

Appendix B1

Test Information:

Sample No.:	2SY1-1	Test Date:	2024/12/3~2024/12/4
Test Site:	RF	Test Mode:	Transmitting
Tester:	Leo Lin	Test Result:	PASS

Environmental Conditions:

Temperature: (°C):	24.5-26.5	Relative Humidity: (%)	40-50	ATM Pressure: (kPa)	101
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Frequency stability vs. temperature & Frequency stability vs. voltage Compliance

FCC Part 22H

GSM 850

Mode	Test Channel (MHz)	Frequency Error		Limit (ppm)	Verdict
		(Hz)	(ppm)		
GSM_Middle_TN/VN	836.6	6.6	0.008	±2.5	Pass
GSM_Middle_T1/VN	836.6	7.9	0.009	±2.5	Pass
GSM_Middle_T2/VN	836.6	7.9	0.009	±2.5	Pass
GSM_Middle_T3/VN	836.6	3.9	0.005	±2.5	Pass
GSM_Middle_T4/VN	836.6	5.6	0.007	±2.5	Pass
GSM_Middle_T5/VN	836.6	5.2	0.006	±2.5	Pass
GSM_Middle_T6/VN	836.6	5.3	0.006	±2.5	Pass
GSM_Middle_T7/VN	836.6	4.7	0.006	±2.5	Pass
GSM_Middle_T8/VN	836.6	9.9	0.012	±2.5	Pass
GSM_Middle_TN/VH	836.6	9.3	0.011	±2.5	Pass
GSM_Middle_TN/VL	836.6	6.7	0.008	±2.5	Pass
EDGE_Middle_Solt1_TN/VN	836.6	14.0	0.017	±2.5	Pass
EDGE_Middle_Solt1_T1/VN	836.6	10.0	0.012	±2.5	Pass
EDGE_Middle_Solt1_T2/VN	836.6	7.0	0.008	±2.5	Pass
EDGE_Middle_Solt1_T3/VN	836.6	12.1	0.014	±2.5	Pass
EDGE_Middle_Solt1_T4/VN	836.6	11.4	0.014	±2.5	Pass
EDGE_Middle_Solt1_T5/VN	836.6	12.1	0.015	±2.5	Pass
EDGE_Middle_Solt1_T6/VN	836.6	10.1	0.012	±2.5	Pass
EDGE_Middle_Solt1_T7/VN	836.6	11.2	0.013	±2.5	Pass
EDGE_Middle_Solt1_T8/VN	836.6	7.7	0.009	±2.5	Pass
EDGE_Middle_Solt1_TN/VH	836.6	9.9	0.012	±2.5	Pass
EDGE_Middle_Solt1_TN/VL	836.6	7.8	0.009	±2.5	Pass

Note:

Frequency Error (ppm)=Frequency Error (Hz)/Test Channel(MHz)

TN: 20°C; T1: -30°C; T2: -20°C; T3: -10°C; T4: 0°C; T5: 10°C; T6: 30°C; T7: 40°C; T8: 50°C.

VN: Normal Voltage; VL: Low Voltage; VH: High Voltage.

FCC Part 24E

PCS 1900

Mode	Result (MHz)	Limit (MHz)	Verdict
GSM_Low_TN/VN	1850.076	1850	Pass
GSM_Low_T1/VN	1850.081	1850	Pass
GSM_Low_T2/VN	1850.081	1850	Pass
GSM_Low_T3/VN	1850.080	1850	Pass
GSM_Low_T4/VN	1850.082	1850	Pass
GSM_Low_T5/VN	1850.076	1850	Pass
GSM_Low_T6/VN	1850.078	1850	Pass
GSM_Low_T7/VN	1850.052	1850	Pass
GSM_Low_T8/VN	1850.082	1850	Pass
GSM_Low_TN/VH	1850.063	1850	Pass
GSM_Low_TN/VL	1850.060	1850	Pass
GSM_High_TN/VN	1909.928	1910	Pass
GSM_High_T1/VN	1909.925	1910	Pass
GSM_High_T2/VN	1909.923	1910	Pass
GSM_High_T3/VN	1909.923	1910	Pass
GSM_High_T4/VN	1909.925	1910	Pass
GSM_High_T5/VN	1909.929	1910	Pass
GSM_High_T6/VN	1909.923	1910	Pass
GSM_High_T7/VN	1909.905	1910	Pass
GSM_High_T8/VN	1909.943	1910	Pass
GSM_High_TN/VH	1909.920	1910	Pass
GSM_High_TN/VL	1909.946	1910	Pass
EDGE_Low_Solt1_TN/VN	1850.065	1850	Pass
EDGE_Low_Solt1_T1/VN	1850.034	1850	Pass
EDGE_Low_Solt1_T2/VN	1850.055	1850	Pass
EDGE_Low_Solt1_T3/VN	1850.094	1850	Pass
EDGE_Low_Solt1_T4/VN	1850.003	1850	Pass
EDGE_Low_Solt1_T5/VN	1850.094	1850	Pass
EDGE_Low_Solt1_T6/VN	1850.022	1850	Pass
EDGE_Low_Solt1_T7/VN	1850.090	1850	Pass
EDGE_Low_Solt1_T8/VN	1850.015	1850	Pass
EDGE_Low_Solt1_TN/VH	1850.061	1850	Pass
EDGE_Low_Solt1_TN/VL	1850.077	1850	Pass
EDGE_High_Solt1_TN/VN	1909.993	1910	Pass

