Appendix A

Test Information:

Serial No.:	2OCI-2	**Test Date:**	2024/07/31~2024/08/01
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Karl Liang	**Test Result:**	Pass

Environmental Conditions:

Temperature: (℃):	27.0~27.3	**Relative Humidity: (%)**	63~65	**ATM Pressure: (kPa)**	100.2~100.8

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Micro-Coax	Coaxial Cable	UFA210A	94089550	2023/09/01	2024/08/31
Minl-Clrcuits	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/02/25	2025/02/24
R&S	Wideband Radio Communication Tester	CMW500	144976	2023/10/18	2024/10/17
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2023/10/18	2024/10/17
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A
All-sun	Clamp Meter	EM305A	8348897	2023/08/03	2024/08/02
R&S	Spectrum Analyzer	FSV40	101461	2023/11/27	2024/11/26

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been perfor med, traceable to National Primary Standards and International System of Units (SI).*

Frequency stability vs. temperature &Frequency stability vs. voltage Compliance

FCC Part 22H

GSM 850

Mode	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)	Result
GSM_Middle_TN/VN	8.9	0.011	±2.5	Pass
GSM_Middle_T1/VN	9.0	0.011	±2.5	Pass
GSM_Middle_T2/VN	11.0	0.013	±2.5	Pass
GSM_Middle_T3/VN	6.5	0.008	±2.5	Pass
GSM_Middle_T4/VN	8.8	0.010	±2.5	Pass
GSM_Middle_T5/VN	8.0	0.010	±2.5	Pass
GSM_Middle_T6/VN	6.6	0.008	±2.5	Pass
GSM_Middle_T7/VN	12.2	0.015	±2.5	Pass
GSM_Middle_T8/VN	13.0	0.015	±2.5	Pass
GSM_Middle_TN/VH	8.8	0.010	±2.5	Pass
GSM_Middle_TN/VL	7.4	0.009	±2.5	Pass
EDGE_Middle_Solt1_TN/VN	9.5	0.011	±2.5	Pass
EDGE_Middle_Solt1_T1/VN	5.9	0.007	±2.5	Pass
EDGE_Middle_Solt1_T2/VN	9.0	0.011	±2.5	Pass
EDGE_Middle_Solt1_T3/VN	4.8	0.006	±2.5	Pass
EDGE_Middle_Solt1_T4/VN	12.0	0.014	±2.5	Pass
EDGE_Middle_Solt1_T5/VN	11.1	0.013	±2.5	Pass
EDGE_Middle_Solt1_T6/VN	3.8	0.005	±2.5	Pass
EDGE_Middle_Solt1_T7/VN	9.2	0.011	±2.5	Pass
EDGE_Middle_Solt1_T8/VN	6.1	0.007	±2.5	Pass
EDGE_Middle_Solt1_TN/VH	7.2	0.009	±2.5	Pass
EDGE_Middle_Solt1_TN/VL	0.1	0.000	±2.5	Pass

Note:

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

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

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

FCC Part 24E

GSM 1900

Mode	Value (MHz)	Limit (MHz)	Result
GSM_Low_TN/VN	1850.080	1850	Pass
GSM_Low_T1/VN	1850.078	1850	Pass
GSM_Low_T2/VN	1850.080	1850	Pass
GSM_Low_T3/VN	1850.079	1850	Pass
GSM_Low_T4/VN	1850.075	1850	Pass
GSM_Low_T5/VN	1850.080	1850	Pass
GSM_Low_T6/VN	1850.077	1850	Pass
GSM_Low_T7/VN	1850.080	1850	Pass
GSM_Low_T8/VN	1850.081	1850	Pass
GSM_Low_TN/VH	1850.082	1850	Pass
GSM_Low_TN/VL	1850.081	1850	Pass
GSM_High_TN/VN	1909.927	1910	Pass
GSM_High_T1/VN	1909.929	1910	Pass
GSM_High_T2/VN	1909.922	1910	Pass
GSM_High_T3/VN	1909.926	1910	Pass
GSM_High_T4/VN	1909.922	1910	Pass
GSM_High_T5/VN	1909.928	1910	Pass
GSM_High_T6/VN	1909.924	1910	Pass
GSM_High_T7/VN	1909.926	1910	Pass
GSM_High_T8/VN	1909.927	1910	Pass
GSM_High_TN/VH	1909.931	1910	Pass
GSM_High_TN/VL	1909.925	1910	Pass
EDGE_Low_Solt1_TN/VN	1850.078	1850	Pass
EDGE_Low_Solt1_T1/VN	1850.077	1850	Pass
EDGE_Low_Solt1_T2/VN	1850.077	1850	Pass
EDGE_Low_Solt1_T3/VN	1850.073	1850	Pass
EDGE_Low_Solt1_T4/VN	1850.073	1850	Pass
EDGE_Low_Solt1_T5/VN	1850.081	1850	Pass
EDGE_Low_Solt1_T6/VN	1850.077	1850	Pass
EDGE_Low_Solt1_T7/VN	1850.078	1850	Pass
EDGE_Low_Solt1_T8/VN	1850.071	1850	Pass

Mode	Value (MHz)	Limit (MHz)	Result
EDGE_Low_Solt1_TN/VH	1850.078	1850	Pass
EDGE_Low_Solt1_TN/VL	1850.076	1850	Pass
EDGE_High_Solt1_TN/VN	1909.928	1910	Pass
EDGE_High_Solt1_T1/VN	1909.930	1910	Pass
EDGE_High_Solt1_T2/VN	1909.927	1910	Pass
EDGE_High_Solt1_T3/VN	1909.920	1910	Pass
EDGE_High_Solt1_T4/VN	1909.932	1910	Pass
EDGE_High_Solt1_T5/VN	1909.931	1910	Pass
EDGE_High_Solt1_T6/VN	1909.930	1910	Pass
EDGE_High_Solt1_T7/VN	1909.927	1910	Pass
EDGE_High_Solt1_T8/VN	1909.925	1910	Pass
EDGE_High_Solt1_TN/VH	1909.930	1910	Pass
EDGE_High_Solt1_TN/VL	1909.924	1910	Pass

Note:

