

Band5-4132-5



Band5-4233-1



Band5-4233-2



Band5-4233-3



Band5-4233-4



Band5-4233-5



7.5. SPURIOUS EMISSION AT ANTENNA TERMINAL

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53, §90,
RSS-132, RSS-133, RSS-139

LIMITS

FCC: §22.901, §22.917, §24.238

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

FCC: §27.53(m)(Band 41)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log (P)$ dB.

TEST PROCEDURE

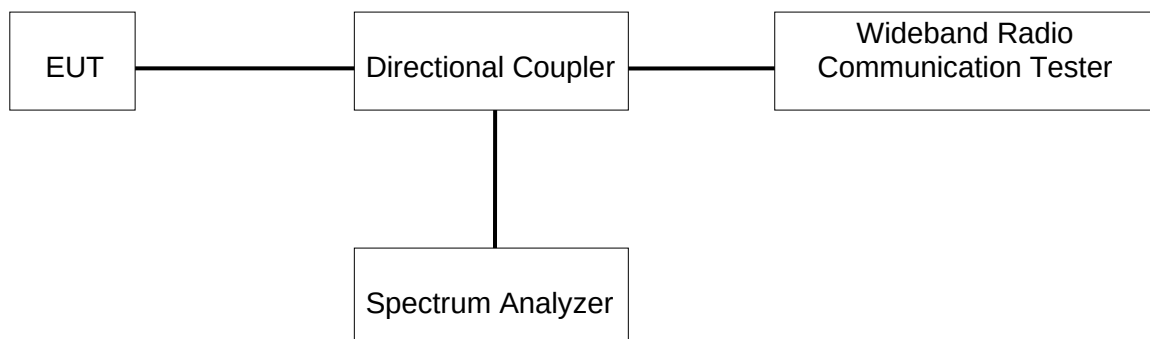
Per KDB 971168 D01 Power Meas License Digital Systems v03r01

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

- a) Set the RBW = 100 kHz for emission below 1GHz and 1MHz for emissions above 1GHz (Tests were performed 1 MHz [Worst case], to sweep 1 time for all frequency range)
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points = Max (40001);
- g) Trace mode = average (LTE 5), Maxhold (LTE Band7);

Note: Please refer to section 5.4 for bandwidth and RB setting about LTE bands.

TEST SETUP





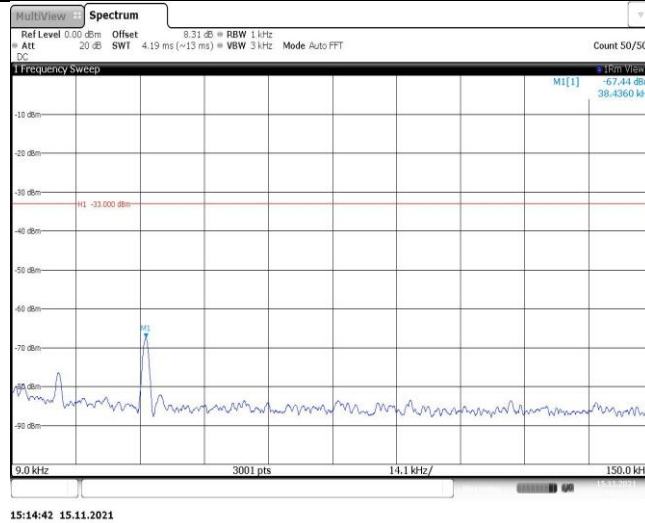
TEST ENVIRONMENT

Temperature	22.4°C	Relative Humidity	56.8%
Atmosphere Pressure	101kPa	Test Voltage	/

