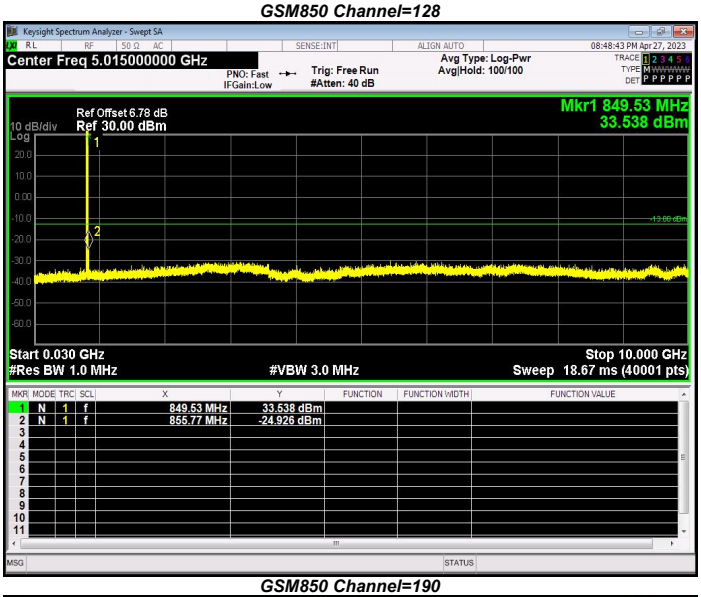
TEST RESULTS

Out-of-band emissions

Band	Channel	Frequency (MHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
GSM850	128	824.2	855.77	-24.92	-13	PASS
GSM850	190	836.6	3196.47	-30.11	-13	PASS
GSM850	251	848.8	3177.28	-30.13	-13	PASS
GPRS850	128	824.2	856.26	-13.32	-13	PASS
GPRS850	190	836.6	799.93	-26.82	-13	PASS
GPRS850	251	848.8	2682.02	-29.65	-13	PASS
EGPRS850	128	824.2	858.76	-26.38	-13	PASS
EGPRS850	190	836.6	3174.04	-30.07	-13	PASS
EGPRS850	251	848.8	812.65	-21.81	-13	PASS
GSM1900	512	1850.2	19313.53	-22.30	-13	PASS
GSM1900	661	1880	19503.25	-21.54	-13	PASS
GSM1900	810	1909.8	19231.16	-22.06	-13	PASS
GPRS1900	512	1850.2	19999.00	-21.98	-13	PASS
GPRS1900	661	1880	19203.70	-22.45	-13	PASS
GPRS1900	810	1909.8	19668.00	-22.02	-13	PASS
EGPRS1900	512	1850.2	19133.80	-22.79	-13	PASS
EGPRS1900	661	1880	16561.67	-21.86	-13	PASS
EGPRS1900	810	1909.8	16475.30	-22.37	-13	PASS

GSM850 Channel=128



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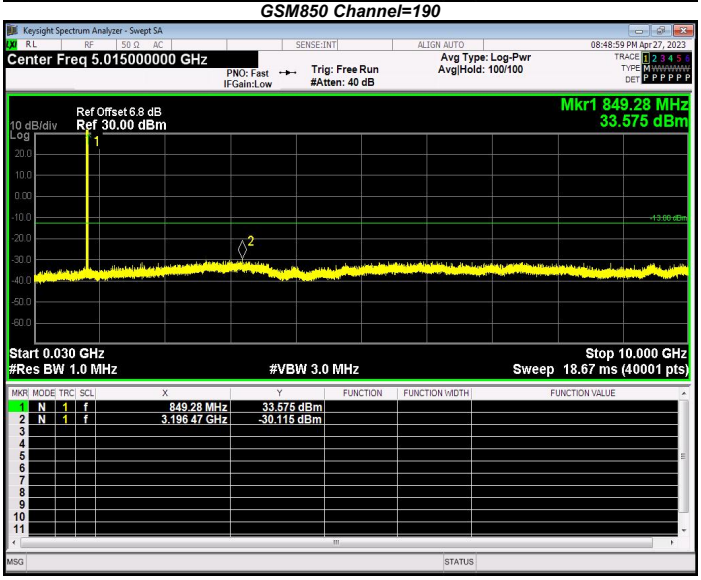
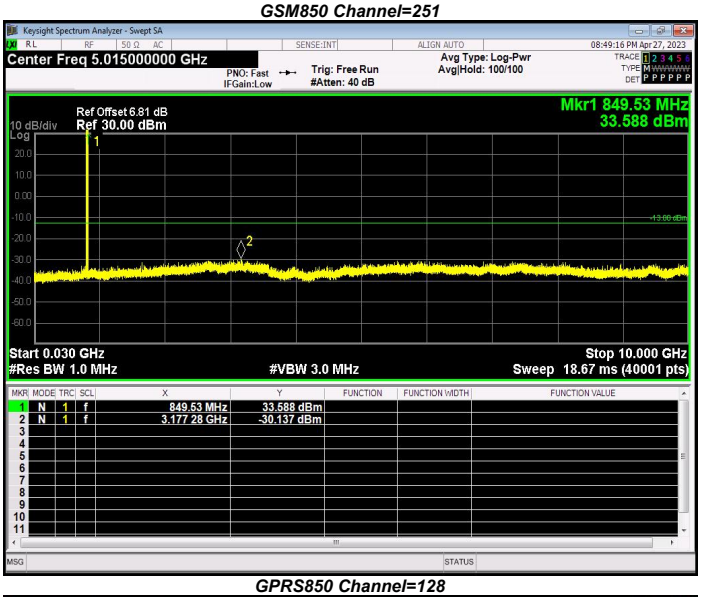
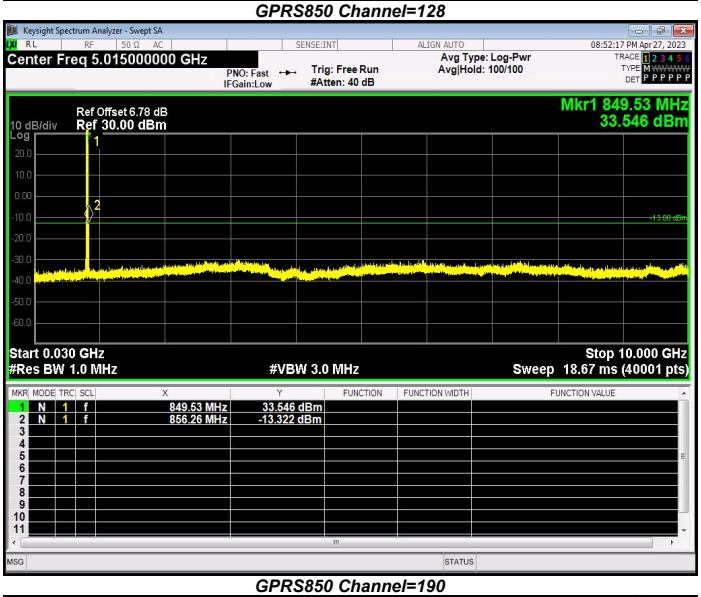


