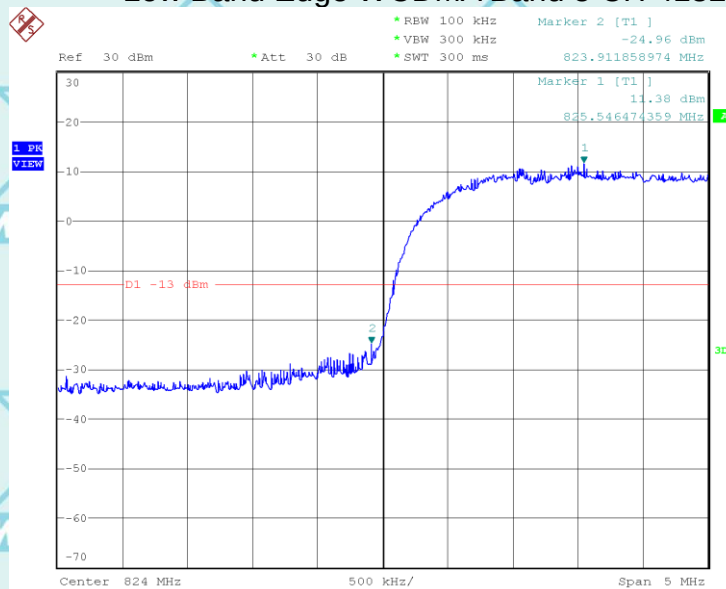
Low Band Edge WCDMA Band 4 CH 1312



Low Band Edge WCDMA Band 4 CH 1513

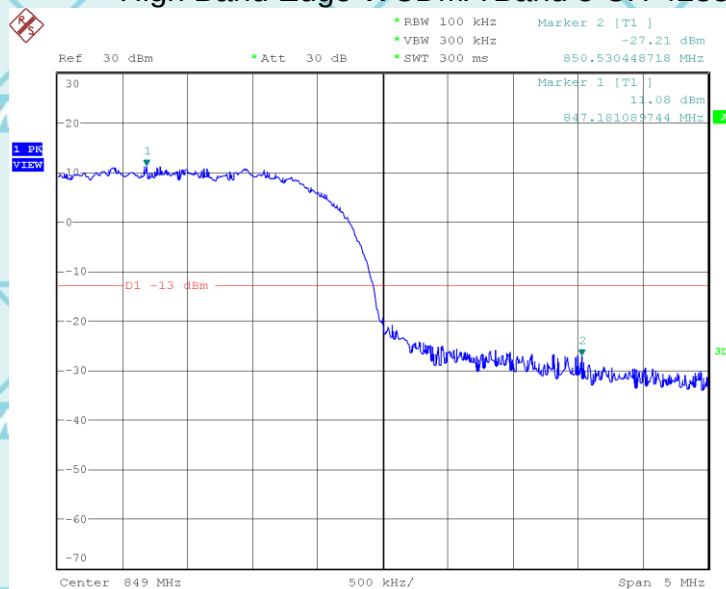


Low Band Edge WCDMA Band 5 CH 4132



Date: 26.NOV.2024 09:33:10

High Band Edge WCDMA Band 5 CH 4233



Date: 26.NOV.2024 09:36:32

Note: Please refer to Annex (LTE Band Edge) for more test data

11. SPURIOUS EMISSION (Conducted and Radiated)

11.1. Measurement Result (Pre-measurement)

GSM850:

Test Channel	BW(MHz)	UL Channel	Frequency(MHz)	Judgment
Low Range	0.2	128	824.3	Pass
Middle Range	0.2	190	836.7	Pass
High Range	0.2	251	848.9	Pass

PCS 1900 :

Test Channel	BW(MHz)	UL Channel	Frequency(MHz)	Judgment
Low Range	0.2	512	1850.3	Pass
Middle Range	0.2	661	1880.1	Pass
High Range	0.2	810	1909.9	Pass

UTRA BANDS

Band 2:

Test Channel	BW(MHz)	UL Channel	Frequency(MHz)	Judgment
Low Range	5	9262	1851.5	Pass
Middle Range	5	9400	1879.1	Pass
High Range	5	9538	1906.6	Pass

Band 4:

Test Channel	BW(MHz)	UL Channel	Frequency(MHz)	Judgment
Low Range	5	1312	1711.5	Pass
Middle Range	5	1413	1731.7	Pass
High Range	5	1513	1751.7	Pass

Band 5:

Test Channel	BW(MHz)	UL Channel	Frequency(MHz)	Judgment
Low Range	5	4132	825.5	Pass
Middle Range	5	4182	835.5	Pass
High Range	5	4233	845.7	Pass

Report No.: WSCT-ANAB-R&E241100063A-RF

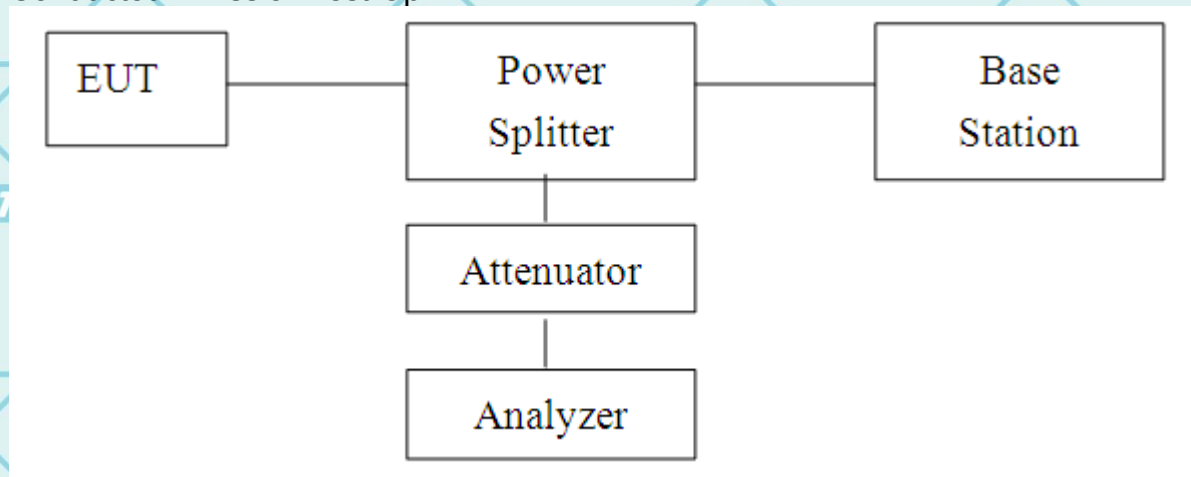
Test Plot(s)**Conducted method****Test limit:**

The spurious (unwanted) emission limits specified in the individual FCC rule parts applicable to licensed digital transmitters (typically referred to under the heading 'emission limits') normally apply to any and all emissions that are present outside of the authorized frequency band/block and apply to emissions in both the out-of-band and spurious domains. In some rule parts, the unwanted emission limits are specified by an emission mask that defines the applicable limit as a function of the frequency range relative to the authorized frequency block.

Typically, unwanted emissions are required by the licensed rule parts to be attenuated below the transmitter power by a factor of at least $X + 10\log(P)$ dB, where P represents the transmitter power expressed in watts and X is a specified scalar value (e.g., 43). This specification can be interpreted in one of two equivalent ways. First, the required attenuation can be construed to be relative to the mean carrier power, with the resultant of the equation $X + 10\log(P)$ being expressed in dBc (dB relative to the maximum carrier power). Alternatively, the specification can be interpreted as an absolute limit when the specified attenuation is actually subtracted from the maximum permissible transmitter power [i.e., $10\log(P) - \{X + 10\log(P)\}$], resulting in an absolute level of $-X$ dBW [or $(-X + 30)$ dBm]. See section 4.