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

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

Occupied Bandwidth

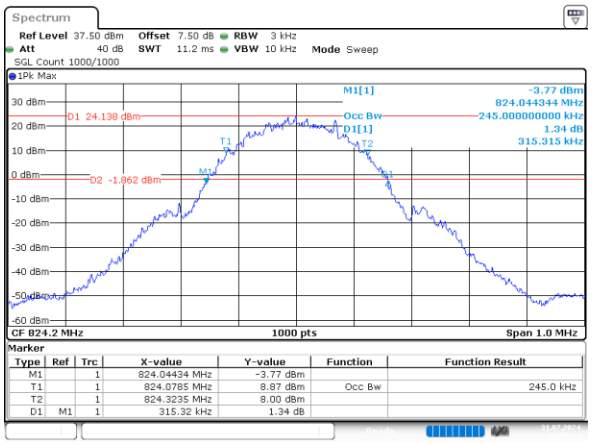
FCC Part 22H

GSM 850 , Normal

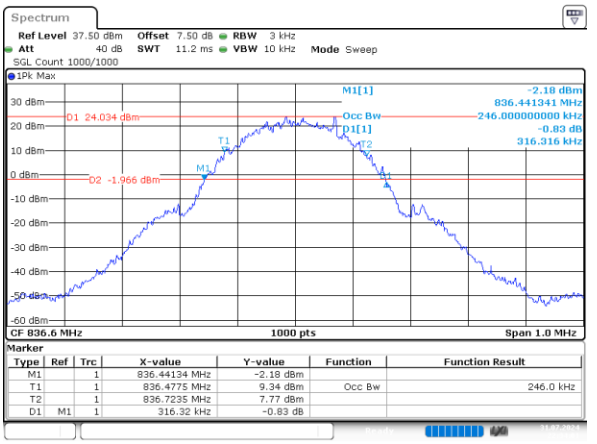
Mode	99% OBW (MHz)	EBW (MHz)
GSM_Low	0.245	0.315
GSM_Middle	0.246	0.316
GSM_High	0.245	0.315
EDGE_Low_Solt1	0.246	0.314
EDGE_Middle_Solt1	0.245	0.319
EDGE_High_Solt1	0.248	0.326

GSM 850 , Normal

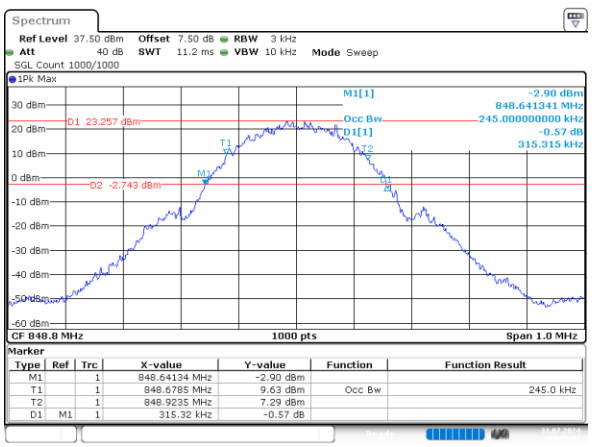
GSM_Low 0.245MHz



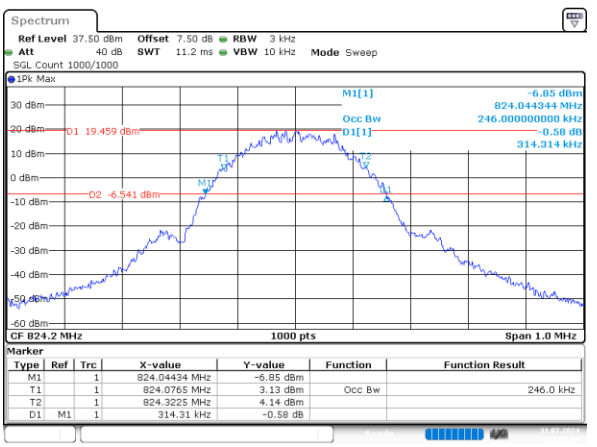
GSM_Middle 0.246MHz



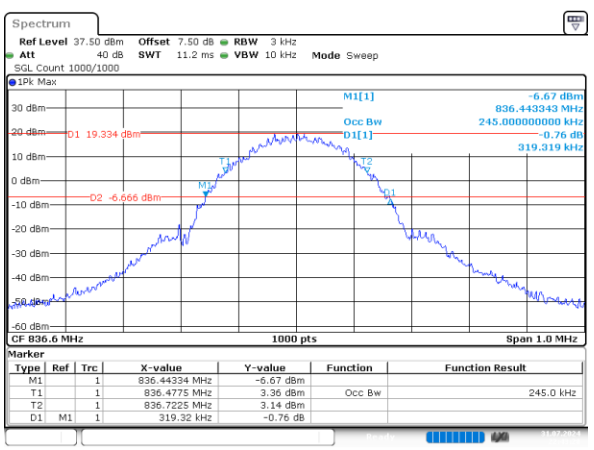
GSM_High 0.245MHz



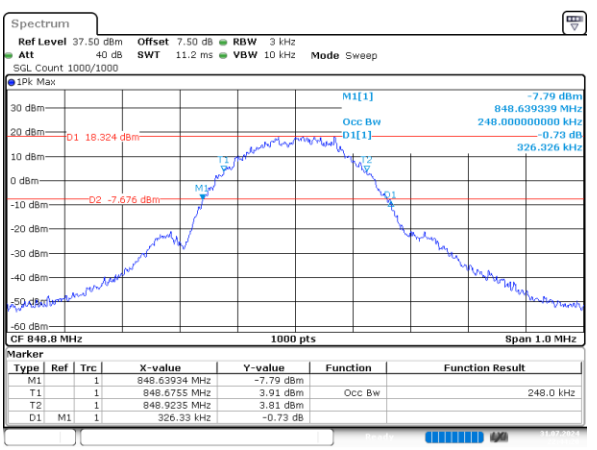
EDGE_Low_Solt1 0.246MHz



EDGE_Middle_Solt1 0.245MHz



EDGE_High_Solt1 0.248MHz



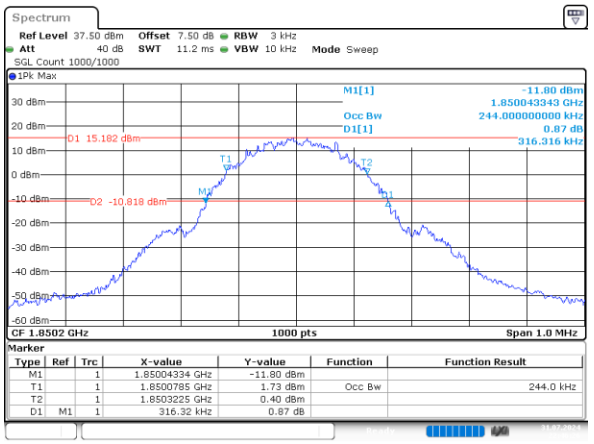
FCC Part 24E

GSM 1900 , Normal

Mode	99% OBW (MHz)	EBW (MHz)
GSM_Low	0.244	0.316
GSM_Middle	0.245	0.311
GSM_High	0.246	0.316
EDGE_Low_Solt1	0.249	0.313
EDGE_Middle_Solt1	0.249	0.313
EDGE_High_Solt1	0.250	0.321

