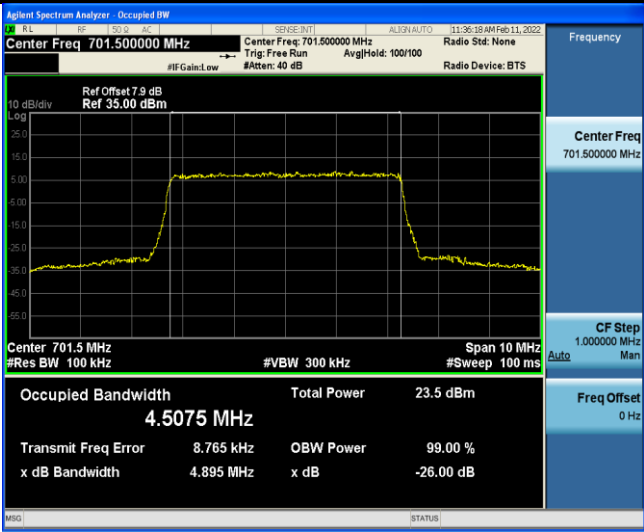
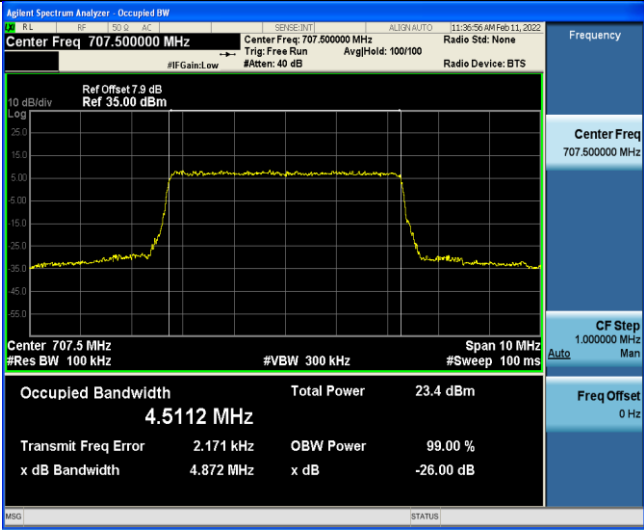
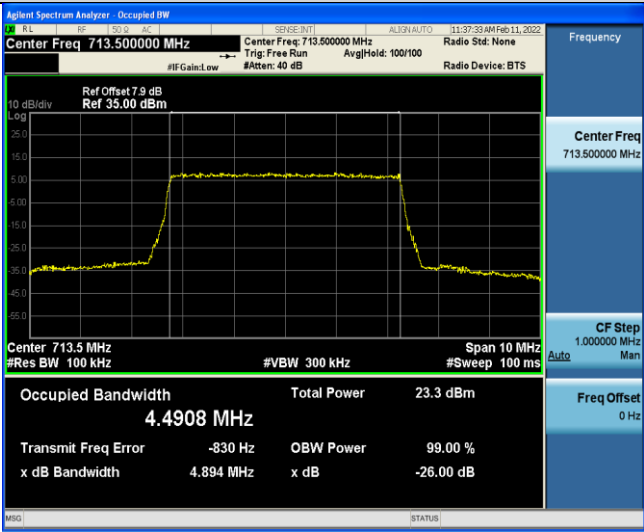