GSM850 Channel=251



GPRS850 Channel=128



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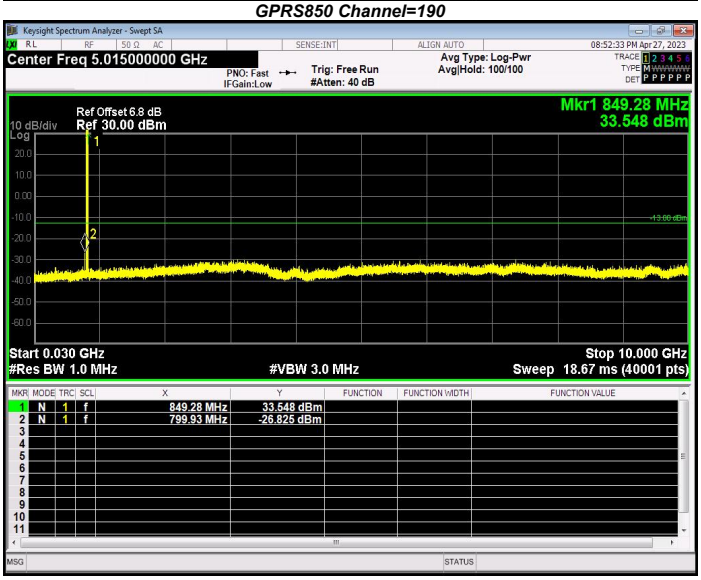
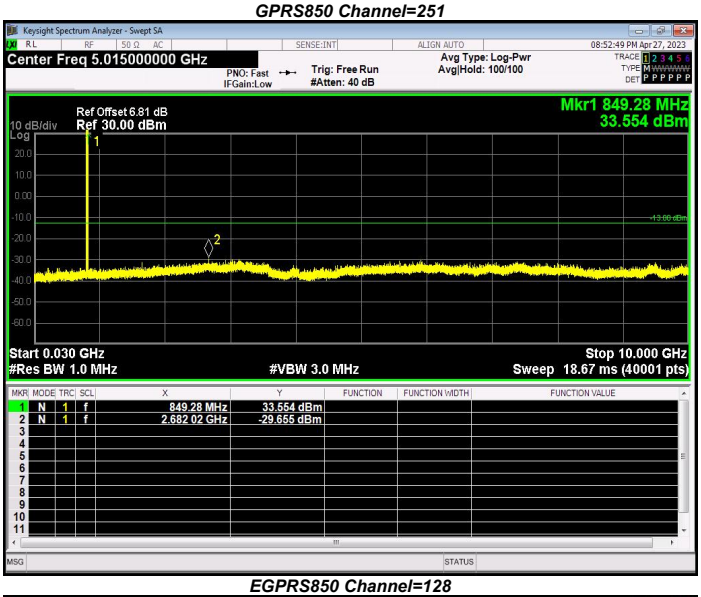
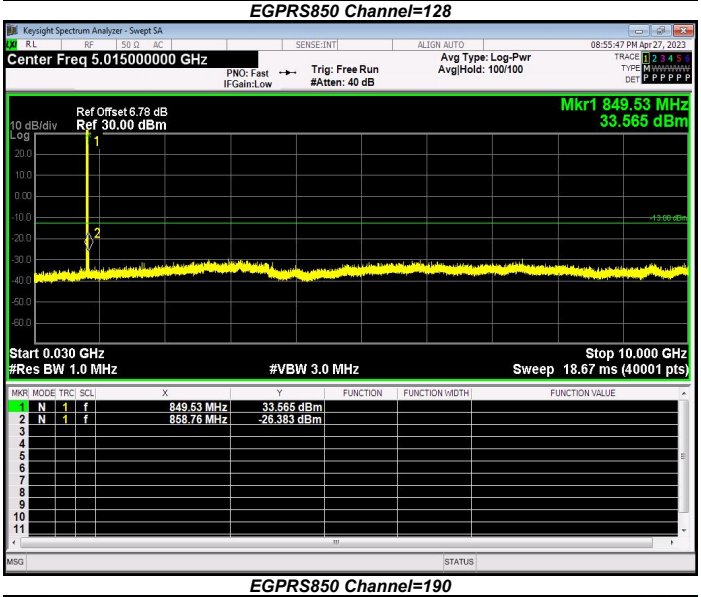


GPRS850 Channel=251



EGPRS850 Channel=128



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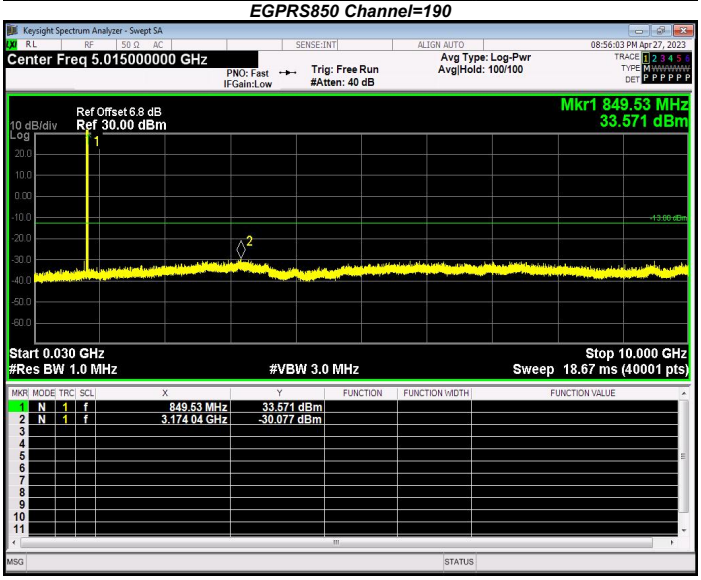

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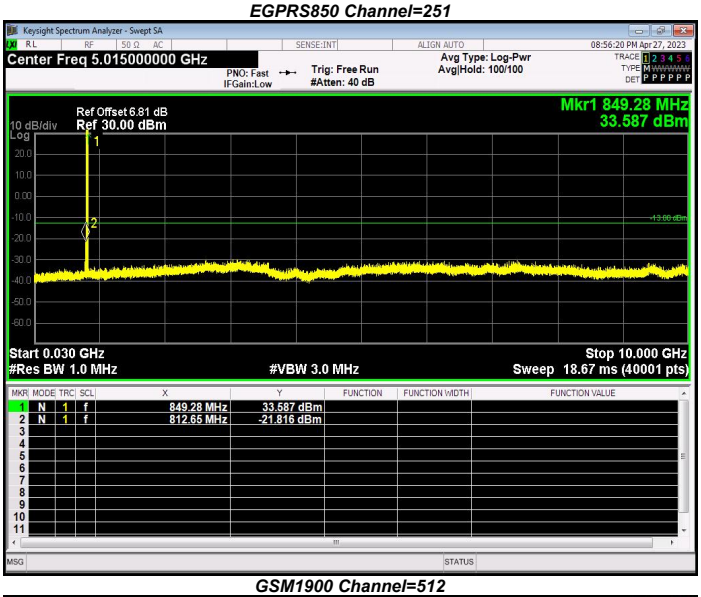
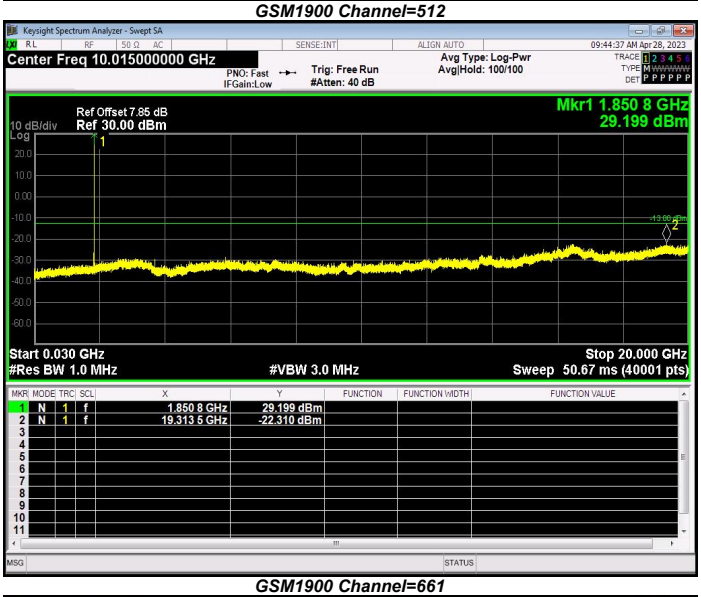
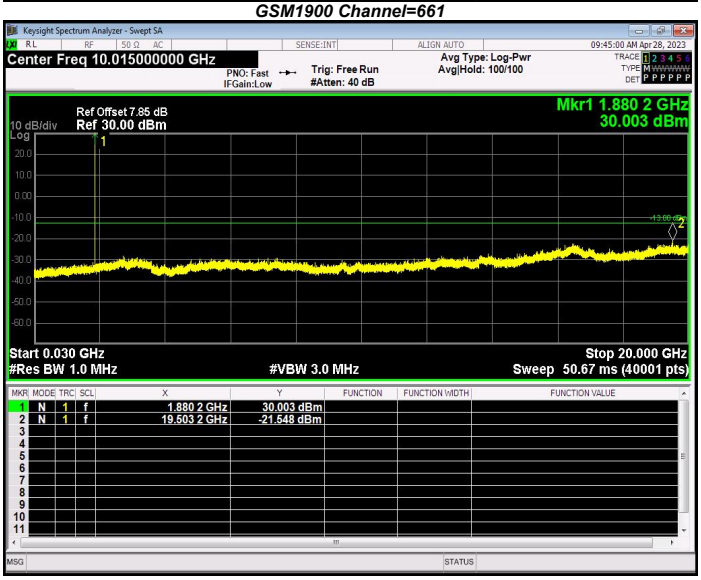