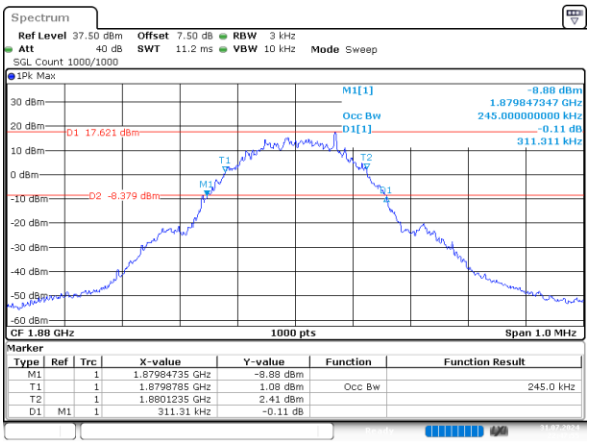
GSM 1900 , Normal

GSM_Low 0.244MHz



ProjectNo.:2402V85515E-RF Tester:Karl Liang
Date: 31.JUL.2024 22:46:27

GSM_Middle 0.245MHz



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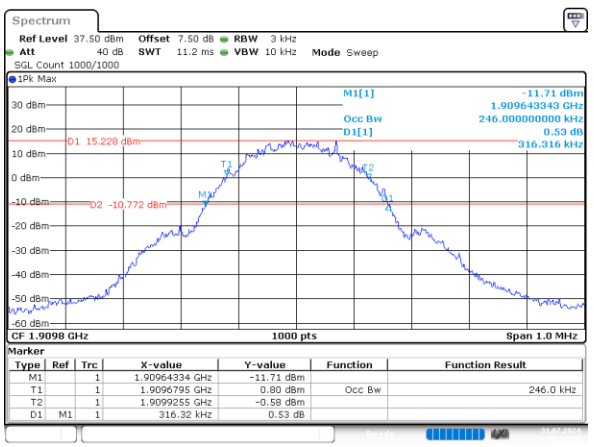
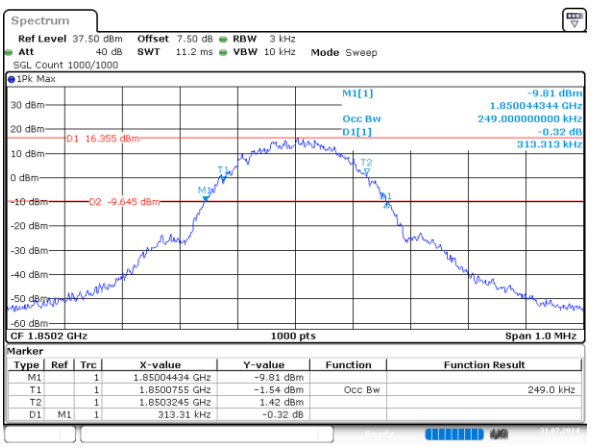
Date: 31.JUL.2024 22:47:55

GSM_High 0.246MHz



ProjectNo.:2402V85515E-RF Tester:Karl Liang
Date: 31.JUL.2024 22:50:57

EDGE_Low_Solt1 0.249MHz



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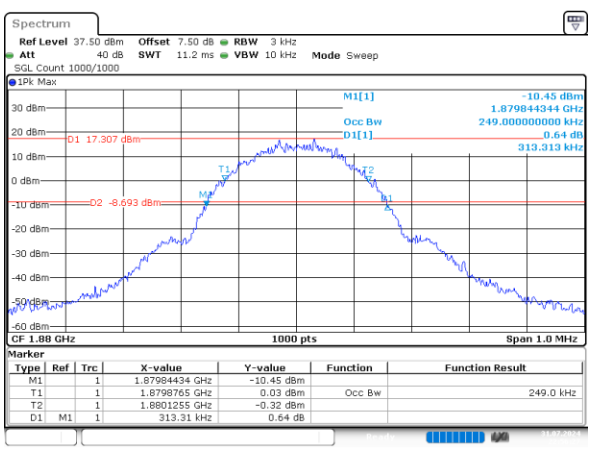
EDGE_Middle_Solt1 0.249MHz



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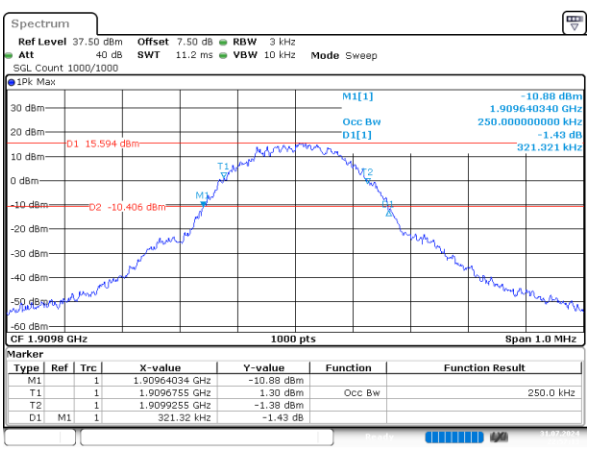
EDGE_High_Solt1 0.250MHz



ProjectNo.:2402V85515E-RF Tester:Karl Liang
Date: 31.JUL.2024 22:57:13

RF Output Power

FCC Part 22H

GSM 850 , Normal

Mode	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Result
GSM_Low	33.10	25.650	38.45	Pass
GSM_Middle	33.15	25.700	38.45	Pass
GSM_High	33.19	25.740	38.45	Pass
GPRS_Low_Solt1	33.11	25.660	38.45	Pass
GPRS_Low_Solt2	32.07	24.620	38.45	Pass
GPRS_Low_Solt3	30.06	22.610	38.45	Pass
GPRS_Low_Solt4	28.78	21.330	38.45	Pass
GPRS_Middle_Solt1	33.17	25.720	38.45	Pass
GPRS_Middle_Solt2	32.26	24.810	38.45	Pass
GPRS_Middle_Solt3	30.15	22.700	38.45	Pass
GPRS_Middle_Solt4	28.90	21.450	38.45	Pass
GPRS_High_Solt1	33.13	25.680	38.45	Pass
GPRS_High_Solt2	32.11	24.660	38.45	Pass
GPRS_High_Solt3	30.08	22.630	38.45	Pass
GPRS_High_Solt4	28.83	21.380	38.45	Pass
EDGE_Low_Solt1	27.81	20.360	38.45	Pass
EDGE_Low_Solt2	26.59	19.140	38.45	Pass
EDGE_Low_Solt3	24.47	17.020	38.45	Pass
EDGE_Low_Solt4	23.34	15.890	38.45	Pass
EDGE_Middle_Solt1	27.82	20.370	38.45	Pass
EDGE_Middle_Solt2	26.59	19.140	38.45	Pass
EDGE_Middle_Solt3	24.45	17.000	38.45	Pass
EDGE_Middle_Solt4	23.38	15.930	38.45	Pass
EDGE_High_Solt1	27.81	20.360	38.45	Pass
EDGE_High_Solt2	26.50	19.050	38.45	Pass
EDGE_High_Solt3	24.40	16.950	38.45	Pass
EDGE_High_Solt4	23.26	15.810	38.45	Pass