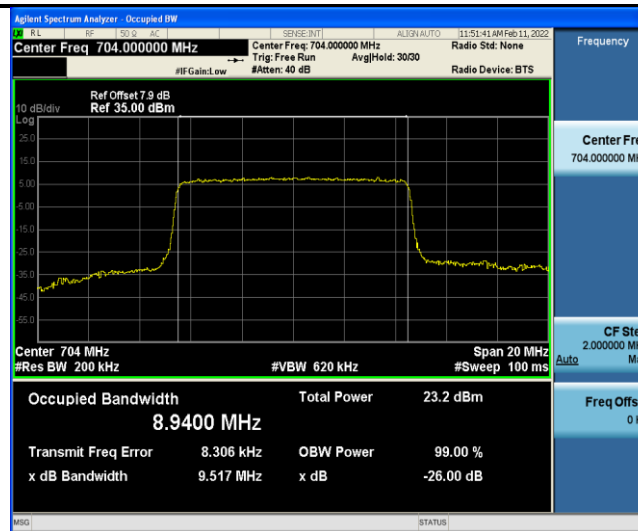
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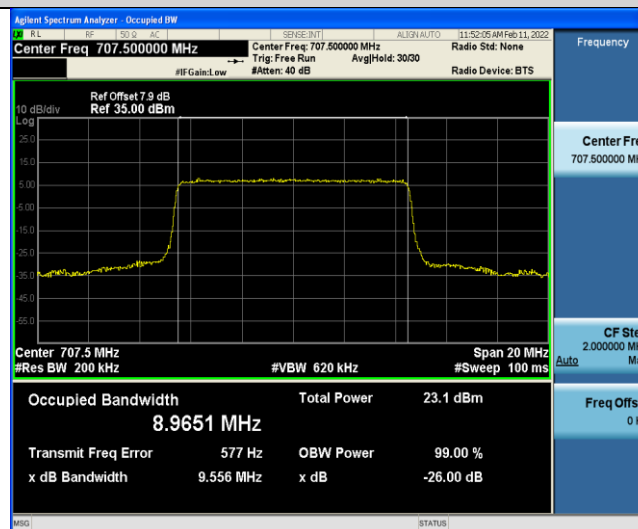
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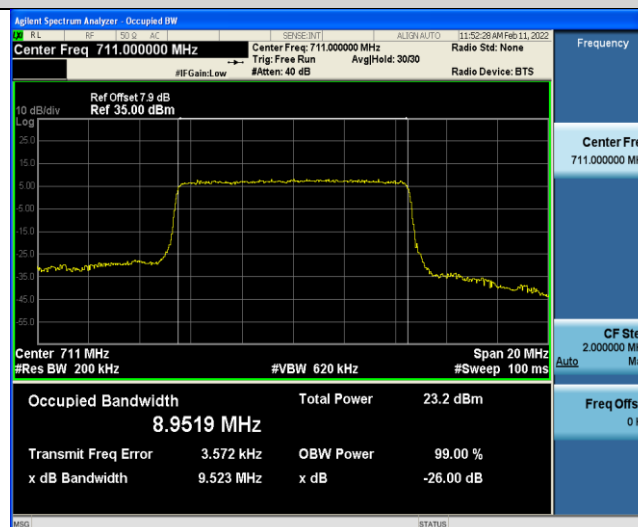
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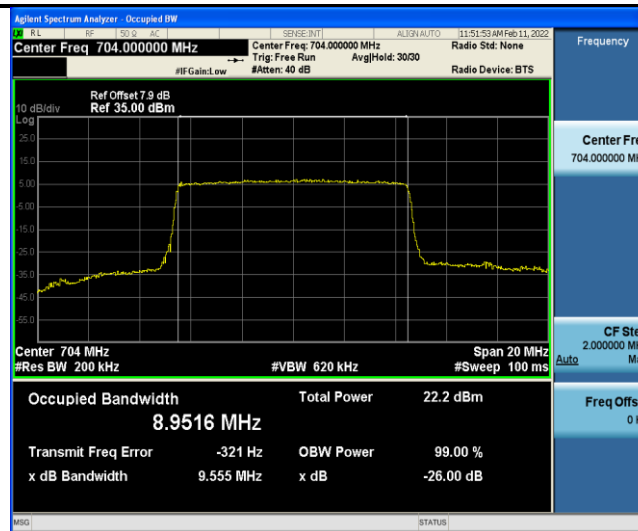
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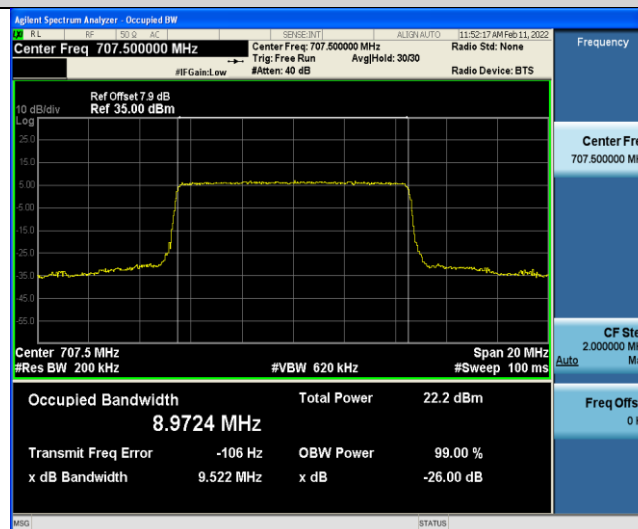
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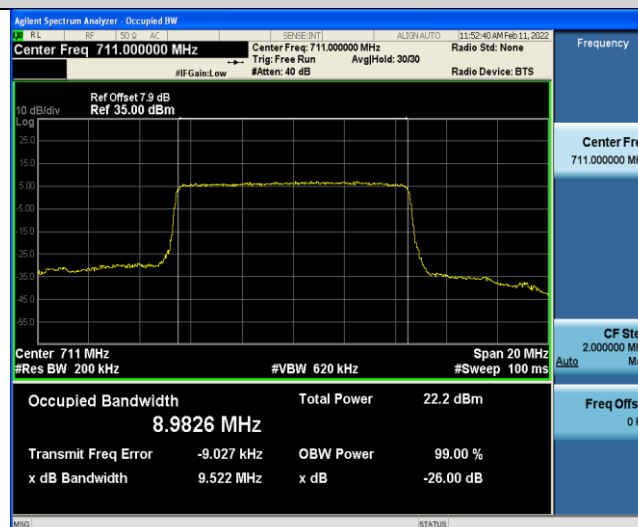
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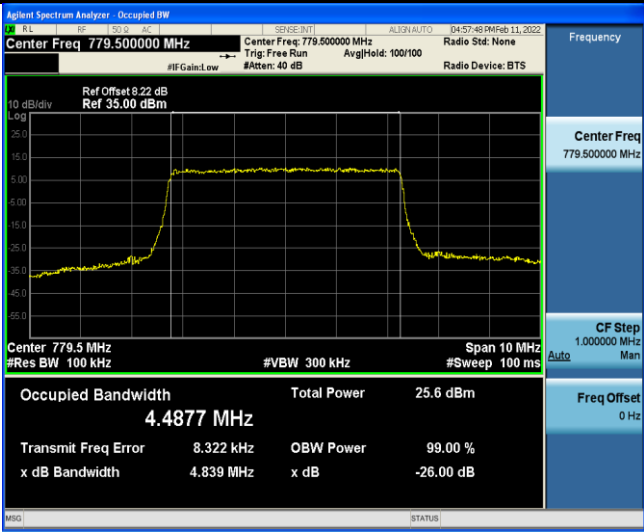
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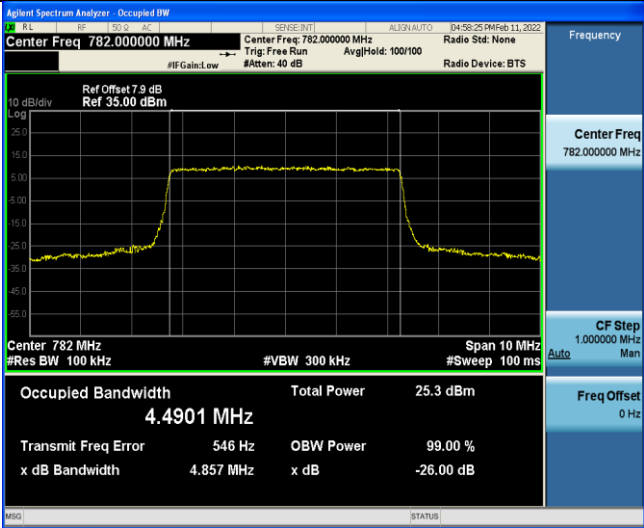
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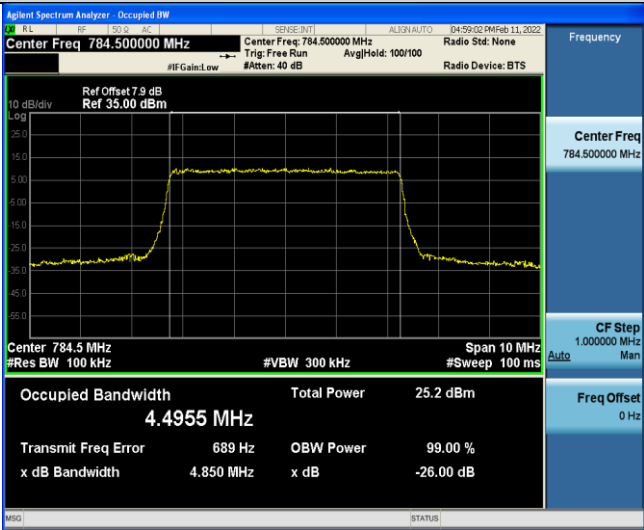
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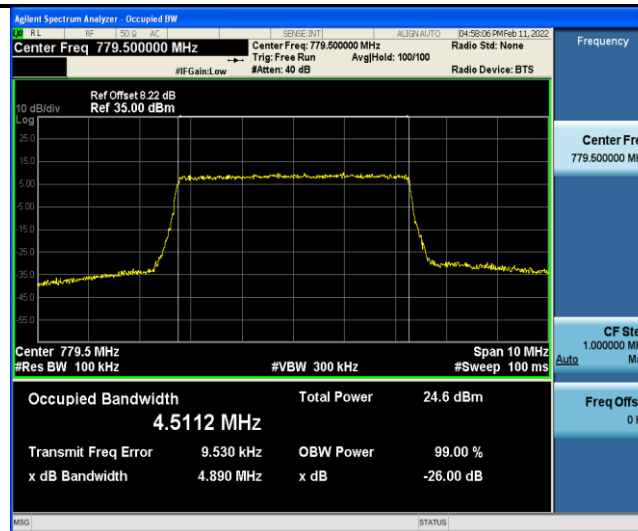
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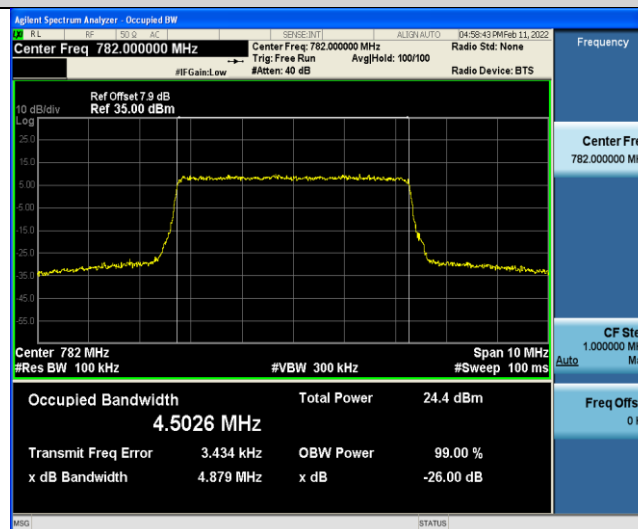
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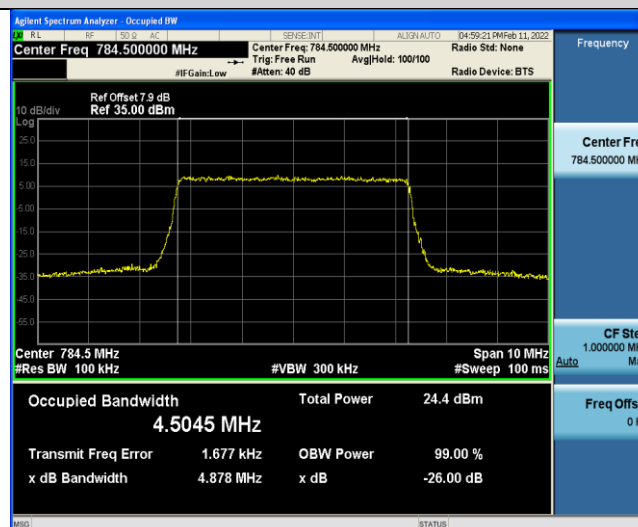
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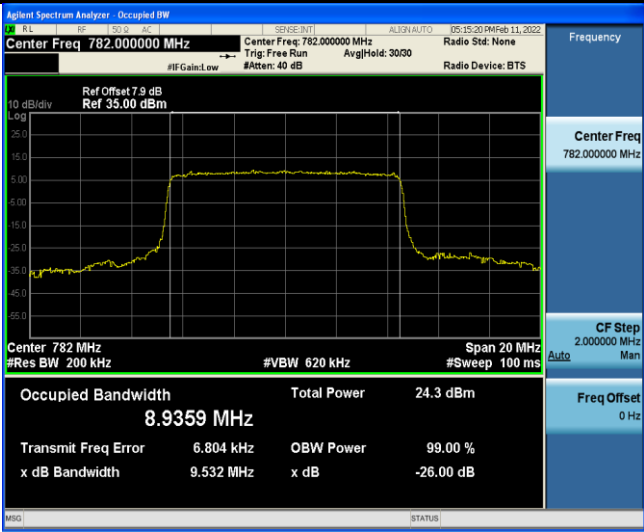
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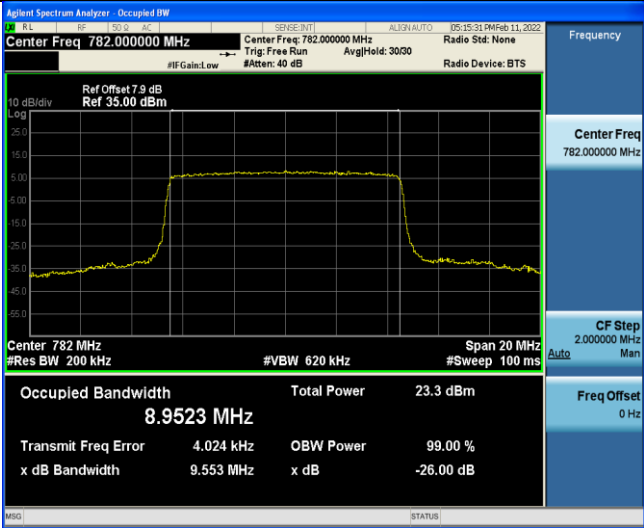
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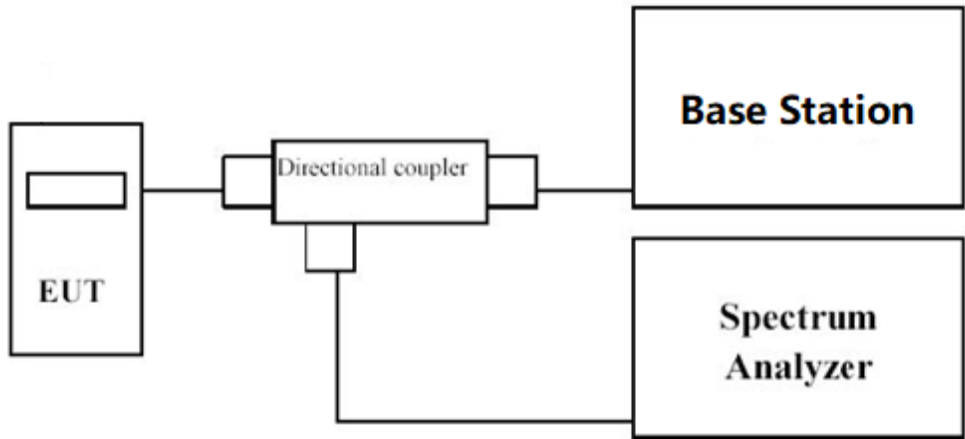
Band13-10MHz-16QAM-23230-50RB#0



4.5 Spurious Emissions at antenna terminals**VERDICT: PASS****4.5.1 Limit**

Band	Standard
GSM 850; WCDMA Band V; LTE Band 5	FCC §2.1051: The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna.
	FCC §22.917: 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.
	RSS-132: Section 5.5: The power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).
GSM 1900; WCDMA Band II; LTE Band 2	FCC §2.1051: The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna.
	FCC §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.
	RSS-133 Section 6.5: The emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).
LTE Band 12/13/17	FCC §2.1051: The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna.
	FCC §27.53(g): For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.
	FCC §27.53(c): On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
	RSS-130 Section 4.7: The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$ (watts), dB. Equipment operating in the frequency bands 746- 756 MHz and 777-787 MHz shall also comply with the following restrictions: The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least: $65 + 10 \log_{10} p$ (watts), dB, for mobile and portable equipment. The e.i.r.p. in the band 1559-1610 MHz shall not exceed -70 dBW/MHz for wideband signal and -80 dBW for discrete emission with bandwidth less than 700 Hz.
WCDMA Band IV; LTE Band 4	FCC §2.1051: The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna.
	FCC §27.53(h): The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
	RSS-139 Section 6.6: The emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB.

