

Appendix A

Test Information:

Serial No.:	2TGU-1	Test Date:	2024/11/08
Test Site:	RF	Test Mode:	Transmitting
Tester:	Karl Liang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C):	24.7	Relative Humidity: (%)	37	ATM Pressure: (kPa)	101.9
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Micro-Coax	Coaxial Cable	UFB205A	323308-012	2024/01/02	2025/01/01
Minl-Clrcuts	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/02/25	2025/02/24
R&S	Coaxial Attenuator	10dB	F-08-EM512	2024/06/13	2025/06/12
All-sun	Multimeter	EM305A	8348897	2024/08/16	2025/08/15
R&S	Spectrum Analyzer	FSV40	101461	2024/09/05	2025/09/04
R&S	Wideband Radio Communication Tester	CMW500	149216	2024/09/05	2025/09/04
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2024/09/06	2025/09/05
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

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

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

IC RSS 132

GSM 850

Mode	Result (MHz)	Limit (MHz)	Verdict
GSM_Low_TN/VN	824.079	824	Pass
GSM_Low_T1/VN	824.055	824	Pass
GSM_Low_T2/VN	824.055	824	Pass
GSM_Low_T3/VN	824.076	824	Pass
GSM_Low_T4/VN	824.064	824	Pass
GSM_Low_T5/VN	824.073	824	Pass
GSM_Low_T6/VN	824.106	824	Pass
GSM_Low_T7/VN	824.094	824	Pass
GSM_Low_T8/VN	824.085	824	Pass
GSM_Low_TN/VH	824.103	824	Pass
GSM_Low_TN/VL	824.094	824	Pass
GSM_High_TN/VN	848.922	849	Pass
GSM_High_T1/VN	848.901	849	Pass
GSM_High_T2/VN	848.916	849	Pass
GSM_High_T3/VN	848.910	849	Pass
GSM_High_T4/VN	848.913	849	Pass
GSM_High_T5/VN	848.904	849	Pass
GSM_High_T6/VN	848.940	849	Pass
GSM_High_T7/VN	848.949	849	Pass
GSM_High_T8/VN	848.937	849	Pass
GSM_High_TN/VH	848.928	849	Pass
GSM_High_TN/VL	848.943	849	Pass
EDGE_Low_Solt1_TN/VN	824.082	824	Pass
EDGE_Low_Solt1_T1/VN	824.064	824	Pass
EDGE_Low_Solt1_T2/VN	824.067	824	Pass
EDGE_Low_Solt1_T3/VN	824.058	824	Pass
EDGE_Low_Solt1_T4/VN	824.079	824	Pass
EDGE_Low_Solt1_T5/VN	824.085	824	Pass
EDGE_Low_Solt1_T6/VN	824.088	824	Pass
EDGE_Low_Solt1_T7/VN	824.106	824	Pass

Mode	Result (MHz)	Limit (MHz)	Verdict
EDGE_Low_Solt1_T8/VN	824.085	824	Pass
EDGE_Low_Solt1_TN/VH	824.106	824	Pass
EDGE_Low_Solt1_TN/VL	824.100	824	Pass
EDGE_High_Solt1_TN/VN	848.922	849	Pass
EDGE_High_Solt1_T1/VN	848.910	849	Pass
EDGE_High_Solt1_T2/VN	848.910	849	Pass
EDGE_High_Solt1_T3/VN	848.898	849	Pass
EDGE_High_Solt1_T4/VN	848.907	849	Pass
EDGE_High_Solt1_T5/VN	848.920	849	Pass
EDGE_High_Solt1_T6/VN	848.937	849	Pass
EDGE_High_Solt1_T7/VN	848.946	849	Pass
EDGE_High_Solt1_T8/VN	848.946	849	Pass
EDGE_High_Solt1_TN/VH	848.931	849	Pass
EDGE_High_Solt1_TN/VL	848.946	849	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.

FCC Part 22H

GSM 850

Mode	Test Channel (MHz)	Frequency Error		Limit (ppm)	Verdict
		(Hz)	(ppm)		
GSM_Middle_TN/VN	836.6	3.1	0.004	±2.5	Pass
GSM_Middle_T1/VN	836.6	1.8	0.002	±2.5	Pass
GSM_Middle_T2/VN	836.6	5.6	0.007	±2.5	Pass
GSM_Middle_T3/VN	836.6	0.0	0.000	±2.5	Pass
GSM_Middle_T4/VN	836.6	9.5	0.011	±2.5	Pass
GSM_Middle_T5/VN	836.6	1.2	0.001	±2.5	Pass
GSM_Middle_T6/VN	836.6	4.9	0.006	±2.5	Pass
GSM_Middle_T7/VN	836.6	7.8	0.009	±2.5	Pass
GSM_Middle_T8/VN	836.6	-1.6	-0.002	±2.5	Pass
GSM_Middle_TN/VH	836.6	9.0	0.011	±2.5	Pass
GSM_Middle_TN/VL	836.6	-0.4	0.000	±2.5	Pass
EDGE_Middle_Solt1_TN/VN	836.6	5.6	0.007	±2.5	Pass
EDGE_Middle_Solt1_T1/VN	836.6	4.3	0.005	±2.5	Pass
EDGE_Middle_Solt1_T2/VN	836.6	2.7	0.003	±2.5	Pass
EDGE_Middle_Solt1_T3/VN	836.6	2.7	0.003	±2.5	Pass
EDGE_Middle_Solt1_T4/VN	836.6	4.0	0.005	±2.5	Pass
EDGE_Middle_Solt1_T5/VN	836.6	2.4	0.003	±2.5	Pass
EDGE_Middle_Solt1_T6/VN	836.6	4.8	0.006	±2.5	Pass
EDGE_Middle_Solt1_T7/VN	836.6	6.8	0.008	±2.5	Pass
EDGE_Middle_Solt1_T8/VN	836.6	6.5	0.008	±2.5	Pass
EDGE_Middle_Solt1_TN/VH	836.6	5.4	0.006	±2.5	Pass
EDGE_Middle_Solt1_TN/VL	836.6	4.0	0.005	±2.5	Pass

Note:
Frequency Error (ppm)=Frequency Error (MHz)/Test Channel(MHz)*10⁶
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 & IC RSS 133