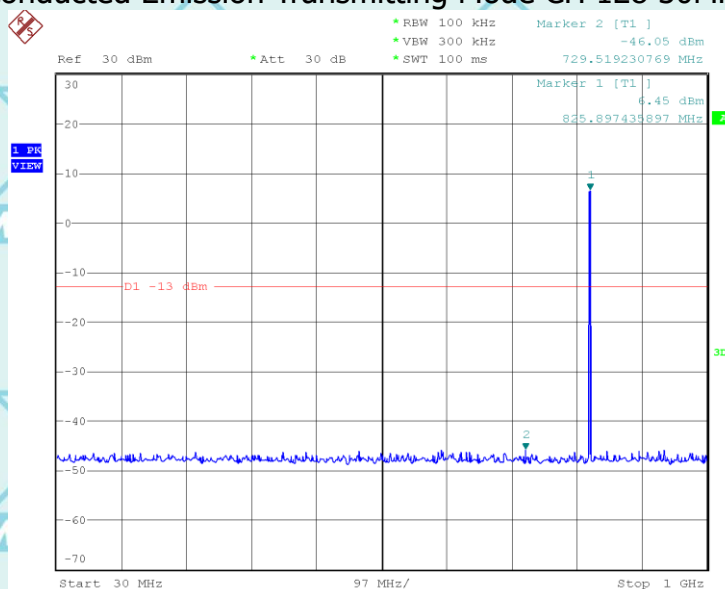
Test procedure:

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz below 1 GHz and 1 MHz above 1 GHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonics.

Conducted Emission Test-Up:

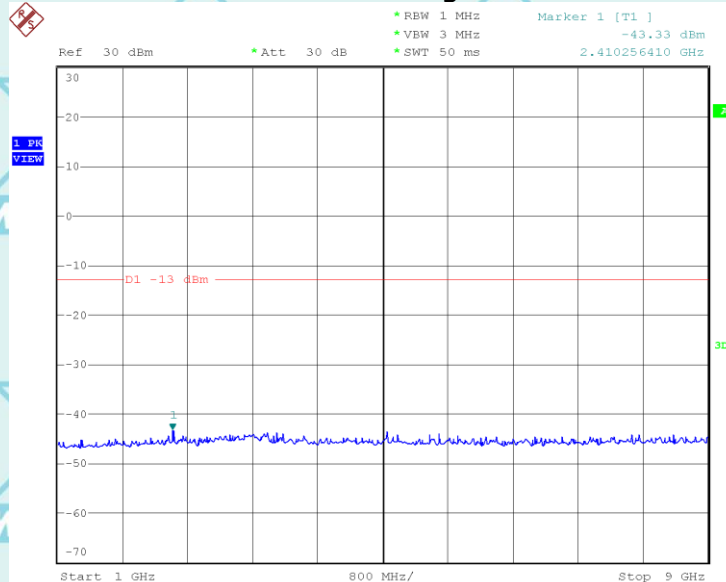
Report No.: WSCT-ANAB-R&E241100063A-RF

CONDUCTED EMISSION IN GSM850 Band Conducted Emission Transmitting Mode CH 128 30MHz – 1GHz