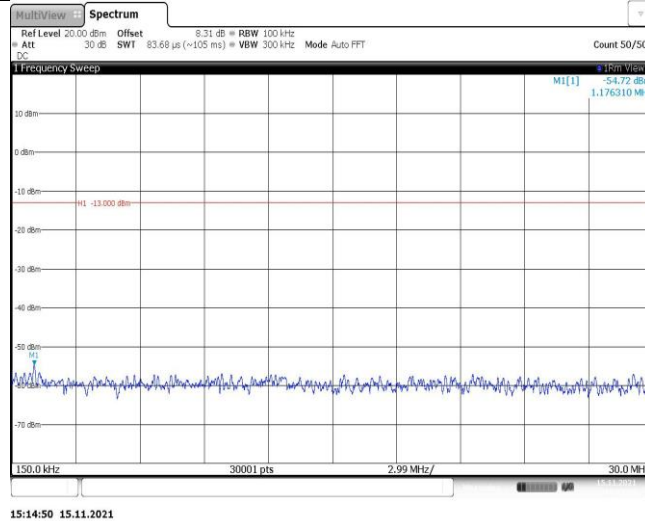
RESULTS

GSM850

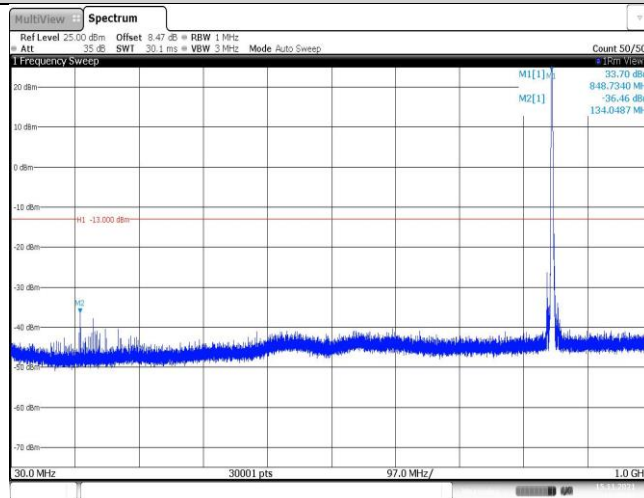
GPRS850-128-3-0.009~0.15MHz



GPRS850-128-3-0.15~30MHz

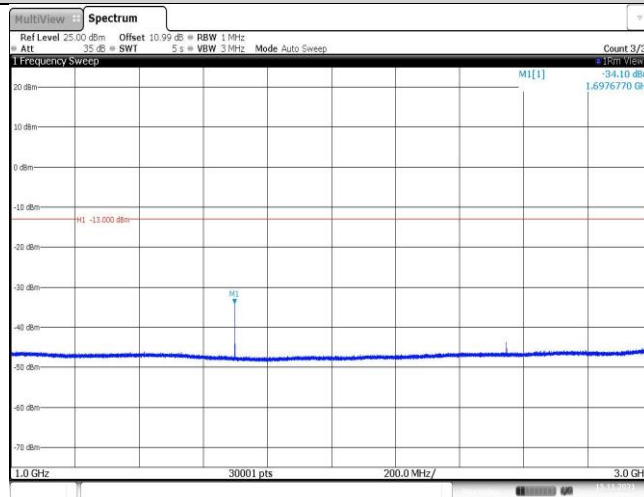


GPRS850-128-3-30~1000MHz



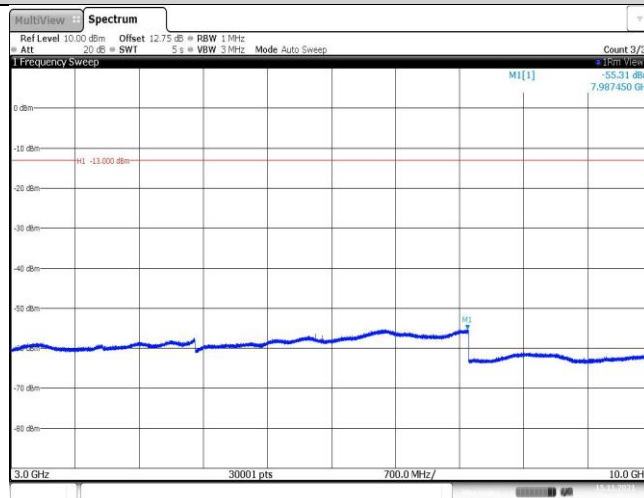
15:15:00 15.11.2021

GPRS850-128-3-1000~3000MHz



15:15:22 15.11.2021

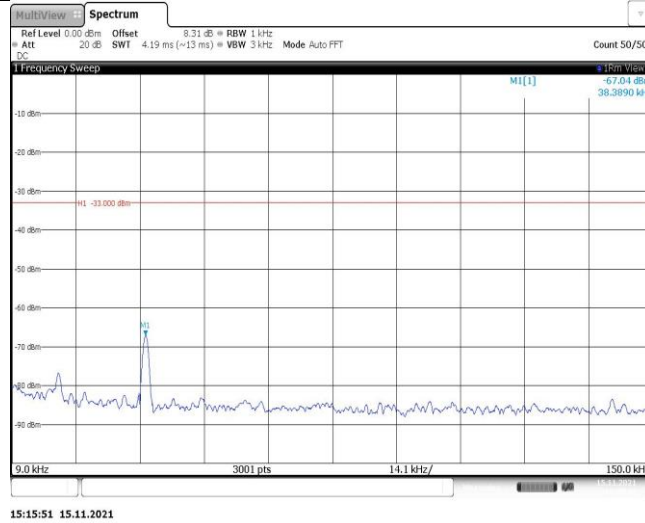
GPRS850-128-3-3000~10000MHz



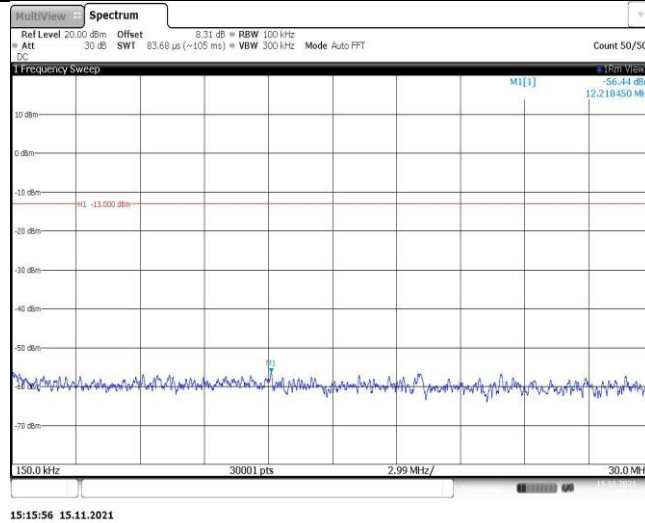
15:15:44 15.11.2021



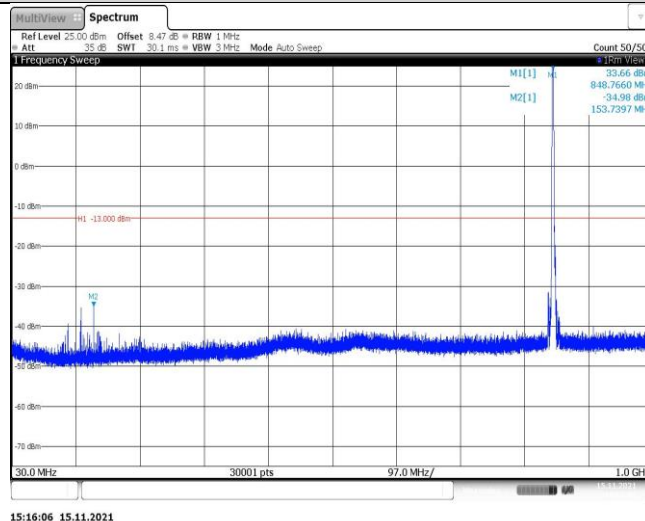
GPRS850-190-3-0.009~0.15MHz



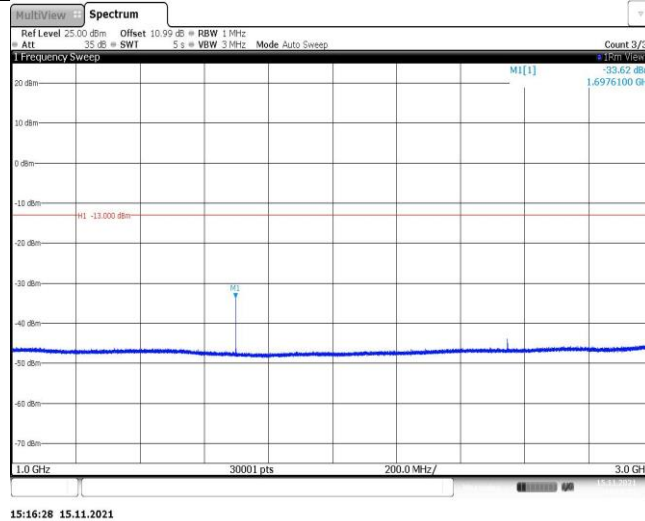
GPRS850-190-3-0.15~30MHz



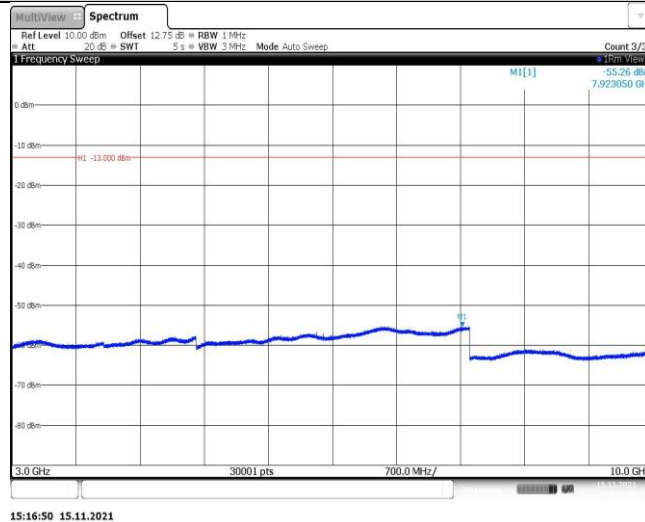
GPRS850-190-3-30~1000MHz



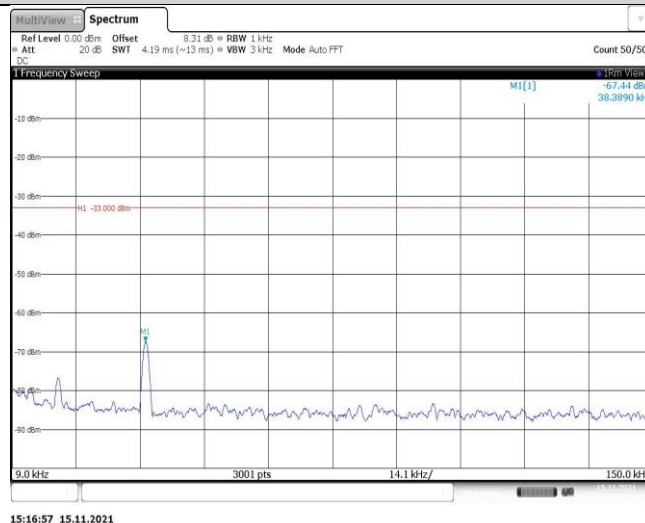
GPRS850-190-3-1000~3000MHz



GPRS850-190-3-3000~10000MHz

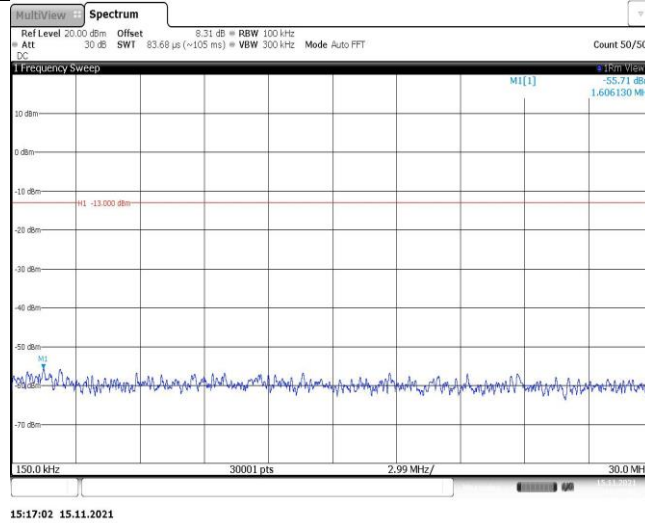


GPRS850-251-3-0.009~0.15MHz

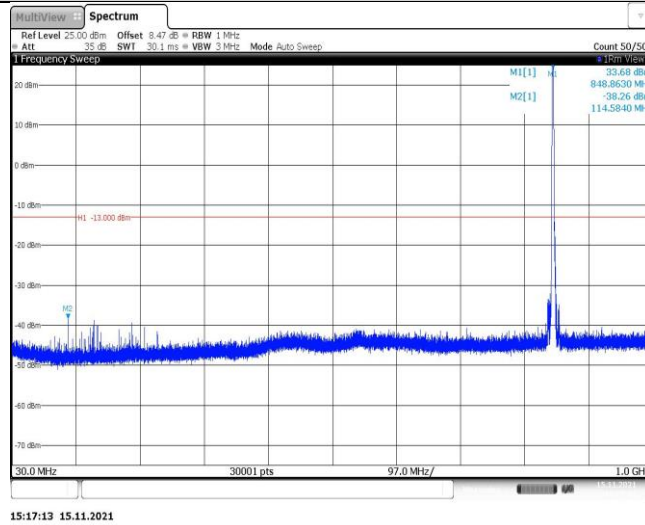




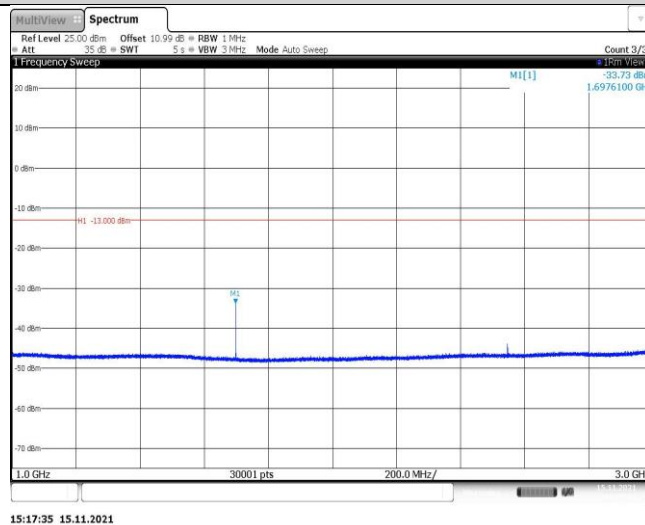
GPRS850-251-3-0.15~30MHz



GPRS850-251-3-30~1000MHz

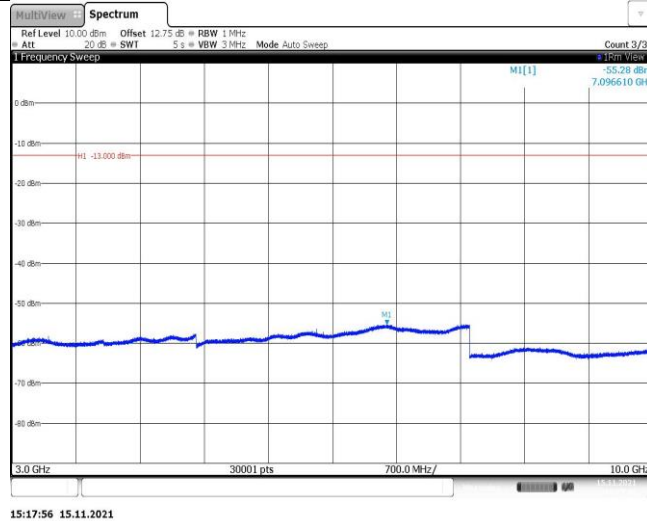