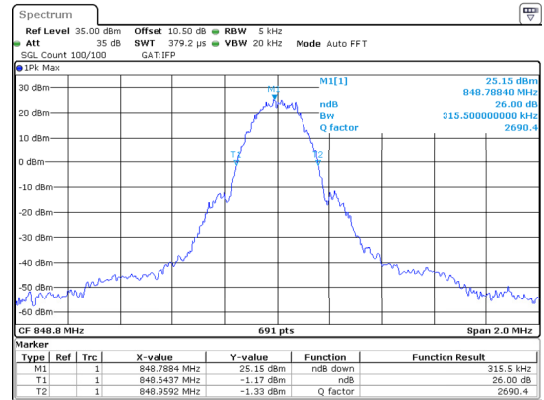
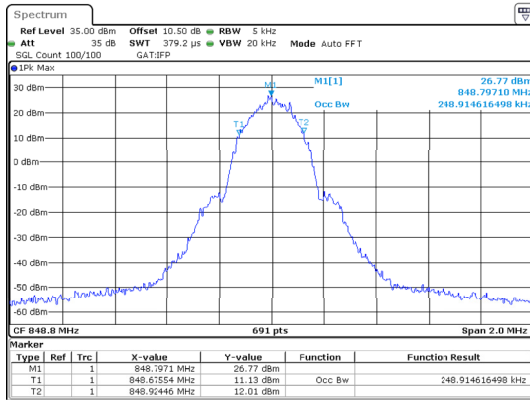
Mode	Result (MHz)	Limit (MHz)	Verdict
EDGE_High_Solt1_T1/VN	1909.900	1910	Pass
EDGE_High_Solt1_T2/VN	1909.923	1910	Pass
EDGE_High_Solt1_T3/VN	1909.927	1910	Pass
EDGE_High_Solt1_T4/VN	1909.940	1910	Pass
EDGE_High_Solt1_T5/VN	1909.990	1910	Pass
EDGE_High_Solt1_T6/VN	1909.937	1910	Pass
EDGE_High_Solt1_T7/VN	1909.906	1910	Pass
EDGE_High_Solt1_T8/VN	1909.936	1910	Pass
EDGE_High_Solt1_TN/VH	1909.985	1910	Pass
EDGE_High_Solt1_TN/VL	1909.916	1910	Pass

Note:
 TN: 20°C; T1: -30°C; T2: -20°C; T3: -10°C; T4: 0°C; T5: 10°C; T6: 30°C; T7: 40°C; T8: 50°C.
 VN: Normal Voltage; VL: Low Voltage; VH: High Voltage.

Occupied Bandwidth

GSM Mode

Band	Channel	Freq (MHz)	OBW (MHz)	26dB BW (MHz)	Verdict
GSM 850	251	848.8	0.24891	0.3155	PASS
GSM 850	190	836.6	0.24313	0.3155	PASS
GSM 850	128	824.2	0.24313	0.3213	PASS
PCS 1900	810	1909.8	0.24313	0.3126	PASS
PCS 1900	661	1880.0	0.24313	0.3213	PASS
PCS 1900	512	1850.2	0.24602	0.3155	PASS

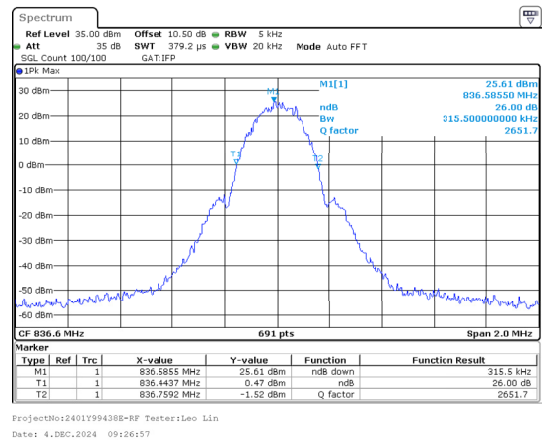
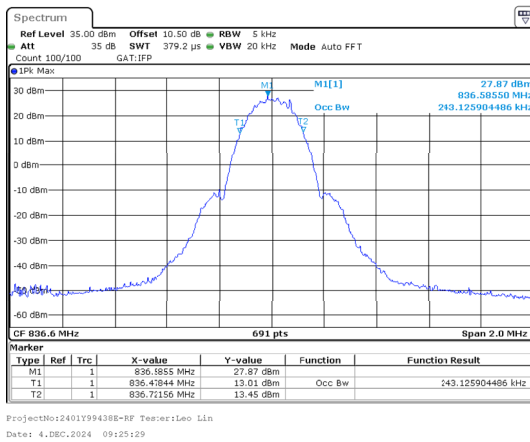


99%OBW

GSM 850 0.2MHz/848.8/High

26%OBW

GSM 850 0.2MHz/848.8/High

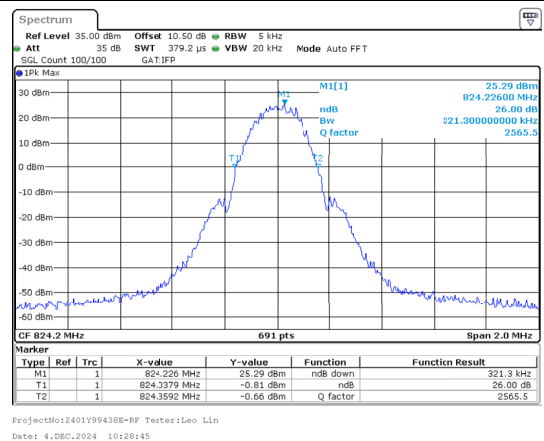
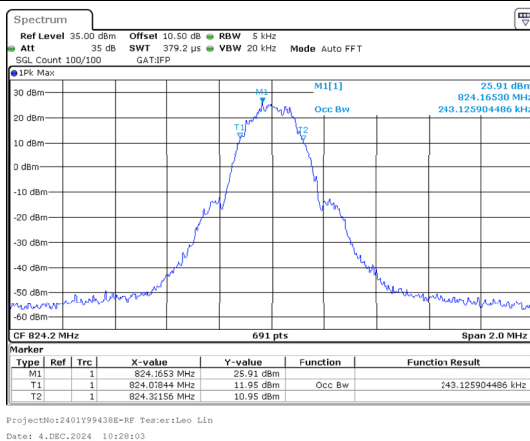