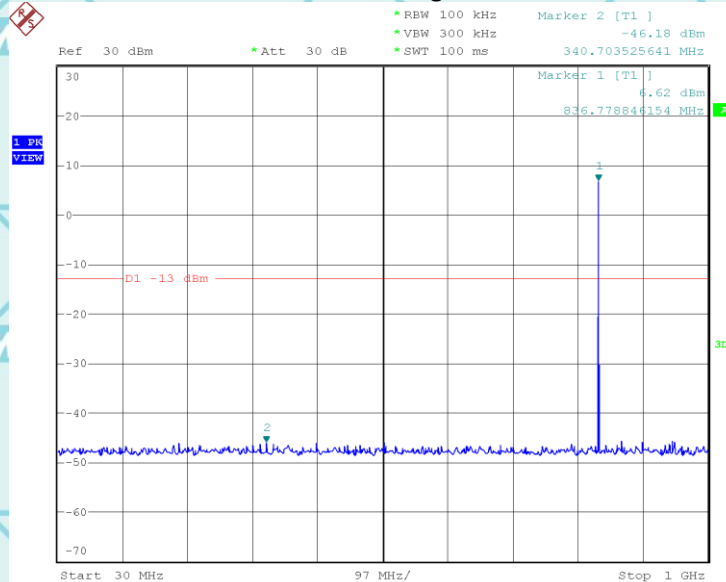
Date: 26.NOV.2024 14:10:17

Conducted Emission Transmitting Mode CH 128 1GHz – 9GHz



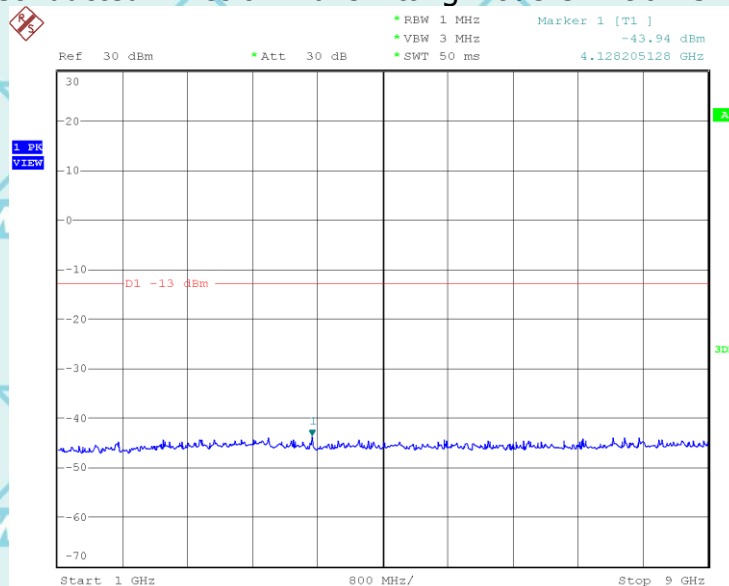
Date: 26.NOV.2024 14:12:13

Conducted Emission Transmitting Mode CH 190 30MHz – 1GHz



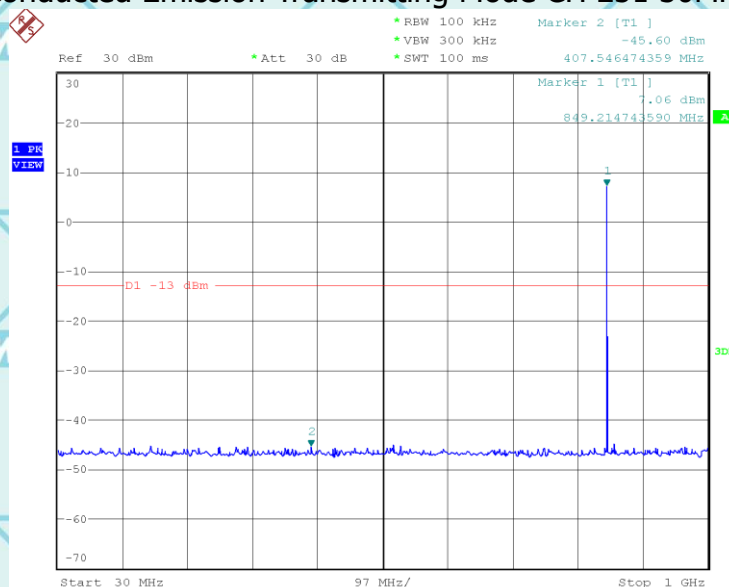
Date: 26.NOV.2024 14:09:15

Conducted Emission Transmitting Mode CH 190 1GHz – 9GHz



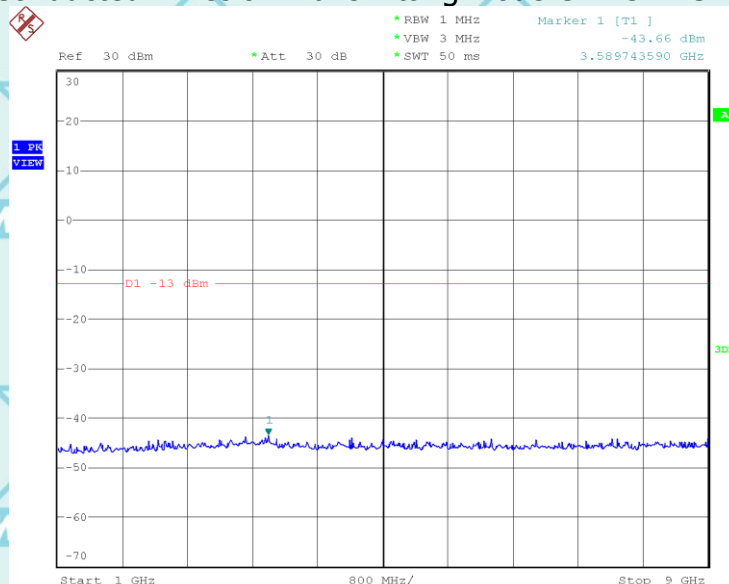
Date: 26.NOV.2024 14:13:00

Conducted Emission Transmitting Mode CH 251 30MHz – 1GHz



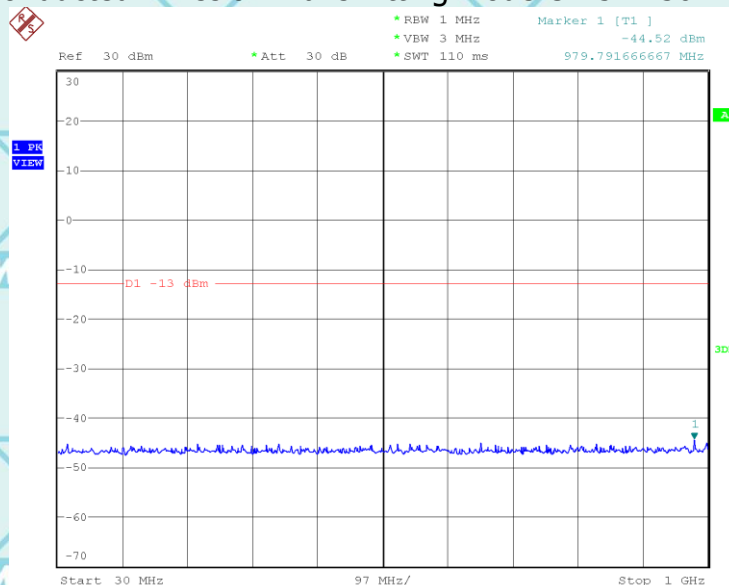
Date: 26.NOV.2024 14:08:15

Conducted Emission Transmitting Mode CH 251 1GHz – 9GHz



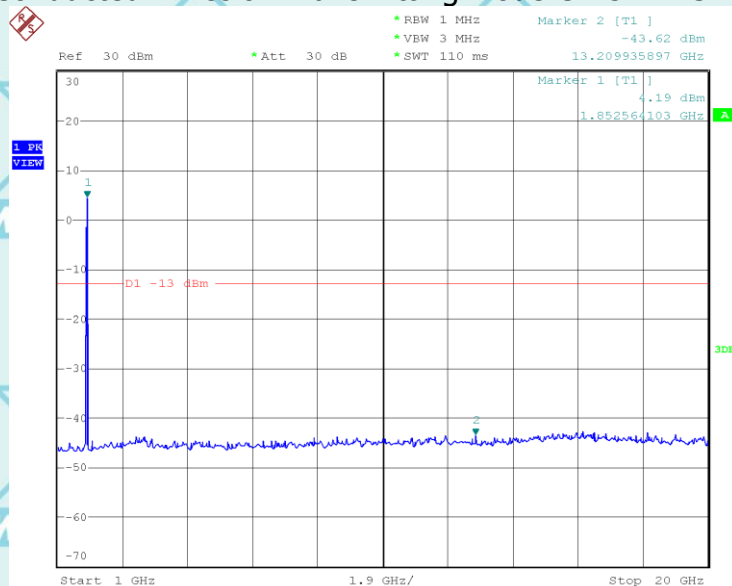
Date: 26.NOV.2024 14:13:47

CONDUCTED EMISSION IN PCS1900 BAND Conducted Emission Transmitting Mode CH 512 30MHz – 1GHz