GPRS850-251-3-1000~3000MHz

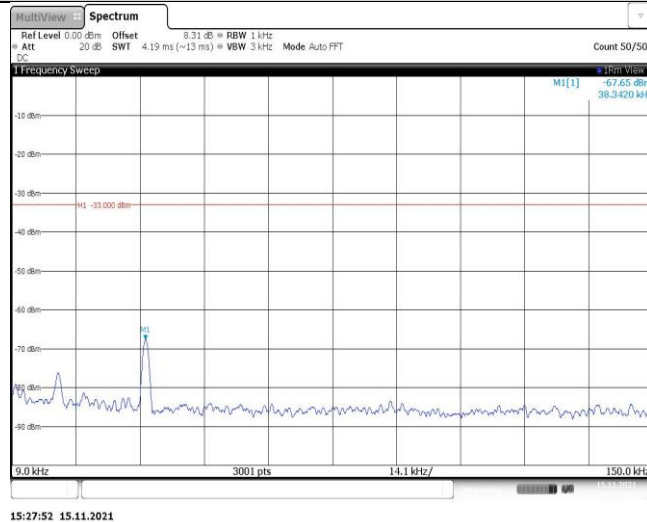




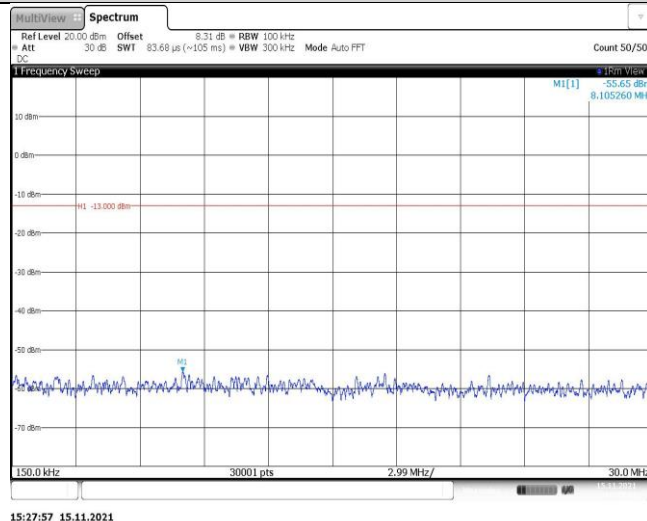
GPRS850-251-3-3000~10000MHz



EGPRS850-128-8-0.009~0.15MHz

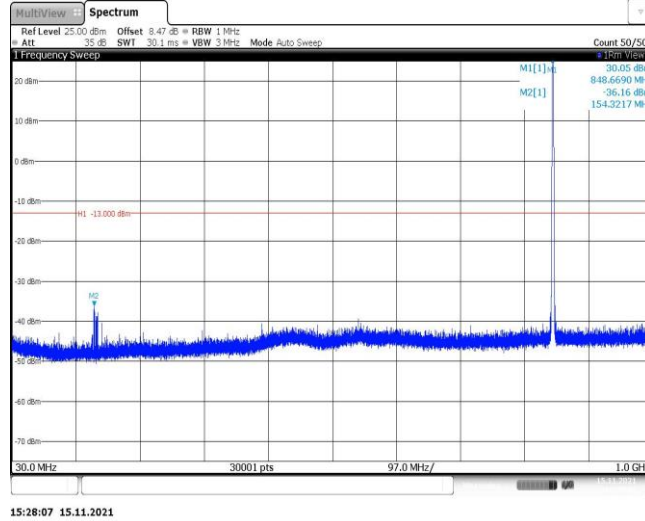


EGPRS850-128-8-0.15~30MHz

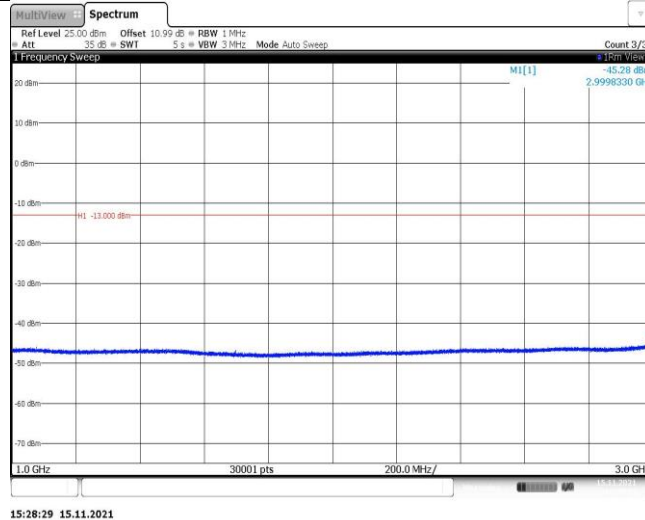




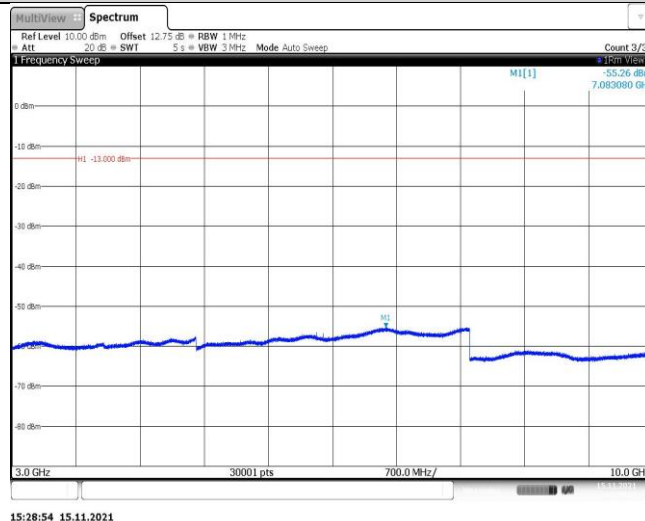
EGPRS850-128-8-30~1000MHz



EGPRS850-128-8-1000~3000MHz

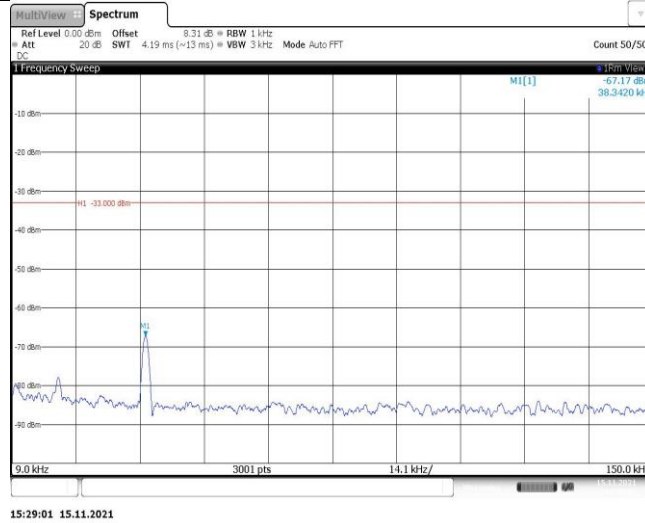


EGPRS850-128-8-3000~10000MHz

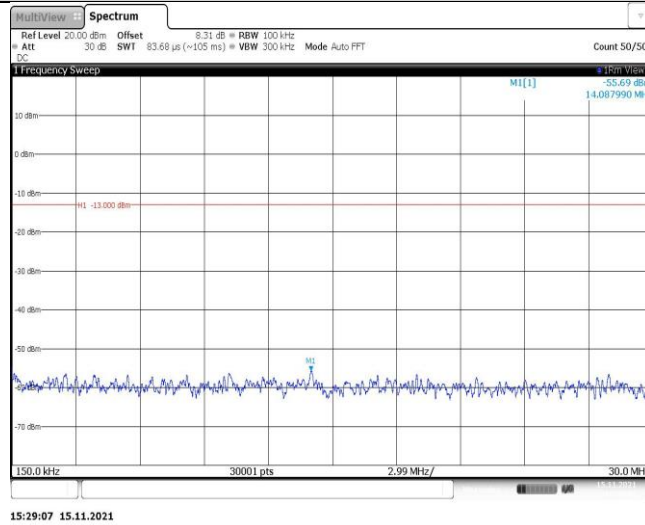




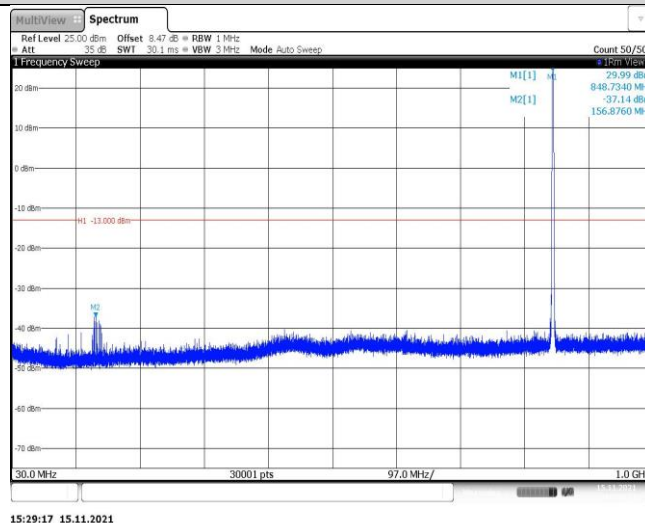
EGPRS850-190-8-0.009~0.15MHz



EGPRS850-190-8-0.15~30MHz

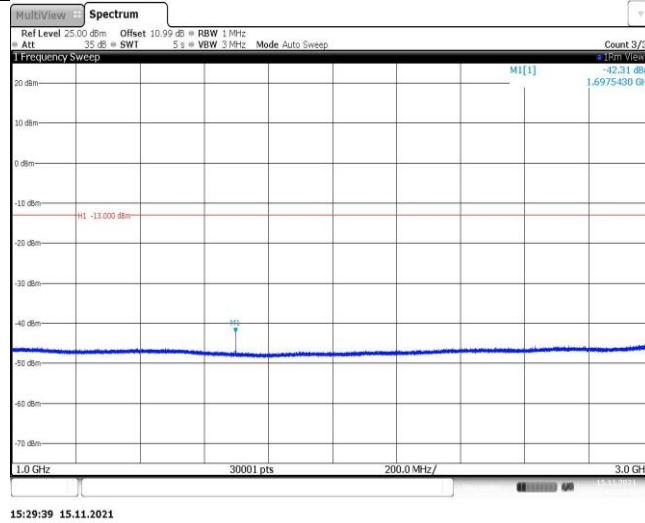


EGPRS850-190-8-30~1000MHz

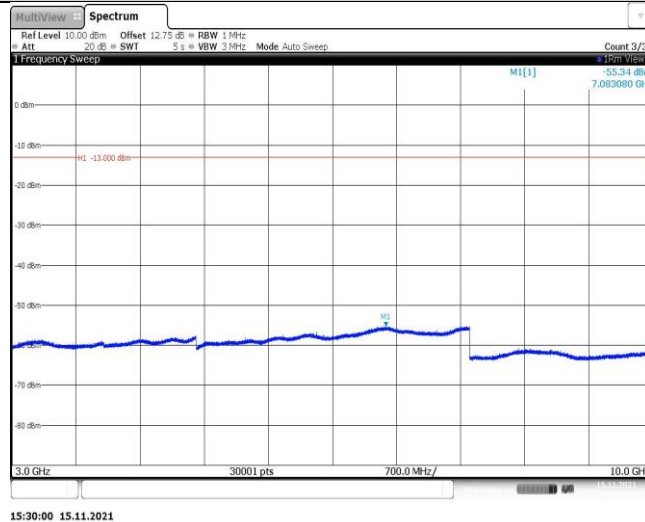




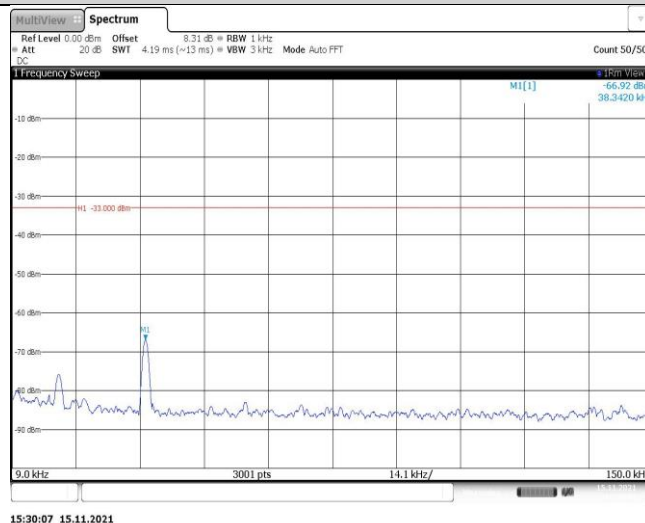
EGPRS850-190-8-1000~3000MHz



EGPRS850-190-8-3000~10000MHz

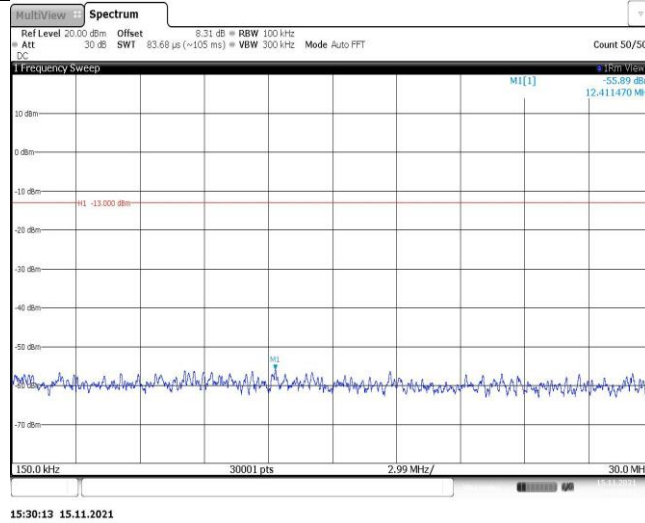


EGPRS850-251-8-0.009~0.15MHz

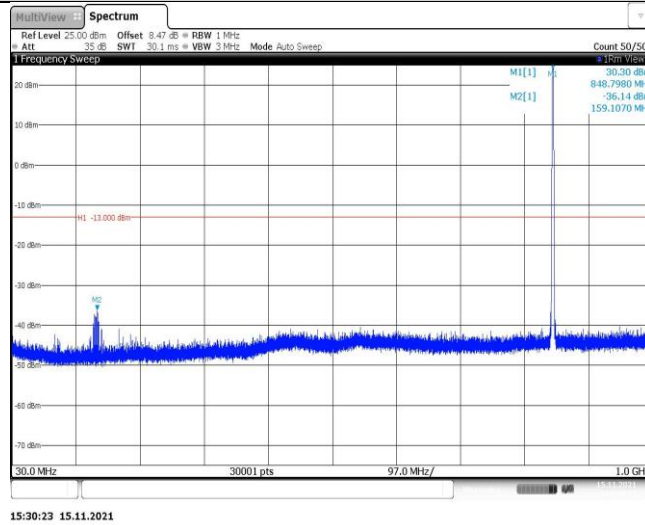




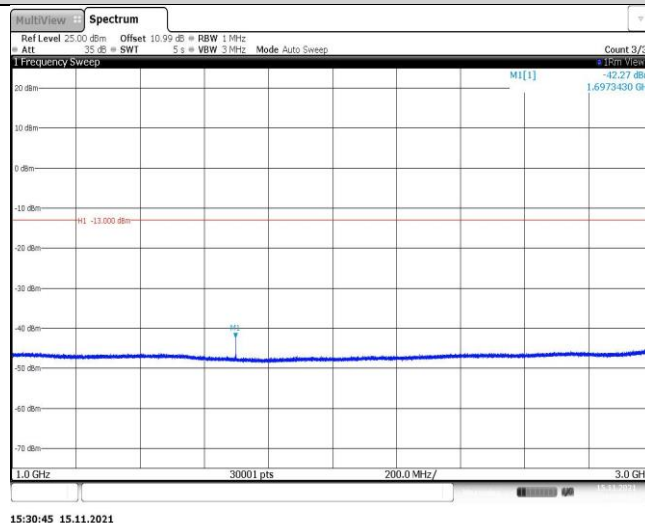
EGPRS850-251-8-0.15~30MHz