4.5.2 Test Setup



4.5.3 Test Procedure

References Rule		Chapter	Description
☒	ANSI C63.26	5.7	Unwanted (out-of-band and spurious) conducted emissions measurement procedures (conducted test at antenna port)

The EUT RF output connector was connected to a spectrum analyser and to the Universal Radio Communication tester R&S CMW500 (selecting maximum transmission power of the EUT and different modes of modulation) using directional coupler.

The spectrum was investigated from 9 kHz to the 10th harmonic of the highest frequency generated within the equipment.

The reading of the spectrum analyser is corrected with the attenuation loss of connection between output terminal of EUT and input of the spectrum analyser.

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least $X + 10 \log (P)$ dB. P in watts. The specification can be interpreted as an absolute limit when the specified attenuation is actually subtracted from the maximum permissible transmitter power [i.e., $10 \log P - \{X + 10 \log P\}$], resulting in an absolute level of -X dBW [or $(-X + 30)$ dBm].

The configuration of tones and modulation which is the worst case for conducted power was used.

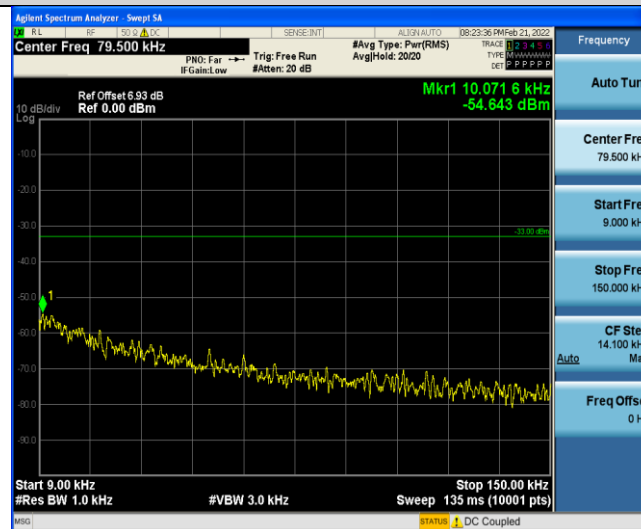
4.5.4 Test Data

GPRS/EGPRS:

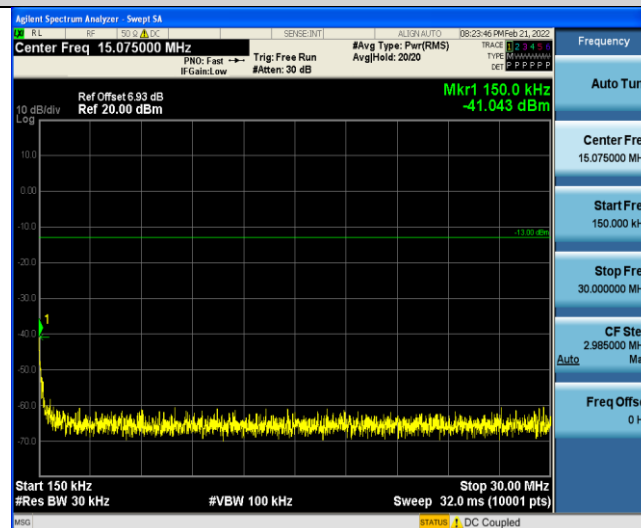
Band	Channel	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GPRS850	128	0.009~0.15MHz	0.01	-54.64	-33	PASS
GPRS850	128	0.15~30MHz	0.15	-41.04	-13	PASS
GPRS850	128	30~1000MHz	947.59	-42.85	-13	PASS
GPRS850	128	1000~3000MHz	1697.53	-34.05	-13	PASS
GPRS850	128	1000~10000MHz	2665	-37.67	-13	PASS
GPRS850	128	3000~10000MHz	3395.27	-48.12	-13	PASS
GPRS850	190	0.009~0.15MHz	0.01	-51.12	-33	PASS
GPRS850	190	0.15~30MHz	0.15	-43.17	-13	PASS
GPRS850	190	30~1000MHz	523.08	-42.11	-13	PASS
GPRS850	190	1000~10000MHz	1697.5	-26.79	-13	PASS
GPRS850	190	1000~3000MHz	1697.6	-33.8	-13	PASS
GPRS850	190	3000~10000MHz	3146.77	-57.69	-13	PASS
GPRS850	251	0.009~0.15MHz	0.01	-52.85	-33	PASS
GPRS850	251	0.15~30MHz	0.16	-40.78	-13	PASS
GPRS850	251	30~1000MHz	257.95	-42.86	-13	PASS
GPRS850	251	1000~3000MHz	1697.13	-36.12	-13	PASS
GPRS850	251	1000~10000MHz	1697.8	-26.99	-13	PASS
GPRS850	251	3000~10000MHz	3395.03	-48.34	-13	PASS
EGPRS850	128	0.009~0.15MHz	0.01	-53.03	-33	PASS
EGPRS850	128	0.15~30MHz	0.16	-40.8	-13	PASS
EGPRS850	128	30~1000MHz	437.95	-42.47	-13	PASS
EGPRS850	128	1000~3000MHz	1697.67	-41.89	-13	PASS
EGPRS850	128	1000~10000MHz	9474.7	-37.13	-13	PASS
EGPRS850	128	3000~10000MHz	3395.03	-55.85	-13	PASS
EGPRS850	190	0.009~0.15MHz	0.01	-50.36	-33	PASS
EGPRS850	190	0.15~30MHz	0.16	-39.84	-13	PASS
EGPRS850	190	30~1000MHz	572.55	-42.86	-13	PASS
EGPRS850	190	1000~3000MHz	2636.93	-43.65	-13	PASS
EGPRS850	190	1000~10000MHz	1697.8	-33.4	-13	PASS
EGPRS850	190	3000~10000MHz	3395.03	-56.29	-13	PASS
EGPRS850	251	0.009~0.15MHz	0.01	-52.54	-33	PASS
EGPRS850	251	0.15~30MHz	0.16	-39.72	-13	PASS
EGPRS850	251	30~1000MHz	958.16	-42.81	-13	PASS
EGPRS850	251	1000~10000MHz	1697.8	-32.36	-13	PASS
EGPRS850	251	1000~3000MHz	2659.47	-43.58	-13	PASS
EGPRS850	251	3000~10000MHz	3395.03	-55	-13	PASS

GPRS1900	512	0.009~0.15MHz	0.01	-53.33	-43	PASS
GPRS1900	512	0.15~30MHz	0.17	-40.99	-23	PASS
GPRS1900	512	30~1000MHz	971.81	-43.57	-13	PASS
GPRS1900	512	1000~18000MHz	16838.33	-32.55	-13	PASS
GPRS1900	661	0.009~0.15MHz	0.01	-52.51	-43	PASS
GPRS1900	661	0.15~30MHz	0.15	-38.68	-23	PASS
GPRS1900	661	30~1000MHz	875.06	-43.07	-13	PASS
GPRS1900	661	1000~18000MHz	16747.67	-32.63	-13	PASS
GPRS1900	810	0.009~0.15MHz	0.01	-53.39	-43	PASS
GPRS1900	810	0.15~30MHz	0.15	-40.84	-23	PASS
GPRS1900	810	30~1000MHz	932.2	-43.97	-13	PASS
GPRS1900	810	1000~18000MHz	16871.77	-32.85	-13	PASS
EGPRS1900	512	0.009~0.15MHz	0.01	-53.24	-43	PASS
EGPRS1900	512	0.15~30MHz	0.15	-41.4	-23	PASS
EGPRS1900	512	30~1000MHz	946.52	-42.48	-13	PASS
EGPRS1900	512	1000~3000MHz	2625.33	-43.5	-13	PASS
EGPRS1900	512	1000~18000MHz	16846.83	-33.1	-13	PASS
EGPRS1900	512	3000~10000MHz	3699.77	-55.36	-13	PASS
EGPRS1900	512	10000~18000MHz	16828.53	-50.46	-13	PASS
EGPRS1900	661	0.009~0.15MHz	0.01	-52.88	-43	PASS
EGPRS1900	661	0.15~30MHz	0.15	-39.85	-23	PASS
EGPRS1900	661	30~1000MHz	918.26	-43.59	-13	PASS
EGPRS1900	661	1000~3000MHz	2640.73	-43.46	-13	PASS
EGPRS1900	661	1000~18000MHz	16927.3	-32.86	-13	PASS
EGPRS1900	661	3000~10000MHz	3700	-53.43	-13	PASS
EGPRS1900	661	10000~18000MHz	16835.73	-50.5	-13	PASS
EGPRS1900	810	0.009~0.15MHz	0.01	-52.11	-43	PASS
EGPRS1900	810	0.15~30MHz	0.15	-41.78	-23	PASS
EGPRS1900	810	30~1000MHz	575.11	-42.16	-13	PASS
EGPRS1900	810	1000~18000MHz	16710.83	-32.95	-13	PASS
EGPRS1900	810	1000~3000MHz	2655.27	-43.31	-13	PASS
EGPRS1900	810	3000~10000MHz	3700	-53.76	-13	PASS
EGPRS1900	810	10000~18000MHz	16801.87	-50.71	-13	PASS