GSM 1900

Mode	Result (MHz)	Limit (MHz)	Verdict
GSM_Low_TN/VN	1850.082	1850	Pass
GSM_Low_T1/VN	1850.080	1850	Pass
GSM_Low_T2/VN	1850.081	1850	Pass
GSM_Low_T3/VN	1850.080	1850	Pass
GSM_Low_T4/VN	1850.081	1850	Pass
GSM_Low_T5/VN	1850.080	1850	Pass
GSM_Low_T6/VN	1850.081	1850	Pass
GSM_Low_T7/VN	1850.081	1850	Pass
GSM_Low_T8/VN	1850.082	1850	Pass
GSM_Low_TN/VH	1850.081	1850	Pass
GSM_Low_TN/VL	1850.081	1850	Pass
GSM_High_TN/VN	1909.922	1910	Pass
GSM_High_T1/VN	1909.922	1910	Pass
GSM_High_T2/VN	1909.927	1910	Pass
GSM_High_T3/VN	1909.926	1910	Pass
GSM_High_T4/VN	1909.919	1910	Pass
GSM_High_T5/VN	1909.924	1910	Pass
GSM_High_T6/VN	1909.923	1910	Pass
GSM_High_T7/VN	1909.920	1910	Pass
GSM_High_T8/VN	1909.923	1910	Pass
GSM_High_TN/VH	1909.926	1910	Pass
GSM_High_TN/VL	1909.925	1910	Pass
EDGE_Low_Solt1_TN/VN	1850.077	1850	Pass
EDGE_Low_Solt1_T1/VN	1850.083	1850	Pass
EDGE_Low_Solt1_T2/VN	1850.079	1850	Pass
EDGE_Low_Solt1_T3/VN	1850.078	1850	Pass
EDGE_Low_Solt1_T4/VN	1850.077	1850	Pass
EDGE_Low_Solt1_T5/VN	1850.075	1850	Pass
EDGE_Low_Solt1_T6/VN	1850.081	1850	Pass
EDGE_Low_Solt1_T7/VN	1850.076	1850	Pass

Mode	Result (MHz)	Limit (MHz)	Verdict
EDGE_Low_Solt1_T8/VN	1850.080	1850	Pass
EDGE_Low_Solt1_TN/VH	1850.083	1850	Pass
EDGE_Low_Solt1_TN/VL	1850.082	1850	Pass
EDGE_High_Solt1_TN/VN	1909.923	1910	Pass
EDGE_High_Solt1_T1/VN	1909.925	1910	Pass
EDGE_High_Solt1_T2/VN	1909.922	1910	Pass
EDGE_High_Solt1_T3/VN	1909.927	1910	Pass
EDGE_High_Solt1_T4/VN	1909.925	1910	Pass
EDGE_High_Solt1_T5/VN	1909.923	1910	Pass
EDGE_High_Solt1_T6/VN	1909.920	1910	Pass
EDGE_High_Solt1_T7/VN	1909.924	1910	Pass
EDGE_High_Solt1_T8/VN	1909.923	1910	Pass
EDGE_High_Solt1_TN/VH	1909.924	1910	Pass
EDGE_High_Solt1_TN/VL	1909.928	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

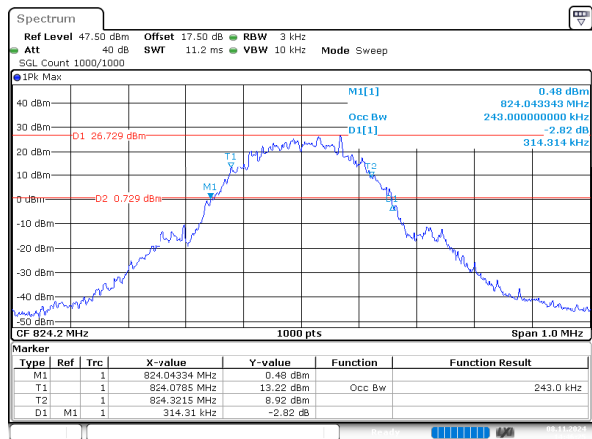
FCC Part 22H & IC RSS 132

GSM 850 , Normal

Mode	99% OBW (MHz)	EBW (MHz)
GSM_Low	0.243	0.314
GSM_Middle	0.244	0.313
GSM_High	0.242	0.308
EDGE_Low_Solt1	0.238	0.303
EDGE_Middle_Solt1	0.242	0.311
EDGE_High_Solt1	0.243	0.314

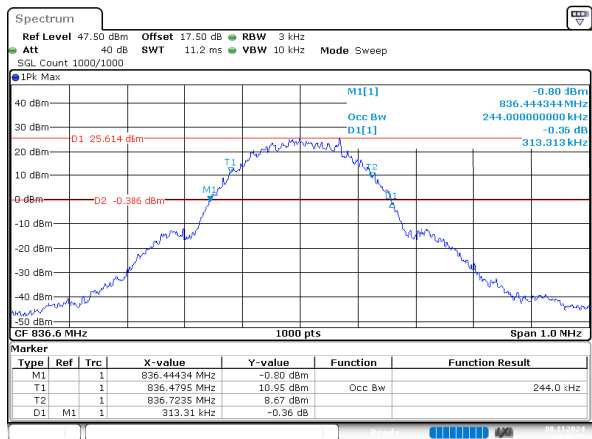
GSM 850 , Normal

GSM_Low



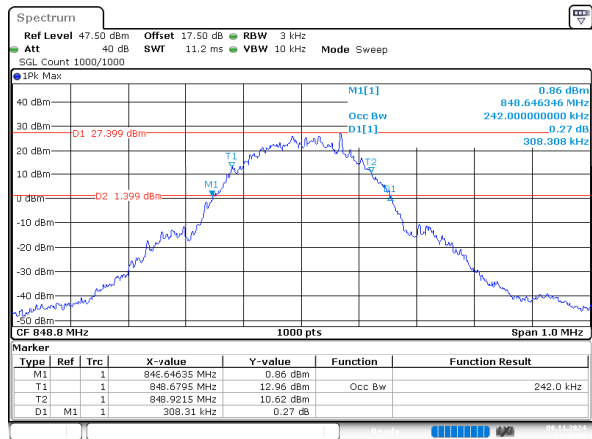
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GSM_Middle