Note:

ERP = Conducted Power(dBm) - L_C(dB) + G_T(dBd)

G_T(dBd) = G_T(dBi) - 2.15

1.Ant Gain = -5.2dBi;

2.C_L = signal attenuation in the connecting cable between the transmitter and antenna in 0.1dB

FCC Part 24E

GSM 1900 , Normal

Mode	Conducted Power (dBm)	EIRP (dBm)	Limit(dBm)	Result
GSM_Low	25.83	24.830	33	Pass
GSM_Middle	26.23	25.230	33	Pass
GSM_High	26.39	25.390	33	Pass
GPRS_Low_Solt1	25.90	24.900	33	Pass
GPRS_Low_Solt2	25.61	24.610	33	Pass
GPRS_Low_Solt3	25.35	24.350	33	Pass
GPRS_Low_Solt4	25.13	24.130	33	Pass
GPRS_Middle_Solt1	26.23	25.230	33	Pass
GPRS_Middle_Solt2	25.97	24.970	33	Pass
GPRS_Middle_Solt3	25.68	24.680	33	Pass
GPRS_Middle_Solt4	25.47	24.470	33	Pass
GPRS_High_Solt1	26.39	25.390	33	Pass
GPRS_High_Solt2	26.11	25.110	33	Pass
GPRS_High_Solt3	25.77	24.770	33	Pass
GPRS_High_Solt4	25.55	24.550	33	Pass
EDGE_Low_Solt1	26.42	25.420	33	Pass
EDGE_Low_Solt2	25.18	24.180	33	Pass
EDGE_Low_Solt3	23.12	22.120	33	Pass
EDGE_Low_Solt4	21.93	20.930	33	Pass
EDGE_Middle_Solt1	26.46	25.460	33	Pass
EDGE_Middle_Solt2	25.28	24.280	33	Pass
EDGE_Middle_Solt3	23.24	22.240	33	Pass
EDGE_Middle_Solt4	22.14	21.140	33	Pass
EDGE_High_Solt1	26.61	25.610	33	Pass
EDGE_High_Solt2	25.50	24.500	33	Pass
EDGE_High_Solt3	23.40	22.400	33	Pass
EDGE_High_Solt4	22.25	21.250	33	Pass

Note:

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

1.Ant Gain = -0.8dBi;

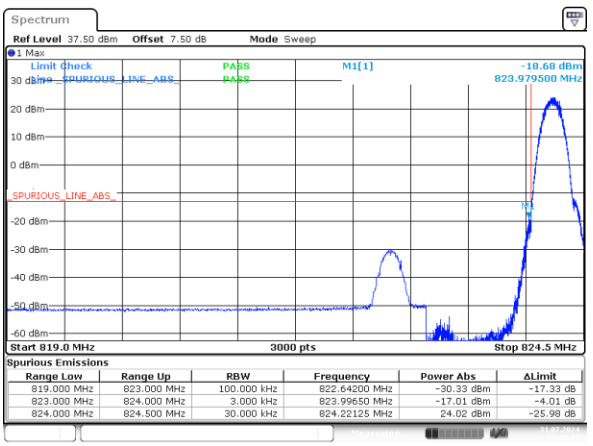
2.C_L = signal attenuation in the connecting cable between the transmitter and antenna in 0.2dB