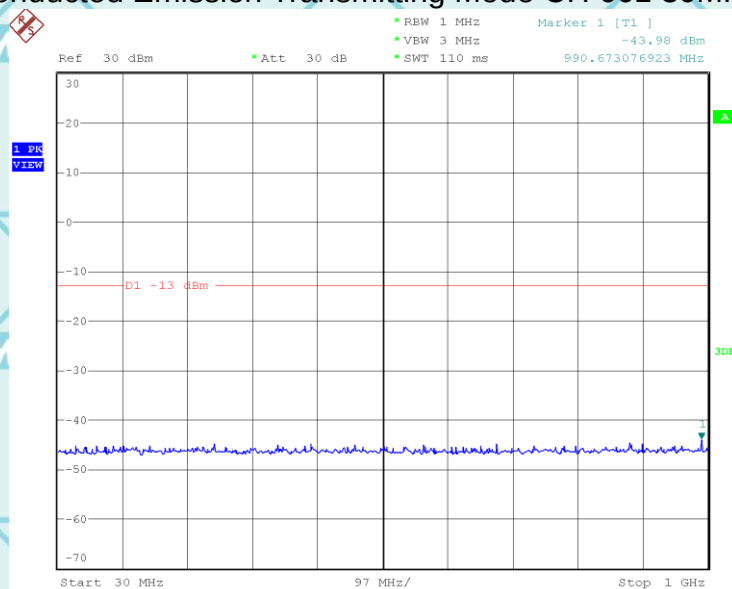
Date: 26.NOV.2024 14:52:14

Conducted Emission Transmitting Mode CH 512 1GHz – 9GHz



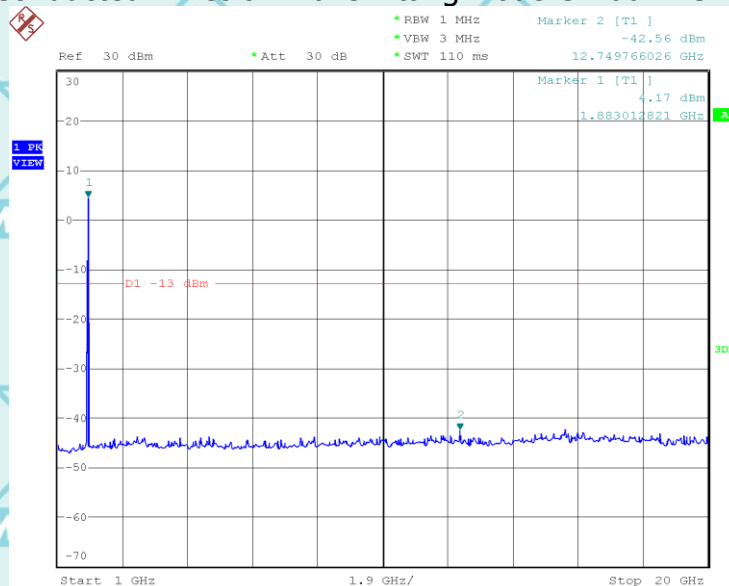
Date: 26.NOV.2024 14:51:28

Conducted Emission Transmitting Mode CH 661 30MHz – 1GHz



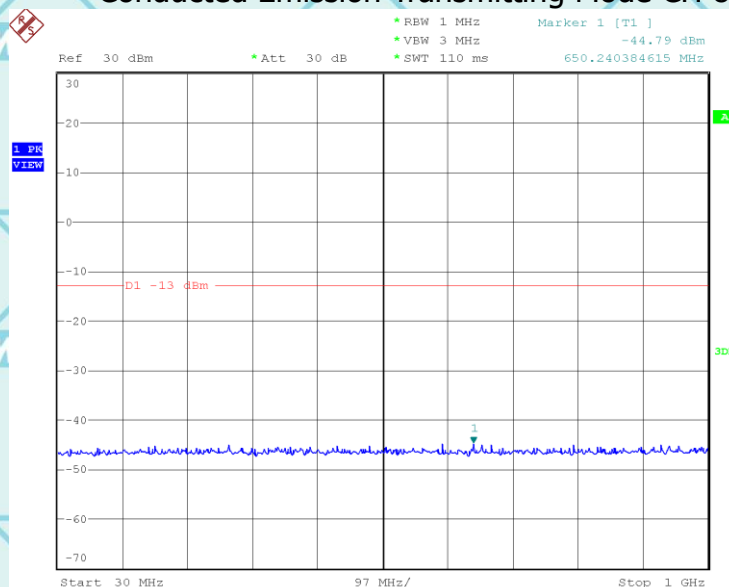
Date: 26.NOV.2024 14:53:16

Conducted Emission Transmitting Mode CH 661 1GHz – 9GHz



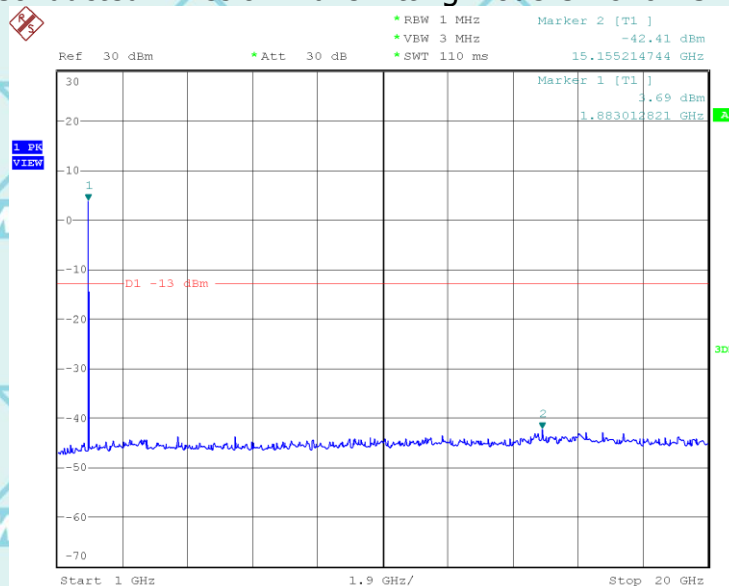
Date: 26.NOV.2024 14:50:24

Conducted Emission Transmitting Mode CH 810 30MHz – 1GHz



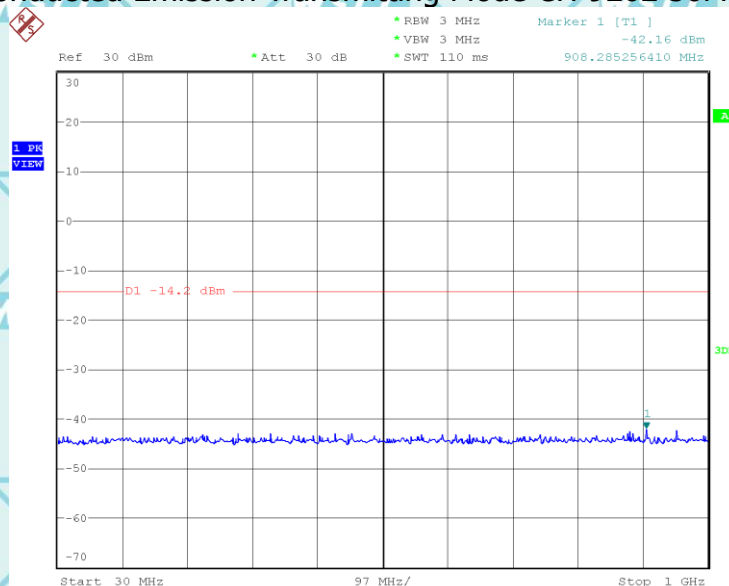
Date: 26.NOV.2024 14:53:58

Conducted Emission Transmitting Mode CH 810 1GHz – 9GHz



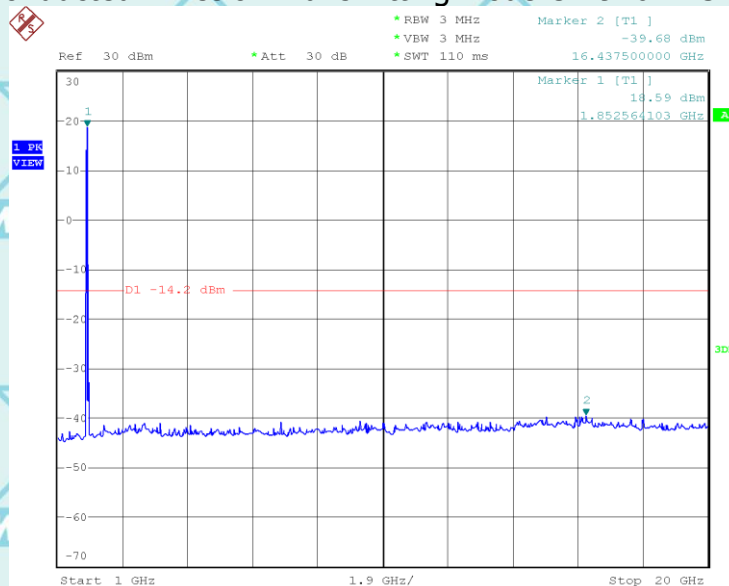
Date: 26.NOV.2024 14:49:30

CONDUCTED EMISSION IN WCDMA Band 2 Conducted Emission Transmitting Mode CH 9262 30MHz – 1GHz