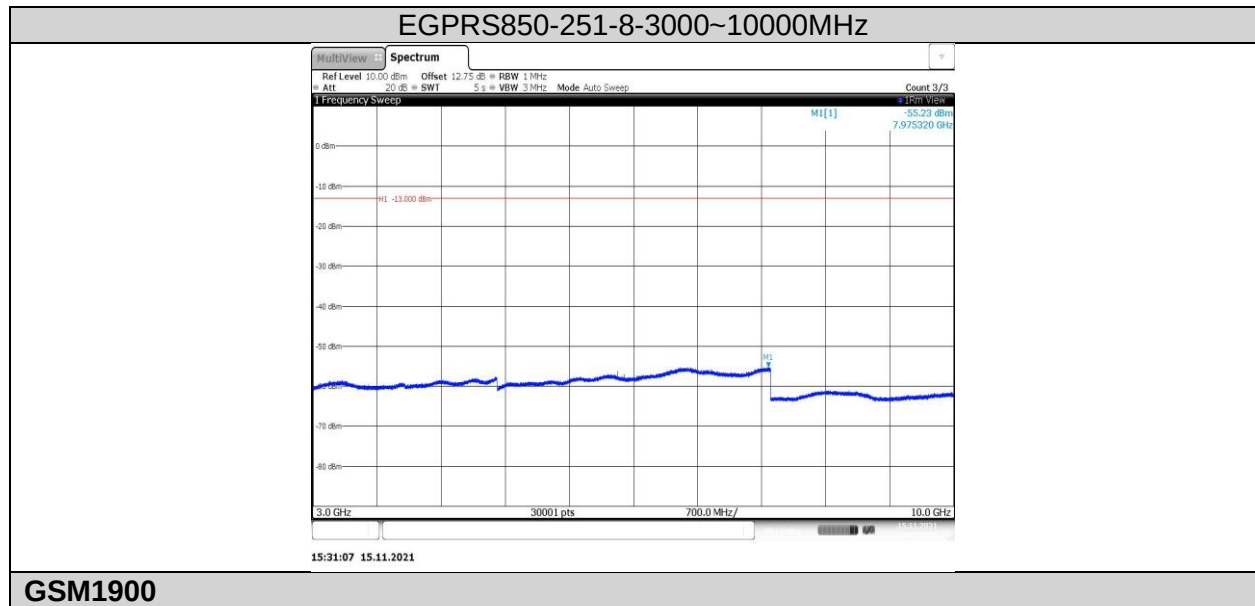


EGPRS850-251-8-30~1000MHz



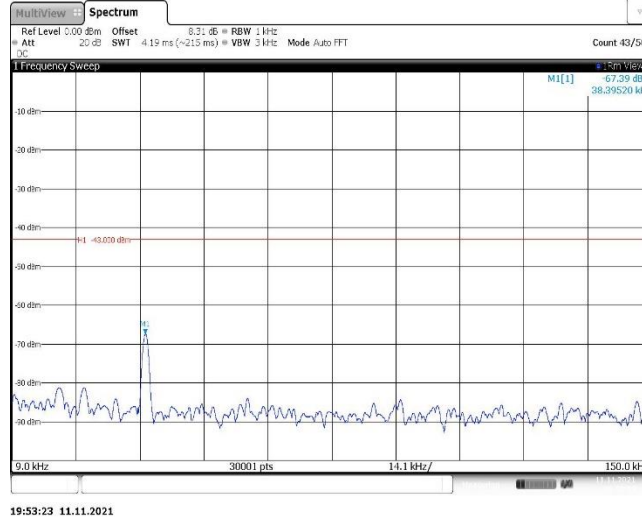
EGPRS850-251-8-1000~3000MHz



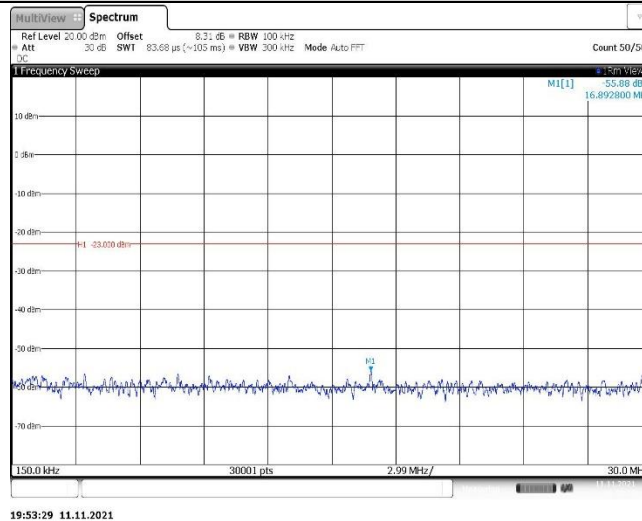




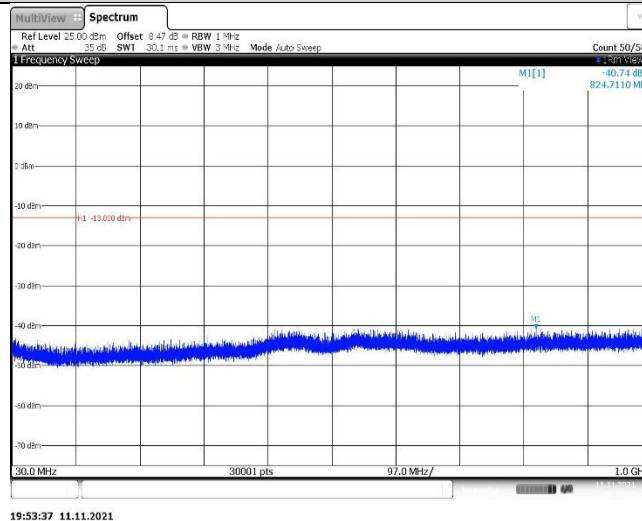
Band2-9262-0.009~0.15MHz



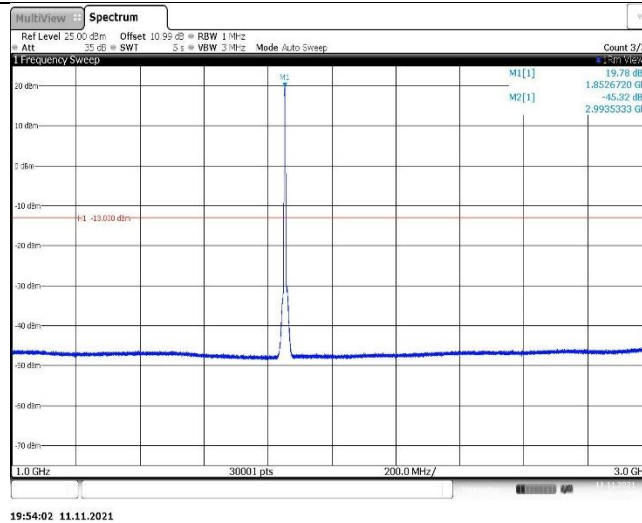
Band2-9262-0.15~30MHz



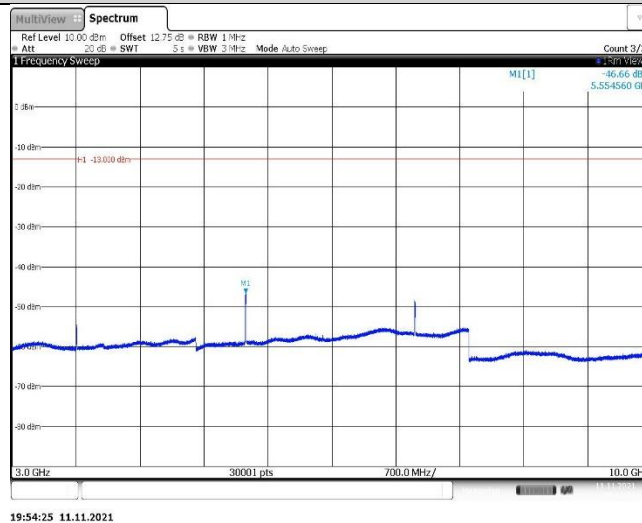
Band2-9262-30~1000MHz



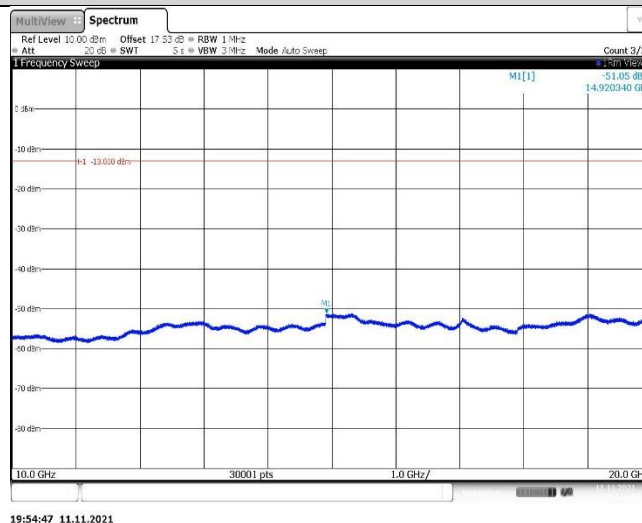
Band2-9262-1000~3000MHz



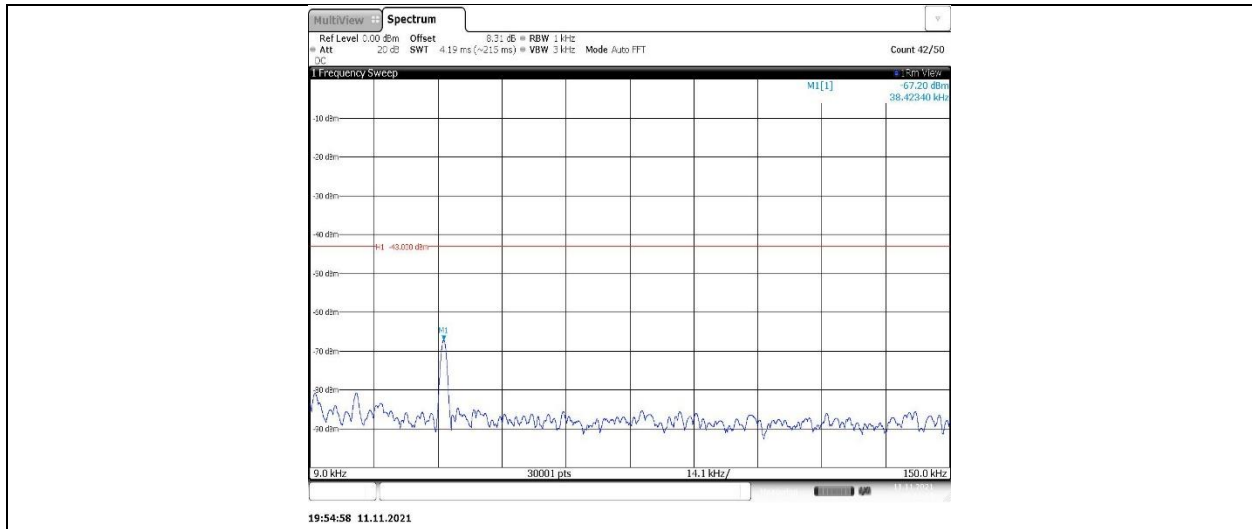
Band2-9262-3000~10000MHz



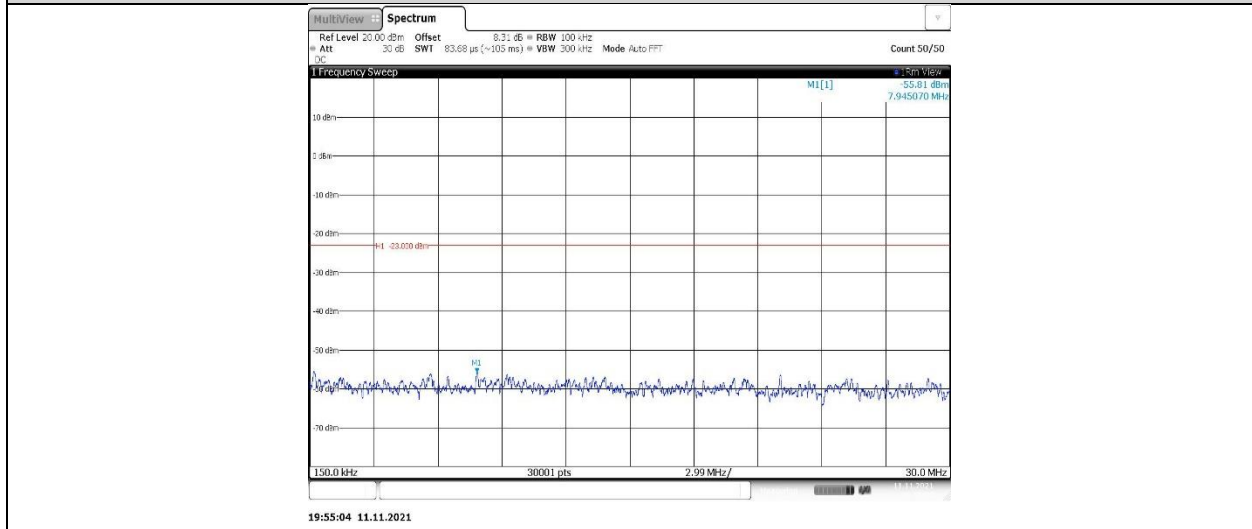
Band2-9262-10000~20000MHz



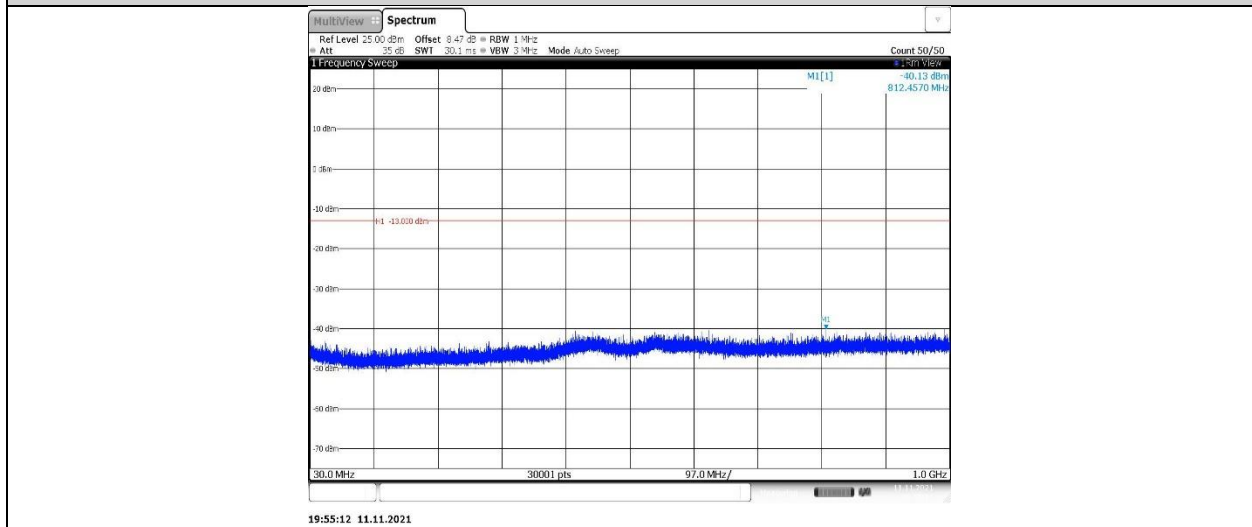
Band2-9400-0.009~0.15MHz



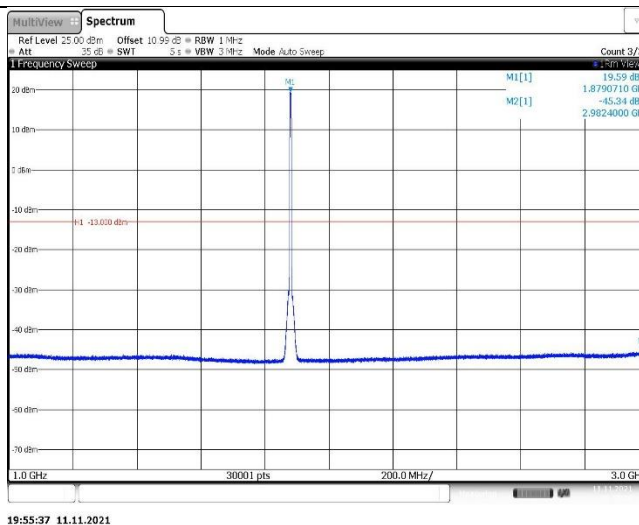
Band2-9400-0.15~30MHz



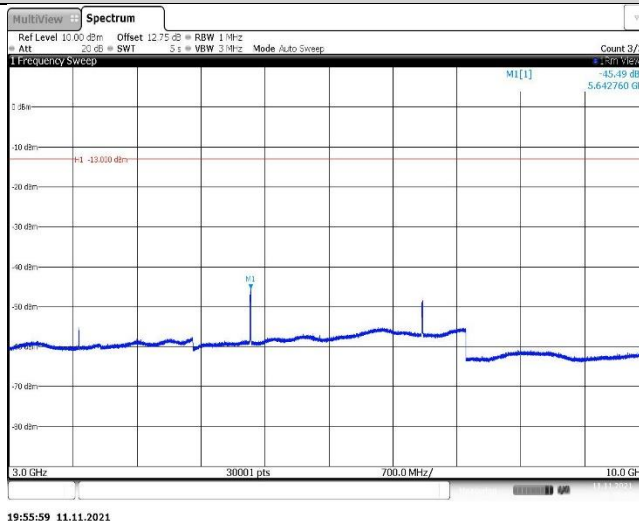
Band2-9400-30~1000MHz



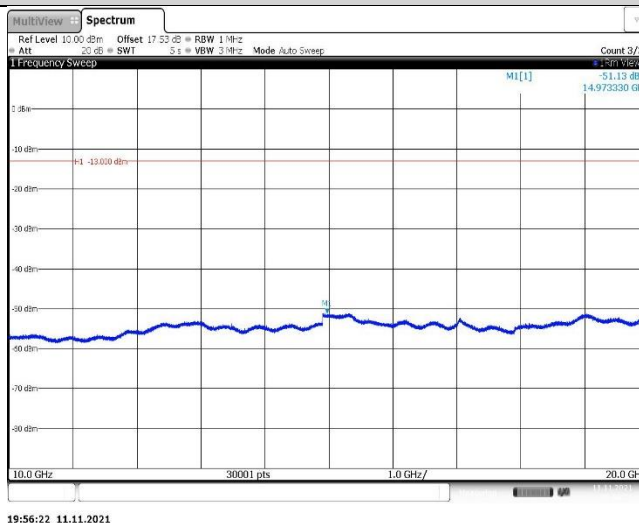
Band2-9400-1000~3000MHz



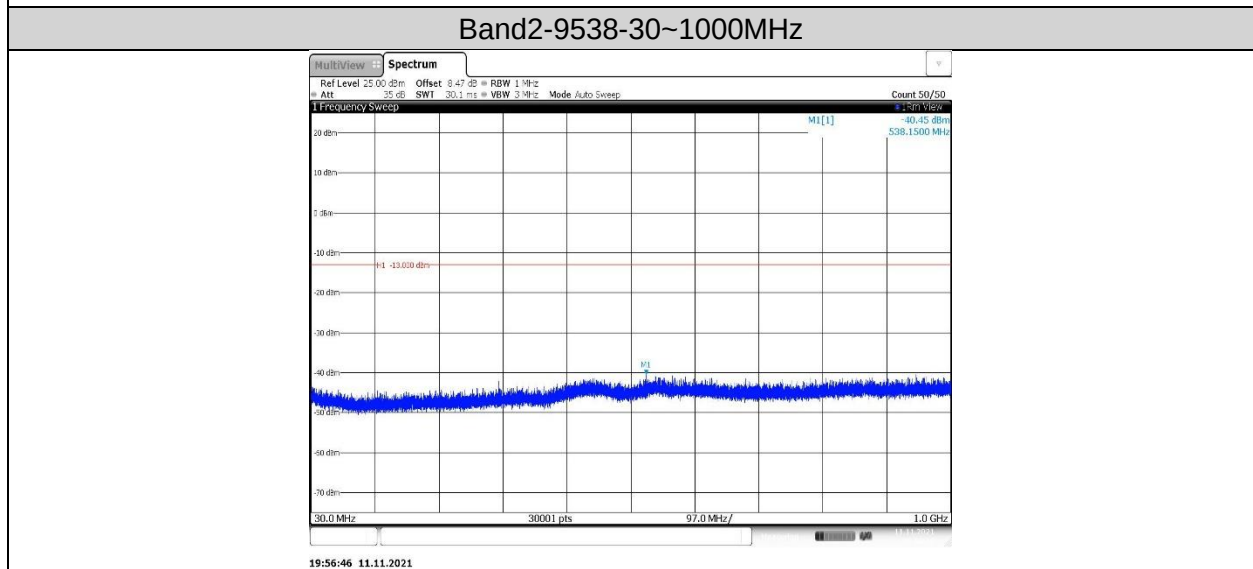
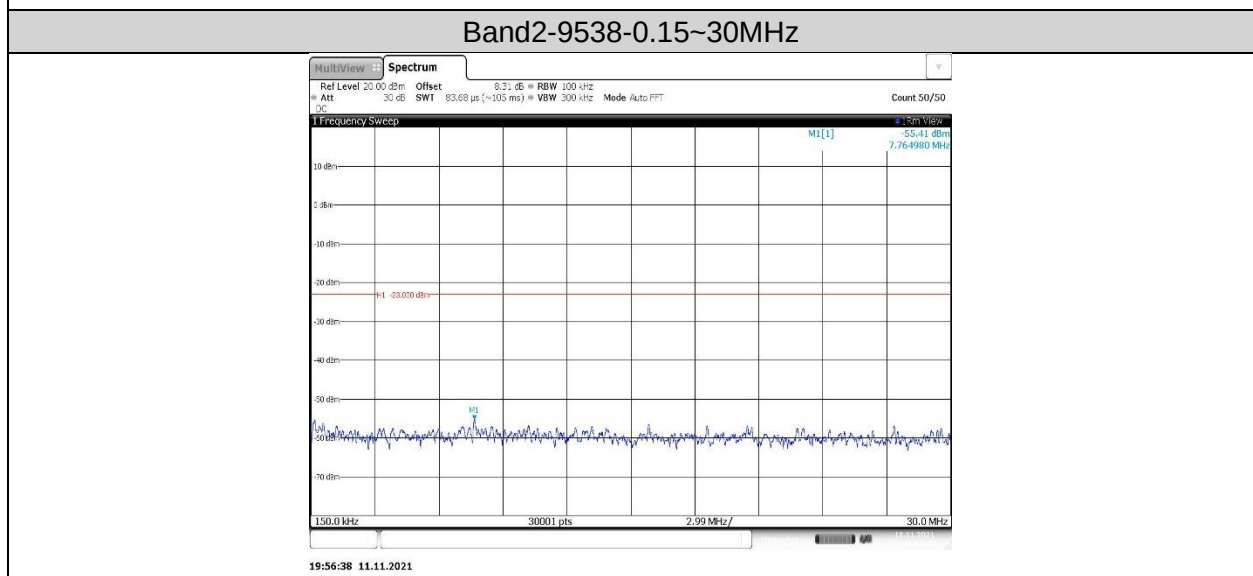
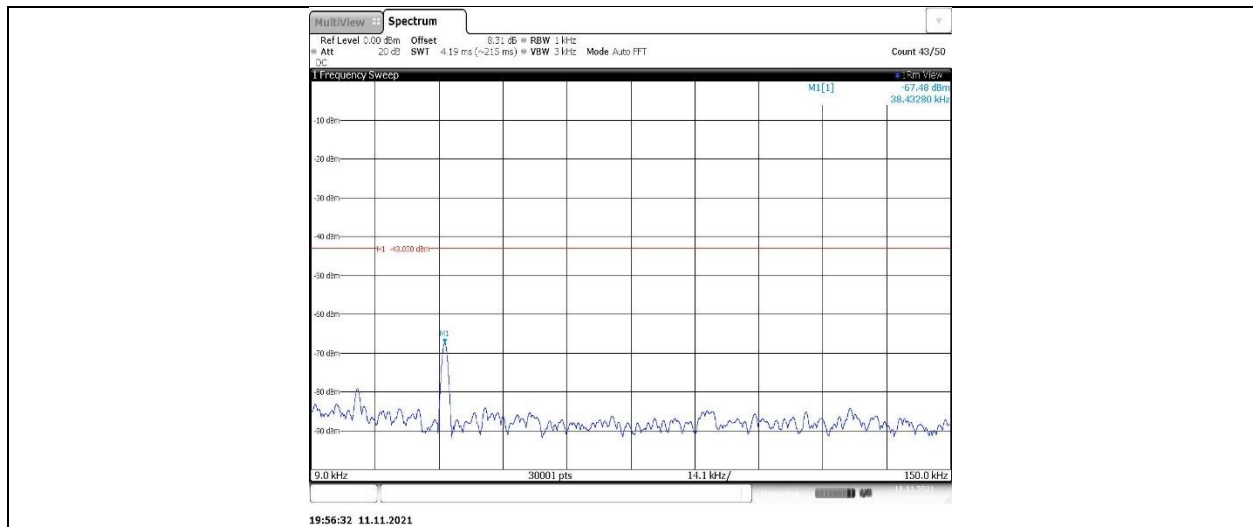
Band2-9400-3000~10000MHz