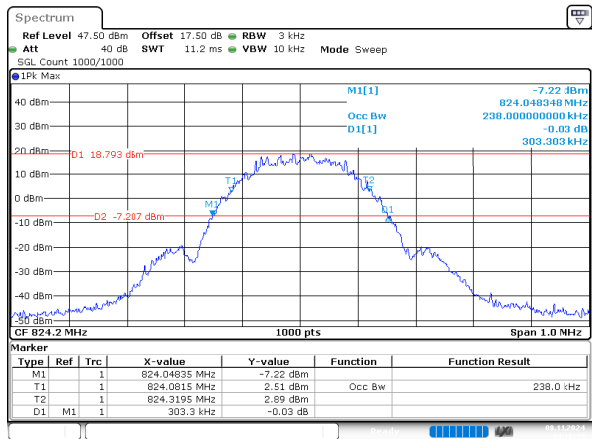
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GSM_High



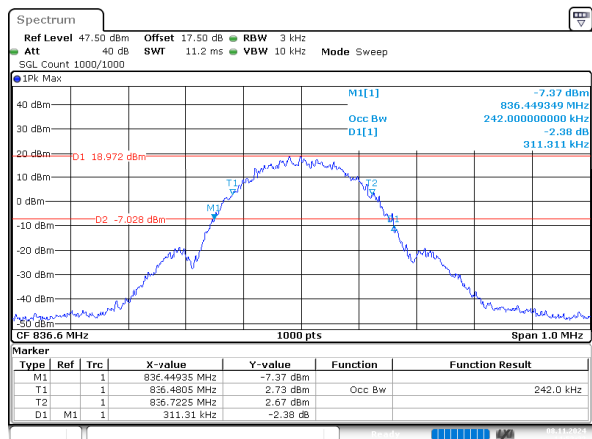
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EDGE_Low_Solt1



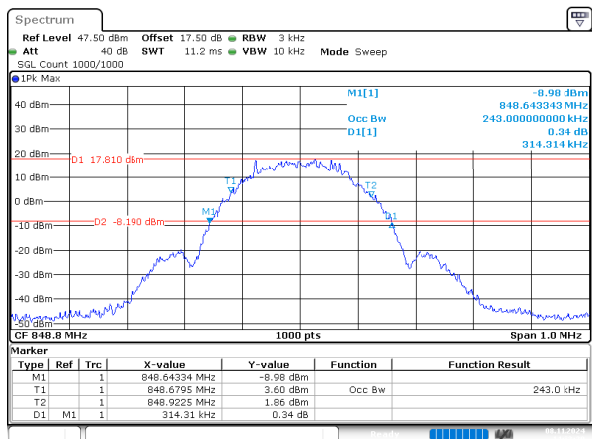
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EDGE_Middle_Solt1



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
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EDGE_High_Solt1



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
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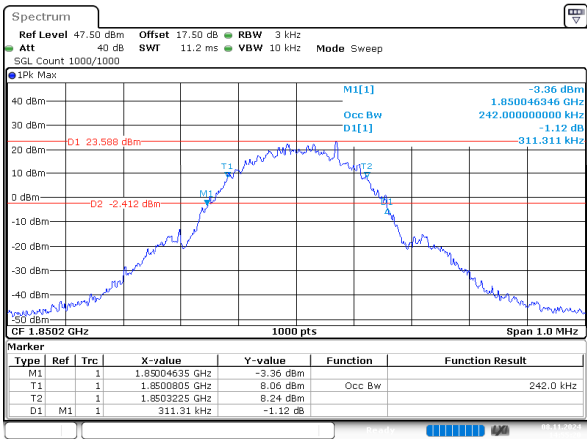
FCC Part 24E & IC RSS 133

GSM 1900 , Normal

Mode	99% OBW (MHz)	EBW (MHz)
GSM_Low	0.242	0.311
GSM_Middle	0.241	0.311
GSM_High	0.240	0.304
EDGE_Low_Solt1	0.238	0.309
EDGE_Middle_Solt1	0.242	0.309
EDGE_High_Solt1	0.241	0.302

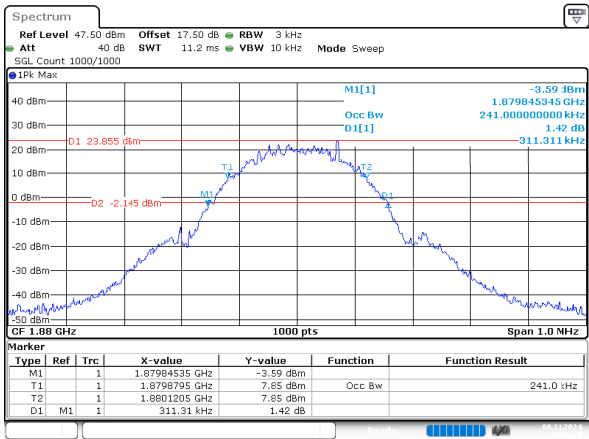
GSM 1900 , Normal

GSM_Low



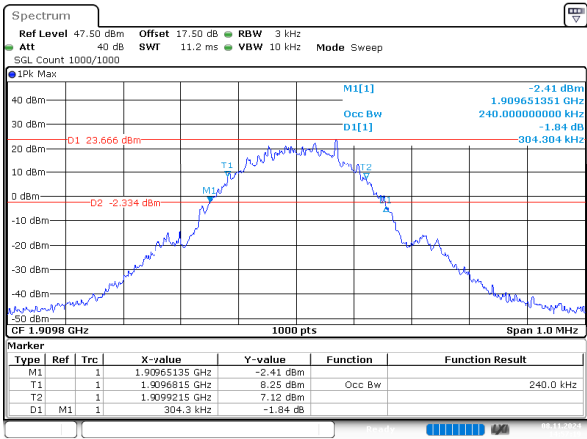
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GSM_Middle