Out of band emission,Band Edge

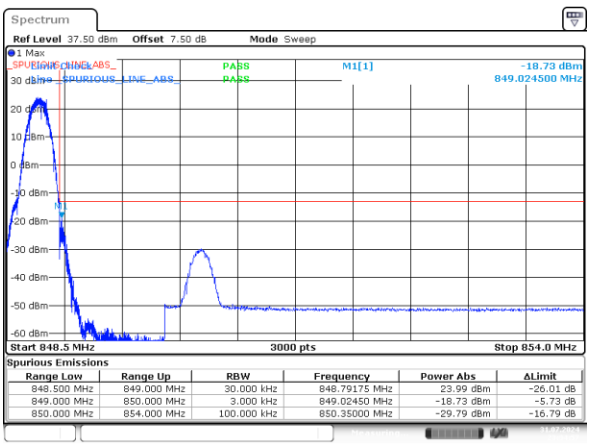
FCC Part 22H

GSM 850 , Normal

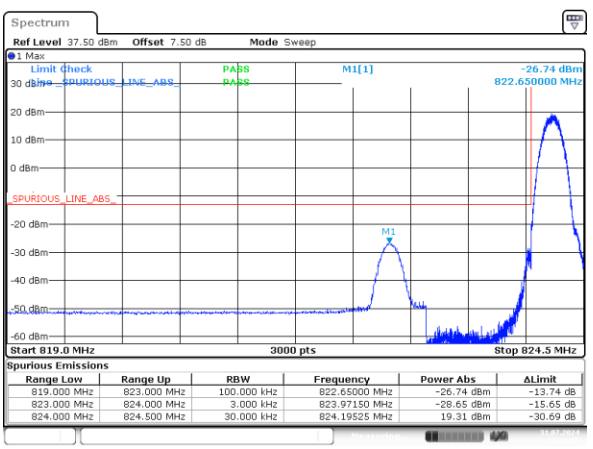
GSM_Low -18.68dBm



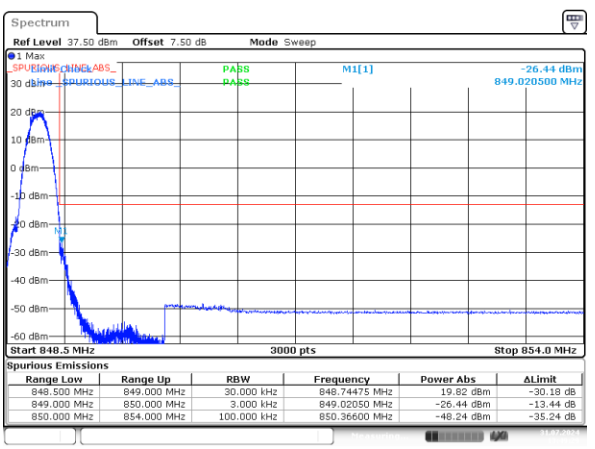
GSM_High -18.73dBm



EDGE_Low_Solt1 -26.74dBm



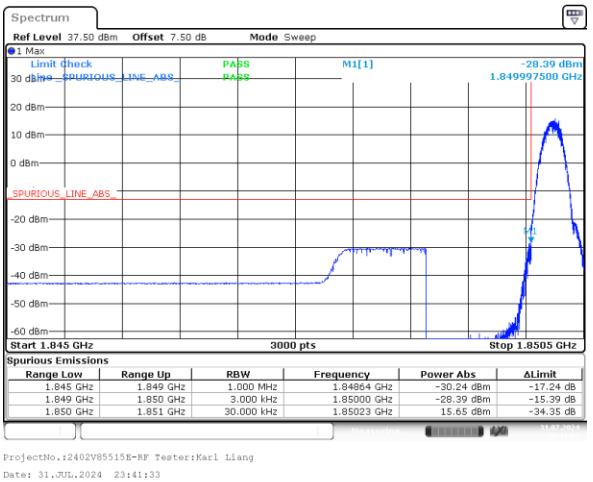
EDGE_High_Solt1 -26.44dBm



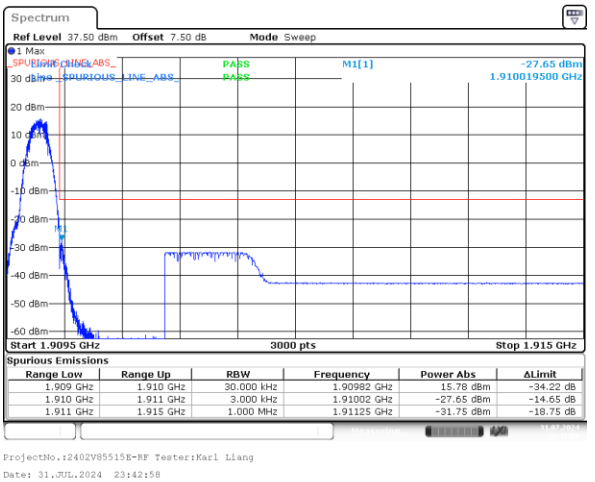
FCC Part 24E

GSM 1900 , Normal

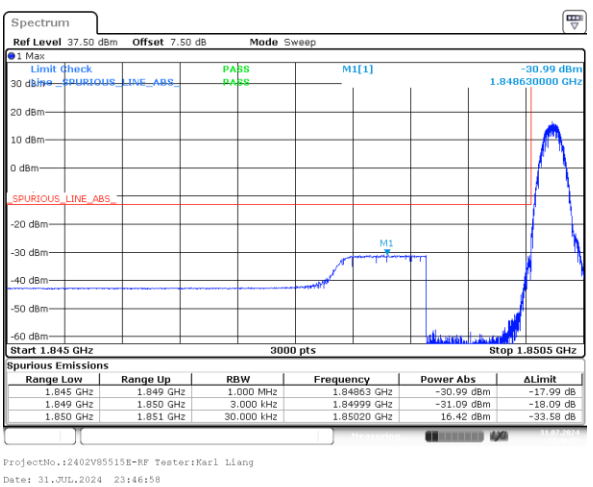
GSM_Low -28.39dBm



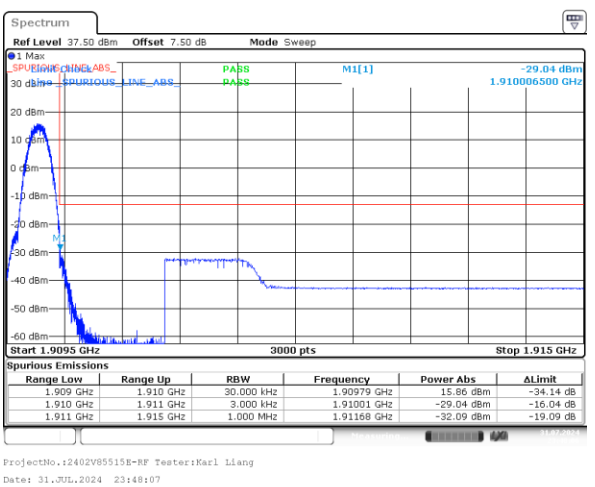
GSM_High -27.65dBm



EDGE_Low_Solt1 -30.99dBm



EDGE_High_Solt1 -29.04dBm



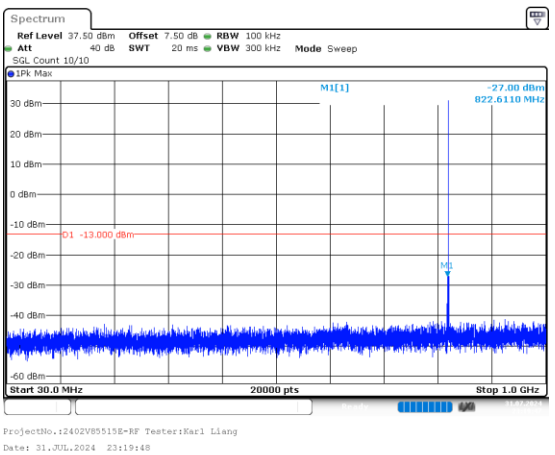
Spurious Emissions at Antenna Terminal

FCC Part 22H

GSM 850 , Normal

GSM_Low

Below 1G



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Date: 31.JUL.2024 23:19:48

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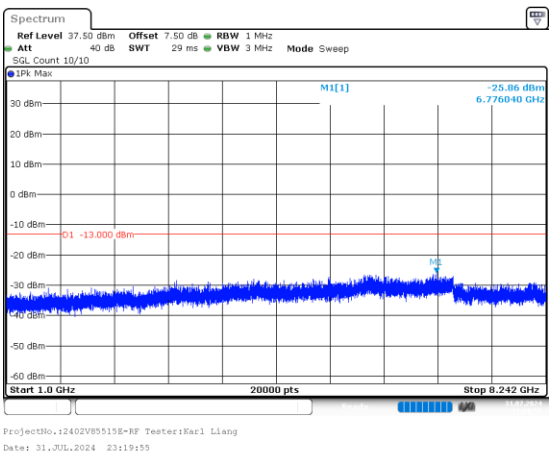