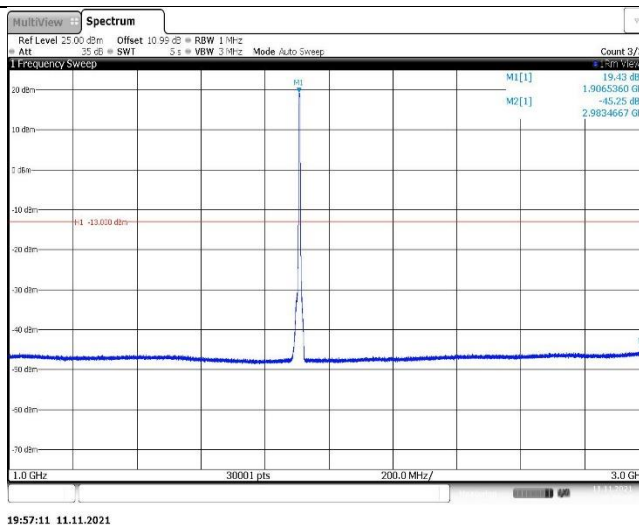


Band2-9400-10000~20000MHz

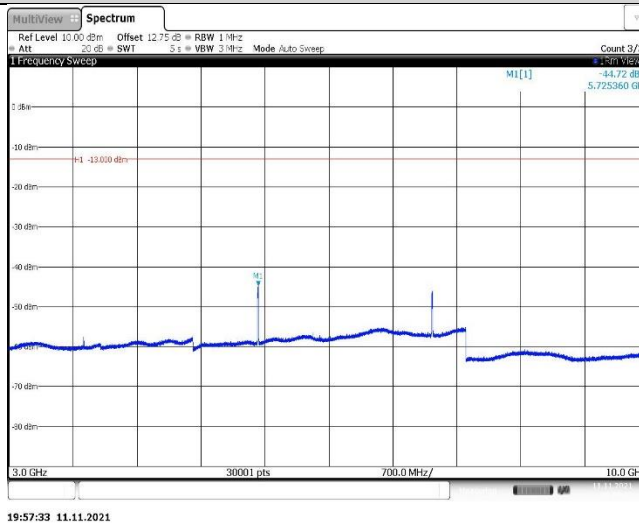


Band2-9538-0.009~0.15MHz

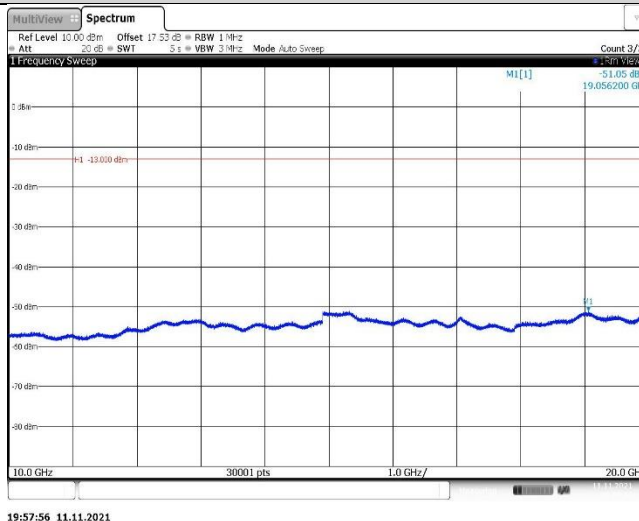




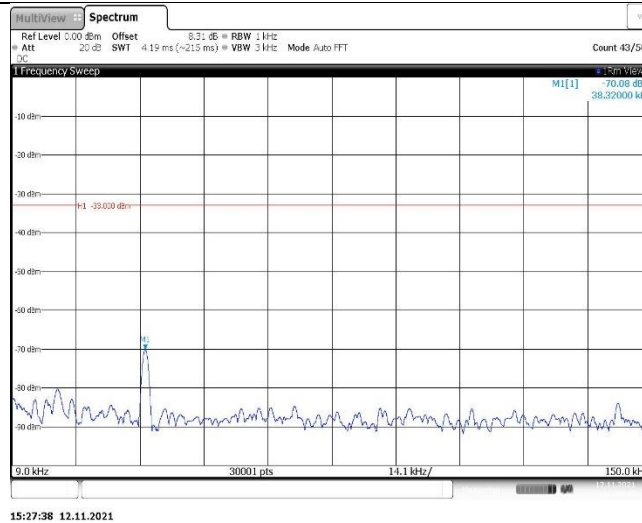
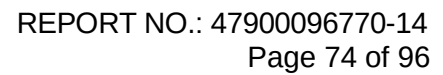
Band2-9538-3000~10000MHz



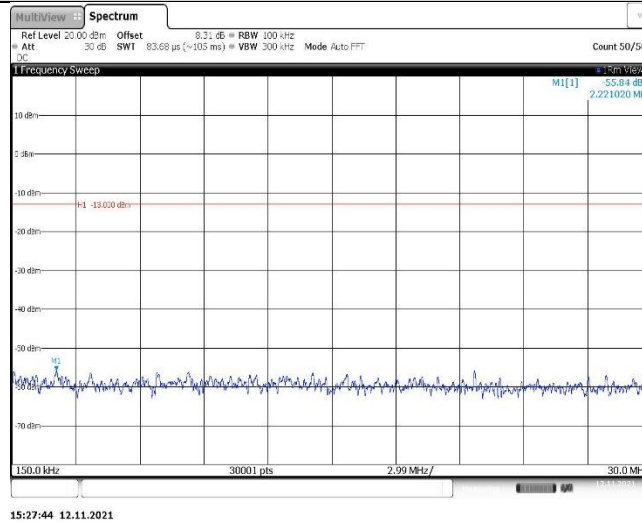
Band2-9538-10000~20000MHz



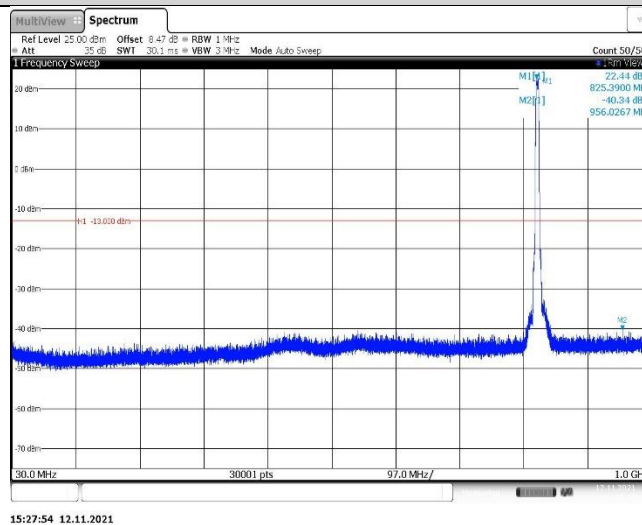
Band5-4132-0.009~0.15MHz



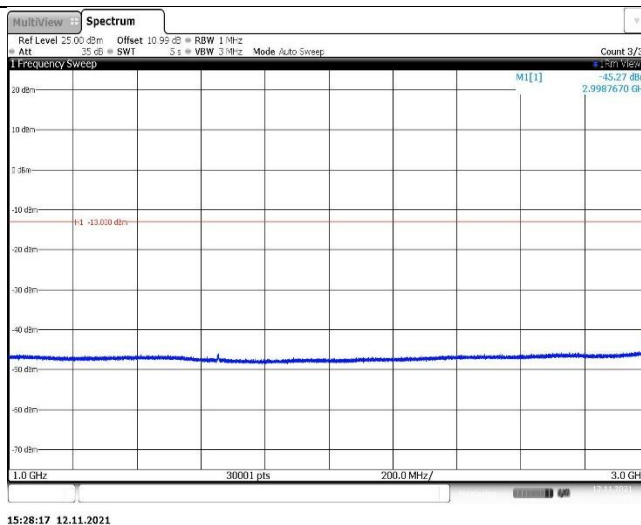
Band5-4132-0.15~30MHz



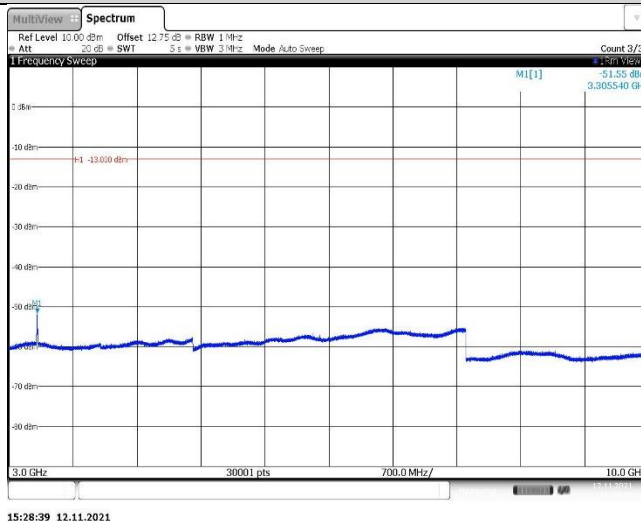
Band5-4132-30~1000MHz



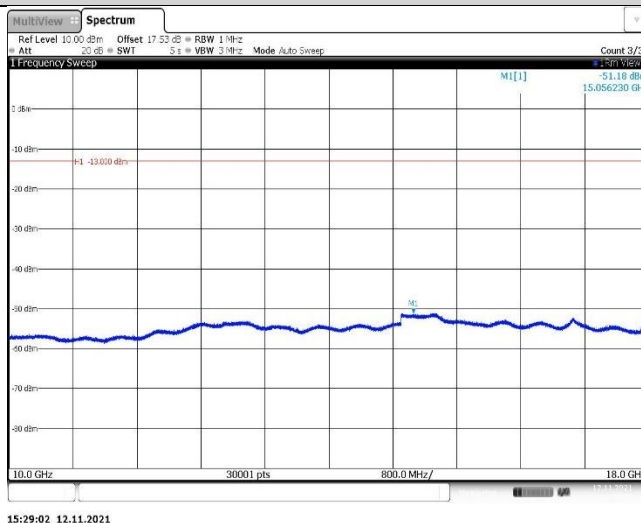
Band5-4132-1000~3000MHz



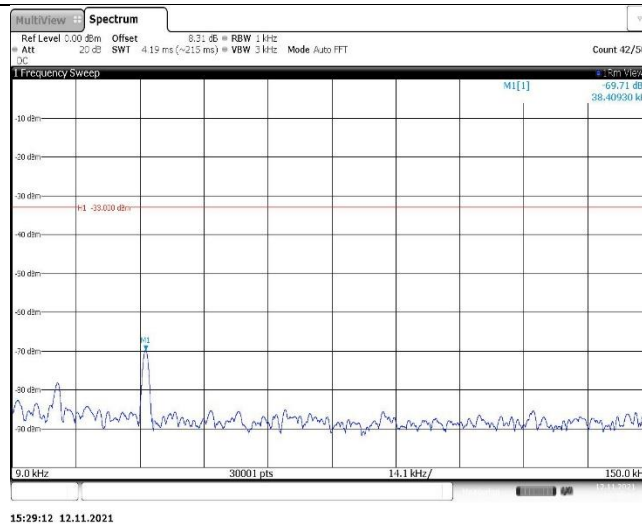
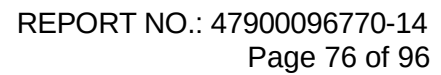
Band5-4132-3000~10000MHz