99%OBW

GSM 850 0.2MHz/836.6/Mid

26%OBW

GSM 850 0.2MHz/836.6/Mid

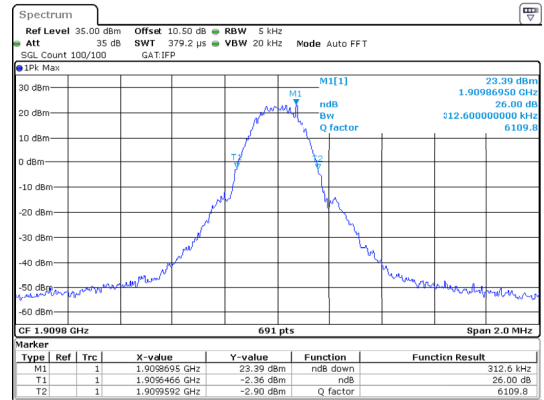
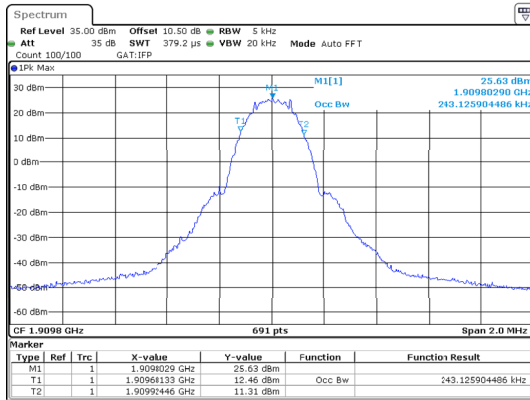


99%OBW

GSM 850 0.2MHz/824.2/Low

26%OBW

GSM 850 0.2MHz/824.2/Low

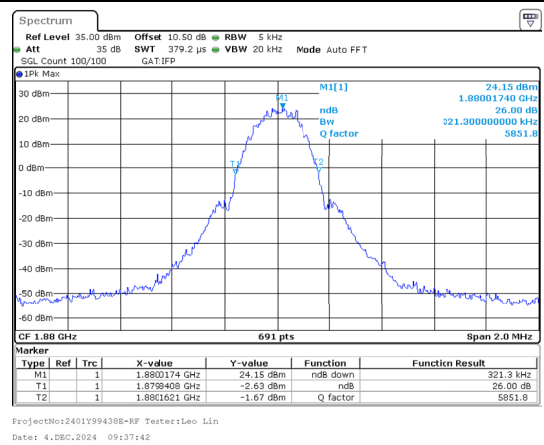
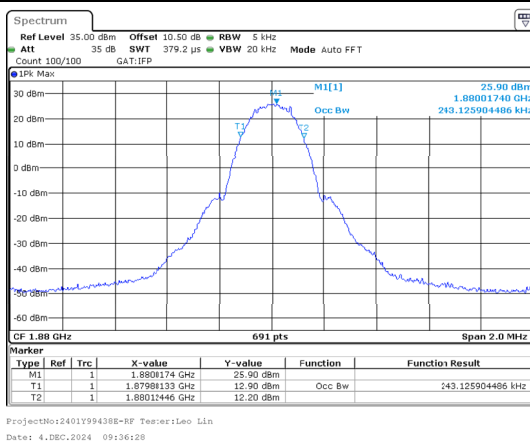


99%OBW

PCS 1900 0.2MHz/1909.8/High

26%OBW

PCS 1900 0.2MHz/1909.8/High

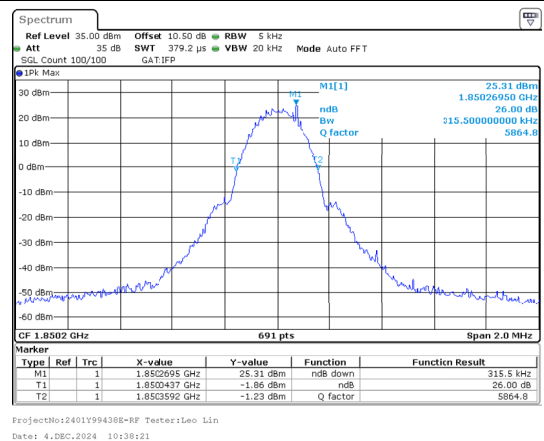
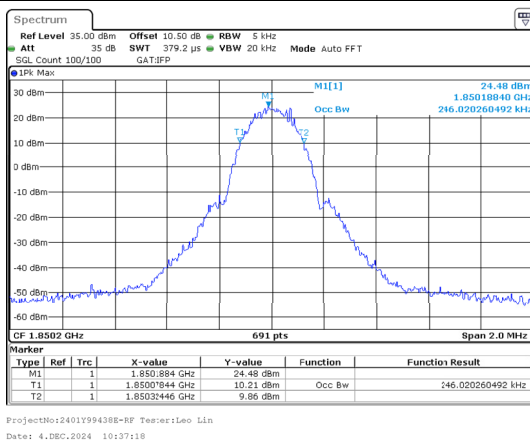


99%OBW

PCS 1900 0.2MHz/1880.0/Mid

26%OBW

PCS 1900 0.2MHz/1880.0/Mid



99%OBW

PCS 1900 0.2MHz/1850.2/Low

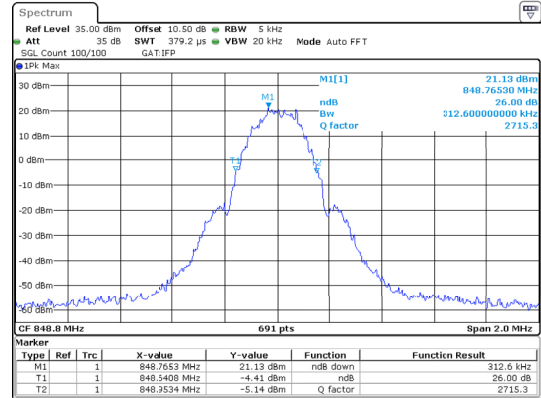
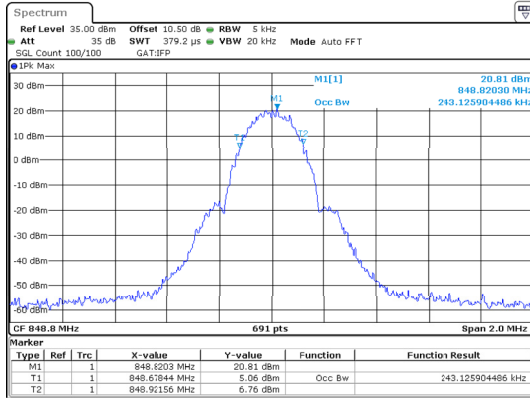
26%OBW