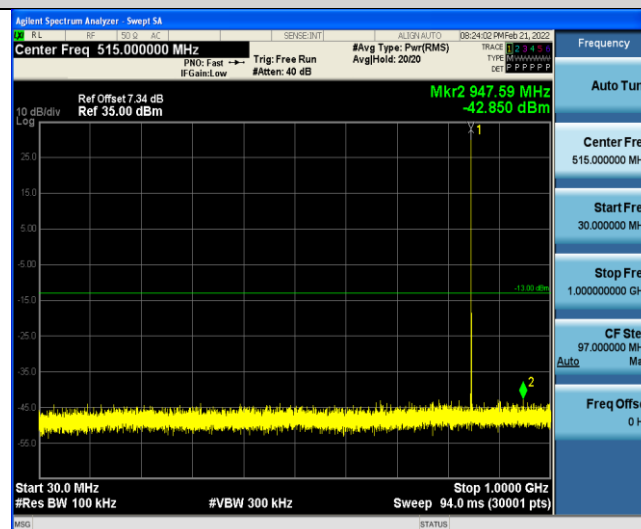
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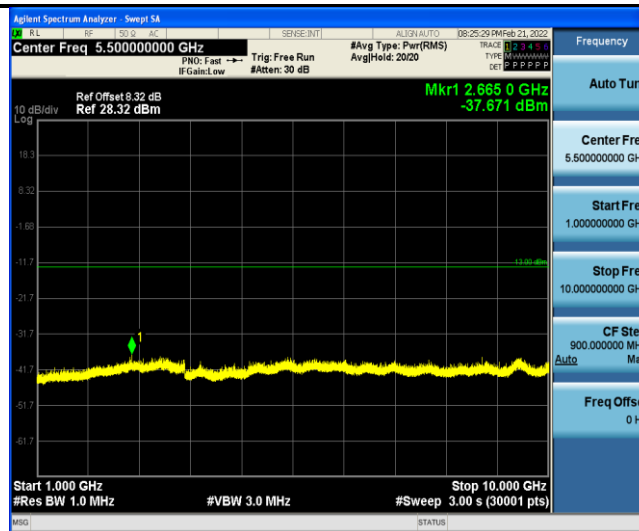
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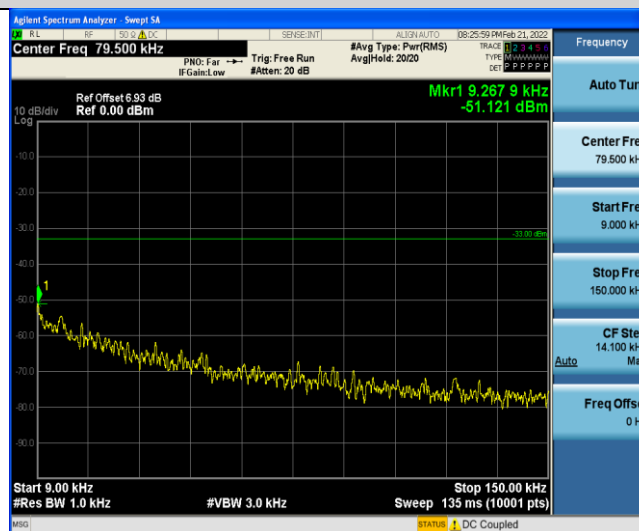
GPRS850-128-3-30~1000MHz



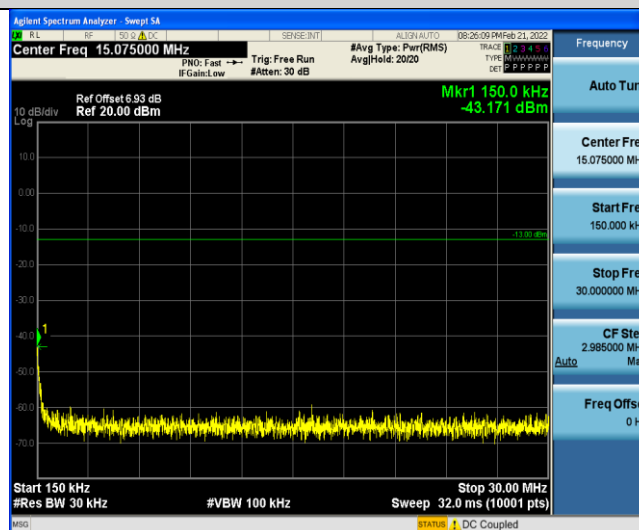
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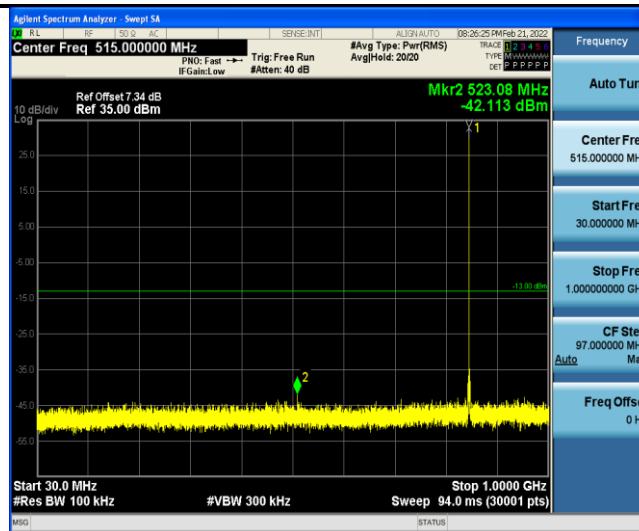
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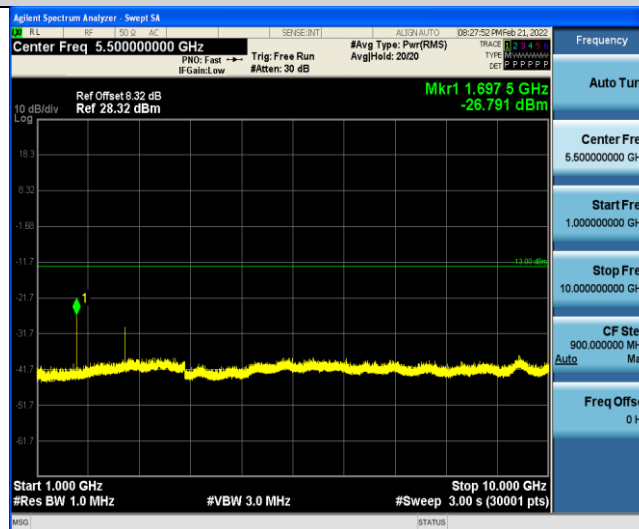
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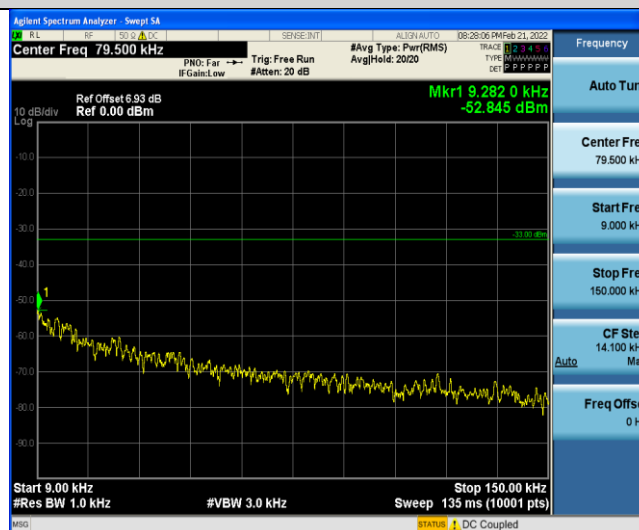
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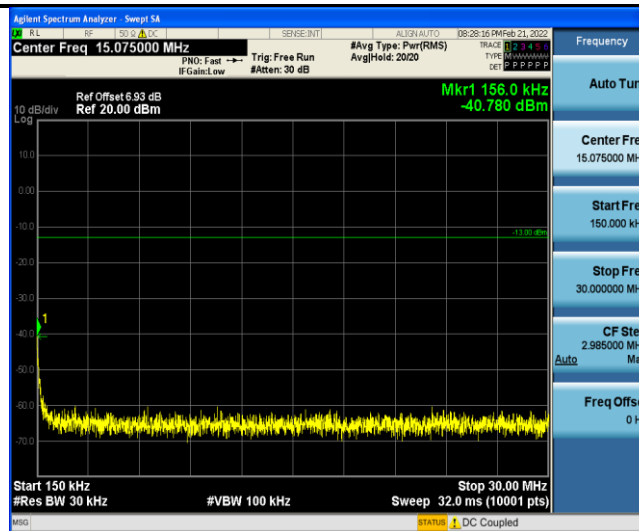
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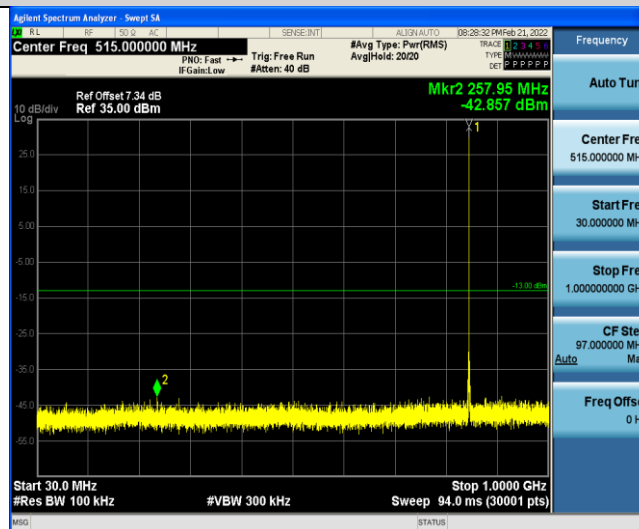
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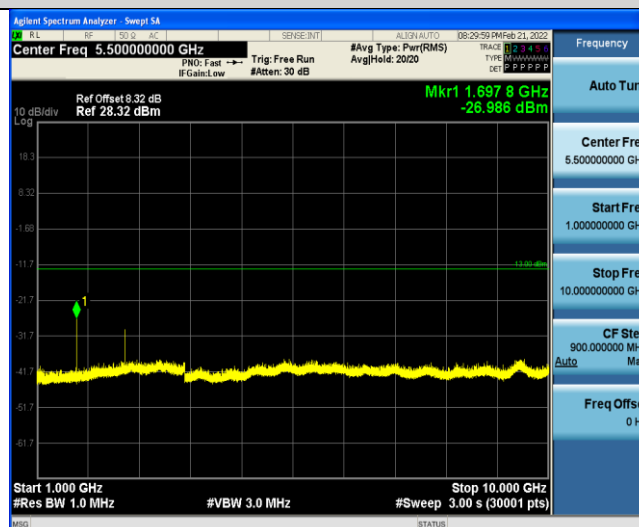
GPRS850-251-3-0.15~30MHz