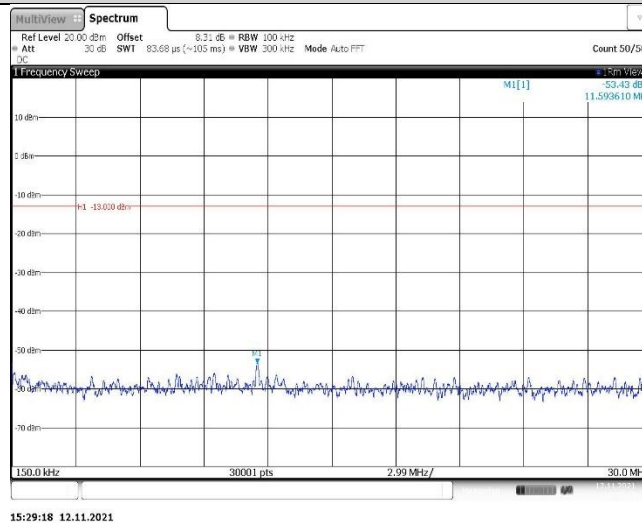
Band5-4132-10000~18000MHz



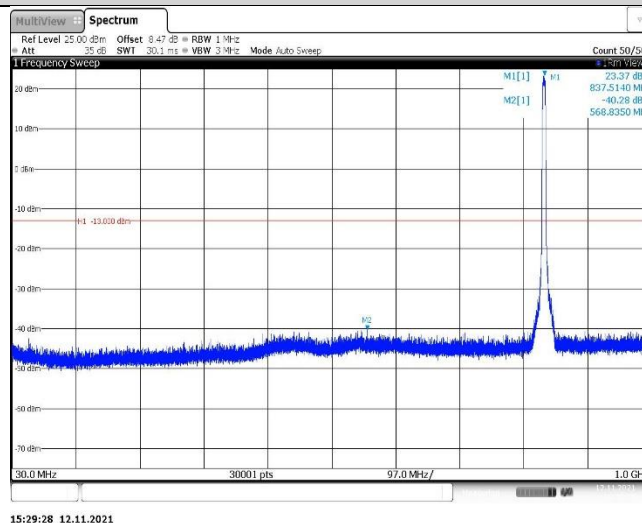
Band5-4183-0.009~0.15MHz



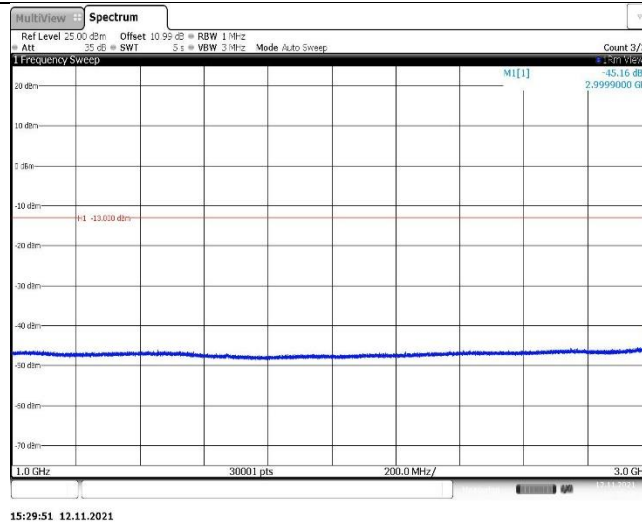
Band5-4183-0.15~30MHz



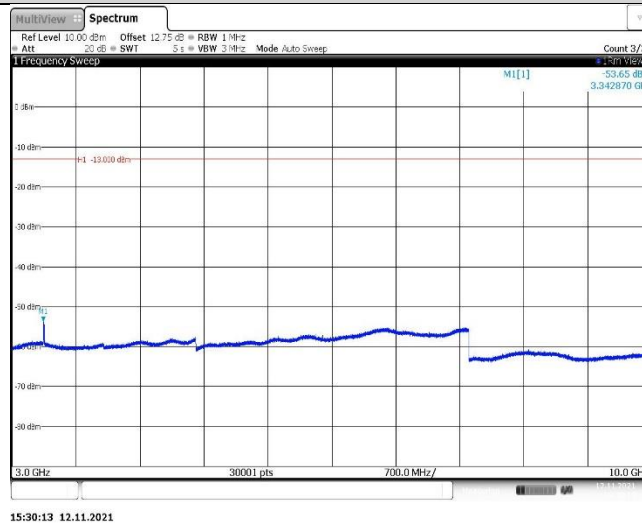
Band5-4183-30~1000MHz



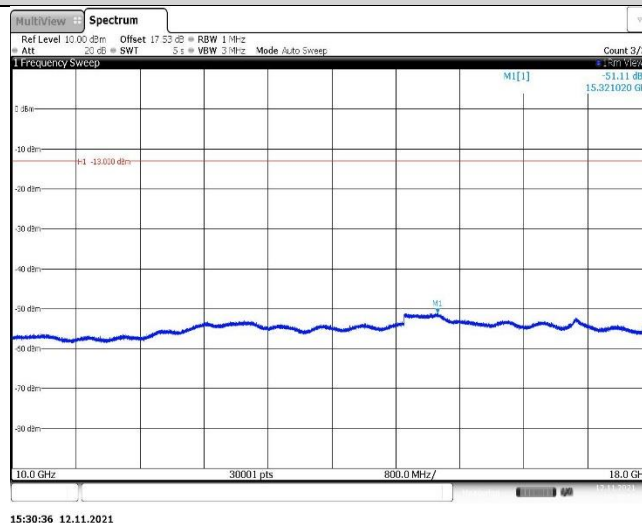
Band5-4183-1000~3000MHz



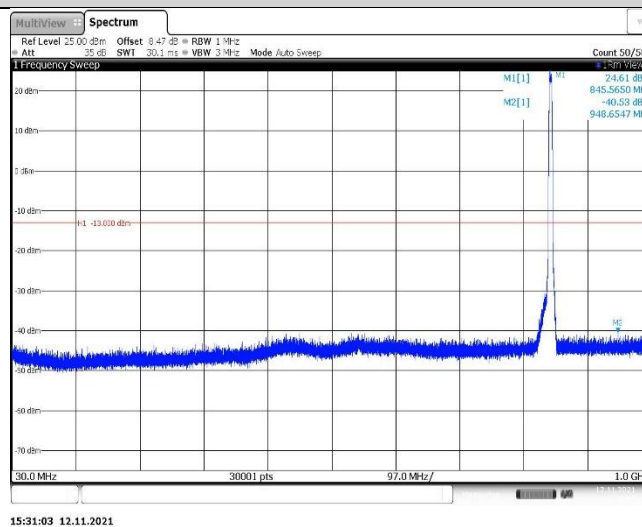
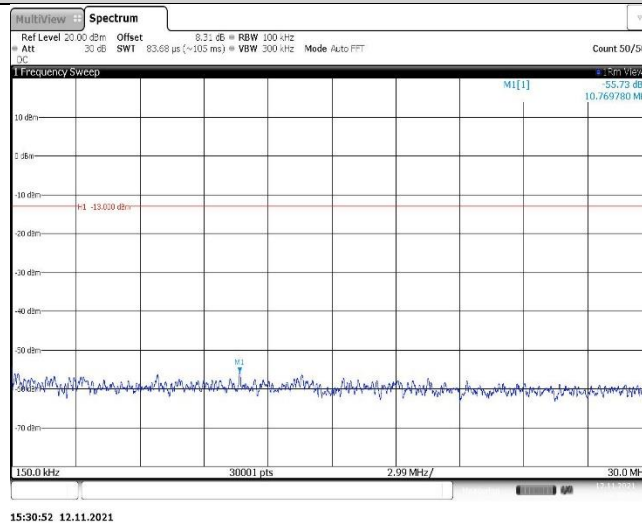
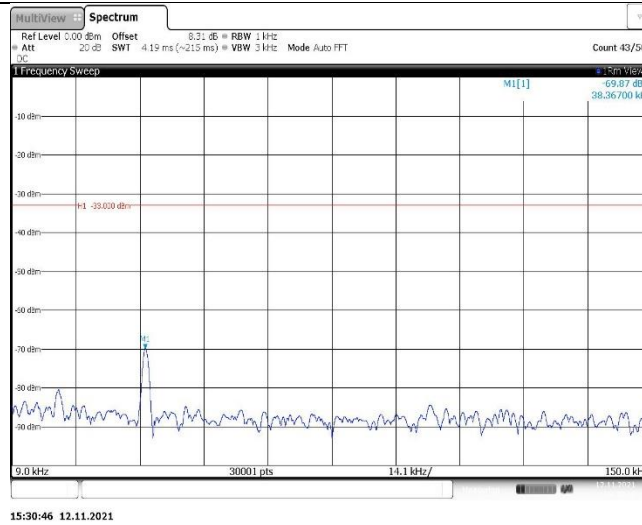
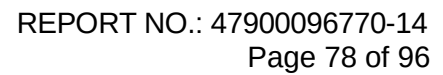
Band5-4183-3000~10000MHz

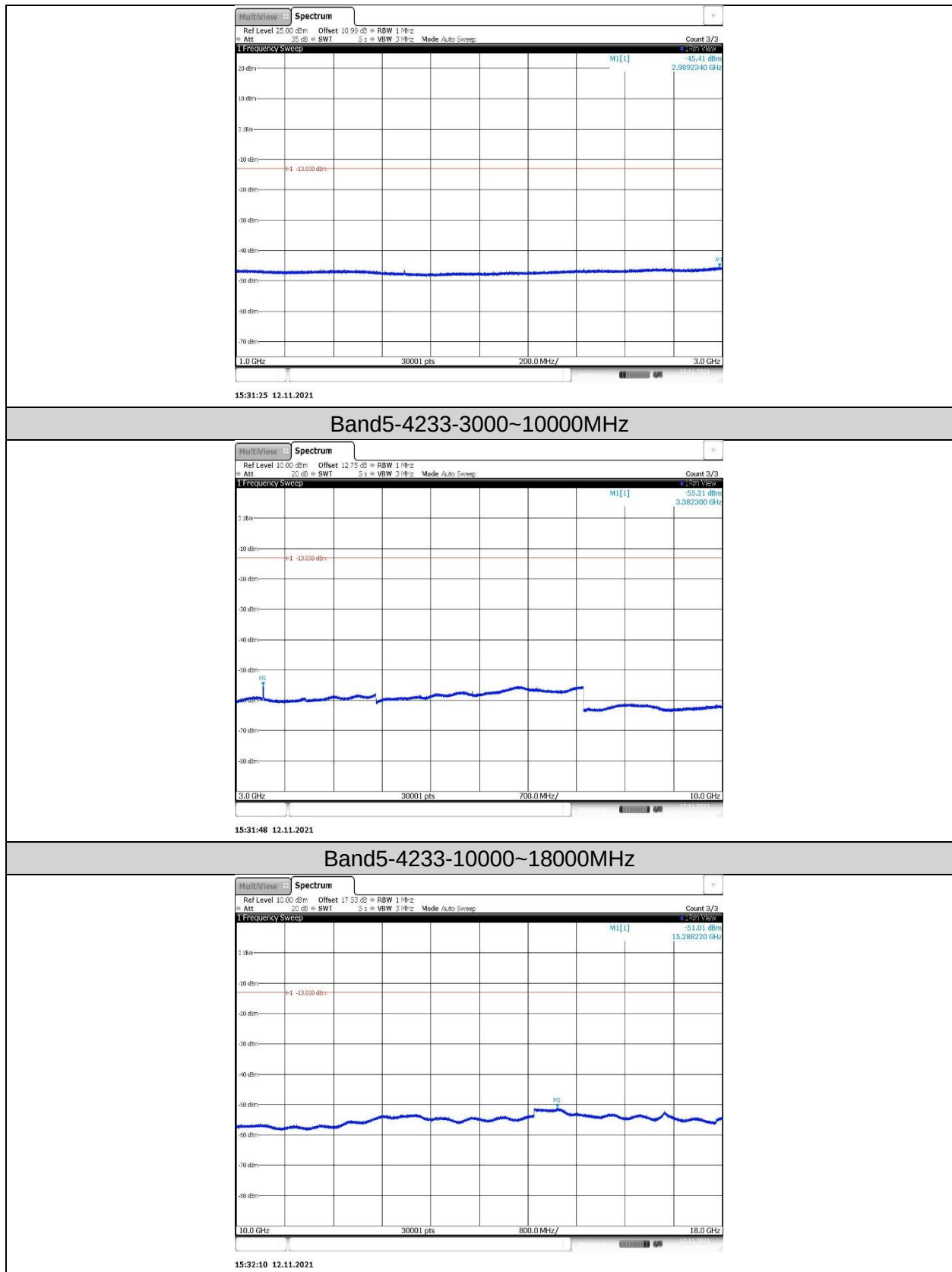


Band5-4183-10000~18000MHz



Band5-4233-0.009~0.15MHz









7.6. FREQUENCY STABILITY

Rule Part:

FCC: §2.1055, §22.355, §24.235, §27.54, §90,
RSS-132, RSS-133, RSS-139

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

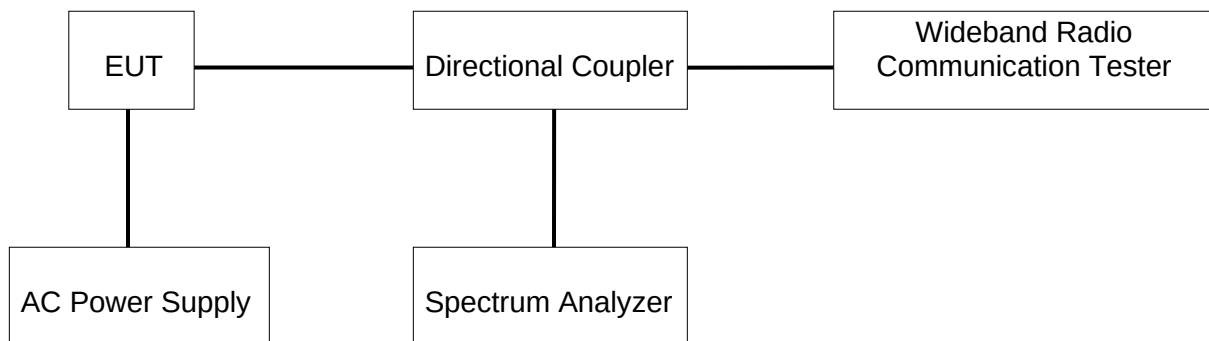
§24.235 and §27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