PCS 1900 0.2MHz/1850.2/Low

Occupied Bandwidth

EGPRS Mode

Band	Channel	Freq (MHz)	Slots	OBW (MHz)	26dB BW (MHz)	Verdict
GSM 850	251	848.8	1 Tx	0.24313	0.3126	PASS
GSM 850	190	836.6	1 Tx	0.24023	0.3126	PASS
GSM 850	128	824.2	1 Tx	0.24023	0.3126	PASS
PCS 1900	810	1909.8	1 Tx	0.24602	0.3184	PASS
PCS 1900	661	1880.0	1 Tx	0.24313	0.3184	PASS
PCS 1900	512	1850.2	1 Tx	0.24313	0.3126	PASS

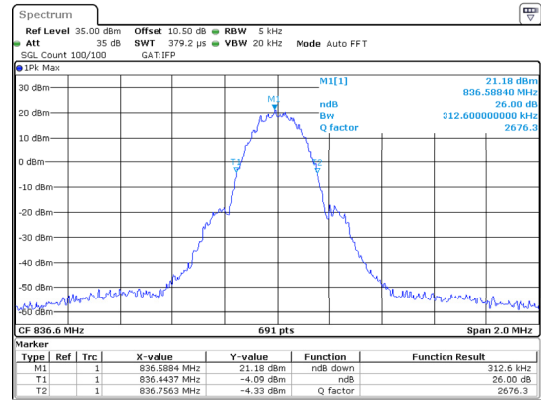
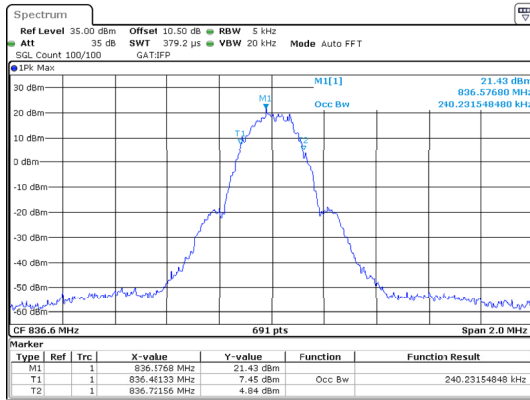


99%OBW

GSM 850 0.2MHz/848.8/High

26%OBW

GSM 850 0.2MHz/848.8/High

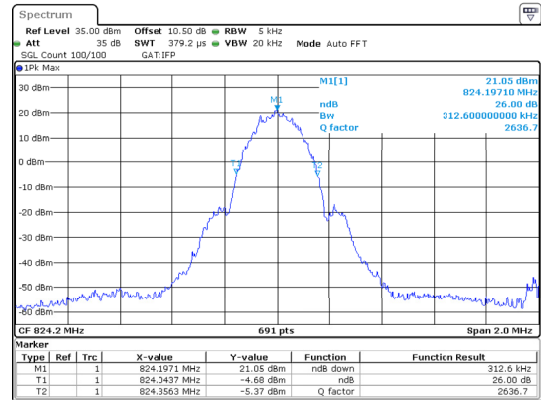
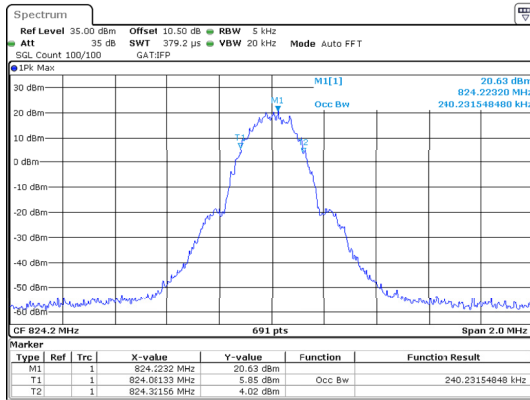


99%OBW

GSM 850 0.2MHz/836.6/Mid

26%OBW

GSM 850 0.2MHz/836.6/Mid

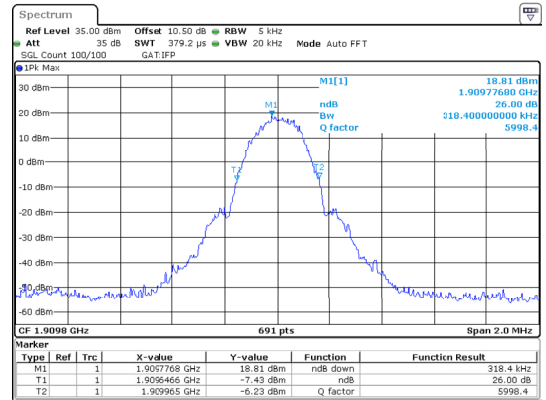
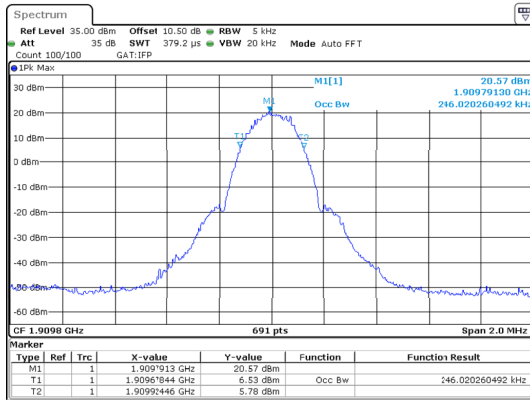