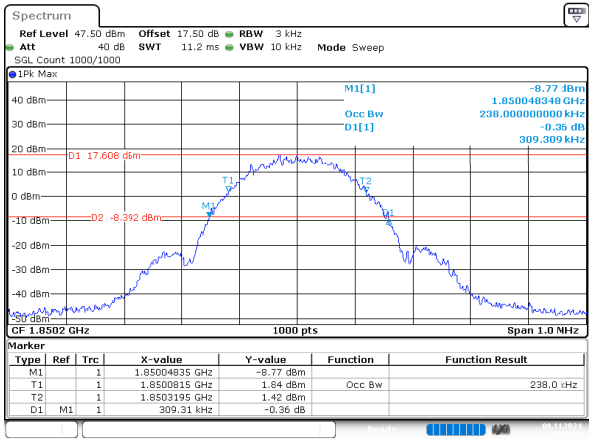
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GSM_High



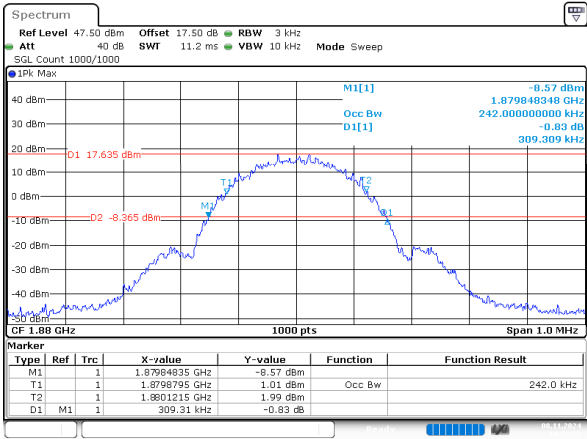
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EDGE_Low_Solt1



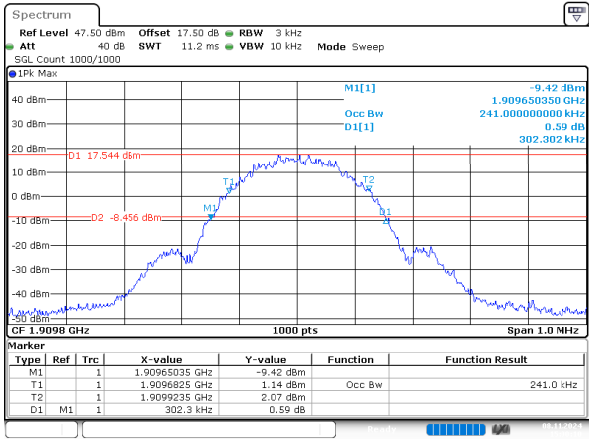
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EDGE_Middle_Solt1



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:59:23

EDGE_High_Solt1



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 15:40:10

RF Output Power

FCC Part 22H & IC RSS 132

GSM 850 , Normal

Mode	Average Conducted Power(dBm)	ERP (dBm)	FCC Limit(dBm)	IC Limit(dBm)	Verdict
GSM_Low	32.91	27.77	38.45	34.77	Pass
GSM_Middle	32.97	27.83	38.45	34.77	Pass
GSM_High	32.82	27.68	38.45	34.77	Pass
GPRS_Low_Solt1	32.90	27.76	38.45	34.77	Pass
GPRS_Low_Solt2	30.96	25.82	38.45	34.77	Pass
GPRS_Low_Solt3	29.11	23.97	38.45	34.77	Pass
GPRS_Low_Solt4	27.05	21.91	38.45	34.77	Pass
GPRS_Middle_Solt1	32.99	27.85	38.45	34.77	Pass
GPRS_Middle_Solt2	30.69	25.55	38.45	34.77	Pass
GPRS_Middle_Solt3	28.86	23.72	38.45	34.77	Pass
GPRS_Middle_Solt4	26.78	21.64	38.45	34.77	Pass
GPRS_High_Solt1	32.83	27.69	38.45	34.77	Pass
GPRS_High_Solt2	30.39	25.25	38.45	34.77	Pass
GPRS_High_Solt3	28.59	23.45	38.45	34.77	Pass
GPRS_High_Solt4	26.51	21.37	38.45	34.77	Pass
EDGE_Low_Solt1	26.19	21.05	38.45	34.77	Pass
EDGE_Low_Solt2	24.68	19.54	38.45	34.77	Pass
EDGE_Low_Solt3	22.35	17.21	38.45	34.77	Pass
EDGE_Low_Solt4	19.95	14.81	38.45	34.77	Pass
EDGE_Middle_Solt1	25.95	20.81	38.45	34.77	Pass
EDGE_Middle_Solt2	24.44	19.30	38.45	34.77	Pass
EDGE_Middle_Solt3	22.16	17.02	38.45	34.77	Pass
EDGE_Middle_Solt4	19.93	14.79	38.45	34.77	Pass
EDGE_High_Solt1	25.68	20.54	38.45	34.77	Pass
EDGE_High_Solt2	24.24	19.10	38.45	34.77	Pass
EDGE_High_Solt3	21.94	16.80	38.45	34.77	Pass
EDGE_High_Solt4	19.55	14.41	38.45	34.77	Pass

Note:

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

G_T(dBd) = G_T(dBi) - 2.15

1.Ant Gain = -2.89dBi;

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

FCC Part 24E & IC RSS 133

GSM 1900 , Normal

Mode	Average Conducted Power(dBm)	EIRP (dBm)	Limit(dBm)	Verdict
GSM_Low	29.19	29.94	33	Pass
GSM_Middle	29.37	30.12	33	Pass
GSM_High	29.17	29.92	33	Pass
GPRS_Low_Solt1	29.27	30.02	33	Pass
GPRS_Low_Solt2	27.15	27.90	33	Pass
GPRS_Low_Solt3	25.52	26.27	33	Pass
GPRS_Low_Solt4	23.51	24.26	33	Pass
GPRS_Middle_Solt1	29.45	30.20	33	Pass
GPRS_Middle_Solt2	27.05	27.80	33	Pass
GPRS_Middle_Solt3	25.41	26.16	33	Pass
GPRS_Middle_Solt4	23.32	24.07	33	Pass
GPRS_High_Solt1	29.22	29.97	33	Pass
GPRS_High_Solt2	26.81	27.56	33	Pass
GPRS_High_Solt3	25.17	25.92	33	Pass
GPRS_High_Solt4	23.07	23.82	33	Pass
EDGE_Low_Solt1	24.87	25.62	33	Pass
EDGE_Low_Solt2	22.89	23.64	33	Pass
EDGE_Low_Solt3	20.53	21.28	33	Pass
EDGE_Low_Solt4	17.64	18.39	33	Pass
EDGE_Middle_Solt1	25.20	25.95	33	Pass
EDGE_Middle_Solt2	23.34	24.09	33	Pass
EDGE_Middle_Solt3	20.95	21.70	33	Pass
EDGE_Middle_Solt4	18.29	19.04	33	Pass
EDGE_High_Solt1	24.91	25.66	33	Pass
EDGE_High_Solt2	22.96	23.71	33	Pass
EDGE_High_Solt3	20.54	21.29	33	Pass
EDGE_High_Solt4	17.90	18.65	33	Pass