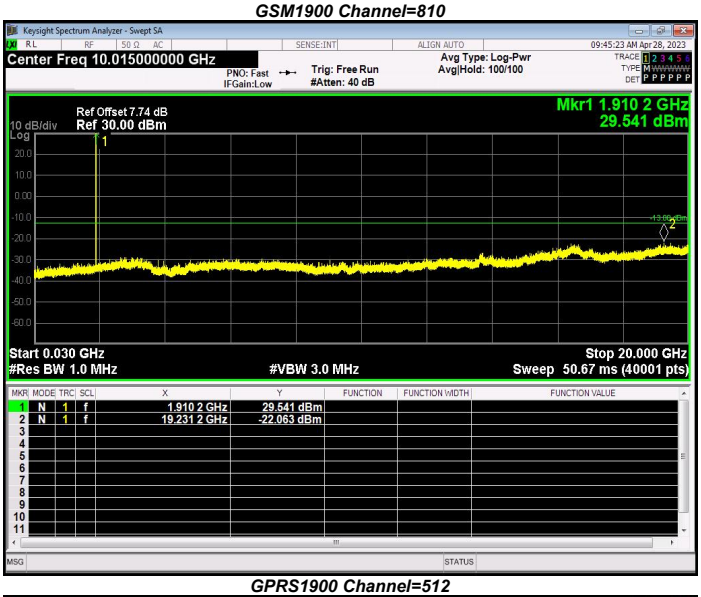
GSM1900 Channel=512



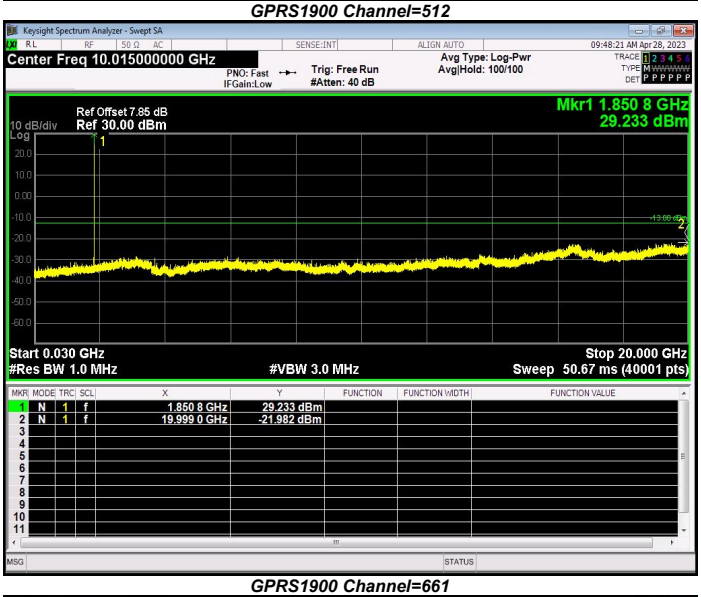
GSM1900 Channel=661



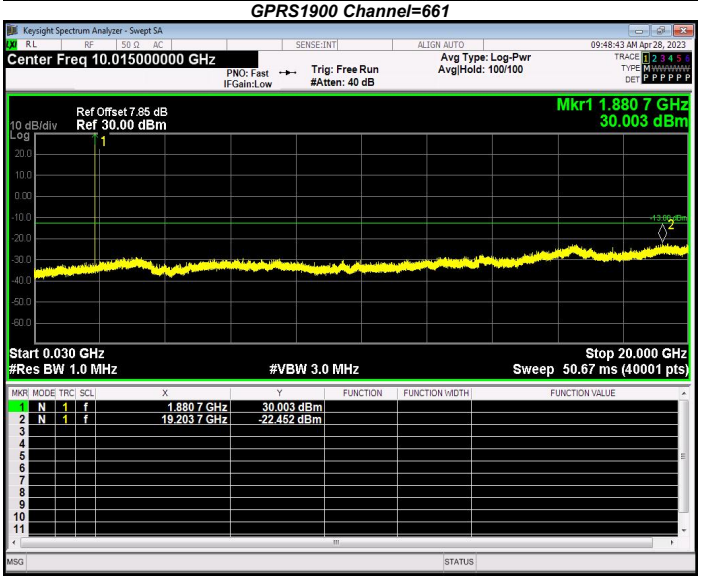
GSM1900 Channel=810



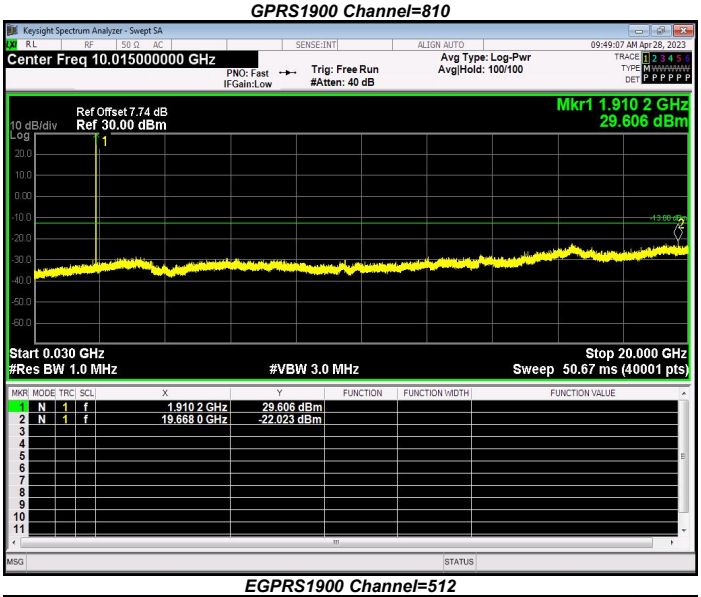
GPRS1900 Channel=512



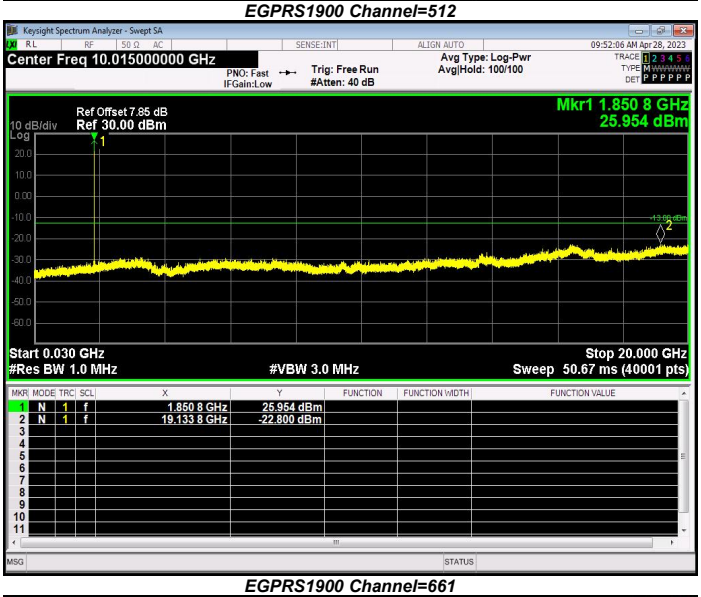
GPRS1900 Channel=661



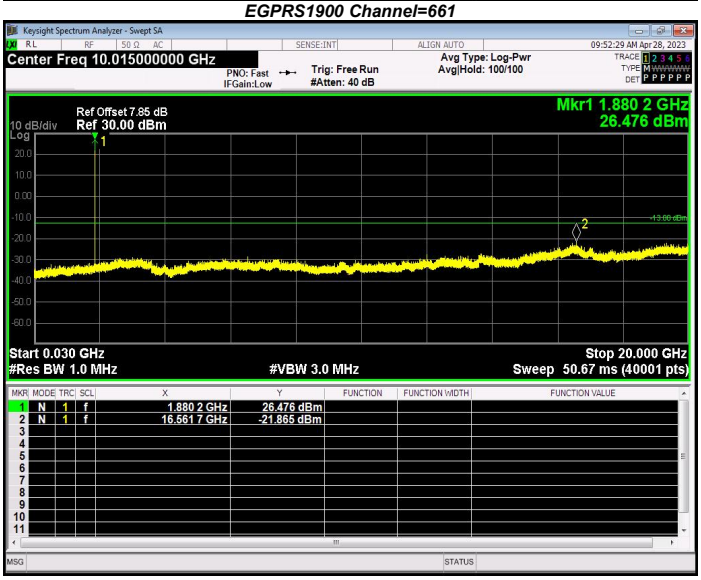
GPRS1900 Channel=810



EGPRS1900 Channel=512



EGPRS1900 Channel=661



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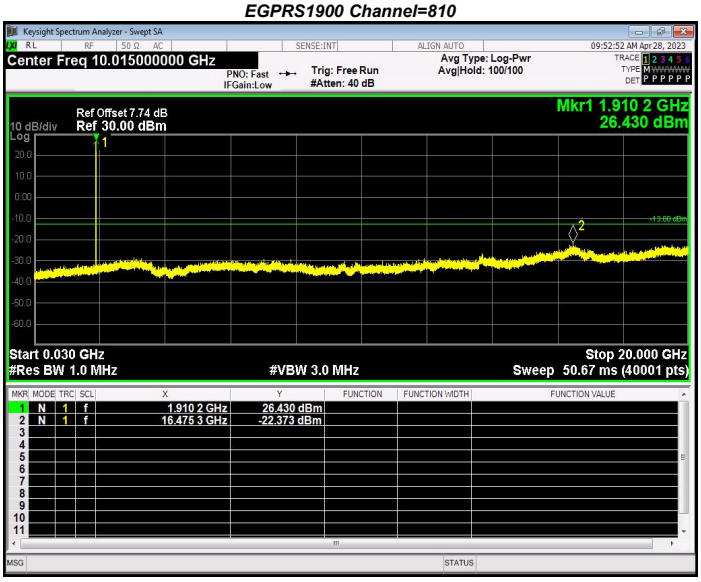