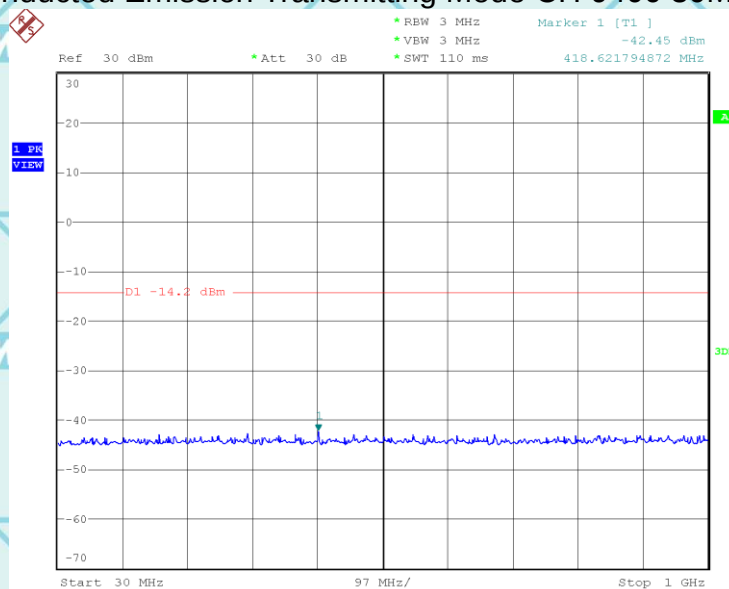
Date: 26.NOV.2024 11:06:14

Conducted Emission Transmitting Mode CH 9262 1GHz – 9GHz



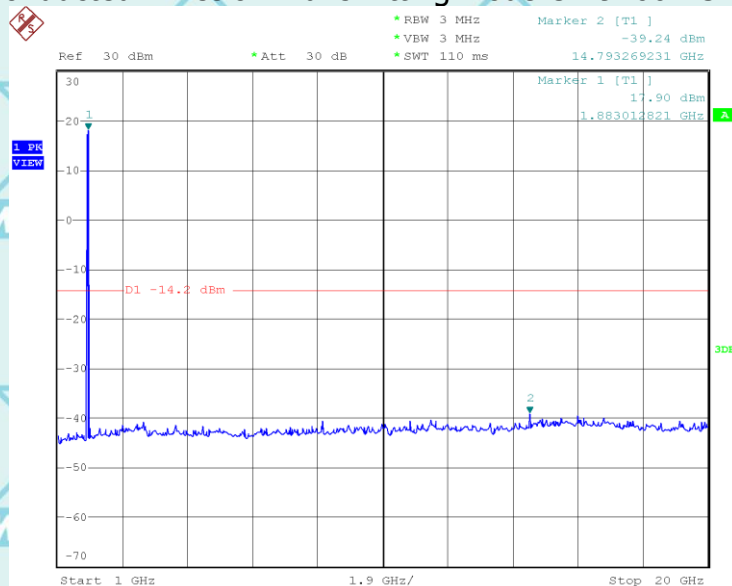
Date: 26.NOV.2024 11:03:29

Conducted Emission Transmitting Mode CH 9400 30MHz – 1GHz



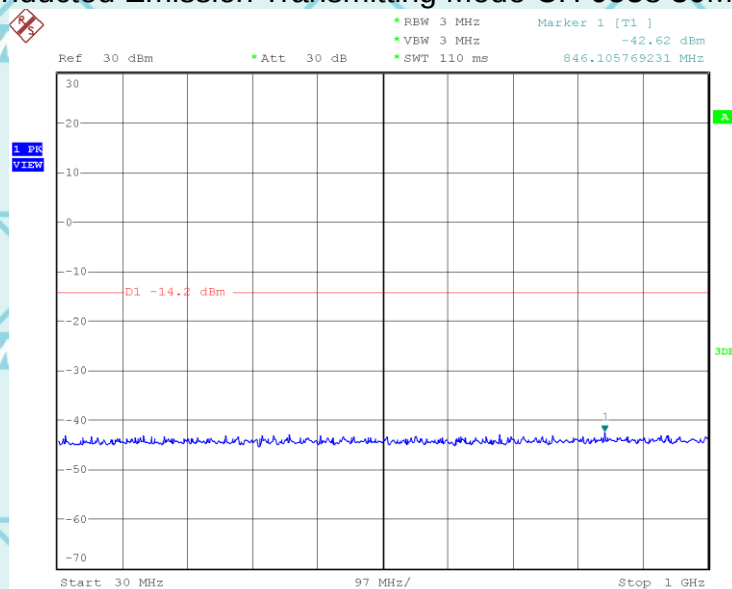
Date: 26.NOV.2024 11:05:49

Conducted Emission Transmitting Mode CH 9400 1GHz – 9GHz



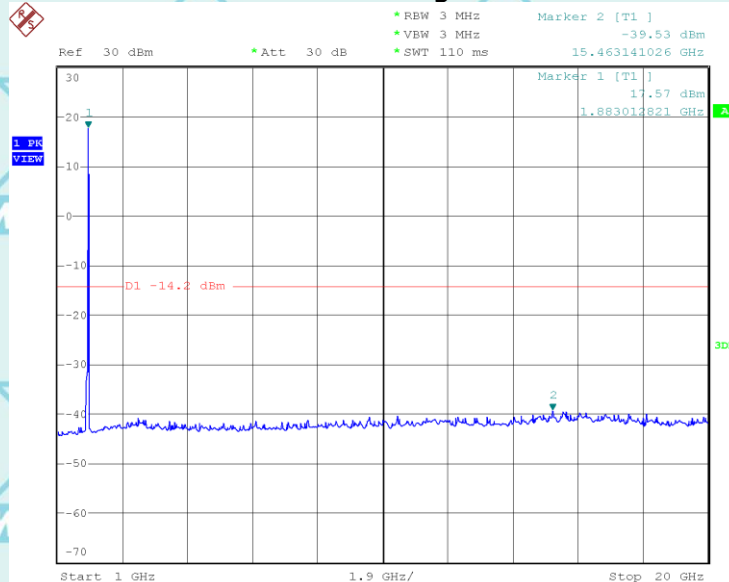
Date: 26.NOV.2024 11:04:02

Conducted Emission Transmitting Mode CH 9538 30MHz – 1GHz



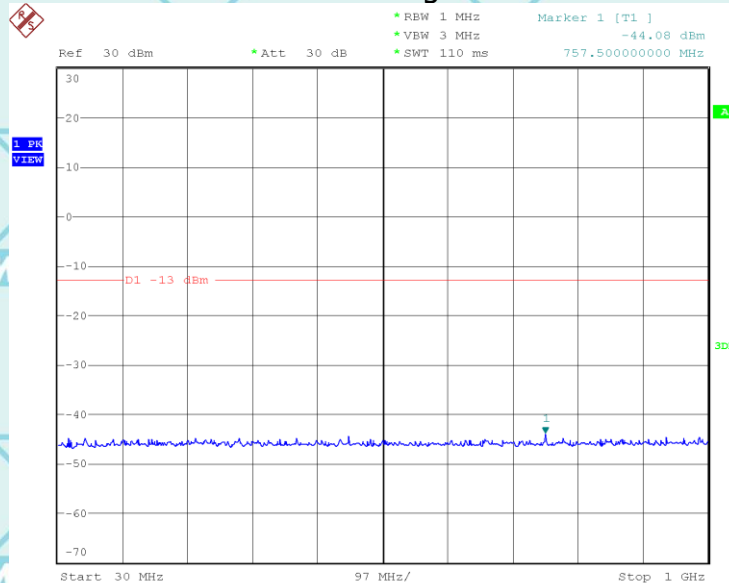
Date: 26.NOV.2024 11:05:24

Conducted Emission Transmitting Mode CH 9538 1GHz – 9GHz



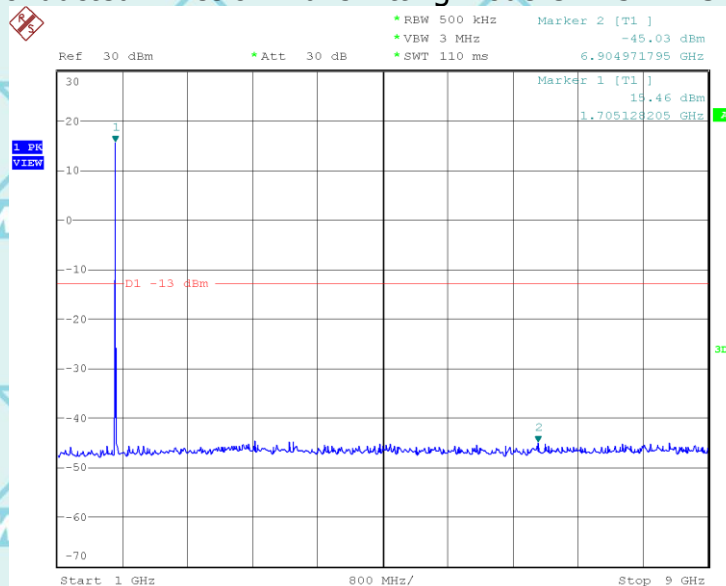
Date: 26.NOV.2024 11:04:50

CONDUCTED EMISSION IN WCDMA Band 4 Conducted Emission Transmitting Mode CH 1312 30MHz – 1GHz