Note:

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

1.Ant Gain = 0.75dBi;

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

Peak-to-average Ratio(PAR)

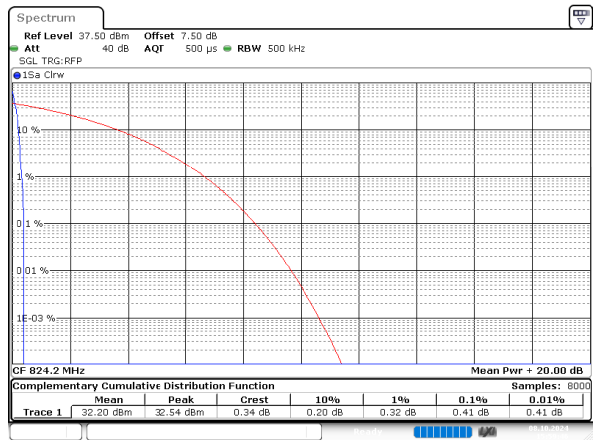
FCC Part 22H & IC RSS 132

GSM 850 , Normal

Mode	Result (dB)	Limit (dB)
GSM_Low	0.41	13
GSM_Middle	0.38	13
GSM_High	0.38	13

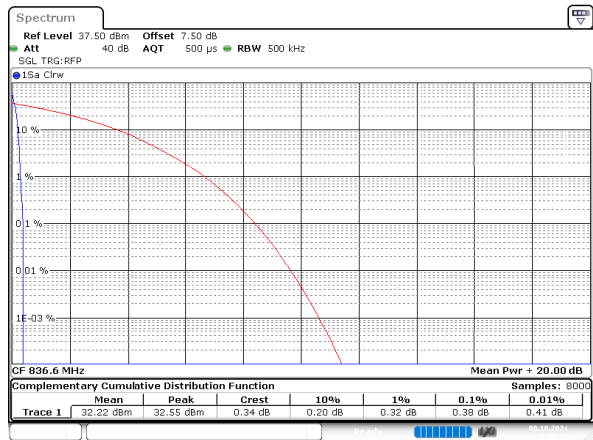
GSM 850 , Normal

GSM_Low



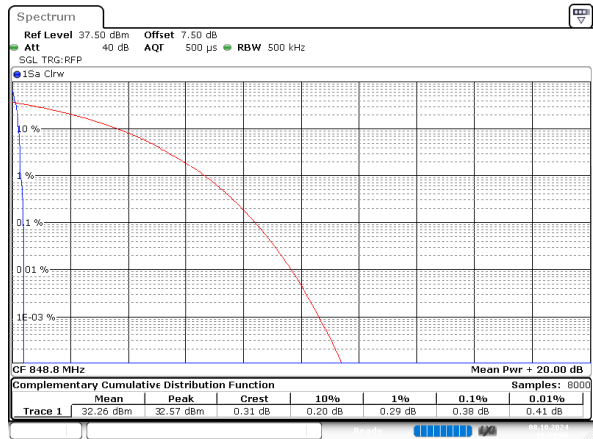
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GSM_Middle



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.OCT.2024 16:40:28

GSM_High



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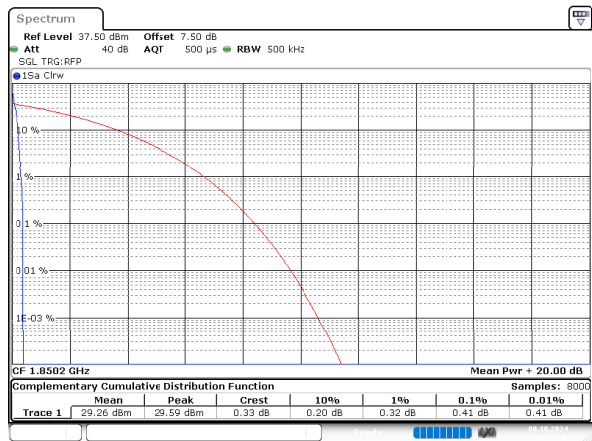
FCC Part 24E & IC RSS 133

GSM 1900 , Normal

Mode	Result (dB)	Limit (dB)
GSM_Low	0.41	13
GSM_Middle	0.41	13
GSM_High	0.41	13

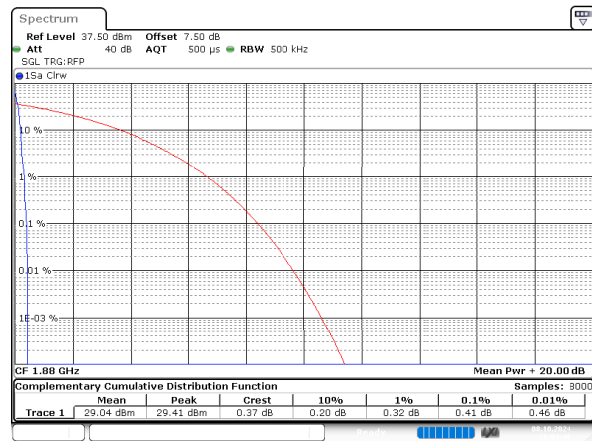
GSM 1900 , Normal

GSM_Low



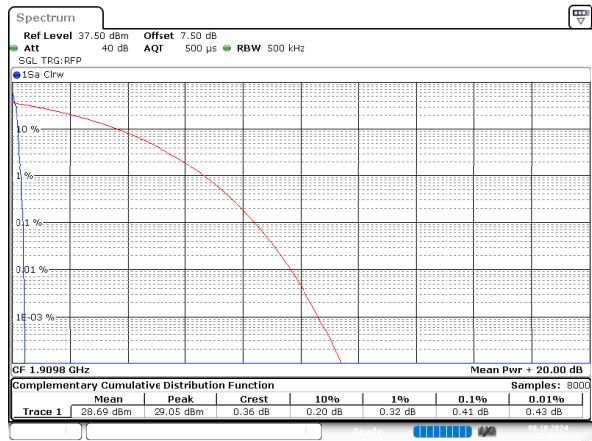
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GSM_Middle