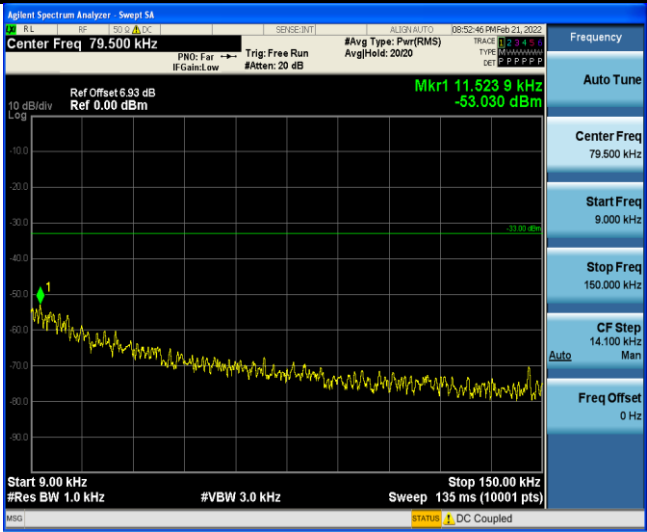
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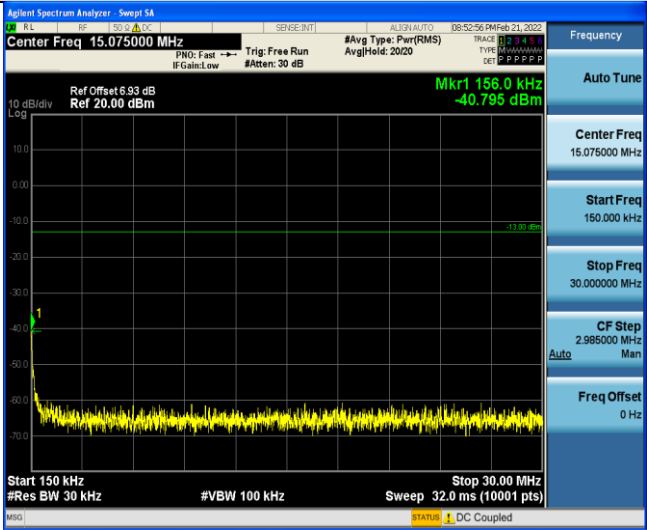
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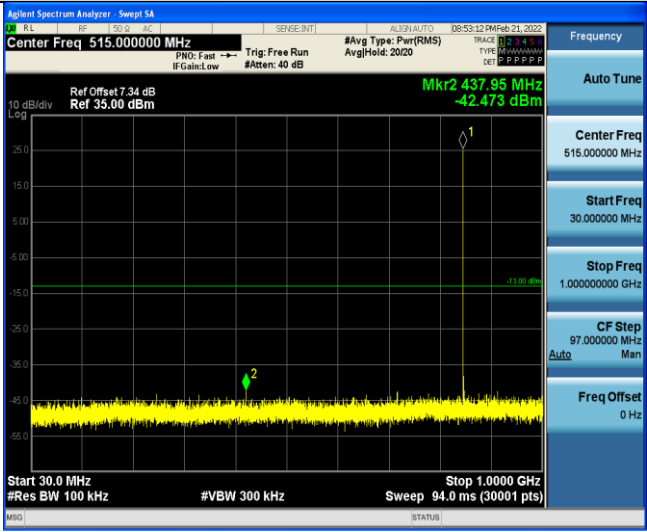
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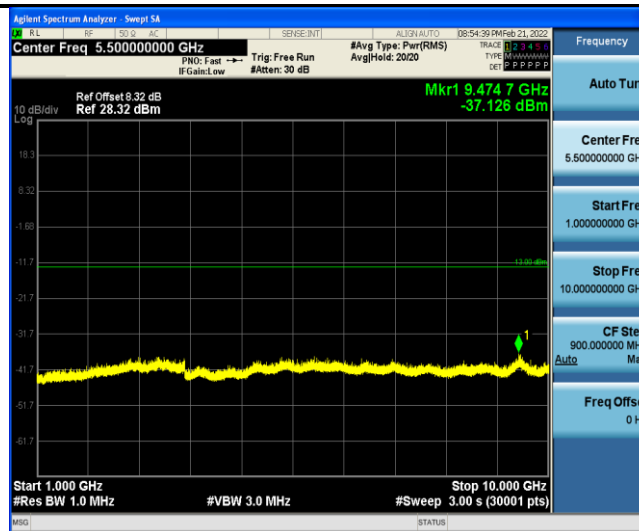
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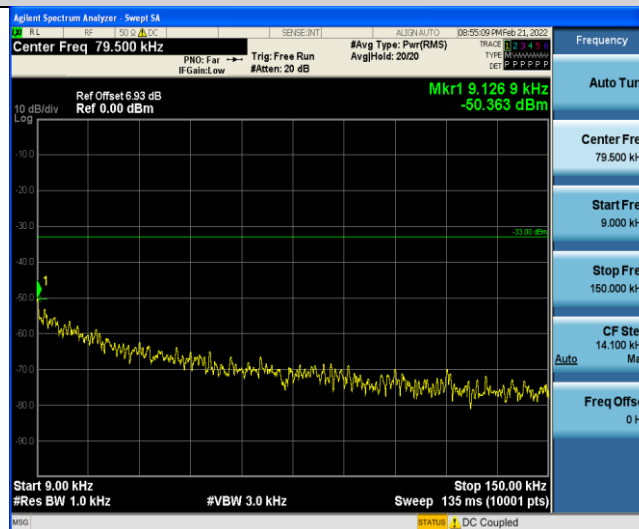
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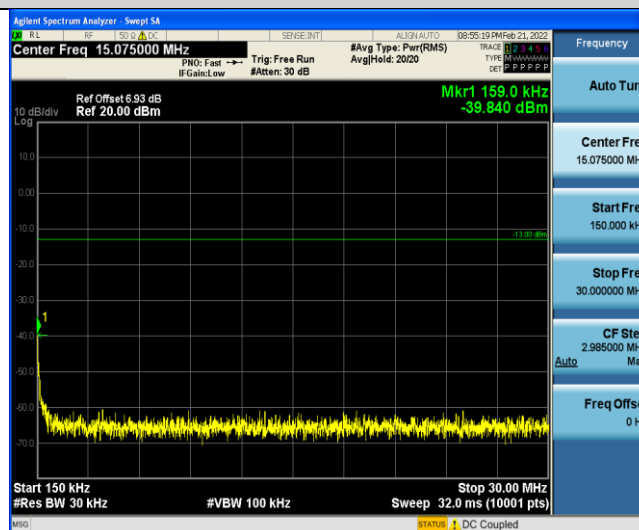
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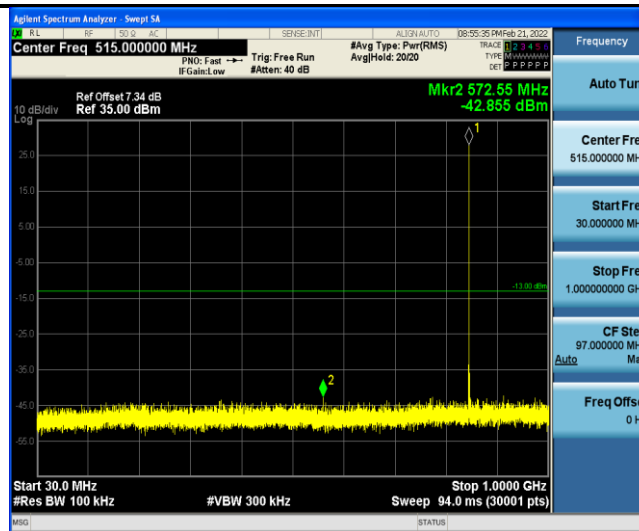
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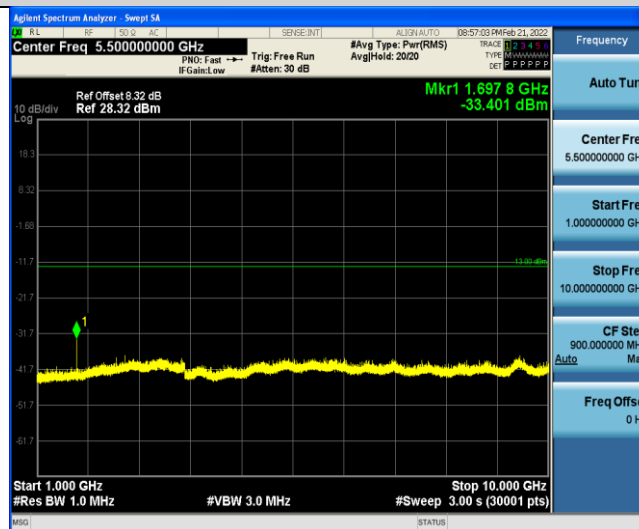
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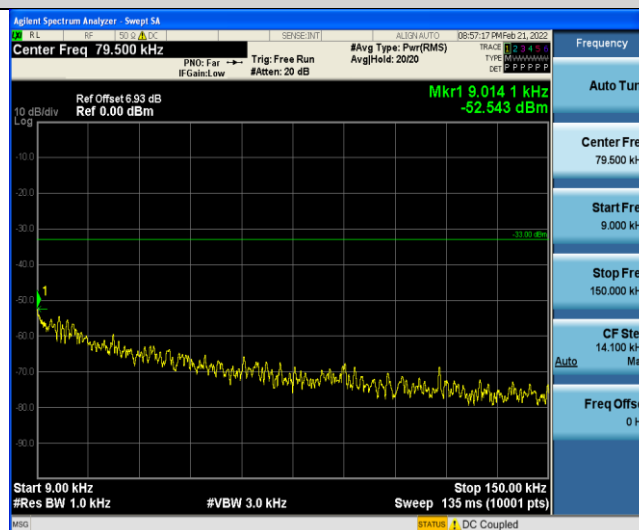
EGPRS850-190-8-30~1000MHz