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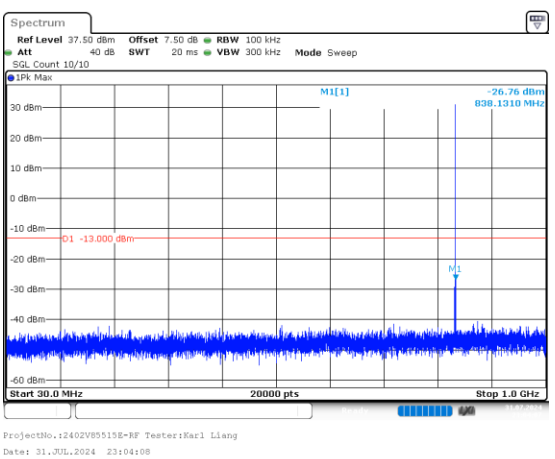
GSM_Middle

Below 1G



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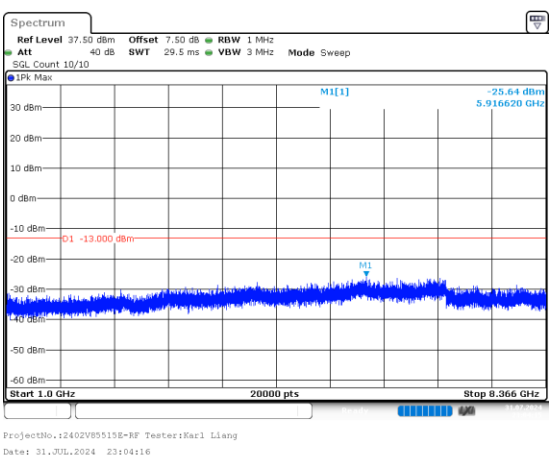
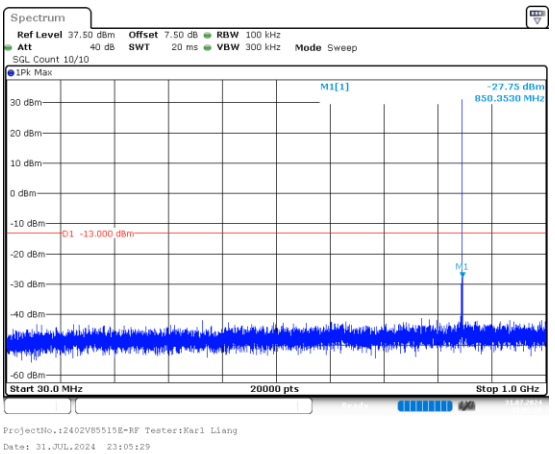


ProjectNo.:2402V85515E-RF Tester:Karl Liang
Date: 31.JUL.2024 23:04:16

GSM_High

Below 1G



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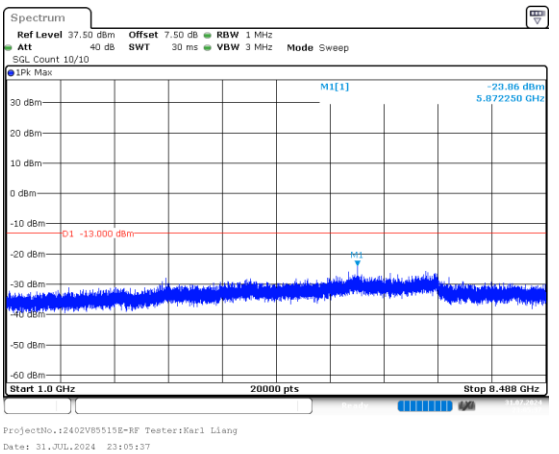

EDGE_Low_Solt1

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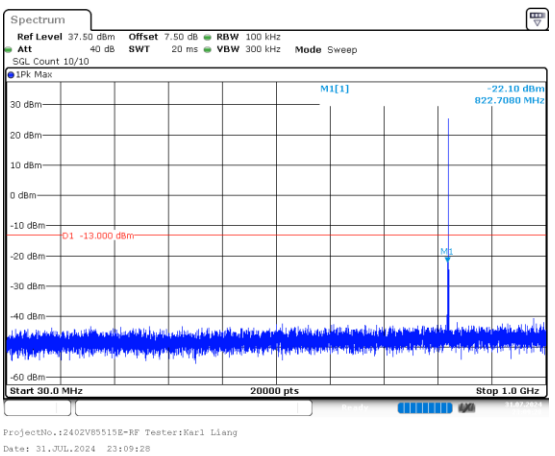

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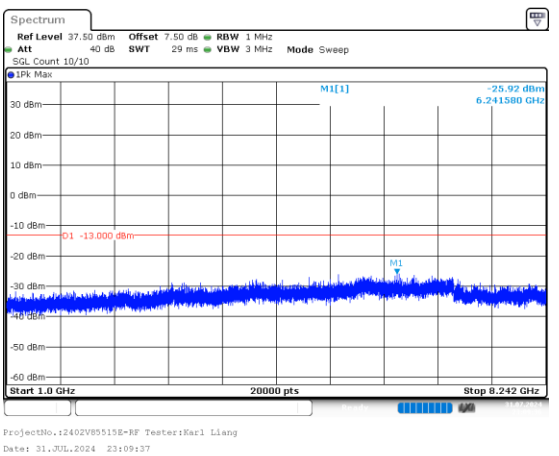

EDGE_Middle_Solt1

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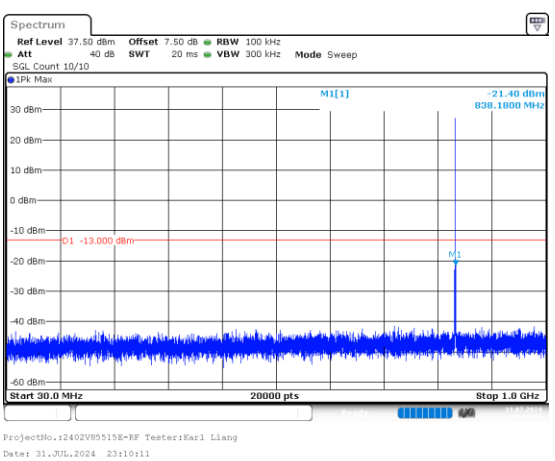