Radiated Spurious Measurement:

TEST RESULTS

Remark:
1. We were tested all refer 3GPP TS151 010.
2. EIRP=P_{Mea}(dBm)-P_{cl}(dB) +G_a(dBi)
3. We were not recorded other points as values lower than limits.
4. Margin = Limit - EIRP

GSM 850_ Low Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1648.4	-30.98	3.00	3.00	9.58	-24.4	-13	11.4	H
2472.6	-36.82	3.03	3.00	10.72	-29.13	-13	16.13	H
1648.4	-30.46	3.00	3.00	9.68	-23.78	-13	10.78	V
2472.6	-39.21	3.03	3.00	10.72	-31.52	-13	18.52	V

GSM 850_ Middle Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.2	-29.12	3.00	3.00	9.58	-22.54	-13	9.54	H
2509.8	-39.55	3.03	3.00	10.72	-31.86	-13	18.86	H
1673.2	-30.96	3.00	3.00	9.68	-24.28	-13	11.28	V
2509.8	-38.3	3.03	3.00	10.72	-30.61	-13	17.61	V

GSM 850_ High Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.6	-32.51	3.00	3.00	9.58	-25.93	-13	12.93	H
2546.4	-37.9	3.03	3.00	10.72	-30.21	-13	17.21	H
1697.6	-31.19	3.00	3.00	9.68	-24.51	-13	11.51	V
2546.4	-35.63	3.03	3.00	10.72	-27.94	-13	14.94	V

GSM 1900_ Low Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3700.4	-36.34	4.39	3.00	12.34	-28.39	-13.00	15.39	H
5550.6	-41.93	5.31	3.00	13.52	-33.72	-13.00	20.72	H
3700.4	-34.52	4.39	3.00	12.34	-26.57	-13.00	13.57	V
5550.6	-43.71	5.31	3.00	13.52	-35.5	-13.00	22.5	V

GSM 1900_ Middle Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-36.55	4.41	3.00	12.34	-28.62	-13.00	15.62	H
5640.0	-41.28	5.38	3.00	13.58	-33.08	-13.00	20.08	H
3760.0	-35.14	4.41	3.00	12.34	-27.21	-13.00	14.21	V
5640.0	-43.02	5.38	3.00	13.58	-34.82	-13.00	21.82	V

GSM 1900_ High Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3819.6	-36.36	4.45	3.00	12.45	-28.36	-13.00	15.36	H
5729.4	-42.15	5.47	3.00	13.66	-33.96	-13.00	20.96	H
3819.6	-35.48	4.45	3.00	12.45	-27.48	-13.00	14.48	V
5729.4	-43.25	5.48	3.00	13.66	-35.07	-13.00	22.07	V

GPRS 850_ Low Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1648.4	-30.98	3.00	3.00	9.58	-24.4	-13	11.4	H
2472.6	-37.06	3.03	3.00	10.72	-29.37	-13	16.37	H
1648.4	-30.85	3.00	3.00	9.68	-24.17	-13	11.17	V
2472.6	-39.01	3.03	3.00	10.72	-31.32	-13	18.32	V

GPRS 850_ Middle Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.2	-28.93	3.00	3.00	9.58	-22.35	-13	9.35	H
2509.8	-39.76	3.03	3.00	10.72	-32.07	-13	19.07	H
1673.2	-30.1	3.00	3.00	9.68	-23.42	-13	10.42	V
2509.8	-38.48	3.03	3.00	10.72	-30.79	-13	17.79	V

GPRS 850_ High Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.6	-32.75	3.00	3.00	9.58	-26.17	-13	13.17	H
2546.4	-38.12	3.03	3.00	10.72	-30.43	-13	17.43	H
1697.6	-30.85	3.00	3.00	9.68	-24.17	-13	11.17	V
2546.4	-35.25	3.03	3.00	10.72	-27.56	-13	14.56	V

GPRS 1900_ Low Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3700.4	-36.34	4.39	3.00	12.34	-28.39	-13.00	15.39	H
5550.6	-41.86	5.31	3.00	13.52	-33.65	-13.00	20.65	H
3700.4	-35.16	4.39	3.00	12.34	-27.21	-13.00	14.21	V
5550.6	-43.38	5.31	3.00	13.52	-35.17	-13.00	22.17	V

GPRS 1900_ Middle Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-36.99	4.41	3.00	12.34	-29.06	-13.00	16.06	H
5640.0	-42.2	5.38	3.00	13.58	-34	-13.00	21	H
3760.0	-36	4.41	3.00	12.34	-28.07	-13.00	15.07	V
5640.0	-43.04	5.38	3.00	13.58	-34.84	-13.00	21.84	V

GPRS 1900_ High Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3819.6	-36.06	4.45	3.00	12.45	-28.06	-13.00	15.06	H
5729.4	-41.96	5.47	3.00	13.66	-33.77	-13.00	20.77	H
3819.6	-35.22	4.45	3.00	12.45	-27.22	-13.00	14.22	V
5729.4	-43.41	5.48	3.00	13.66	-35.23	-13.00	22.23	V

EGPRS 850_ Low Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1648.4	-30.46	3.00	3.00	9.58	-23.88	-13	10.88	H
2472.6	-37.07	3.03	3.00	10.72	-29.38	-13	16.38	H
1648.4	-30.23	3.00	3.00	9.68	-23.55	-13	10.55	V
2472.6	-39.61	3.03	3.00	10.72	-31.92	-13	18.92	V

EGPRS 850_ Middle Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.2	-30.98	3.00	3.00	9.58	-24.4	-13	11.4	H
2509.8	-37.21	3.03	3.00	10.72	-29.52	-13	16.52	H
1673.2	-30.65	3.00	3.00	9.68	-23.97	-13	10.97	V
2509.8	-39.62	3.03	3.00	10.72	-31.93	-13	18.93	V

EGPRS 850_ High Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.6	-28.19	3.00	3.00	9.58	-21.61	-13	8.61	H
2546.4	-38.97	3.03	3.00	10.72	-31.28	-13	18.28	H
1697.6	-31.2	3.00	3.00	9.68	-24.52	-13	11.52	V
2546.4	-38.32	3.03	3.00	10.72	-30.63	-13	17.63	V

EGPRS 1900_ Low Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3700.4	-36.34	4.41	3.00	12.34	-28.41	-13.00	15.41	H
5550.6	-41.56	5.38	3.00	13.58	-33.36	-13.00	20.36	H
3700.4	-34.11	4.41	3.00	12.34	-26.18	-13.00	13.18	V
5550.6	-43.5	5.38	3.00	13.58	-35.3	-13.00	22.3	V

EGPRS 1900_ Middle Channel

Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-37.12	4.41	3.00	12.34	-29.19	-13.00	16.19	H
5640.0	-42.29	5.38	3.00	13.58	-34.09	-13.00	21.09	H
3760.0	-35.44	4.41	3.00	12.34	-27.51	-13.00	14.51	V
5640.0	-42.94	5.38	3.00	13.58	-34.74	-13.00	21.74	V

EGPRS 1900_ High Channel

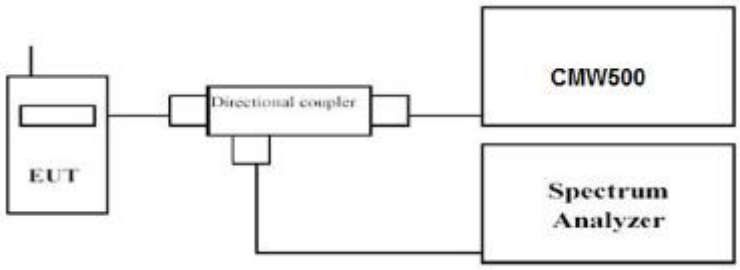
Frequency (MHz)	P_{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3819.6	-36.42	4.45	3.00	12.45	-28.42	-13.00	15.42	H
5729.4	-42.18	5.47	3.00	13.66	-33.99	-13.00	20.99	H
3819.6	-35.74	4.45	3.00	12.45	-27.74	-13.00	14.74	V
5729.4	-43.65	5.48	3.00	13.66	-35.47	-13.00	22.47	V