99%OBW

GSM 850 0.2MHz/824.2/Low

26%OBW

GSM 850 0.2MHz/824.2/Low

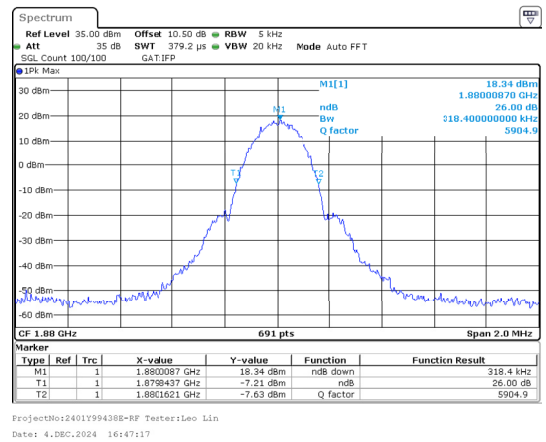
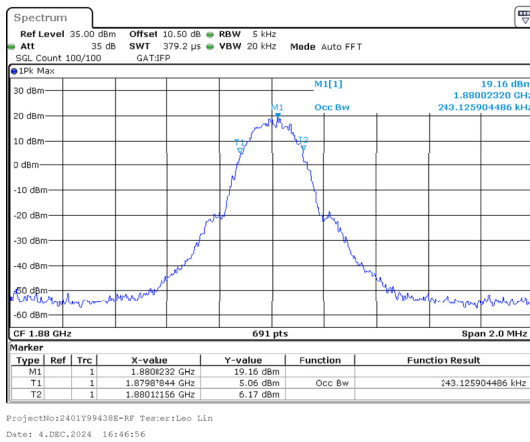


99%OBW

PCS 1900 0.2MHz/1909.8/High

26%OBW

PCS 1900 0.2MHz/1909.8/High

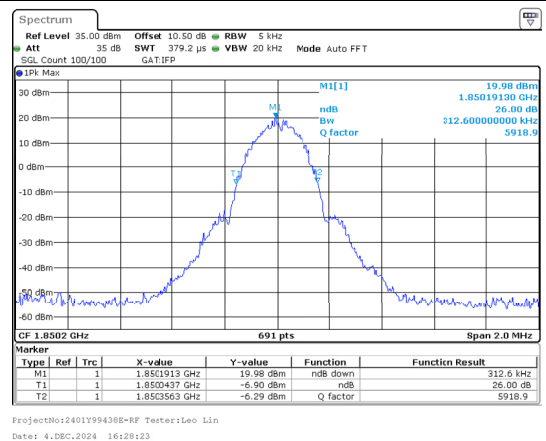
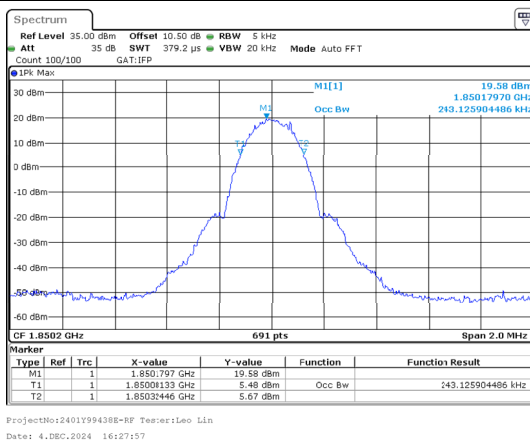


99%OBW

PCS 1900 0.2MHz/1880.0/Mid

26%OBW

PCS 1900 0.2MHz/1880.0/Mid



99%OBW

PCS 1900 0.2MHz/1850.2/Low

26%OBW

PCS 1900 0.2MHz/1850.2/Low

RF Output Power

FCC Part 22H

GSM850, Normal

Mode	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Verdict
GSM_Low	32.90	25.28	38.45	Pass
GSM_Middle	32.89	25.27	38.45	Pass
GSM_High	32.95	25.33	38.45	Pass
GPRS_Low_Solt1	32.82	25.20	38.45	Pass
GPRS_Low_Solt2	30.70	23.08	38.45	Pass
GPRS_Low_Solt3	28.79	21.17	38.45	Pass
GPRS_Low_Solt4	26.88	19.26	38.45	Pass
GPRS_Middle_Solt1	32.85	25.23	38.45	Pass
GPRS_Middle_Solt2	30.71	23.09	38.45	Pass
GPRS_Middle_Solt3	28.95	21.33	38.45	Pass
GPRS_Middle_Solt4	26.99	19.37	38.45	Pass
GPRS_High_Solt1	32.84	25.22	38.45	Pass
GPRS_High_Solt2	30.77	23.15	38.45	Pass
GPRS_High_Solt3	28.98	21.36	38.45	Pass
GPRS_High_Solt4	27.09	19.47	38.45	Pass
EDGE_Low_Solt1	25.87	18.25	38.45	Pass
EDGE_Low_Solt2	24.65	17.03	38.45	Pass
EDGE_Low_Solt3	22.35	14.73	38.45	Pass
EDGE_Low_Solt4	20.19	12.57	38.45	Pass
EDGE_Middle_Solt1	26.40	18.78	38.45	Pass
EDGE_Middle_Solt2	24.92	17.30	38.45	Pass
EDGE_Middle_Solt3	22.47	14.85	38.45	Pass
EDGE_Middle_Solt4	20.50	12.88	38.45	Pass
EDGE_High_Solt1	26.12	18.50	38.45	Pass
EDGE_High_Solt2	24.63	17.01	38.45	Pass
EDGE_High_Solt3	22.24	14.62	38.45	Pass
EDGE_High_Solt4	20.22	12.60	38.45	Pass

Note:

$ERP = \text{Conducted Power(dBm)} - L_c(\text{dB}) + G_T(\text{dBd})$

$G_T(\text{dBd}) = G_T(\text{dBi}) - 2.15$

GSM 850:

1.Ant Gain = -4.97dBi;

2.C_L = signal attenuation in the connecting cable between the transmitter and antenna in 0.5dB