	Normal Test Conditions	Extreme Test Conditions
Relative Humidity	45 % - 75 %	/
Atmospheric Pressure	100 kPa ~102 kPa	/
Temperature	T_N (Normal Temperature): 25.1 °C	T_L (Low Temperature): -10 °C
		T_H (High Temperature): 50 °C
Supply Voltage	V_N (Normal Voltage): DC 3.85 V	V_L (Low Voltage): DC 3.465 V
		V_H (High Voltage): DC 4.235 V

TEST SETUP



TEST ENVIRONMENT

Temperature	21.4°C	Relative Humidity	56.6%
Atmosphere Pressure	101kPa	Test Voltage	/

**RESULTS****GSM**

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GPRS850	128	VL	NT	23.37	0.028355	±2.5	PASS
		VN		25.22	0.030599	±2.5	PASS
		VH		30.22	0.036666	±2.5	PASS
	190	VL		19.57	0.023392	±2.5	PASS
		VN		18.60	0.022233	±2.5	PASS
		VH		25.51	0.030492	±2.5	PASS
	251	VL		30.25	0.035639	±2.5	PASS
		VN		17.18	0.020240	±2.5	PASS
		VH		29.44	0.034684	±2.5	PASS
EGPRS850	128	VL	NT	27.48	0.033341	±2.5	PASS
		VN		26.70	0.032395	±2.5	PASS
		VH		26.22	0.031813	±2.5	PASS
	190	VL		22.21	0.026548	±2.5	PASS
		VN		22.47	0.026859	±2.5	PASS
		VH		26.73	0.031951	±2.5	PASS
	251	VL		28.44	0.033506	±2.5	PASS
		VN		20.28	0.023893	±2.5	PASS
		VH		31.45	0.037052	±2.5	PASS
GPRS1900	512	VL	NT	25.18	0.013609	±2.5	PASS
		VN		31.70	0.017133	±2.5	PASS
		VH		31.58	0.017068	±2.5	PASS
	661	VL		23.12	0.012298	±2.5	PASS
		VN		24.57	0.013069	±2.5	PASS
		VH		15.40	0.008191	±2.5	PASS
	810	VL		24.41	0.012781	±2.5	PASS
		VN		6.33	0.003314	±2.5	PASS
		VH		21.34	0.011174	±2.5	PASS
EGPRS1900	512	VL	NT	38.32	0.020711	±2.5	PASS
		VN		37.06	0.020030	±2.5	PASS
		VH		27.60	0.014917	±2.5	PASS
	661	VL		25.76	0.013702	±2.5	PASS
		VN		26.31	0.013995	±2.5	PASS
		VH		20.92	0.011128	±2.5	PASS
	810	VL		15.82	0.008284	±2.5	PASS
		VN		12.04	0.006304	±2.5	PASS
		VH		19.02	0.009959	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GPRS850	128	NV	-10	24.83	0.030126	±2.5	PASS
			0	22.05	0.026753	±2.5	PASS



			10	26.38	0.032007	±2.5	PASS
			20	25.93	0.031461	±2.5	PASS
			30	23.92	0.029022	±2.5	PASS
			40	23.57	0.028597	±2.5	PASS
			50	23.83	0.028913	±2.5	PASS
	190	NV	-10	22.15	0.026476	±2.5	PASS
			0	21.15	0.025281	±2.5	PASS
			10	27.44	0.032799	±2.5	PASS
			20	22.89	0.027361	±2.5	PASS
			30	22.31	0.026667	±2.5	PASS
	251	NV	40	27.35	0.032692	±2.5	PASS
			50	23.34	0.027899	±2.5	PASS
			-10	28.06	0.033058	±2.5	PASS
			0	25.09	0.029559	±2.5	PASS
			10	22.50	0.026508	±2.5	PASS
EGPRS850	128	NV	20	27.22	0.032069	±2.5	PASS
			30	21.18	0.024953	±2.5	PASS
			40	24.02	0.028299	±2.5	PASS
			50	26.99	0.031798	±2.5	PASS
			-10	31.64	0.038389	±2.5	PASS
	190	NV	0	23.54	0.028561	±2.5	PASS
			10	30.93	0.037527	±2.5	PASS
			20	23.08	0.028003	±2.5	PASS
			30	30.22	0.036666	±2.5	PASS
			40	30.64	0.037175	±2.5	PASS
	251	NV	50	28.09	0.034082	±2.5	PASS
			-10	21.18	0.025317	±2.5	PASS
			0	24.15	0.028867	±2.5	PASS
			10	27.86	0.033301	±2.5	PASS
			20	28.86	0.034497	±2.5	PASS
GPRS1900	512	NV	30	23.92	0.028592	±2.5	PASS
			40	19.82	0.023691	±2.5	PASS
			50	20.24	0.024193	±2.5	PASS
			-10	29.35	0.034578	±2.5	PASS
			0	22.92	0.027003	±2.5	PASS
	661	NV	10	25.28	0.029783	±2.5	PASS
			20	23.73	0.027957	±2.5	PASS
			30	26.99	0.031798	±2.5	PASS
			40	21.89	0.025789	±2.5	PASS
			50	26.96	0.031762	±2.5	PASS
	512	NV	-10	20.57	0.011118	±2.5	PASS
			0	23.54	0.012723	±2.5	PASS
			10	22.89	0.012372	±2.5	PASS
			20	24.34	0.013155	±2.5	PASS
			30	24.41	0.013193	±2.5	PASS
	512	NV	40	23.57	0.012739	±2.5	PASS
			50	30.61	0.016544	±2.5	PASS
			-10	8.78	0.004670	±2.5	PASS



			0	20.44	0.010872	±2.5	PASS
			10	16.59	0.008824	±2.5	PASS
			20	13.08	0.006957	±2.5	PASS
			30	23.12	0.012298	±2.5	PASS
			40	12.56	0.006681	±2.5	PASS
			50	21.73	0.011559	±2.5	PASS
	810	NV	-10	29.44	0.015415	±2.5	PASS
			0	28.44	0.014892	±2.5	PASS
			10	13.17	0.006896	±2.5	PASS
			20	19.27	0.010090	±2.5	PASS
			30	17.21	0.009011	±2.5	PASS
			40	23.12	0.012106	±2.5	PASS
			50	27.31	0.014300	±2.5	PASS
			-10	28.06	0.015166	±2.5	PASS
EGPRS1900	512	NV	0	26.35	0.014242	±2.5	PASS
			10	27.99	0.015128	±2.5	PASS
			20	22.02	0.011901	±2.5	PASS
			30	31.77	0.017171	±2.5	PASS
			40	22.73	0.012285	±2.5	PASS
			50	28.22	0.015252	±2.5	PASS
	661	NV	-10	21.34	0.011351	±2.5	PASS
			0	9.88	0.005255	±2.5	PASS
			10	23.70	0.012606	±2.5	PASS
			20	25.54	0.013585	±2.5	PASS
			30	26.47	0.014080	±2.5	PASS
			40	23.92	0.012723	±2.5	PASS
			50	28.28	0.015043	±2.5	PASS
	810	NV	-10	27.80	0.014556	±2.5	PASS
			0	31.51	0.016499	±2.5	PASS
			10	31.70	0.016599	±2.5	PASS
			20	15.92	0.008336	±2.5	PASS
			30	28.54	0.014944	±2.5	PASS
			40	30.77	0.016112	±2.5	PASS
			50	21.53	0.011273	±2.5	PASS

**WCDMA (only worst recorded)**

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	9262	VL	NT	18.27	0.009863	±2.5	PASS
		VN		18.00	0.009717	±2.5	PASS
		VH		18.54	0.010009	±2.5	PASS
	9400	VL		12.24	0.006511	±2.5	PASS
		VN		11.96	0.006362	±2.5	PASS
		VH		11.61	0.006176	±2.5	PASS
	9538	VL		4.19	0.002196	±2.5	PASS
		VN		4.55	0.002385	±2.5	PASS
		VH		3.59	0.001882	±2.5	PASS
Band4	1312	VL	NT	22.49	0.013134	±2.5	PASS
		VN		22.33	0.013040	±2.5	PASS
		VH		23.21	0.013554	±2.5	PASS
	1413	VL		-11.26	-0.006499	±2.5	PASS
		VN		-11.22	-0.006476	±2.5	PASS
		VH		-11.47	-0.006620	±2.5	PASS
	1513	VL		-16.79	-0.009580	±2.5	PASS
		VN		-16.04	-0.009152	±2.5	PASS
		VH		-17.12	-0.009768	±2.5	PASS
Band5	4132	VL	NT	1.98	0.002396	±2.5	PASS
		VN		2.10	0.002541	±2.5	PASS
		VH		2.18	0.002638	±2.5	PASS
	4183	VL		-0.19	-0.000227	±2.5	PASS
		VN		-0.11	-0.000131	±2.5	PASS
		VH		-0.18	-0.000215	±2.5	PASS
	4233	VL		-3.55	-0.004193	±2.5	PASS
		VN		-3.38	-0.003992	±2.5	PASS
		VH		-3.52	-0.004158	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	9262	NV	-10	18.95	0.010230	±2.5	PASS
			0	19.76	0.010667	±2.5	PASS
			10	19.15	0.010338	±2.5	PASS
			20	19.68	0.010624	±2.5	PASS
			30	19.10	0.010311	±2.5	PASS
			40	19.64	0.010602	±2.5	PASS
			50	19.00	0.010257	±2.5	PASS
	9400	NV	-10	11.45	0.006090	±2.5	PASS
			0	11.39	0.006059	±2.5	PASS
			10	11.52	0.006128	±2.5	PASS
			20	12.18	0.006479	±2.5	PASS
			30	12.37	0.006580	±2.5	PASS
			40	12.59	0.006697	±2.5	PASS



	9538	NV	50	12.27	0.006527	±2.5	PASS
			-10	3.53	0.001850	±2.5	PASS
			0	4.06	0.002128	±2.5	PASS
			10	4.13	0.002165	±2.5	PASS
			20	3.95	0.002071	±2.5	PASS
			30	4.09	0.002144	±2.5	PASS
			40	4.24	0.002223	±2.5	PASS
Band4	1312	NV	50	4.33	0.002270	±2.5	PASS
			-10	23.53	0.013741	±2.5	PASS
			0	23.37	0.013648	±2.5	PASS
			10	24.45	0.014278	±2.5	PASS
			20	24.38	0.014237	±2.5	PASS
			30	24.45	0.014278	±2.5	PASS
			40	24.70	0.014424	±2.5	PASS
	1413	NV	50	25.06	0.014634	±2.5	PASS
			-10	-11.84	-0.006834	±2.5	PASS
			0	-11.57	-0.006678	±2.5	PASS
			10	-11.85	-0.006839	±2.5	PASS
			20	-11.64	-0.006718	±2.5	PASS
			30	-11.82	-0.006822	±2.5	PASS
			40	-11.84	-0.006834	±2.5	PASS
	1513	NV	50	-11.86	-0.006845	±2.5	PASS
			-10	-17.29	-0.009865	±2.5	PASS
			0	-17.42	-0.009940	±2.5	PASS
			10	-17.55	-0.010014	±2.5	PASS
			20	-17.17	-0.009797	±2.5	PASS
			30	-17.67	-0.010082	±2.5	PASS
			40	-17.79	-0.010151	±2.5	PASS
Band5	4132	NV	50	-18.14	-0.010350	±2.5	PASS
			-10	2.60	0.003146	±2.5	PASS
			0	2.22	0.002686	±2.5	PASS
			10	2.78	0.003364	±2.5	PASS
			20	2.65	0.003207	±2.5	PASS
			30	2.83	0.003424	±2.5	PASS
			40	2.80	0.003388	±2.5	PASS
	4183	NV	50	2.80	0.003388	±2.5	PASS
			-10	-0.29	-0.000347	±2.5	PASS
			0	-0.36	-0.000430	±2.5	PASS
			10	-0.23	-0.000275	±2.5	PASS
			20	-0.45	-0.000538	±2.5	PASS
			30	-0.19	-0.000227	±2.5	PASS
			40	-0.23	-0.000275	±2.5	PASS
	4233	NV	50	-0.43	-0.000514	±2.5	PASS
			-10	-3.55	-0.004193	±2.5	PASS
			0	-3.56	-0.004205	±2.5	PASS
			-10	-3.55	-0.004193	±2.5	PASS
			0	-3.56	-0.004205	±2.5	PASS
			10	-3.57	-0.004217	±2.5	PASS



			20	-3.79	-0.004477	±2.5	PASS
			30	-3.44	-0.004063	±2.5	PASS
			40	-3.44	-0.004063	±2.5	PASS
			50	-3.58	-0.004229	±2.5	PASS

8. RADIATED SPURIOUS EMISSIONS

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53, §90,
RSS-132, RSS-133, RSS-139

LIMIT

Part §22.917(a), §24.238(a), §27.53(h)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

Part §27.53(m)

At least $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

TEST PROCEDURE

KDB 971168 D01 Section 7 , ANSI C63.26 section 5.5.4.

1. The EUT was placed on a rotatable non-conductive support 0.8 meter above the ground (1.5m for above 1GHz).
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission as field strength (dBuV/m) using the formula: $E(\text{dBuV/m}) = V(\text{dBuV/m}) + \text{cable loss (dB)} + \text{antenna factor (dB/m)} - \text{gain (dB)}$
6. Field strength is compared to the power limit converted to a field strength using the equations in ANSI C63.26: $E = \sqrt{(30 P G)/d}$ where E = field strength at distance d, PG = EIRP. Example a limit of $43 + 10 \log (P)$ dB is an EIRP of -13dBm and has an equivalent field strength of 82.25 dBuV/m at 3m.

NOTE 1: Radiated spurious emissions were investigated below 30 MHz, 30 MHz – 1 GHz and above 1 GHz. There were no emissions found on below 30 MHz and 30 MHz – 1 GHz.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area test site.

Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

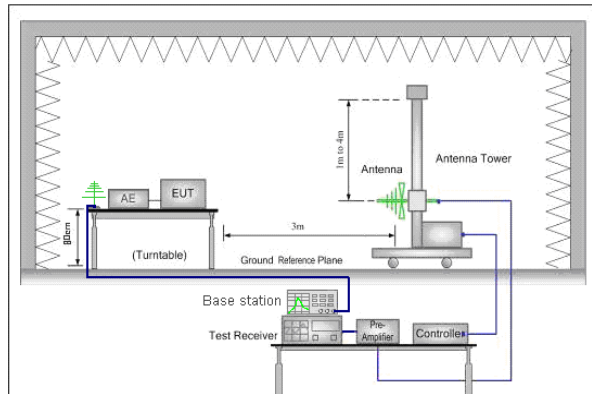
NOTE 2: Please refer to section 5.4 for bandwidth and RB setting about LTE bands.