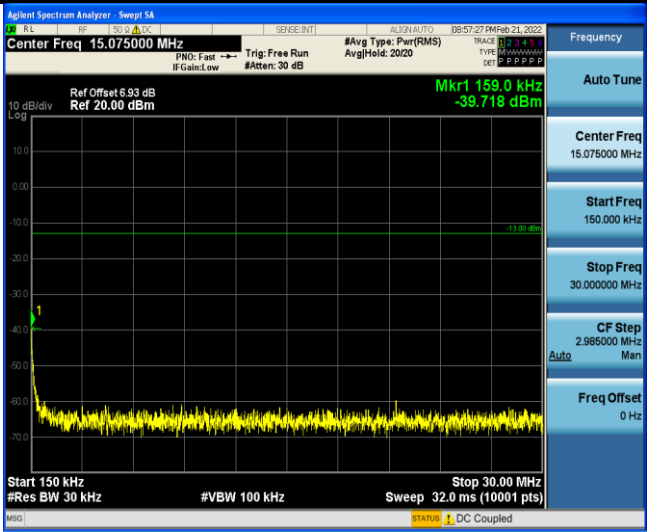
EGPRS850-190-8-1000~10000MHz



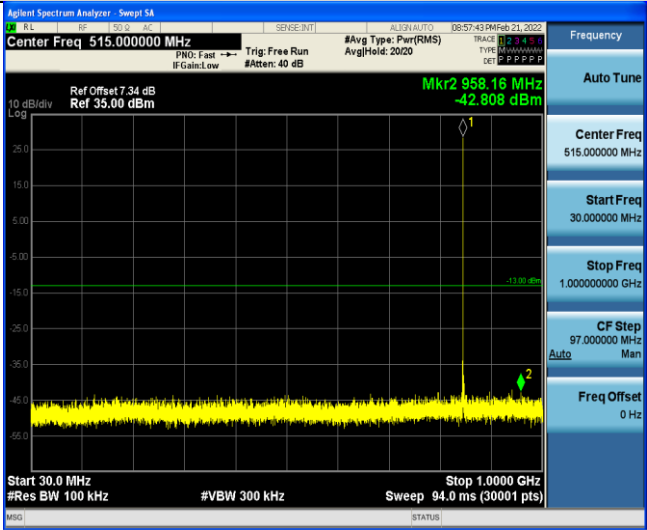
EGPRS850-251-8-0.009~0.15MHz



EGPRS850-251-8-0.15~30MHz



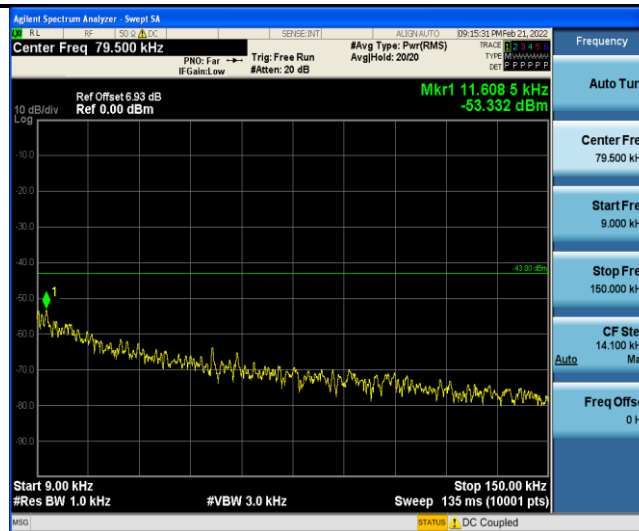
EGPRS850-251-8-30~1000MHz



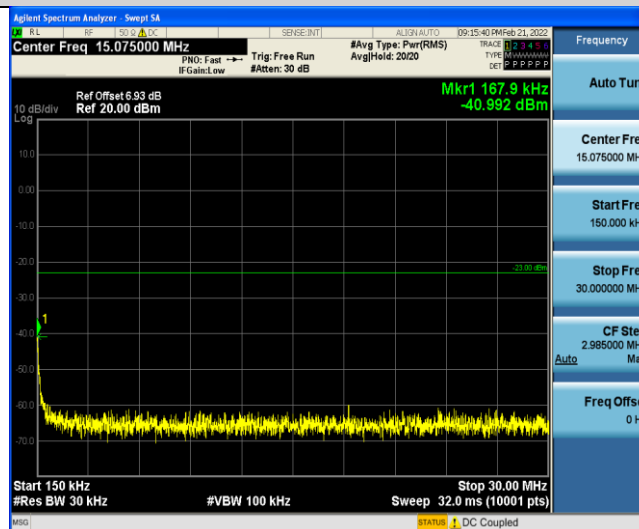
EGPRS850-251-8-1000~10000MHz



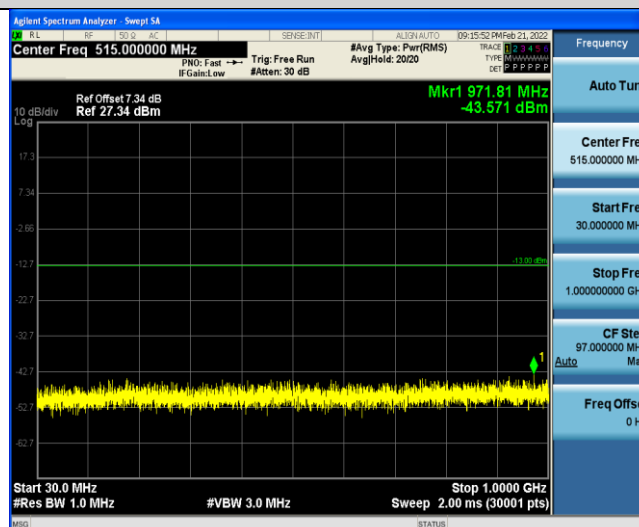
GPRS1900-512-0-0.009~0.15MHz



GPRS1900-512-0-0.15~30MHz



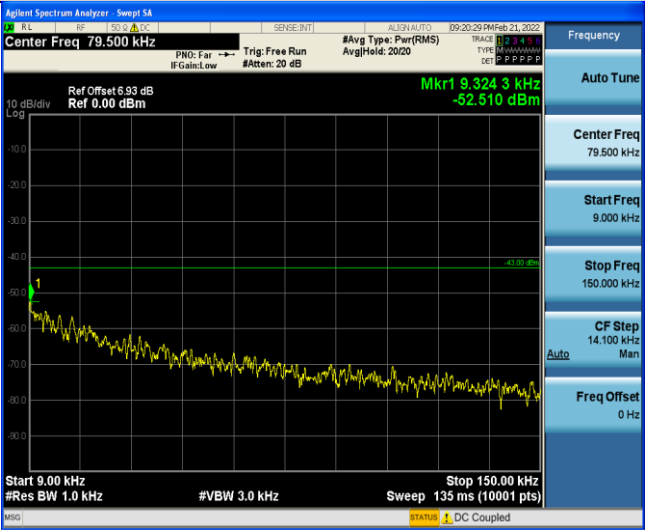
GPRS1900-512-0-30~1000MHz



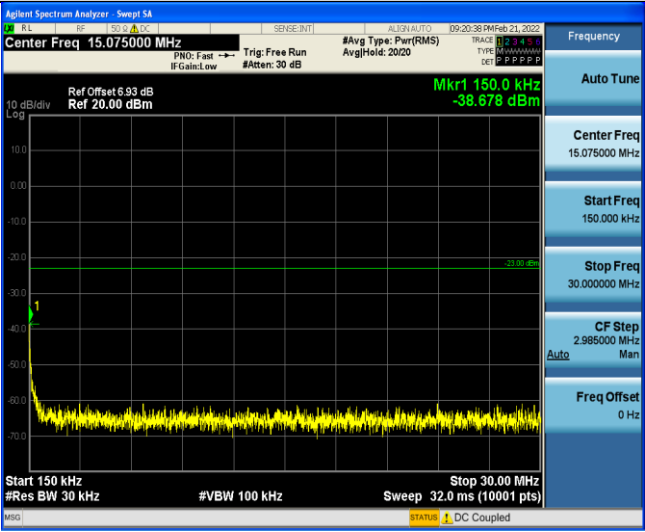
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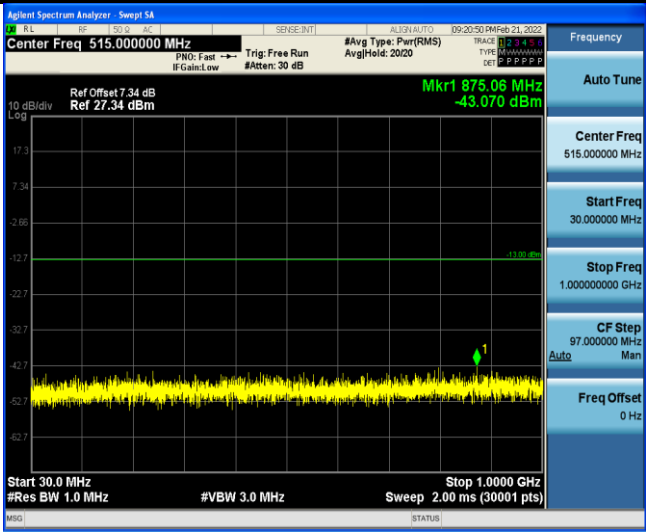
GPRS1900-661-0-0.009~0.15MHz