FCC Part 24E

PCS1900, Normal

Mode	Conducted Power (dBm)	EIRP (dBm)	Limit(dBm)	Verdict
GSM_Low	29.60	29.24	33	Pass
GSM_Middle	29.57	29.21	33	Pass
GSM_High	29.55	29.19	33	Pass
GPRS_Low_Solt1	29.58	29.22	33	Pass
GPRS_Low_Solt2	27.51	27.15	33	Pass
GPRS_Low_Solt3	25.93	25.57	33	Pass
GPRS_Low_Solt4	23.82	23.46	33	Pass
GPRS_Middle_Solt1	29.78	29.42	33	Pass
GPRS_Middle_Solt2	27.37	27.01	33	Pass
GPRS_Middle_Solt3	25.75	25.39	33	Pass
GPRS_Middle_Solt4	23.70	23.34	33	Pass
GPRS_High_Solt1	29.78	29.42	33	Pass
GPRS_High_Solt2	27.05	26.69	33	Pass
GPRS_High_Solt3	25.46	25.10	33	Pass
GPRS_High_Solt4	23.46	23.10	33	Pass
EDGE_Low_Solt1	26.52	26.16	33	Pass
EDGE_Low_Solt2	25.20	24.84	33	Pass
EDGE_Low_Solt3	22.78	22.42	33	Pass
EDGE_Low_Solt4	20.48	20.12	33	Pass
EDGE_Middle_Solt1	26.57	26.21	33	Pass
EDGE_Middle_Solt2	25.21	24.85	33	Pass
EDGE_Middle_Solt3	23.15	22.79	33	Pass
EDGE_Middle_Solt4	20.59	20.23	33	Pass
EDGE_High_Solt1	26.30	25.94	33	Pass
EDGE_High_Solt2	24.99	24.63	33	Pass
EDGE_High_Solt3	22.95	22.59	33	Pass
EDGE_High_Solt4	20.56	20.20	33	Pass

Note:

EIRP = Conducted Power(dBm) - L_C(dB) + G_T(dBi)

GSM 1900:

1.Ant Gain = -0.36dBi;

2.C_L = signal attenuation in the connecting cable between the transmitter and antenna in 0dB

Peak to Average Ratio

GSM Mode

Band	Channel	Freq (MHz)	Result (dB)	Limit (dB)	Verdict
GSM 850	251	848.8	2.52	13	PASS
GSM 850	190	836.6	2.56	13	PASS
GSM 850	128	824.2	2.48	13	PASS
PCS 1900	810	1909.8	2.49	13	PASS
PCS 1900	661	1880.0	2.53	13	PASS
PCS 1900	512	1850.2	2.55	13	PASS

EGPRS Mode

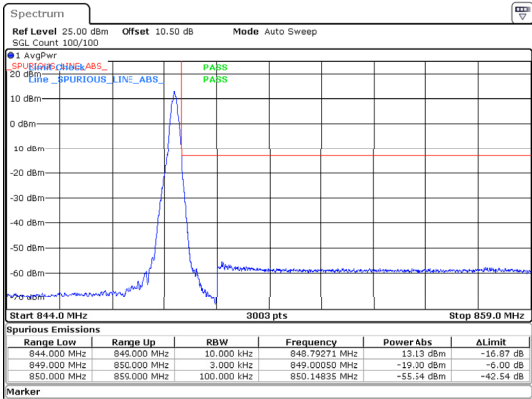
Band	Channel	Freq (MHz)	Slots	Result (dB)	Limit (dB)	Verdict
GSM 850	251	848.8	1 Tx	2.18	13	PASS
GSM 850	190	836.6	1 Tx	2.42	13	PASS
GSM 850	128	824.2	1 Tx	2.51	13	PASS
PCS 1900	810	1909.8	1 Tx	2.41	13	PASS
PCS 1900	661	1880.0	1 Tx	2.26	13	PASS
PCS 1900	512	1850.2	1 Tx	2.47	13	PASS