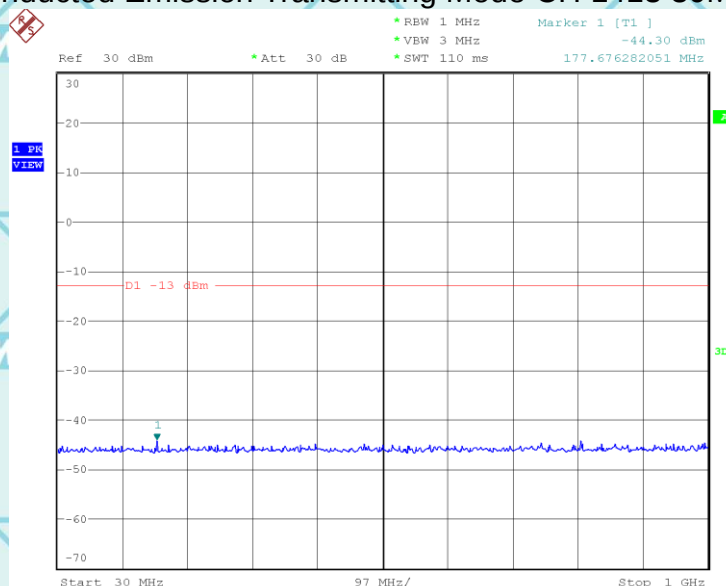
Date: 2.DEC.2024 14:19:09

Conducted Emission Transmitting Mode CH 1312 1GHz – 9GHz



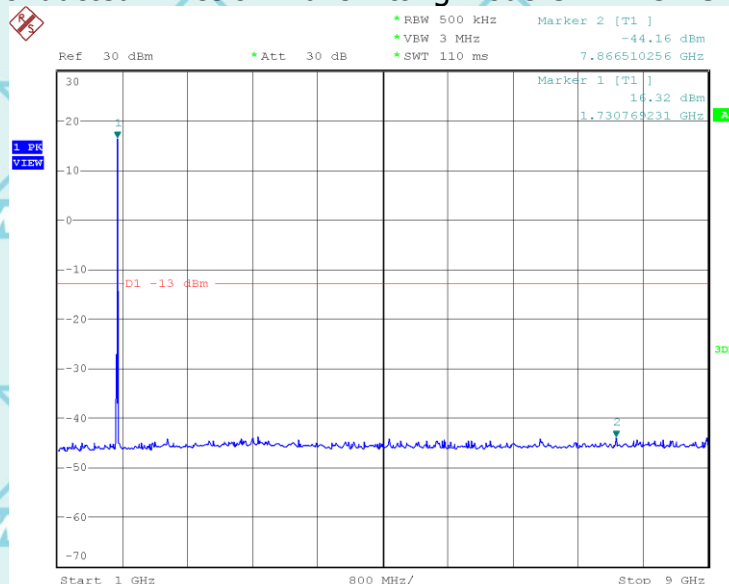
Date: 2.DEC.2024 14:06:45

Conducted Emission Transmitting Mode CH 1413 30MHz – 1GHz



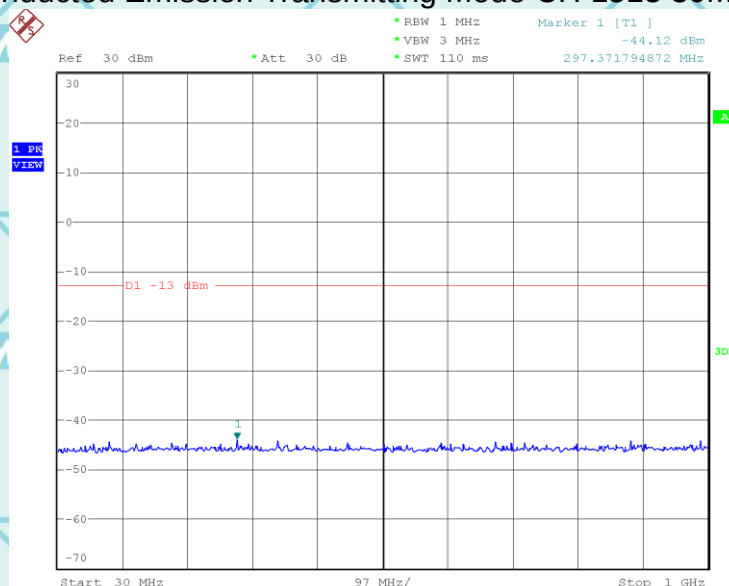
Date: 2.DEC.2024 14:17:13

Conducted Emission Transmitting Mode CH 1413 1GHz – 9GHz



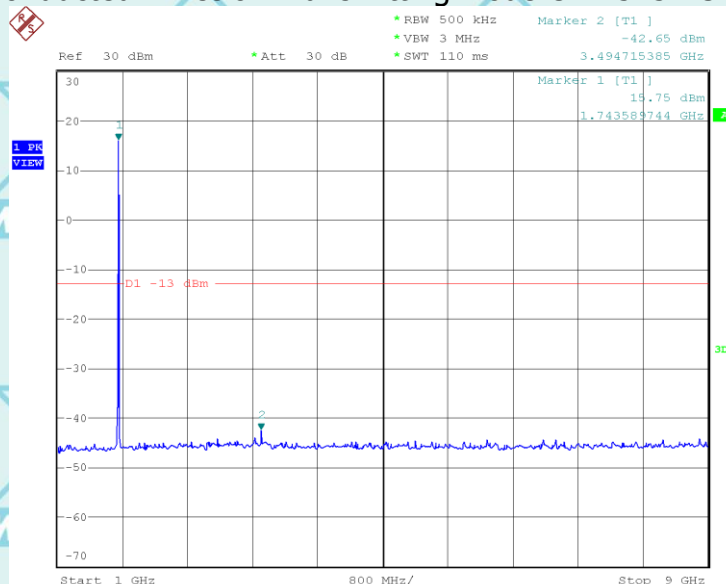
Date: 2.DEC.2024 14:09:51

Conducted Emission Transmitting Mode CH 1513 30MHz – 1GHz



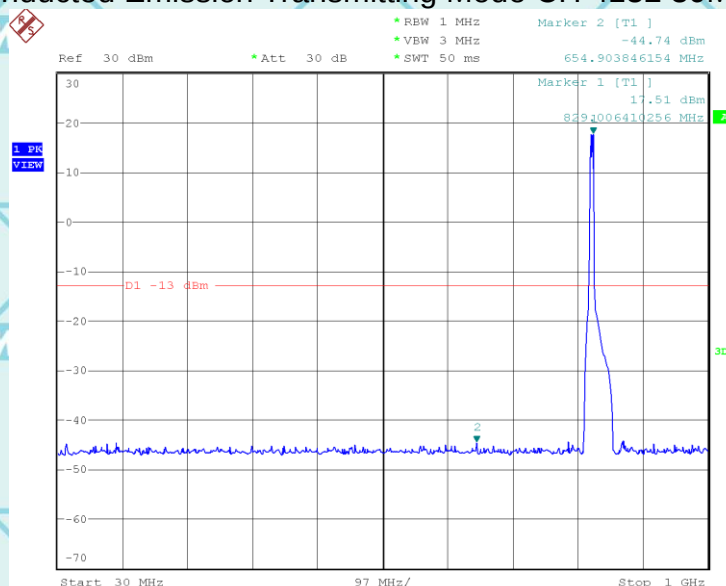
Date: 2.DEC.2024 14:15:15

Conducted Emission Transmitting Mode CH 1513 1GHz – 9GHz



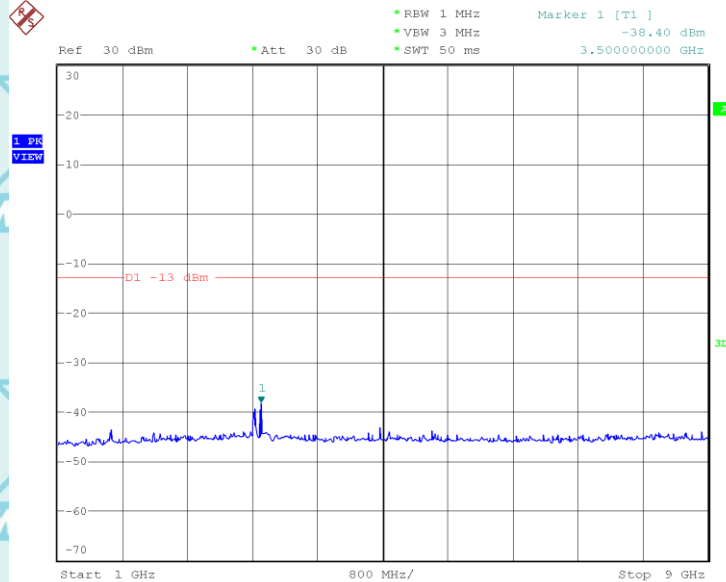
Date: 2.DEC.2024 14:12:05

CONDUCTED EMISSION IN WCDMA Band 5 Conducted Emission Transmitting Mode CH 4132 30MHz – 1GHz