4.5 Peak-to-Average Ratio (PAR)

LIMIT

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

TEST CONFIGURATION



TEST PROCEDURE

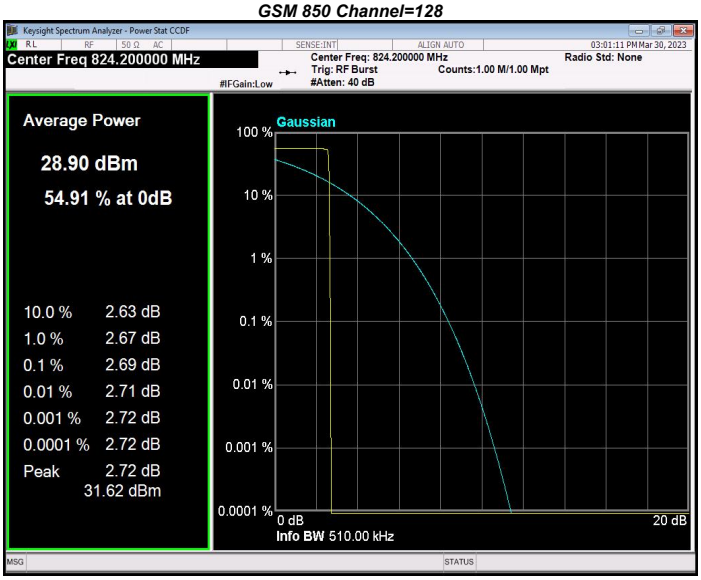
Use spectrum to measure the total peak power and record as P_{Pk}. Use spectrum to measure the total average power and record as P_{Avg}. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm).
Determine the PAPR from:
PAPR (dB) = P_{Pk} (dBm) - P_{Avg} (dBm)

TEST RESULTS

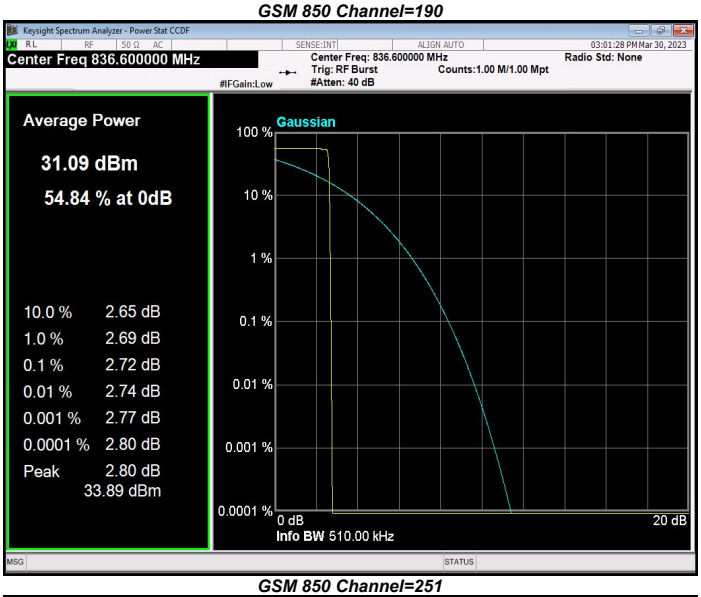
Peak-to-Average Ratio

Band	Channel	Frequency (MHz)	Result (dB)	high Limit (dB)	Verdict
GSM850	128	824.2	2.69	13	PASS
GSM850	190	836.6	2.72	13	PASS
GSM850	251	848.8	2.69	13	PASS
GPRS850	128	824.2	3.20	13	PASS
GPRS850	190	836.6	7.61	13	PASS
GPRS850	251	848.8	10.28	13	PASS
EGPRS850	128	824.2	3.23	13	PASS
EGPRS850	190	836.6	7.66	13	PASS
EGPRS850	251	848.8	10.28	13	PASS
GSM1900	512	1850.2	2.72	13	PASS
GSM1900	661	1880	2.70	13	PASS
GSM1900	810	1909.8	2.70	13	PASS
GPRS1900	512	1850.2	2.76	13	PASS
GPRS1900	661	1880	2.73	13	PASS
GPRS1900	810	1909.8	2.74	13	PASS
EGPRS1900	512	1850.2	8.44	13	PASS
EGPRS1900	661	1880	8.38	13	PASS
EGPRS1900	810	1909.8	8.52	13	PASS

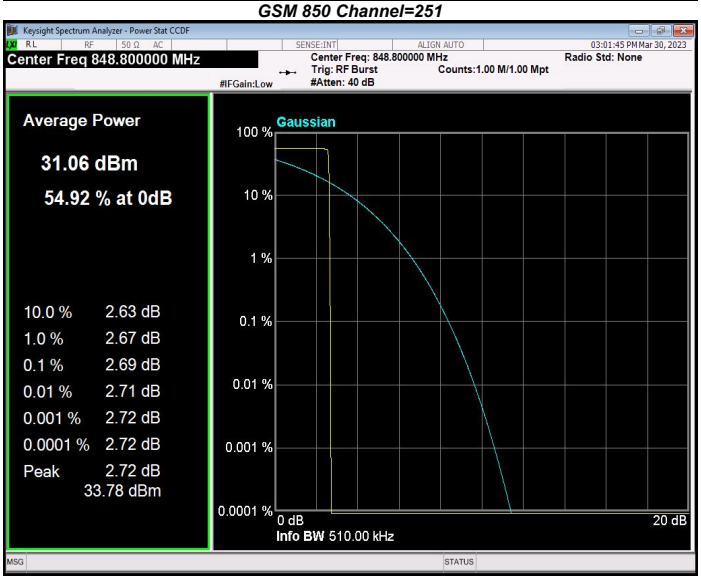
GSM 850 Channel=128



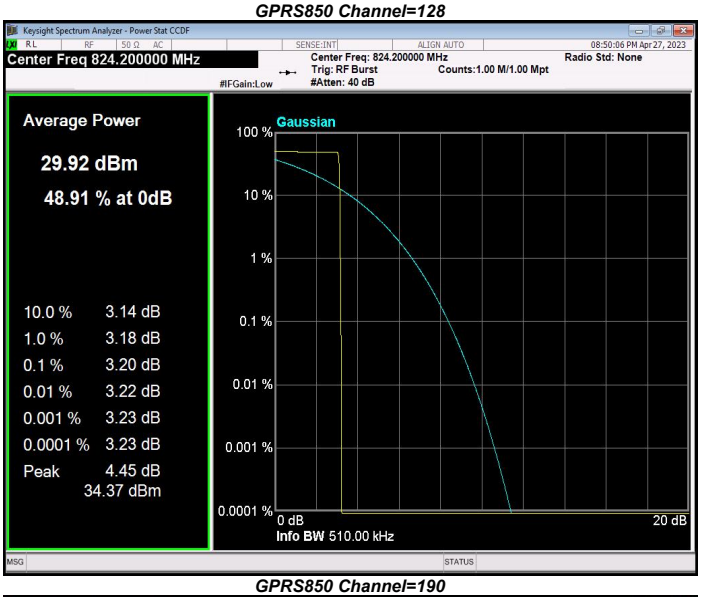
GSM 850 Channel=190



GSM 850 Channel=251



GPRS850 Channel=128



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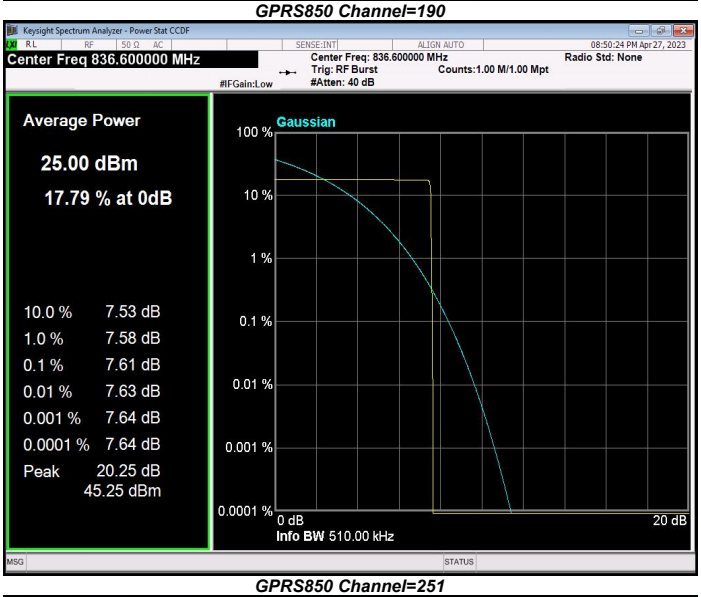