Out of band emission, Band Edge

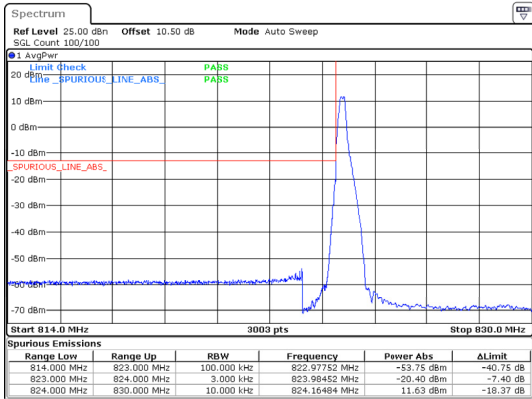
FCC Part 22H

GSM 850, Normal

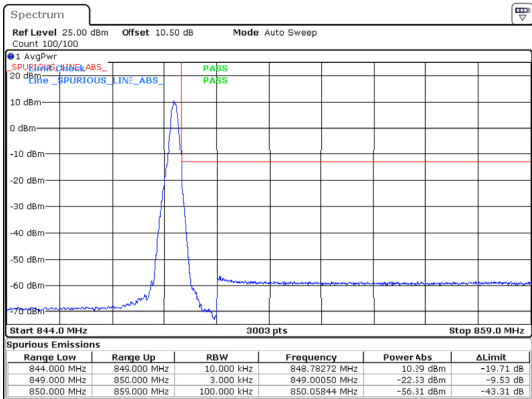
GSM_High



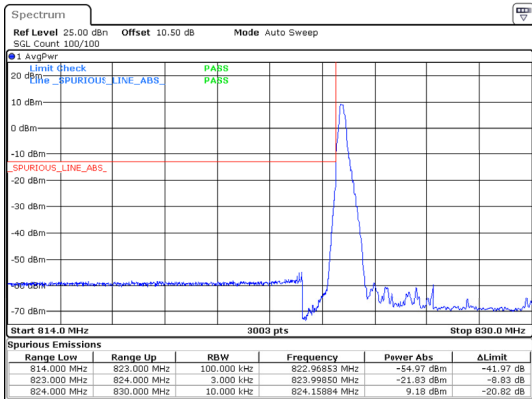
GSM_Low



EDGE_High_Solt1



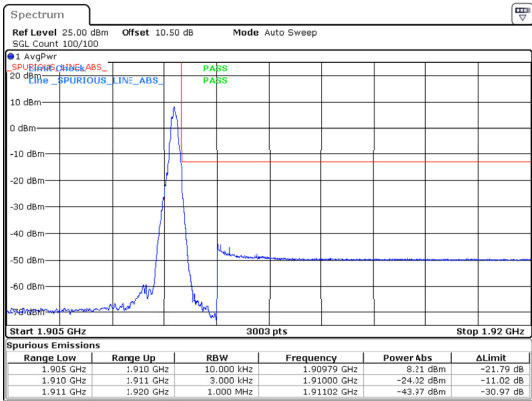
EDGE_Low_Solt1



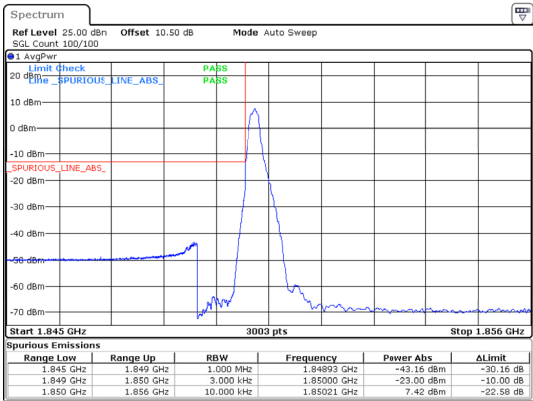
FCC Part 24E

PCS1900, Normal

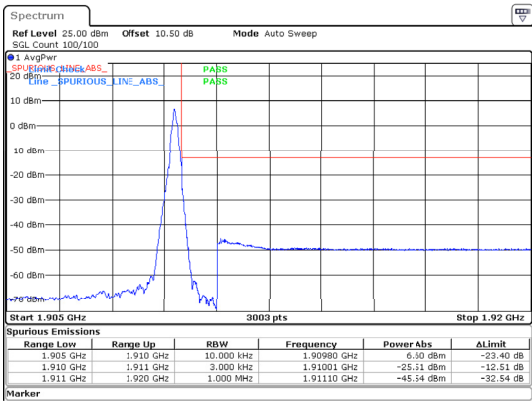
GSM_High



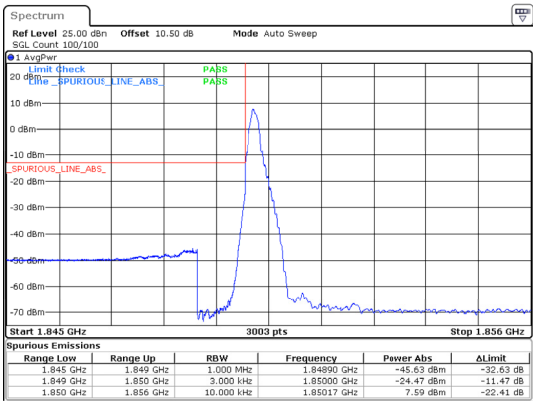
GSM_Low



EDGE_High_Solt1

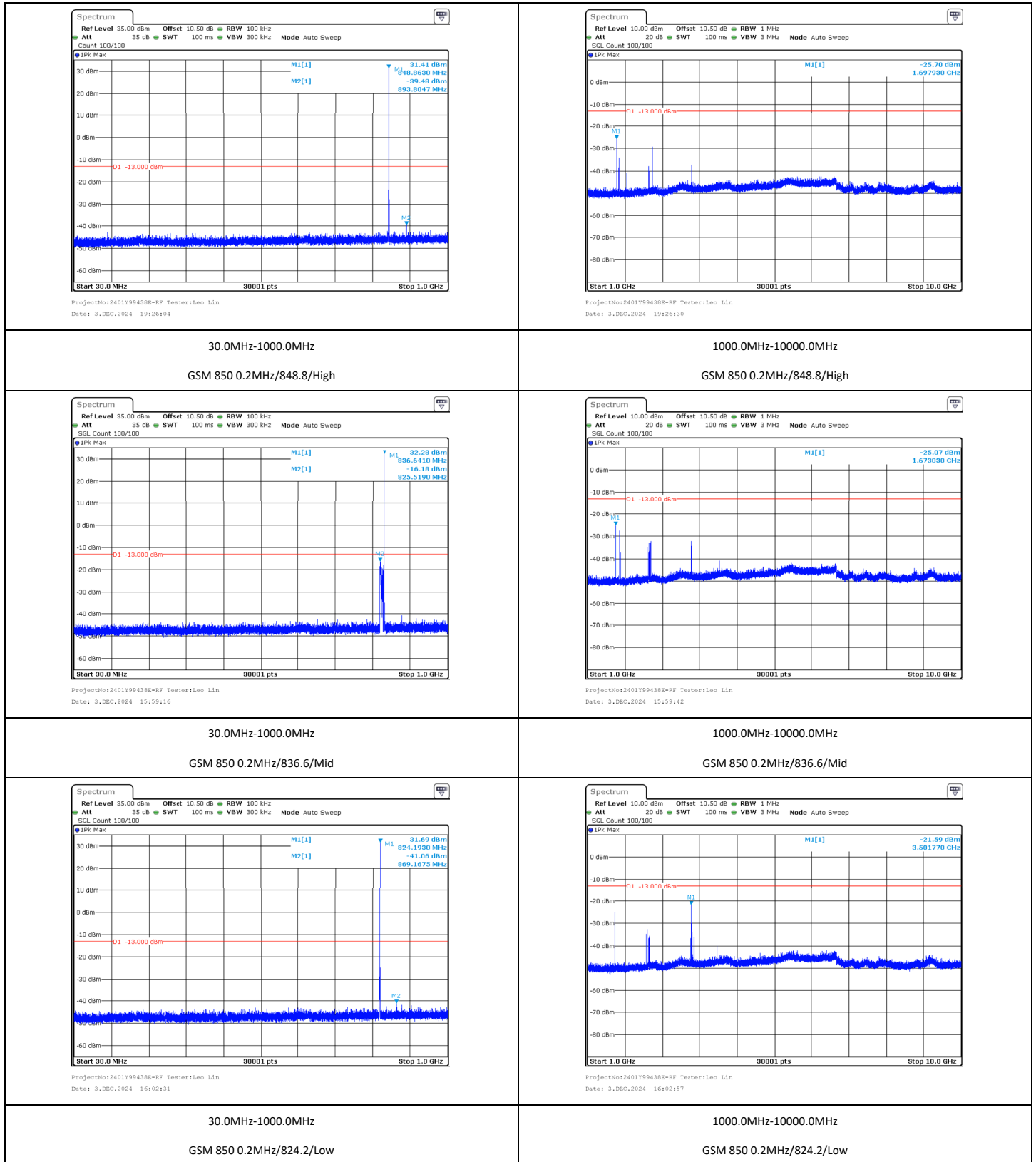


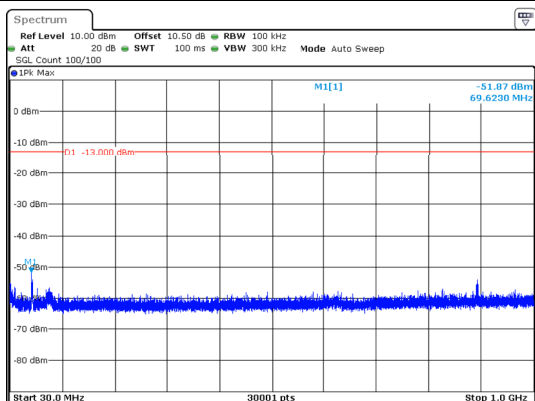
EDGE_Low_Solt1



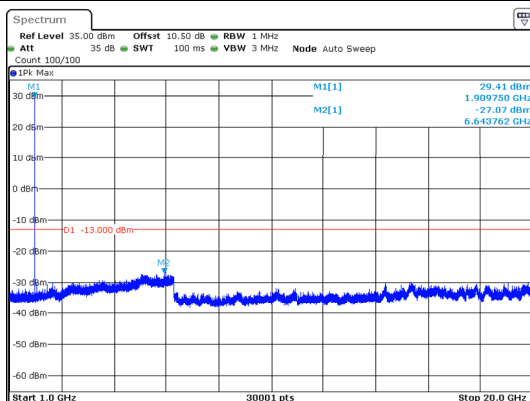
Spurious Emissions at Antenna Terminal

GSM Mode (Worst Case)





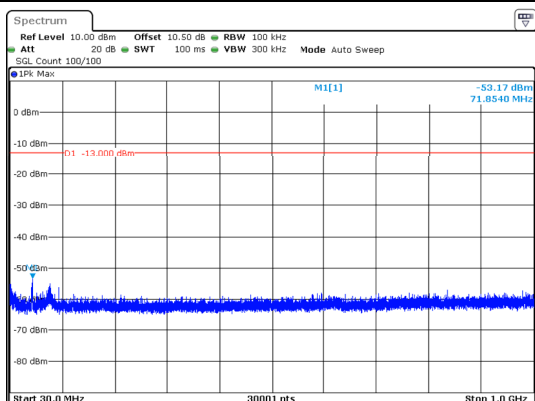
ProjectNo:2401Y99438E-RF Tester:Leo Lin