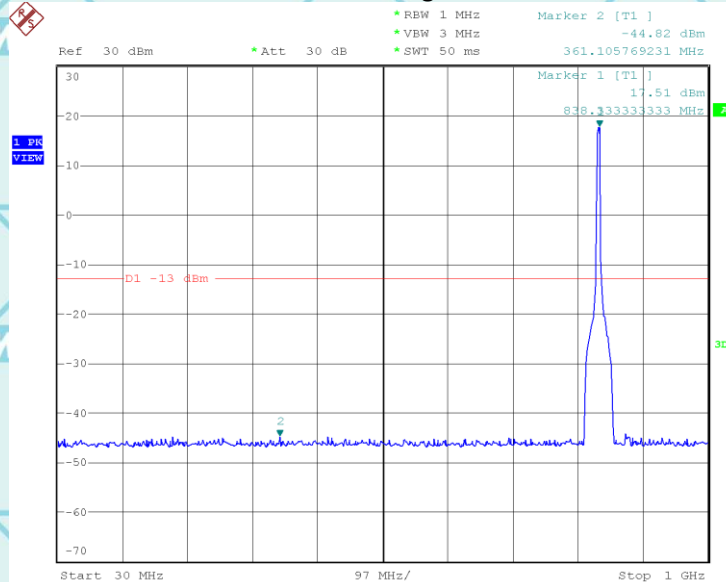
Date: 26.NOV.2024 10:14:00

Conducted Emission Transmitting Mode CH 4132 1GHz – 9GHz



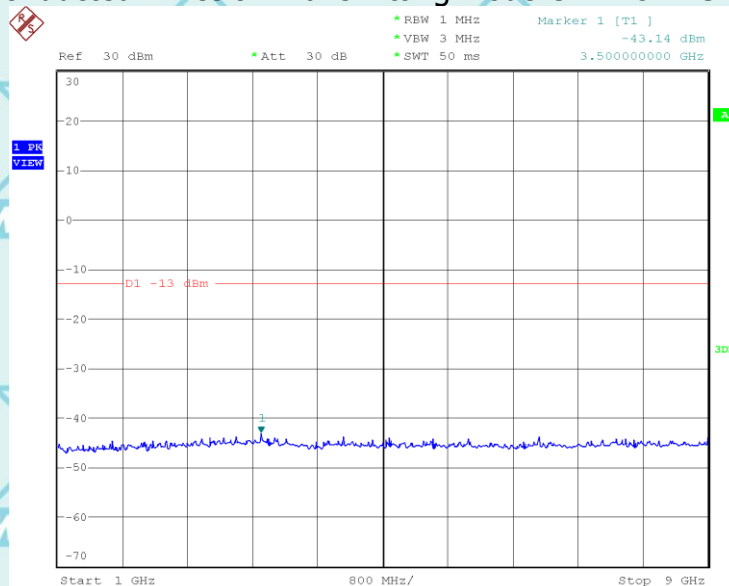
Date: 26.NOV.2024 10:01:38

Conducted Emission Transmitting Mode CH 4182 30MHz – 1GHz



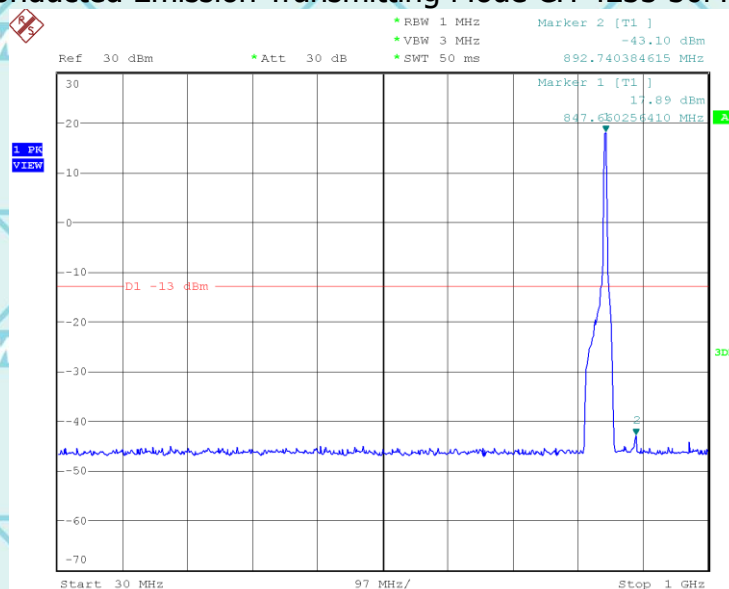
Date: 26.NOV.2024 10:12:14

Conducted Emission Transmitting Mode CH 4182 1GHz – 9GHz



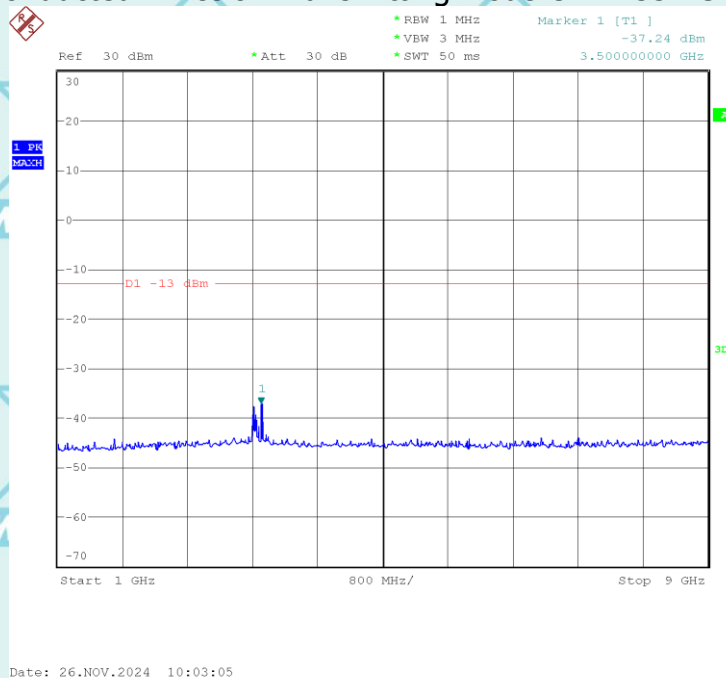
Date: 26.NOV.2024 09:58:00

Conducted Emission Transmitting Mode CH 4233 30MHz – 1GHz



Date: 26.NOV.2024 10:08:01

Conducted Emission Transmitting Mode CH 4233 1GHz – 9GHz



Note: Please refer to Annex (LTE Out-of-band emissions) for more test data

Report No.: WSCT-ANAB-R&E241100063A-RF

12. FREQUENCY STABILITY

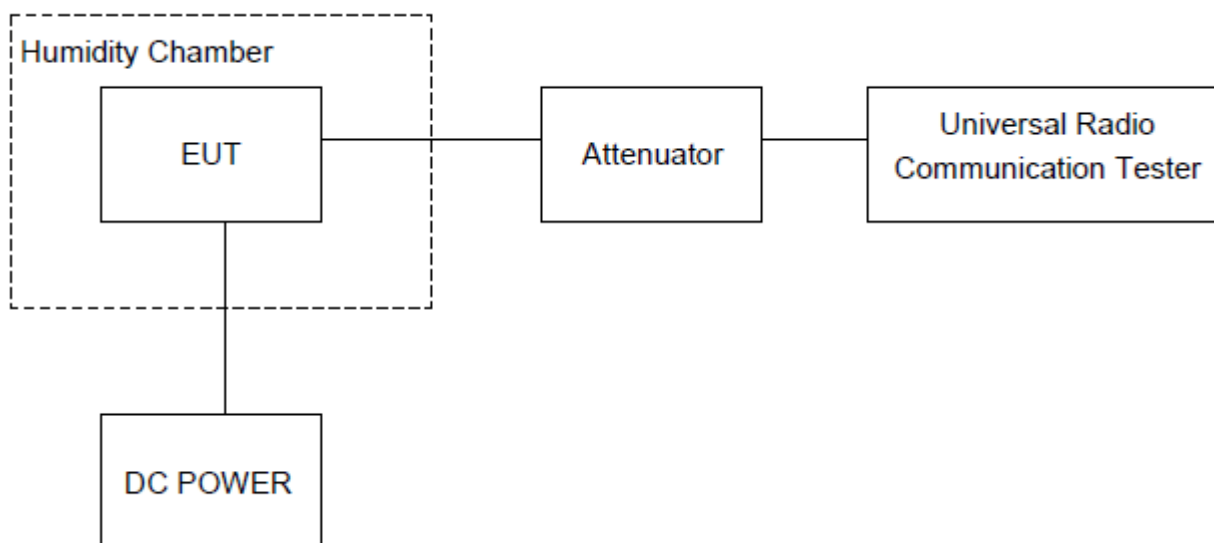
Test limit:

The frequency stability of the transmitter shall be measured while varying the ambient temperatures and supply voltages over the ranges specified in §2.1055. The specific frequency stability limits are provided in the relevant rules section(s). see section 4.

Test procedure:

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

Test setup:



12.1. Measurement Result (Worst)

Frequency Error against Voltage for GSM 850 band (836.6MHz)

Voltage(V)	Frequency error(Hz)	Frequency error (ppm)
3.45	29	0.035
3.91	41	0.049
4.50	32	0.038

Frequency Error against Temperature for GSM 850 band (836.6MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-20	38	0.046
0	30	0.036
10	37	0.044
20	39	0.046
30	38	0.046
40	30	0.036
55	41	0.049

Frequency Error against Voltage for PCS 1900 band (1880MHz)

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.45	41	0.022
3.91	34	0.018
4.50	34	0.018

Frequency Error against Temperature for PCS 1900 band (1880MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	34	0.018
0	39	0.021
10	38	0.020
20	29	0.016
30	38	0.020
40	41	0.022
55	34	0.018

Frequency Error against Voltage for GPRS 850 band (836.6MHz)

Voltage(V)	Frequency error(Hz)	Frequency error (ppm)
3.45	31	0.037
3.91	36	0.044
4.50	33	0.040

Frequency Error against Temperature for GPRS 850 band (836.6MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	30	0.036
0	40	0.047
10	33	0.039
20	39	0.047
30	38	0.045
40	38	0.045
55	31	0.037

Frequency Error against Voltage for GPRS 1900 band (1880MHz)