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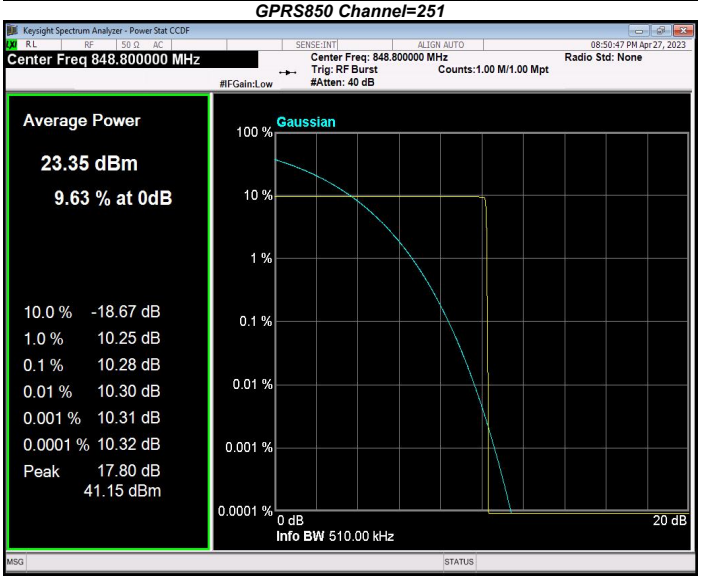

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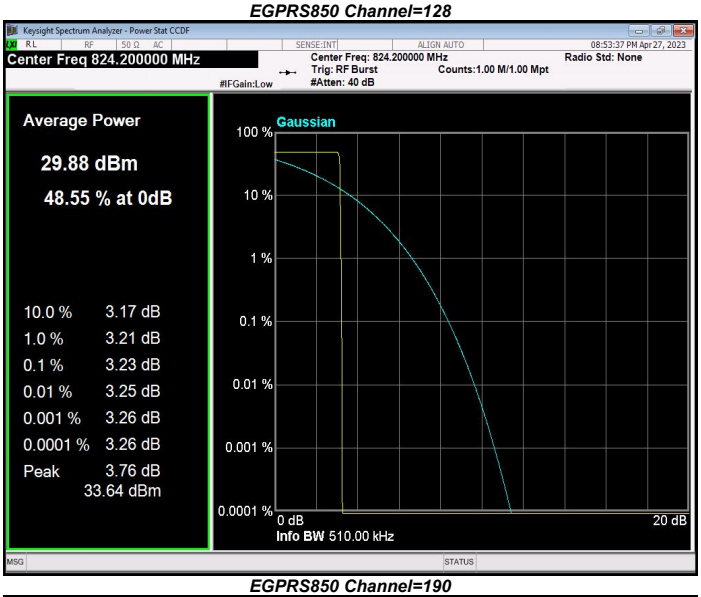

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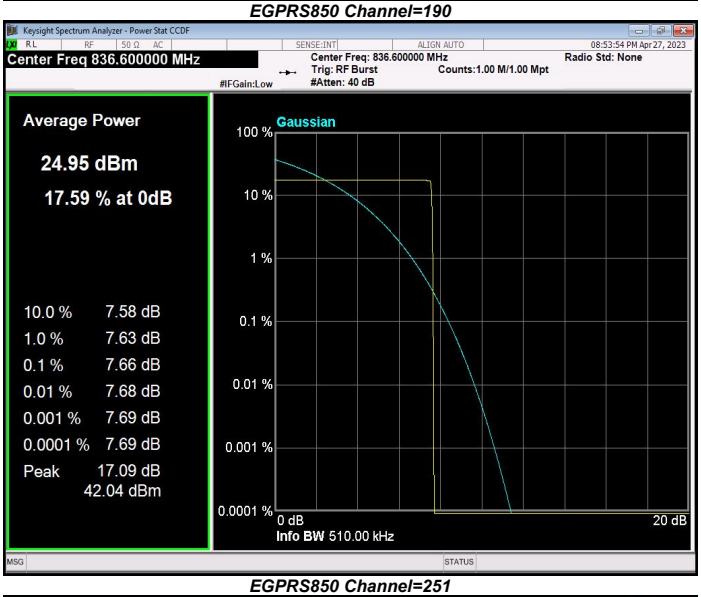

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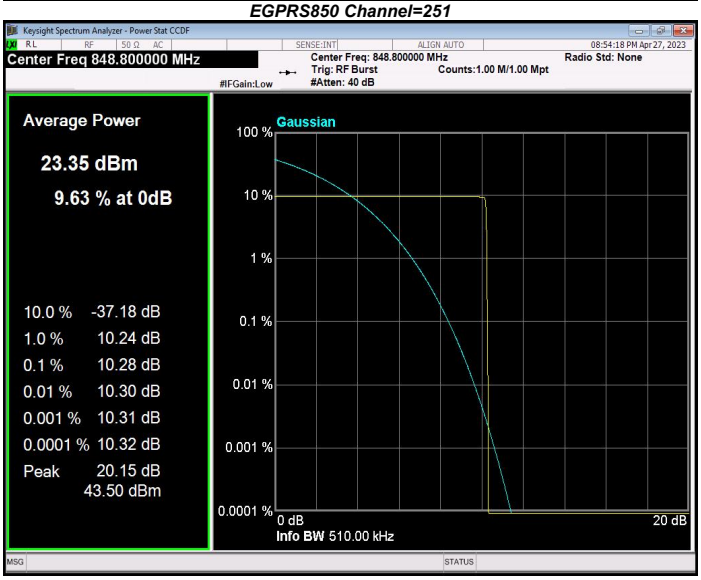
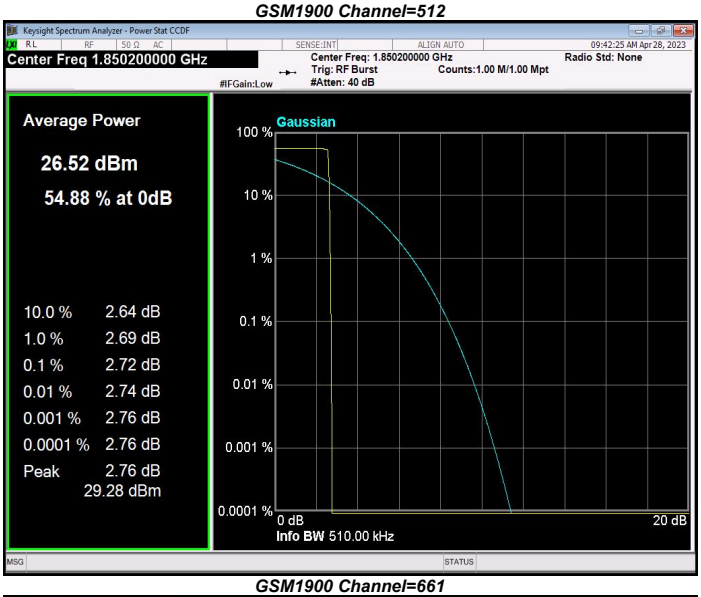
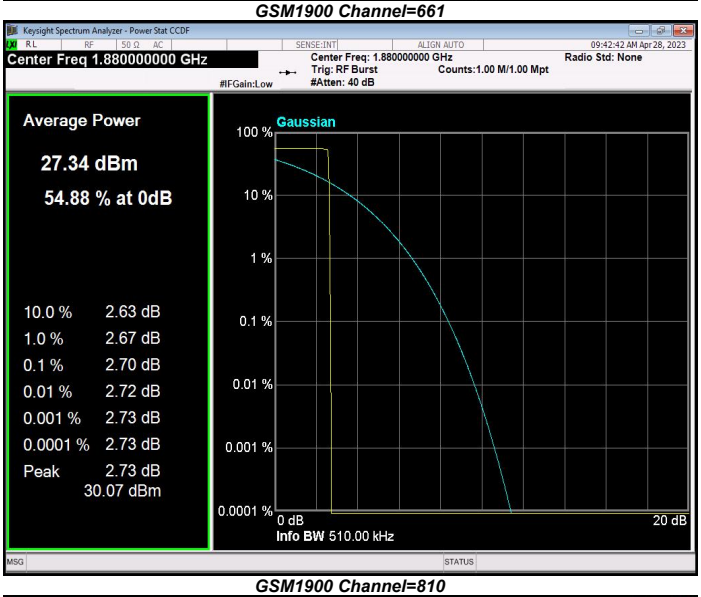