Date: 3.DEC.2024 19:31:55



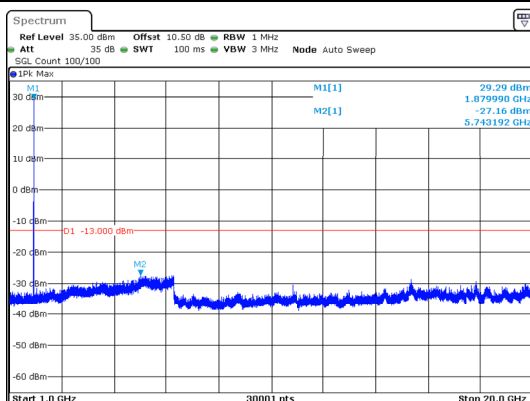
ProjectNo:2401Y99438E-RF Tester:Leo Lin
Date: 3.DEC.2024 19:34:12

30.0MHz-1000.0MHz
PCS 1900 0.2MHz/1909.8/High

1000.0MHz-20000.0MHz
PCS 1900 0.2MHz/1909.8/High



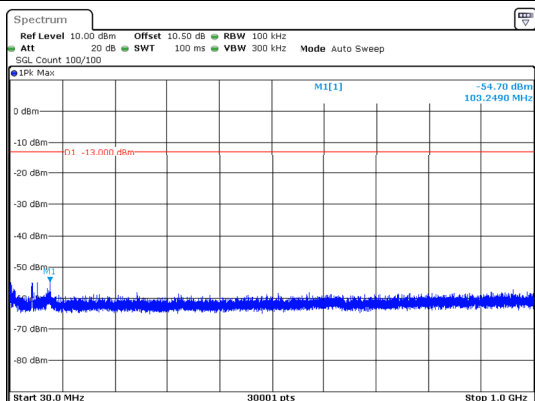
ProjectNo:2401Y99438E-RF Tester:Leo Lin
Date: 3.DEC.2024 19:35:36



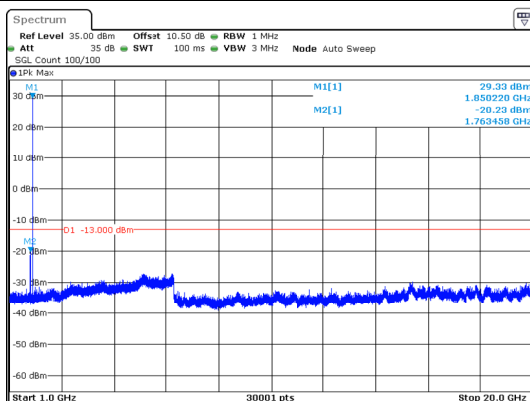
ProjectNo:2401Y99438E-RF Tester:Leo Lin
Date: 3.DEC.2024 19:36:40

30.0MHz-1000.0MHz
PCS 1900 0.2MHz/1880.0/Mid

1000.0MHz-20000.0MHz
PCS 1900 0.2MHz/1880.0/Mid



ProjectNo:2401Y99438E-RF Tester:Leo Lin
Date: 3.DEC.2024 19:37:34



ProjectNo:2401Y99438E-RF Tester:Leo Lin
Date: 3.DEC.2024 19:40:17

30.0MHz-1000.0MHz
PCS 1900 0.2MHz/1850.2/Low

1000.0MHz-20000.0MHz
PCS 1900 0.2MHz/1850.2/Low