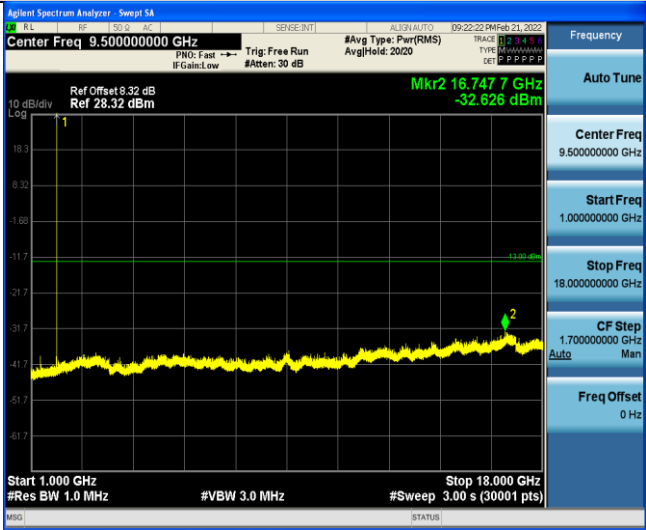
GPRS1900-661-0-0.15~30MHz



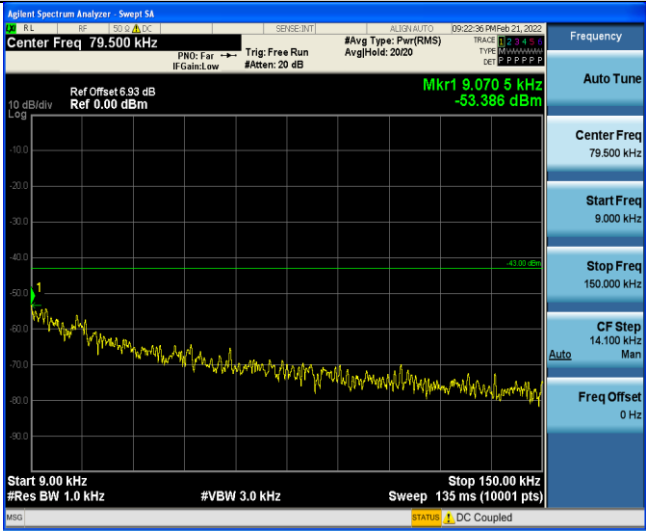
GPRS1900-661-0-30~1000MHz



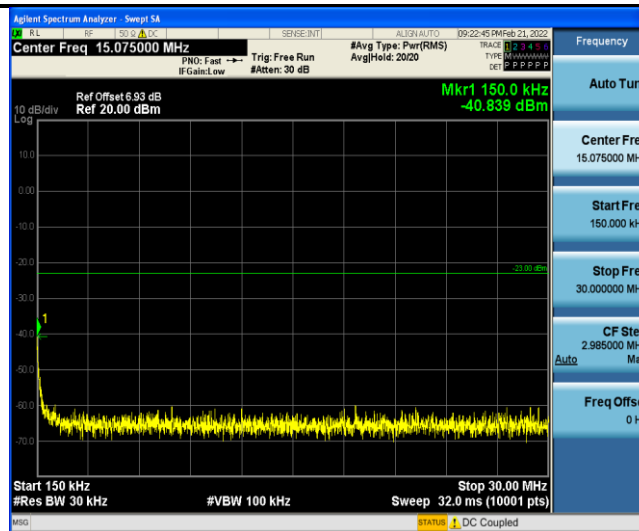
GPRS1900-661-0-1000~18000MHz



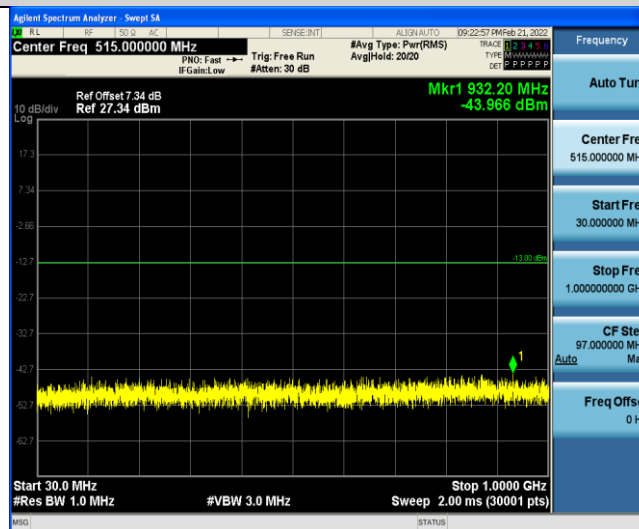
GPRS1900-810-0-0.009~0.15MHz



GPRS1900-810-0-0.15~30MHz



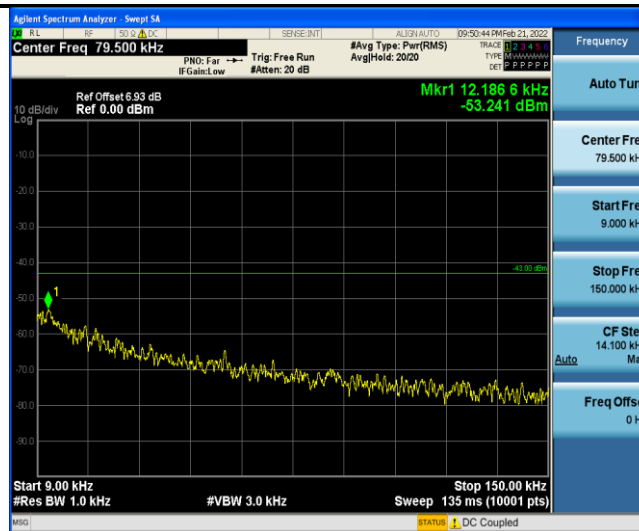
GPRS1900-810-0-30~1000MHz



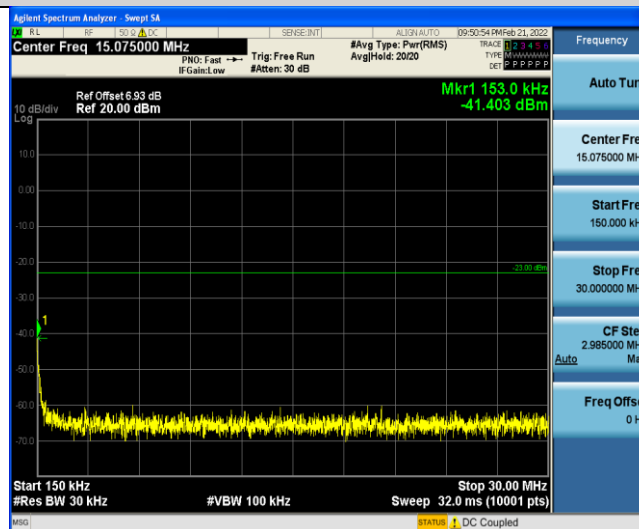
GPRS1900-810-0-1000~18000MHz



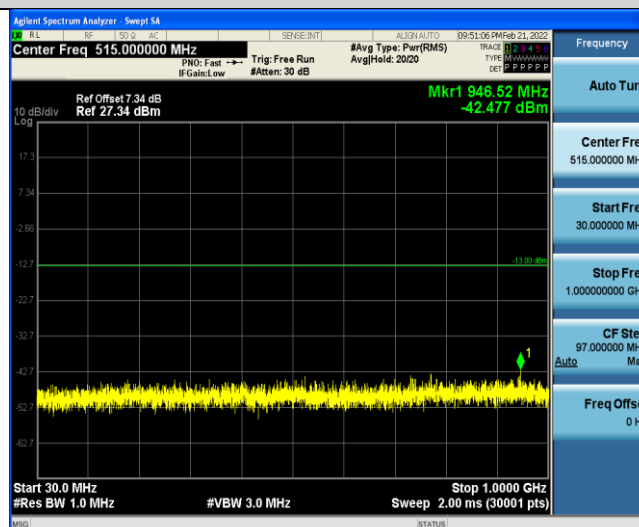
EGPRS1900-512-2-0.009~0.15MHz



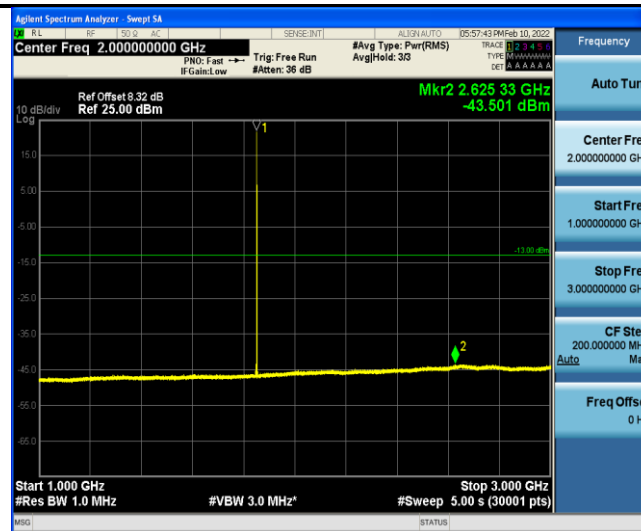
EGPRS1900-512-2-0.15~30MHz



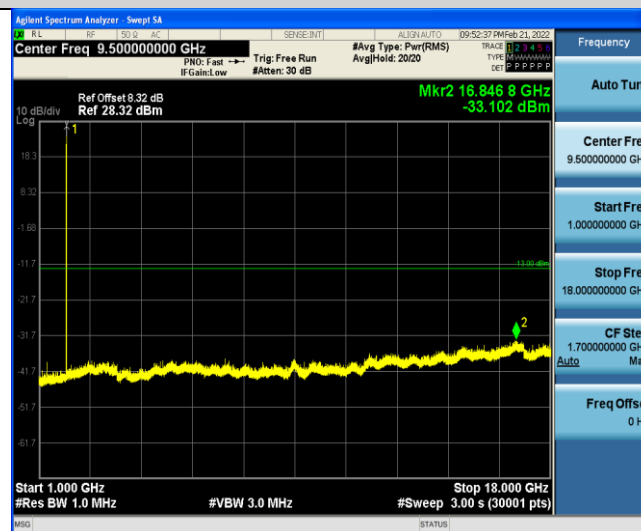
EGPRS1900-512-2-30~1000MHz



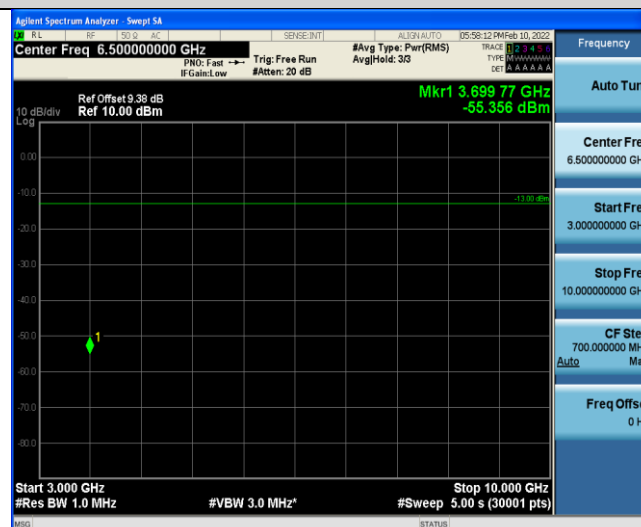
EGPRS1900-512-2-1000~3000MHz