GSM1900 Channel=512



GSM1900 Channel=661



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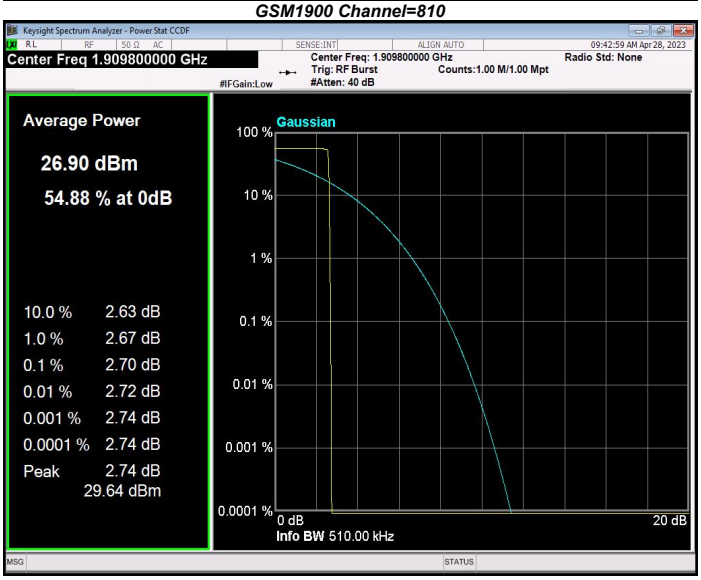

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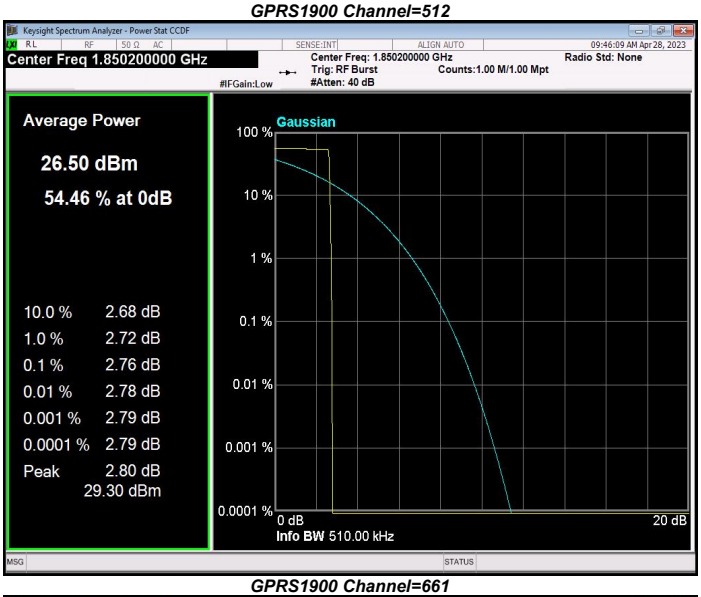

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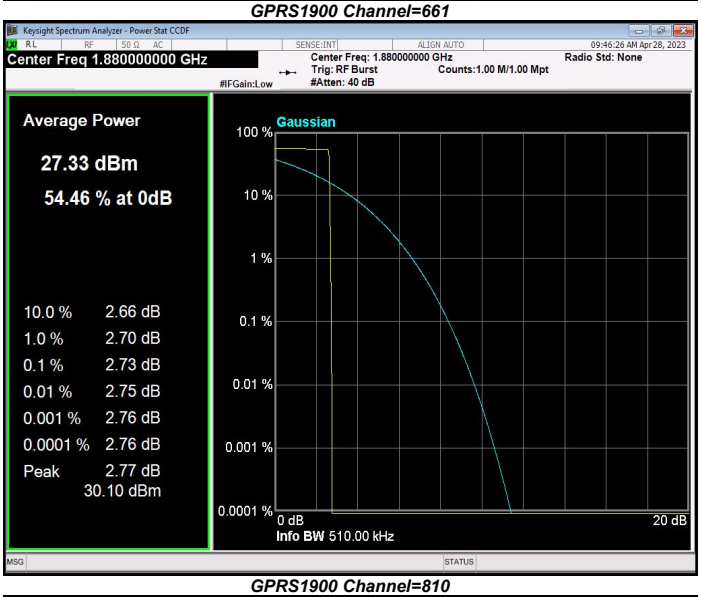

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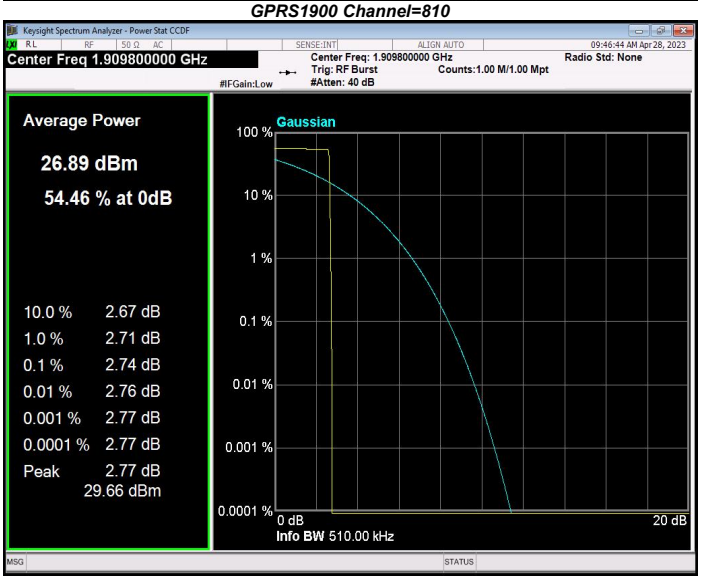

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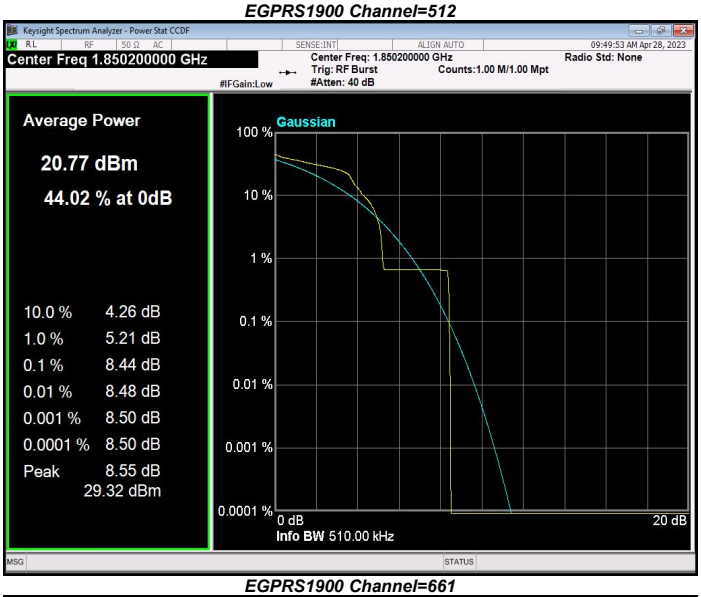

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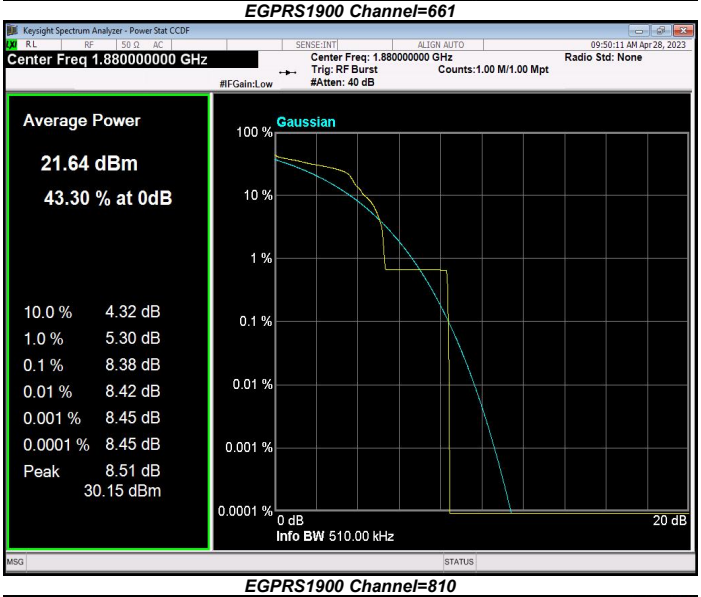