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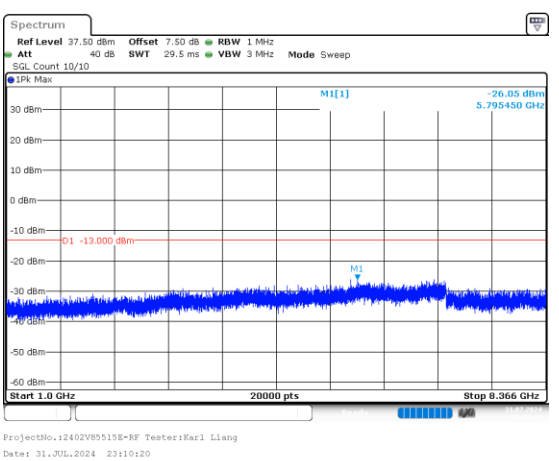

EDGE_High_Solt1

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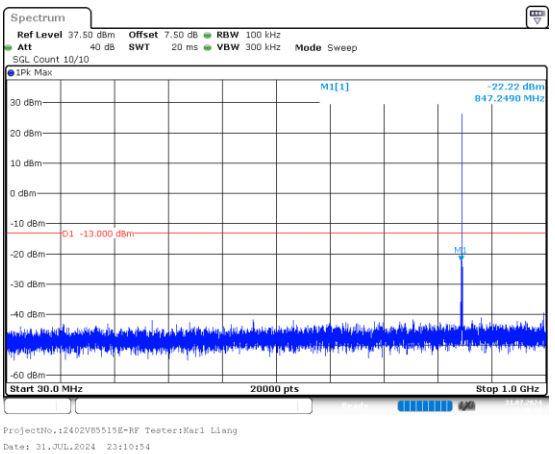

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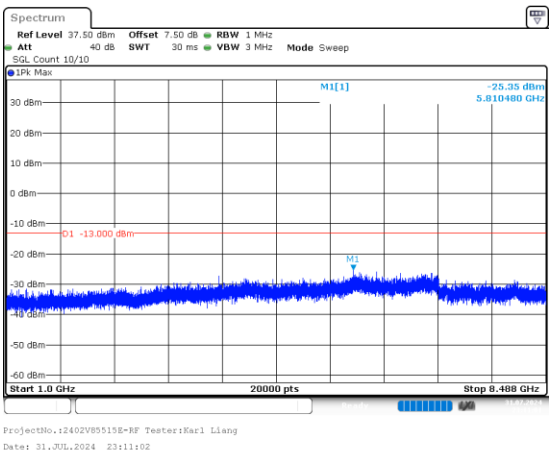

FCC Part 24E

GSM 1900 , Normal

GSM_Low

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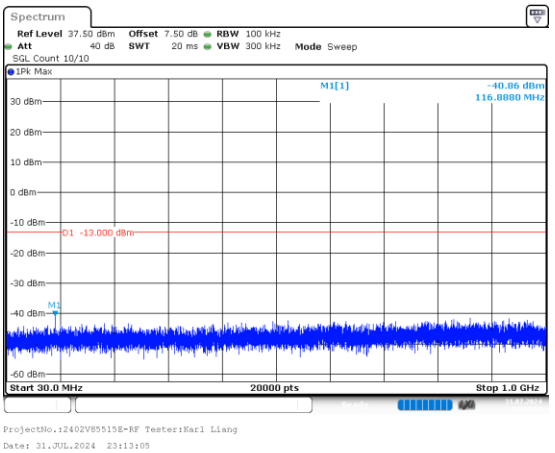

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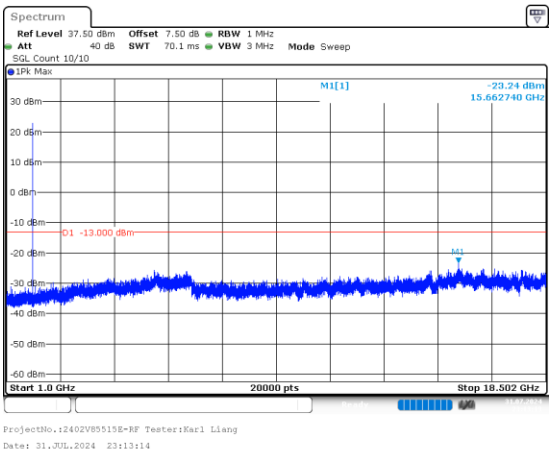

GSM_Middle

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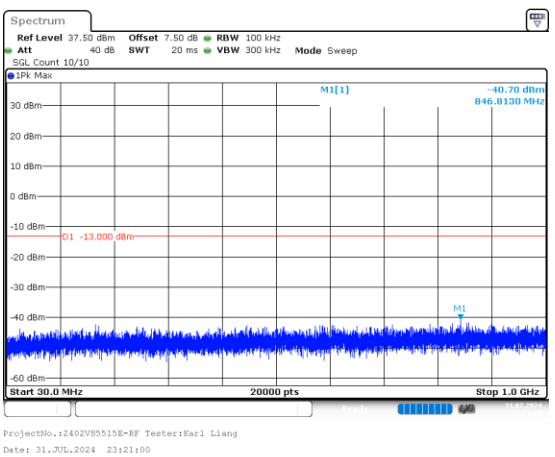

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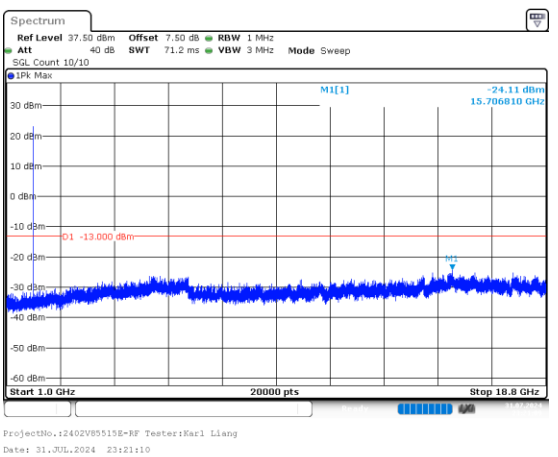

GSM_High

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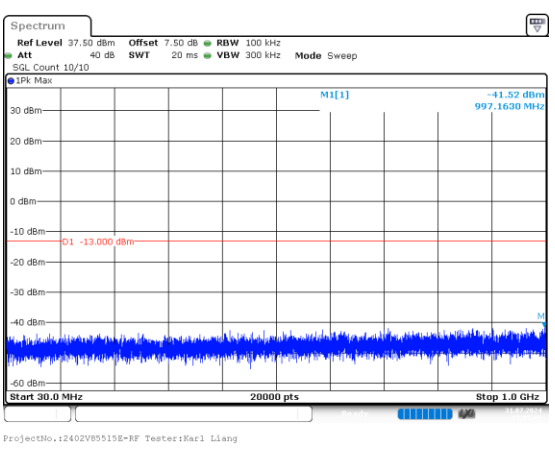