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Date: 8.OCT.2024 16:03:40

GSM_High



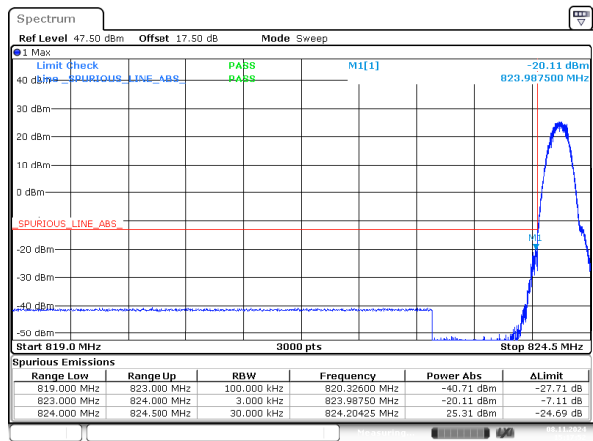
ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.OCT.2024 16:04:24

Out of band emission,Band Edge

FCC Part 22H & IC RSS 132

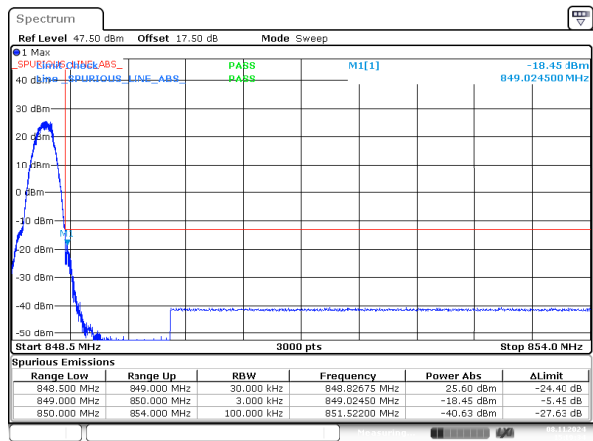
GSM 850 , Normal

GSM_Low



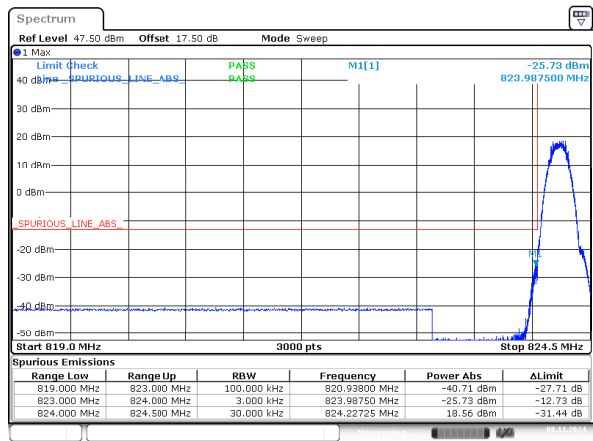
ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 15:17:53

GSM_High



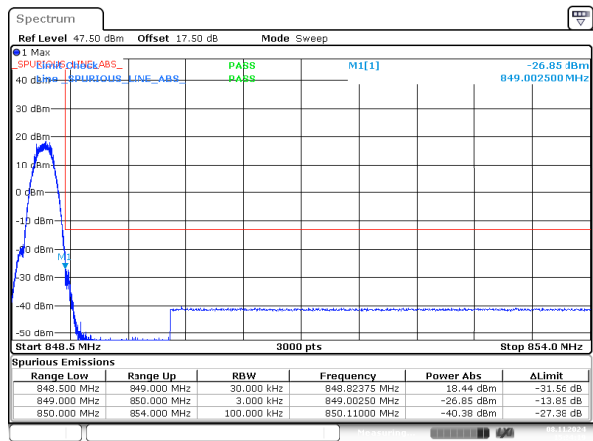
ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 15:19:34