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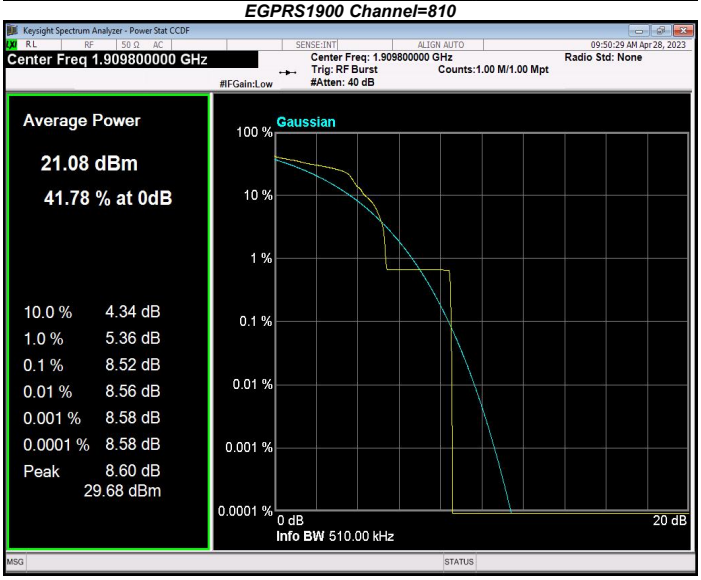
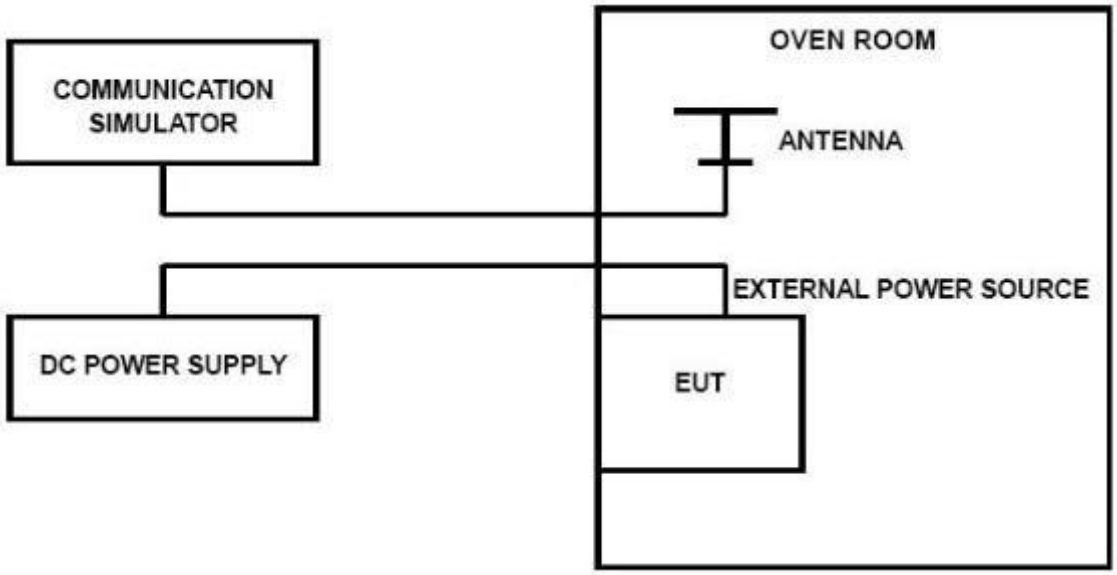


4.6 Frequency Stability under Temperature & Voltage Variations

LIMIT

Cellular Band: ±2.5ppm PCS Band: Within the authorized frequency block

TEST CONFIGURATION



TEST PROCEDURE

For Hand carried battery powered equipment

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.40VDC and 4.20VDC, with a nominal voltage of 3.80 DC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

For equipment powered by primary supply voltage

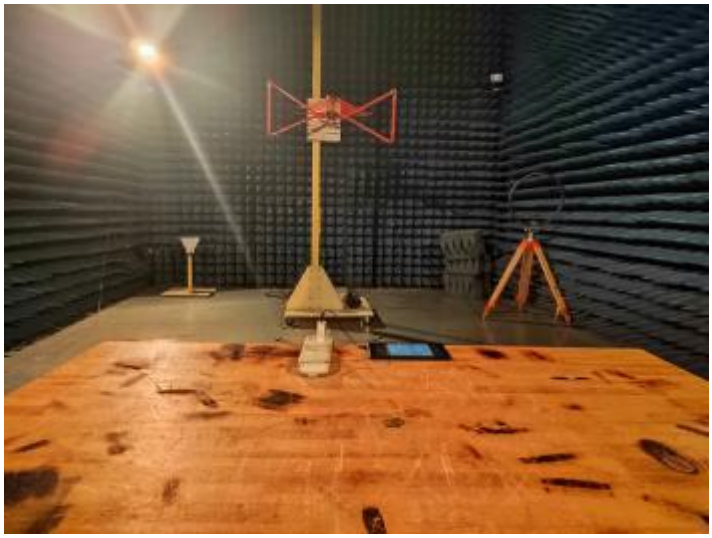
According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

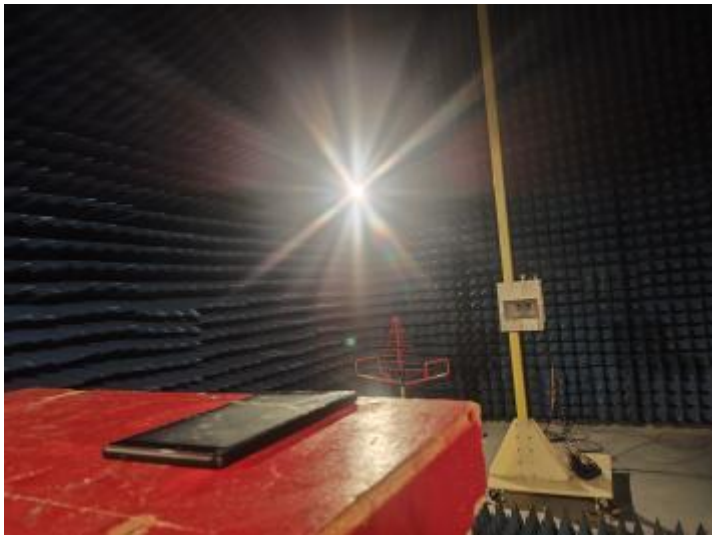
TEST RESULTS

Frequency stability

Band	Channel	Frequency (MHz)	Result(Hz)	Result (ppm)	Low Limit (ppm)	high Limit (ppm)	Verdict
GSM850	128	824.2	-9.62	-0.011673	-2.5	2.5	PASS
GSM850	190	836.6	-12.30	-0.014703	-2.5	2.5	PASS
GSM850	251	848.8	-9.78	-0.011525	-2.5	2.5	PASS
GPRS850	128	824.2	-16.30	-0.019782	-2.5	2.5	PASS
GPRS850	190	836.6	-16.89	-0.020183	-2.5	2.5	PASS
GPRS850	251	848.8	-17.43	-0.020540	-2.5	2.5	PASS
EGPRS850	128	824.2	-13.95	-0.016922	-2.5	2.5	PASS
EGPRS850	190	836.6	-17.18	-0.020531	-2.5	2.5	PASS
EGPRS850	251	848.8	-17.56	-0.020692	-2.5	2.5	PASS
GSM1900	512	1850.2	-20.57	-0.011116	-2.5	2.5	PASS
GSM1900	661	1880	-20.15	-0.010716	-2.5	2.5	PASS
GSM1900	810	1909.8	-16.40	-0.008588	-2.5	2.5	PASS
GPRS1900	512	1850.2	-29.28	-0.015827	-2.5	2.5	PASS
GPRS1900	661	1880	-25.22	-0.013412	-2.5	2.5	PASS
GPRS1900	810	1909.8	999.00	0.523091	-2.5	2.5	PASS
EGPRS1900	512	1850.2	-19.05	-0.010295	-2.5	2.5	PASS
EGPRS1900	661	1880	-13.01	-0.006921	-2.5	2.5	PASS
EGPRS1900	810	1909.8	-9.52	-0.004987	-2.5	2.5	PASS

5 Test Setup Photos of the EUT





6 External and Internal Photos of the EUT

Reference to the test report No. EUT

********** End of Report **********