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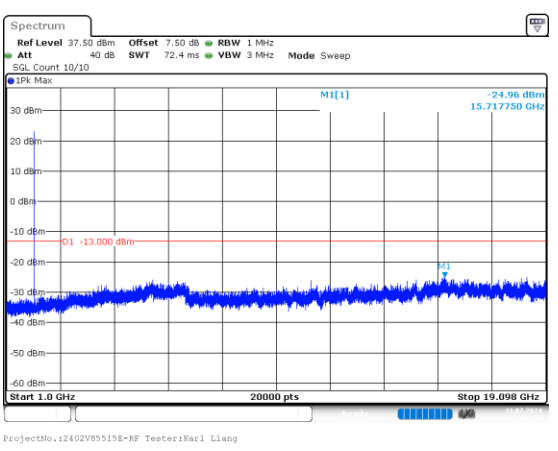

EDGE_Low_Solt1

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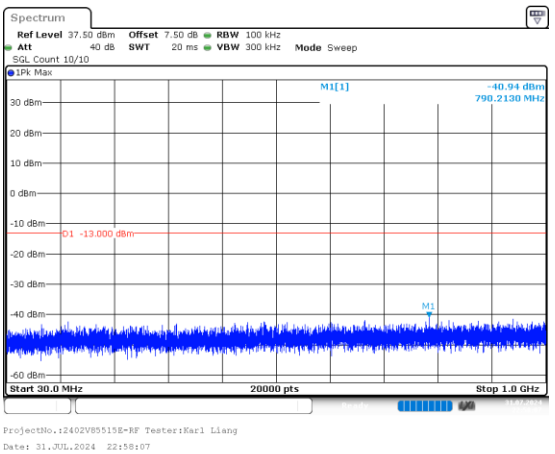

ProjectNo.:2402V85515E-RF Tester:Karl Liang
Date: 31.JUL.2024 22:58:07

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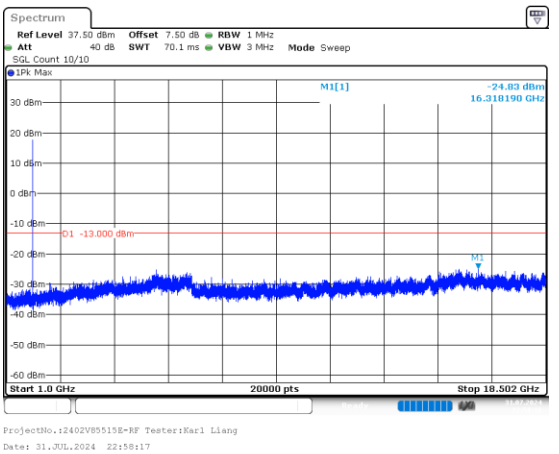

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EDGE_Middle_Solt1

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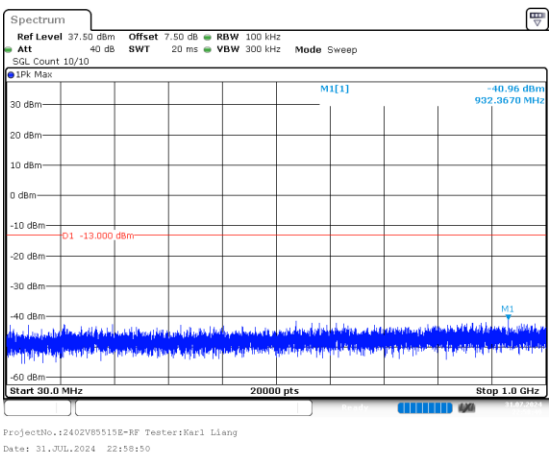

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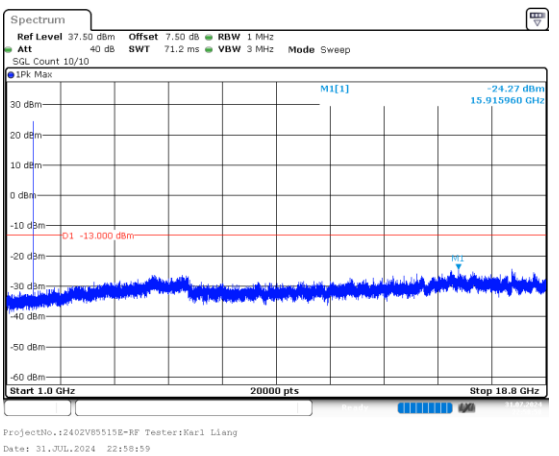

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Date: 31.JUL.2024 22:58:59

EDGE_High_Solt1

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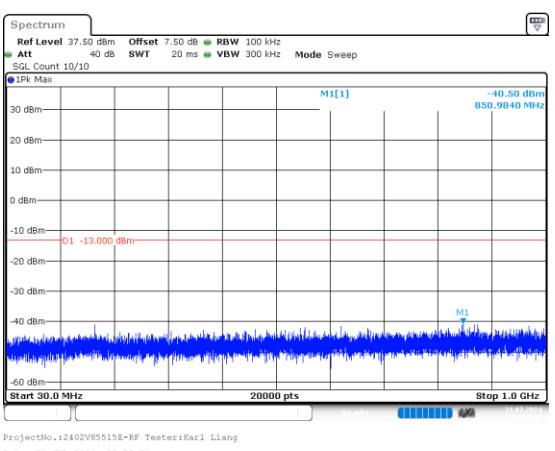

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Date: 31.JUL.2024 22:59:31

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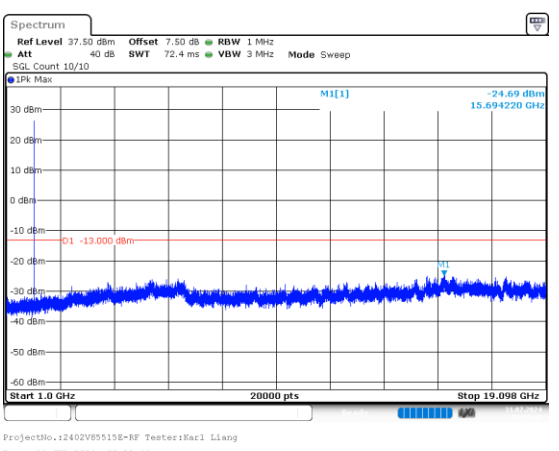

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