EDGE_Low_Solt1



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 15:22:13

EDGE_High_Solt1

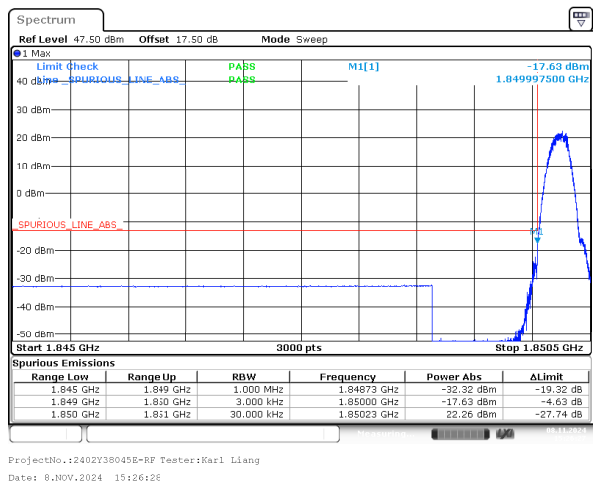


ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 15:24:20

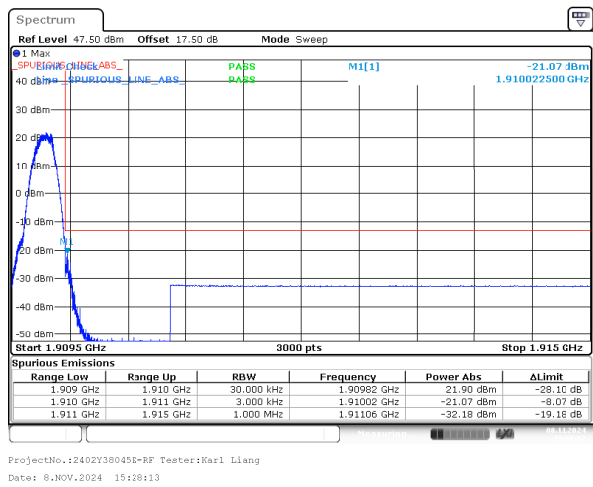
FCC Part 24E & IC RSS 133

GSM 1900 , Normal

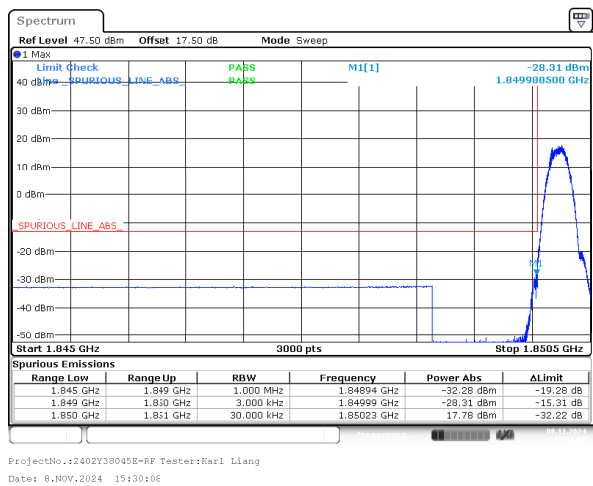
GSM_Low



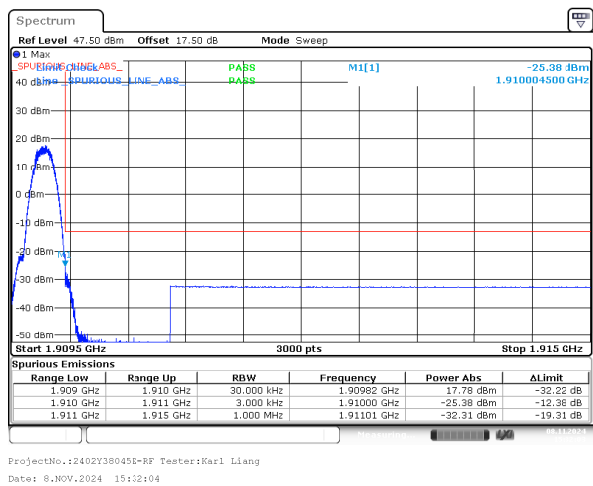
GSM_High



EDGE_Low_Solt1



EDGE_High_Solt1

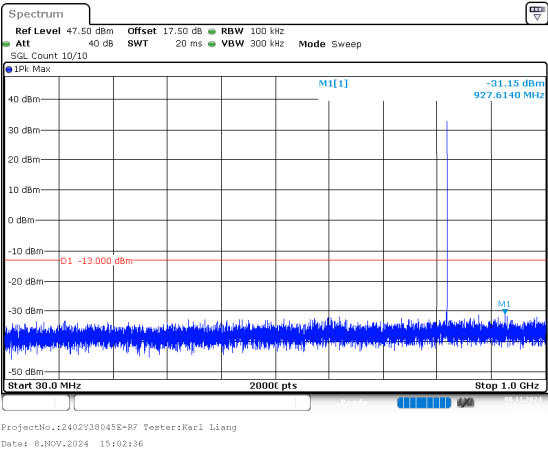


Spurious Emissions at Antenna Terminal

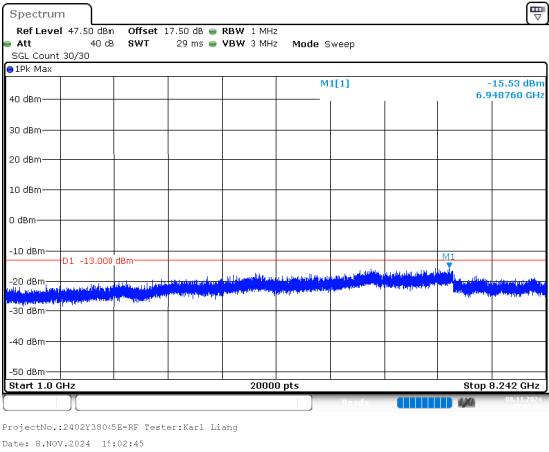
FCC Part 22H & IC RSS 132
GSM 850 , Normal