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.45	32	0.017
3.91	37	0.020
4.50	30	0.016

Frequency Error against Temperature for GPRS 1900 band (1880MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	38	0.020
0	37	0.020
10	32	0.017
20	38	0.020
30	34	0.018
40	33	0.018
55	32	0.017

Frequency Error against Voltage for EGPRS 850 band (836.6MHz)

Voltage(V)	Frequency error(Hz)	Frequency error (ppm)
3.45	32	0.038
3.91	33	0.039
4.50	33	0.040

Frequency Error against Temperature for EGPRS 850 band (836.6MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	39	0.047
0	40	0.048
10	36	0.042
20	28	0.034
30	36	0.043
40	35	0.042
55	40	0.048

Frequency Error against Voltage for EGPRS 1900 band (1880MHz)

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.45	31	0.016
3.91	29	0.016
4.50	36	0.019

Frequency Error against Temperature for EGPRS 1900 band (1880MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	37	0.020
0	37	0.020
10	36	0.019
20	40	0.021
30	39	0.021
40	30	0.016
55	40	0.021

UTRA BANDS

Frequency Error against Voltage for WCDMA Band 2 (1880MHz)

Voltage(V)	Frequency error(Hz)	Frequency error (ppm)
3.45	29	0.015
3.91	30	0.016
4.50	35	0.019

Frequency Error against Temperature for WCDMA Band 2 (1880MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	40	0.021
0	41	0.022
10	35	0.019
20	35	0.018
30	33	0.018
40	31	0.016
55	40	0.021

Frequency Error against Voltage for WCDMA Band 4 (1732.6MHz)

Voltage(V)	Frequency error(Hz)	Frequency error (ppm)
3.45	39	0.022
3.91	35	0.020
4.50	29	0.017

Frequency Error against Temperature for WCDMA Band 4 (1732.6MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	34	0.020
0	38	0.022
10	37	0.021
20	31	0.018
30	29	0.017
40	32	0.018
55	30	0.017

Frequency Error against Voltage for WCDMA Band 5 (836.4MHz)

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.45	29	0.035
3.91	40	0.048
4.50	32	0.039

Frequency Error against Temperature for WCDMA Band 5 (836.4MHz)

Temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-10	38	0.045
0	31	0.037
10	32	0.038
20	31	0.037
30	40	0.047
40	29	0.034
55	40	0.047

Note: Please refer to Annex (LTE Frequency Error against) for more test data

13. Test Setup Photographs

Please refer to Annex "Set Up Photos-RF" for test setup photos

---END OF REPORT---