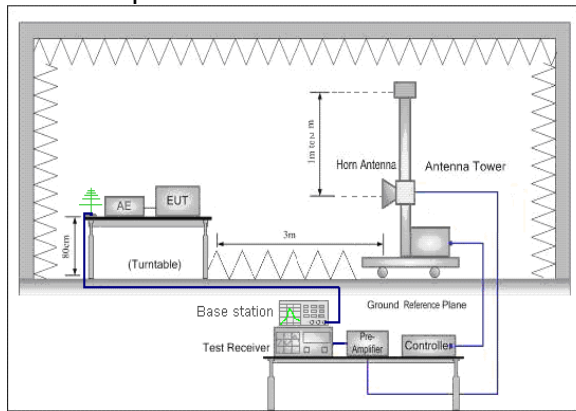
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TEST SETUP

Test Setup for Below 1 GHz



Test Setup for Above 1 GHz



TEST ENVIRONMENT

Temperature	22.9°C	Relative Humidity	58.3%
Atmosphere Pressure	101kPa	Test Voltage	/

RESULTS

GSM 850

GPRS- Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1738.000	59.01	-11.14	47.87	82.25	-34.38	peak
2467.000	57.18	-8.91	48.27	82.25	-33.98	peak
4501.000	44.96	-2.23	42.73	82.25	-39.52	peak
6004.000	40.41	2.20	42.61	82.25	-39.64	peak
8110.000	38.78	7.98	46.76	82.25	-35.49	peak
9784.000	45.77	10.29	56.06	82.25	-26.19	peak



GPRS- Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1738.000	57.19	-11.14	46.05	82.25	-36.20	peak
2467.000	49.58	-8.91	40.67	82.25	-41.58	peak
4996.000	45.41	-0.51	44.90	82.25	-37.35	peak
6004.000	43.29	2.20	45.49	82.25	-36.76	peak
7255.000	40.07	6.33	46.40	82.25	-35.85	peak
9001.000	37.24	10.12	47.36	82.25	-34.89	peak

GPRS- Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1495.000	52.70	-12.56	40.14	82.25	-42.11	peak
2503.000	57.58	-8.81	48.77	82.25	-33.48	peak
4996.000	50.12	-0.51	49.61	82.25	-32.64	peak
6751.000	46.79	4.56	51.35	82.25	-30.90	peak
8506.000	44.21	7.84	52.05	82.25	-30.20	peak
9955.000	42.68	10.70	53.38	82.25	-28.87	peak

GPRS- Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1999.000	53.86	-11.19	42.67	82.25	-39.58	peak
2503.000	52.17	-8.81	43.36	82.25	-38.89	peak
4996.000	47.36	-0.51	46.85	82.25	-35.40	peak
6004.000	45.84	2.20	48.04	82.25	-34.21	peak
7498.000	40.98	6.92	47.90	82.25	-34.35	peak
9001.000	38.20	10.12	48.32	82.25	-33.93	peak

GPRS- High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1765.000	59.56	-10.98	48.58	82.25	-33.67	peak
2539.000	56.40	-8.75	47.65	82.25	-34.60	peak
4996.000	42.19	-0.51	41.68	82.25	-40.57	peak
6004.000	41.11	2.20	43.31	82.25	-38.94	peak
7849.000	38.96	7.48	46.44	82.25	-35.81	peak
9667.000	46.44	10.44	56.88	82.25	-25.37	peak

GPRS- High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1765.000	56.09	-10.98	45.11	82.25	-37.14	peak
2548.000	52.80	-8.73	44.07	82.25	-38.18	peak
4996.000	45.41	-0.51	44.90	82.25	-37.35	peak
5500.000	44.36	1.17	45.53	82.25	-36.72	peak
7885.000	38.39	7.38	45.77	82.25	-36.48	peak
9505.000	36.96	10.36	47.32	82.25	-34.93	peak

GSM 1900

GPRS- Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3870.000	51.02	-3.86	47.16	82.25	-35.09	peak
6000.000	42.97	2.90	45.87	82.25	-36.38	peak
9390.000	36.64	10.73	47.37	82.25	-34.88	peak
11625.000	36.48	16.65	53.13	82.25	-29.12	peak



13965.000	33.70	19.34	53.04	82.25	-29.21	peak
17775.000	30.40	23.98	54.38	82.25	-27.87	peak

GPRS- Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3870.000	48.31	-3.86	44.45	82.25	-37.80	peak
6000.000	42.75	2.90	45.65	82.25	-36.60	peak
8115.000	38.13	9.50	47.63	82.25	-34.62	peak
11745.000	35.98	17.06	53.04	82.25	-29.21	peak
13485.000	33.99	19.18	53.17	82.25	-29.08	peak
17715.000	30.66	23.46	54.12	82.25	-28.13	peak

GPRS- Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3900.000	52.92	-3.97	48.95	82.25	-33.30	peak
4995.000	51.30	0.70	52.00	82.25	-30.25	peak
7245.000	44.45	6.39	50.84	82.25	-31.41	peak
10005.000	42.39	11.56	53.95	82.25	-28.30	peak
12495.000	36.77	16.99	53.76	82.25	-28.49	peak
15510.000	38.39	15.20	53.59	82.25	-28.66	peak

GPRS- Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3900.000	50.15	-3.97	46.18	82.25	-36.07	peak
6000.000	46.39	2.90	49.29	82.25	-32.96	peak
7500.000	42.03	7.68	49.71	82.25	-32.54	peak
10005.000	39.37	11.56	50.93	82.25	-31.32	peak
13560.000	34.28	19.12	53.40	82.25	-28.85	peak
17940.000	31.27	24.57	55.84	82.25	-26.41	peak

GPRS- High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3930.000	48.74	-3.86	44.88	82.25	-37.37	peak
5490.000	42.73	2.31	45.04	82.25	-37.21	peak
8130.000	38.51	9.44	47.95	82.25	-34.30	peak
11745.000	36.16	17.06	53.22	82.25	-29.03	peak
13965.000	34.87	19.34	54.21	82.25	-28.04	peak
17790.000	31.03	24.10	55.13	82.25	-27.12	peak

GPRS- High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3930.000	49.42	-3.86	45.56	82.25	-36.69	peak
6000.000	45.32	2.90	48.22	82.25	-34.03	peak
10005.000	38.34	11.56	49.90	82.25	-32.35	peak
13665.000	33.50	19.33	52.83	82.25	-29.42	peak
15195.000	33.43	15.51	48.94	82.25	-33.31	peak
17700.000	31.32	23.33	54.65	82.25	-27.60	peak

WCDMA Band 2

HSDPA- Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4845.000	40.61	0.07	40.68	82.25	-41.57	peak



8250.000	38.20	9.10	47.30	82.25	-34.95	peak
11865.000	36.24	17.14	53.38	82.25	-28.87	peak
13650.000	33.70	19.26	52.96	82.25	-29.29	peak
14985.000	32.61	16.67	49.28	82.25	-32.97	peak
17775.000	31.40	23.98	55.38	82.25	-26.87	peak

HSDPA- Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4860.000	41.46	0.04	41.50	82.25	-40.75	peak
8115.000	37.62	9.50	47.12	82.25	-35.13	peak
11685.000	35.66	17.02	52.68	82.25	-29.57	peak
13665.000	33.73	19.33	53.06	82.25	-29.19	peak
14760.000	33.99	17.52	51.51	82.25	-30.74	peak
17700.000	31.32	23.33	54.65	82.25	-27.60	peak

HSDPA- Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5640.000	42.17	2.00	44.17	82.25	-38.08	peak
8235.000	38.55	9.12	47.67	82.25	-34.58	peak
11700.000	35.97	17.11	53.08	82.25	-29.17	peak
13665.000	33.63	19.33	52.96	82.25	-29.29	peak
15195.000	33.64	15.51	49.15	82.25	-33.10	peak
17805.000	30.28	24.20	54.48	82.25	-27.77	peak

HSDPA- Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4860.000	40.62	0.04	40.66	82.25	-41.59	peak
7185.000	36.79	6.52	43.31	82.25	-38.94	peak
9000.000	36.84	10.77	47.61	82.25	-34.64	peak
11820.000	35.69	17.03	52.72	82.25	-29.53	peak
13920.000	33.56	19.30	52.86	82.25	-29.39	peak
17775.000	29.68	23.98	53.66	82.25	-28.59	peak

HSDPA- High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5715.000	44.71	2.11	46.82	82.25	-35.43	peak
8115.000	38.07	9.50	47.57	82.25	-34.68	peak
11745.000	35.51	17.06	52.57	82.25	-29.68	peak
14010.000	33.38	19.32	52.70	82.25	-29.55	peak
16935.000	32.05	19.66	51.71	82.25	-30.54	peak
17685.000	31.10	23.18	54.28	82.25	-27.97	peak

HSDPA- High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5715.000	43.05	2.11	45.16	82.25	-37.09	peak
7635.000	40.52	7.45	47.97	82.25	-34.28	peak
10230.000	36.49	12.13	48.62	82.25	-33.63	peak
11835.000	35.27	17.07	52.34	82.25	-29.91	peak
13950.000	33.35	19.33	52.68	82.25	-29.57	peak
17790.000	30.21	24.10	54.31	82.25	-27.94	peak

**WCDMA Band 4****HSDPA- Low Channel- Horizontal**

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4785.000	40.92	0.00	40.92	82.25	-41.33	peak
5925.000	38.80	3.30	42.10	82.25	-40.15	peak
8940.000	37.72	9.61	47.33	82.25	-34.92	peak
11820.000	35.15	17.03	52.18	82.25	-30.07	peak
13635.000	33.49	19.20	52.69	82.25	-29.56	peak
17955.000	29.48	24.67	54.15	82.25	-28.10	peak

HSDPA- Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4470.000	40.99	-1.52	39.47	82.25	-42.78	peak
5925.000	38.76	3.30	42.06	82.25	-40.19	peak
7740.000	39.04	8.15	47.19	82.25	-35.06	peak
11700.000	35.86	17.11	52.97	82.25	-29.28	peak
13530.000	34.21	19.17	53.38	82.25	-28.87	peak
17775.000	30.15	23.98	54.13	82.25	-28.12	peak

HSDPA- Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4725.000	41.20	-0.63	40.57	82.25	-41.68	peak
5865.000	38.93	3.09	42.02	82.25	-40.23	peak
9390.000	37.04	10.73	47.77	82.25	-34.48	peak
11955.000	35.99	17.25	53.24	82.25	-29.01	peak
13845.000	33.10	19.36	52.46	82.25	-29.79	peak
17955.000	29.84	24.67	54.51	82.25	-27.74	peak

HSDPA- Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4860.000	40.28	0.04	40.32	82.25	-41.93	peak
8145.000	37.63	9.38	47.01	82.25	-35.24	peak
11340.000	35.51	15.72	51.23	82.25	-31.02	peak
13545.000	35.36	19.13	54.49	82.25	-27.76	peak
14430.000	33.68	17.84	51.52	82.25	-30.73	peak
17760.000	30.20	23.85	54.05	82.25	-28.20	peak

HSDPA- High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5115.000	40.23	0.69	40.92	82.25	-41.33	peak
7170.000	36.87	6.55	43.42	82.25	-38.83	peak
8970.000	37.54	10.18	47.72	82.25	-34.53	peak
11820.000	36.31	17.03	53.34	82.25	-28.91	peak
13620.000	33.18	19.12	52.30	82.25	-29.95	peak
17790.000	30.44	24.10	54.54	82.25	-27.71	peak

HSDPA- High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4860.000	40.52	0.04	40.56	82.25	-41.69	peak
7185.000	36.60	6.52	43.12	82.25	-39.13	peak



10230.000	35.69	12.13	47.82	82.25	-34.43	peak
12195.000	35.44	17.47	52.91	82.25	-29.34	peak
13650.000	33.83	19.26	53.09	82.25	-29.16	peak
17865.000	29.45	24.27	53.72	82.25	-28.53	peak

WCDMA Band 5

HSDPA- Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1648.000	53.61	-11.70	41.91	82.25	-40.34	peak
2476.000	48.89	-8.88	40.01	82.25	-42.24	peak
3304.000	54.07	-6.43	47.64	82.25	-34.61	peak
4870.000	40.66	-0.60	40.06	82.25	-42.19	peak
7723.000	38.31	7.29	45.60	82.25	-36.65	peak
9001.000	37.14	10.12	47.26	82.25	-34.99	peak

HSDPA- Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1495.000	50.28	-12.56	37.72	82.25	-44.53	peak
3295.000	45.12	-6.45	38.67	82.25	-43.58	peak
4789.000	40.73	-0.71	40.02	82.25	-42.23	peak
7030.000	36.62	5.27	41.89	82.25	-40.36	peak
7885.000	38.94	7.38	46.32	82.25	-35.93	peak
9019.000	37.16	10.02	47.18	82.25	-35.07	peak

HSDPA- Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1666.000	47.62	-11.59	36.03	82.25	-46.22	peak
2512.000	45.64	-8.80	36.84	82.25	-45.41	peak
3340.000	45.74	-6.38	39.36	82.25	-42.89	peak
4870.000	40.64	-0.60	40.04	82.25	-42.21	peak
7885.000	38.36	7.38	45.74	82.25	-36.51	peak
9136.000	37.78	9.33	47.11	82.25	-35.14	peak

HSDPA- Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1495.000	49.43	-12.56	36.87	82.25	-45.38	peak
2494.000	45.51	-8.84	36.67	82.25	-45.58	peak
4870.000	40.75	-0.60	40.15	82.25	-42.10	peak
7039.000	36.42	5.32	41.74	82.25	-40.51	peak
8290.000	38.06	8.35	46.41	82.25	-35.84	peak
8956.000	37.28	9.65	46.93	82.25	-35.32	peak

HSDPA- High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1684.000	48.25	-11.48	36.77	82.25	-45.48	peak
2530.000	49.08	-8.77	40.31	82.25	-41.94	peak
3376.000	47.55	-6.33	41.22	82.25	-41.03	peak
5932.000	39.56	1.94	41.50	82.25	-40.75	peak
7219.000	52.92	6.18	59.10	82.25	-23.15	peak
9073.000	37.43	9.71	47.14	82.25	-35.11	peak



HSDPA- High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1495.000	50.48	-12.56	37.92	82.25	-44.33	peak
2494.000	50.31	-8.84	41.47	82.25	-40.78	peak
4708.000	41.63	-1.11	40.52	82.25	-41.73	peak
7183.000	37.86	6.01	43.87	82.25	-38.38	peak
9001.000	37.13	10.12	47.25	82.25	-35.00	peak
9856.000	41.69	10.44	52.13	82.25	-30.12	peak

END OF REPORT