GSM_Low

Below 1G

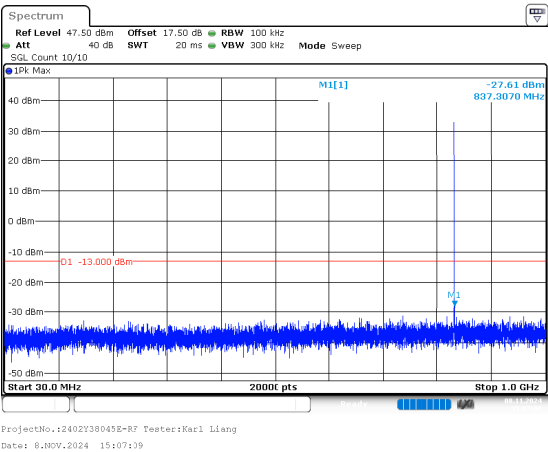


Above 1G

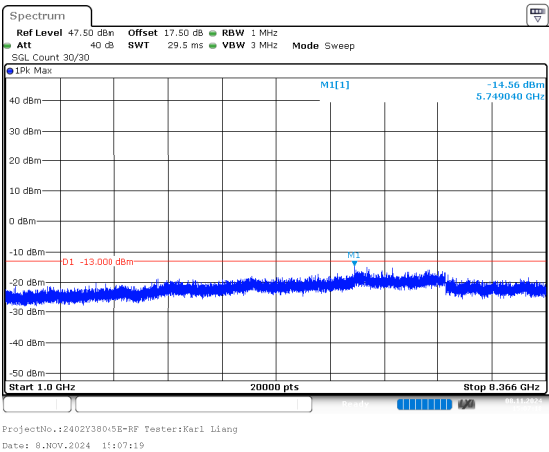


GSM_Middle

Below 1G

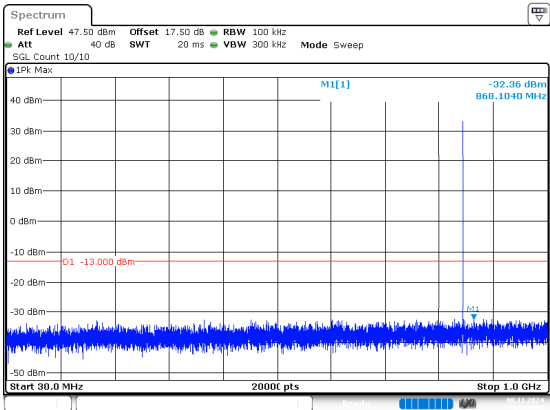


Above 1G



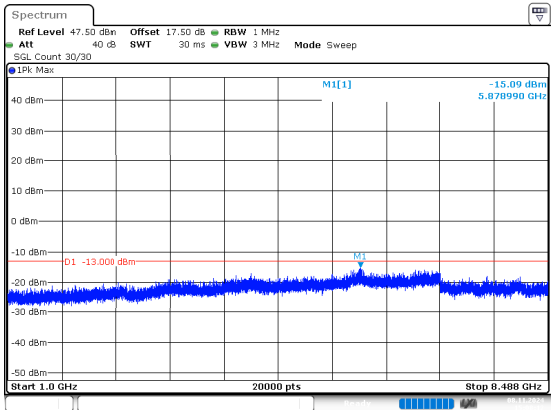
GSM_High

Below 1G



ProjectNo.:2402Y38045E-R7 Tester:Karl Liang
Date: 8.NOV.2024 15:08:33

Above 1G



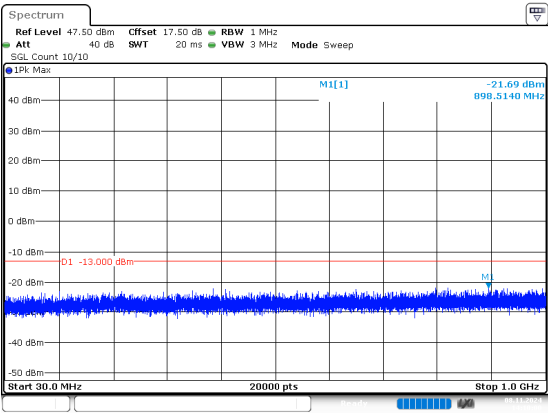
ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 11:08:12

FCC Part 24E & IC RSS 133

GSM 1900 , Normal

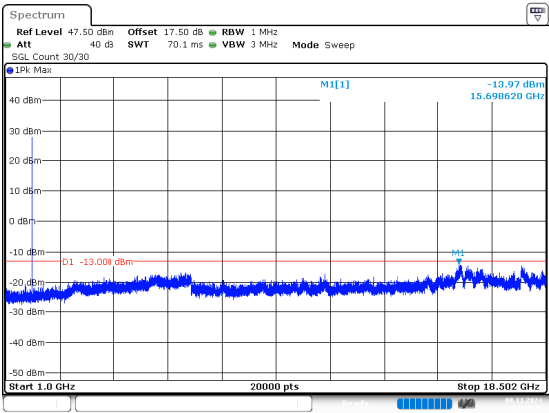
GSM_Low

Below 1G



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:10:30

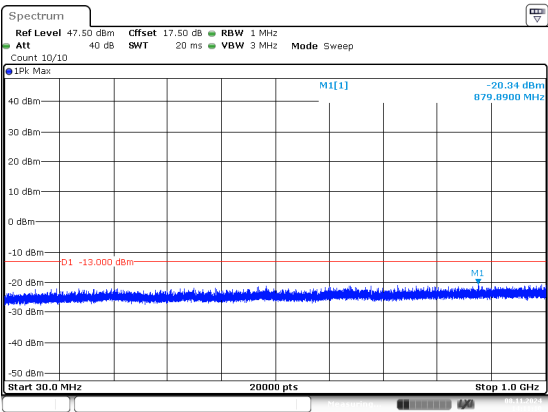
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ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:10:16

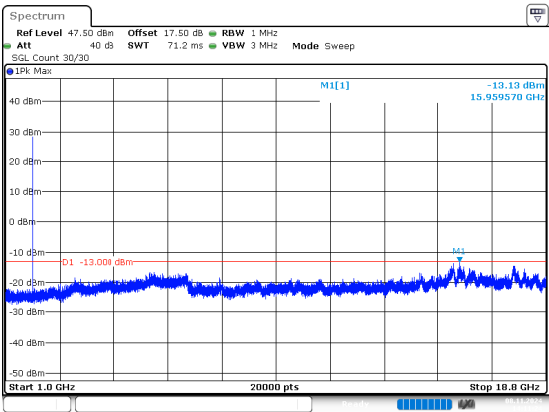
GSM_Middle

Below 1G



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:11:11

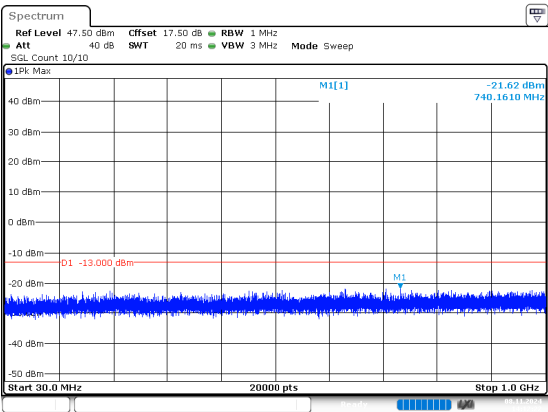
Above 1G



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:11:24

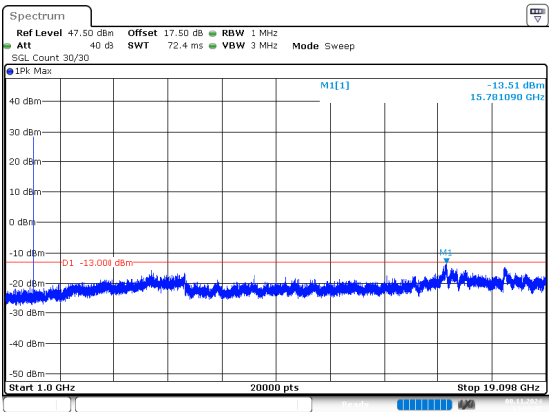
GSM_High

Below 1G



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:12:22

Above 1G



ProjectNo.:2402Y38045E-RF Tester:Karl Liang
Date: 8.NOV.2024 14:12:35