EGPRS1900-512-2-1000~18000MHz



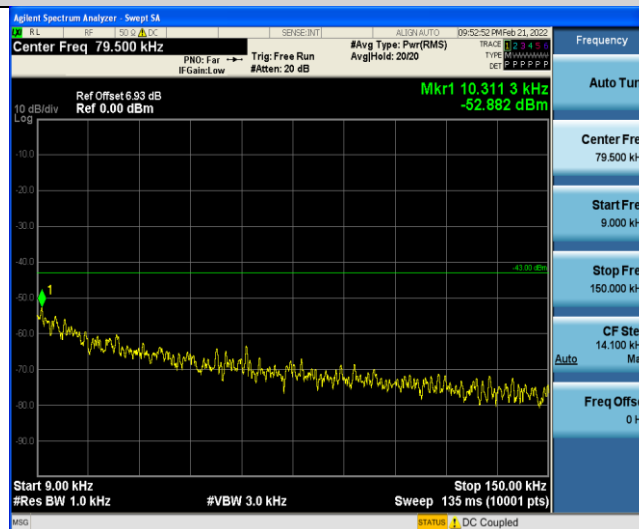
EGPRS1900-512-2-3000~10000MHz



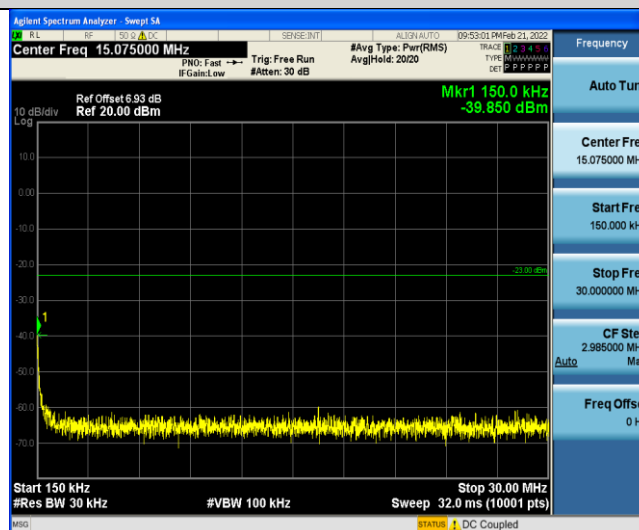
EGPRS1900-512-2-10000~18000MHz



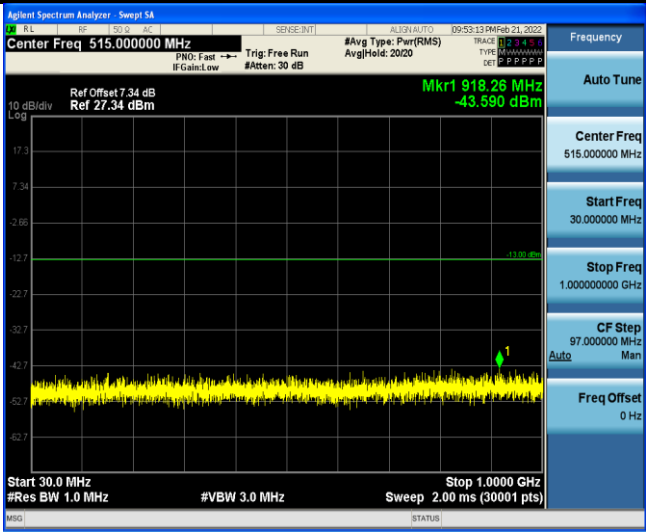
EGPRS1900-661-2-0.009~0.15MHz



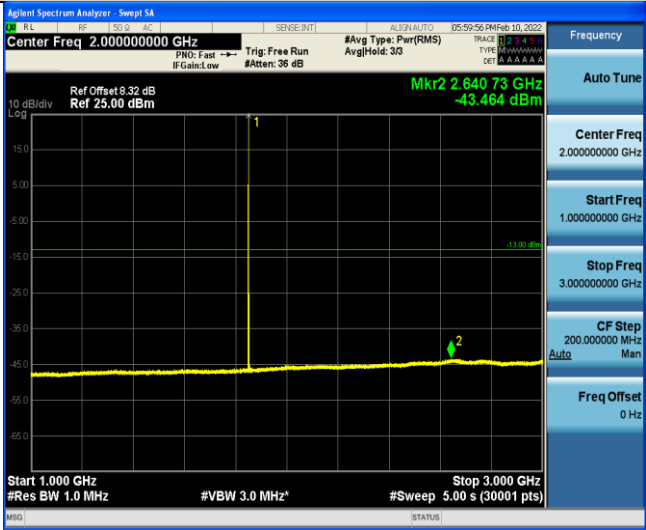
EGPRS1900-661-2-0.15~30MHz



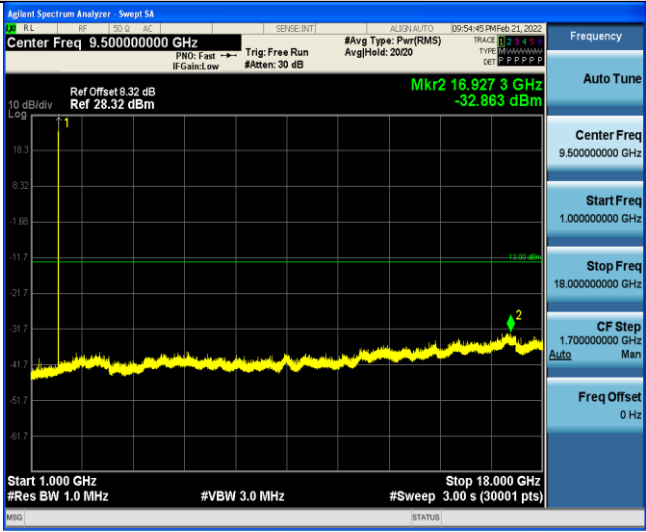
EGPRS1900-661-2-30~1000MHz



EGPRS1900-661-2-1000~3000MHz



EGPRS1900-661-2-1000~18000MHz



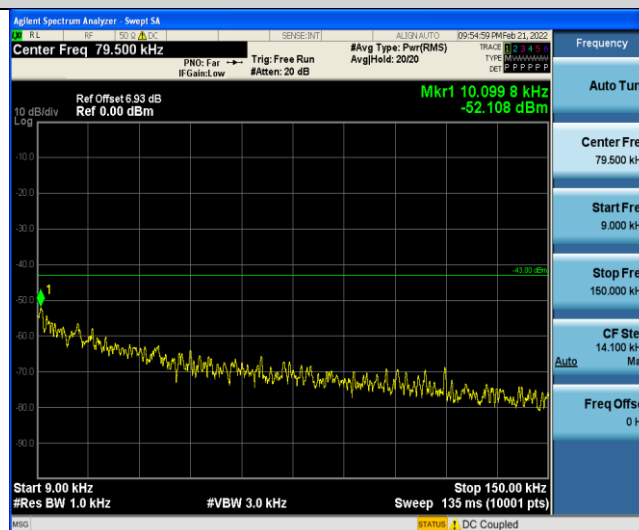
EGPRS1900-661-2-3000~10000MHz



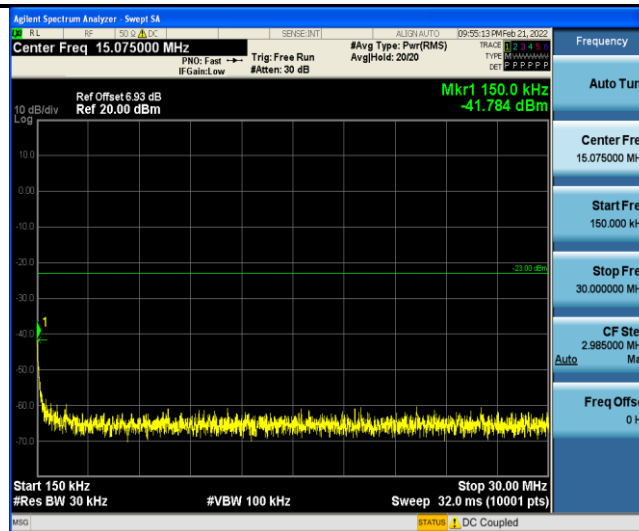
EGPRS1900-661-2-10000~18000MHz



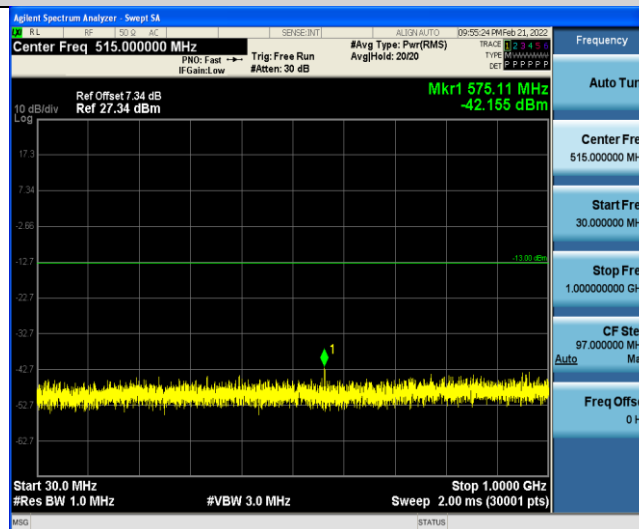
EGPRS1900-810-2-0.009~0.15MHz



EGPRS1900-810-2-0.15~30MHz



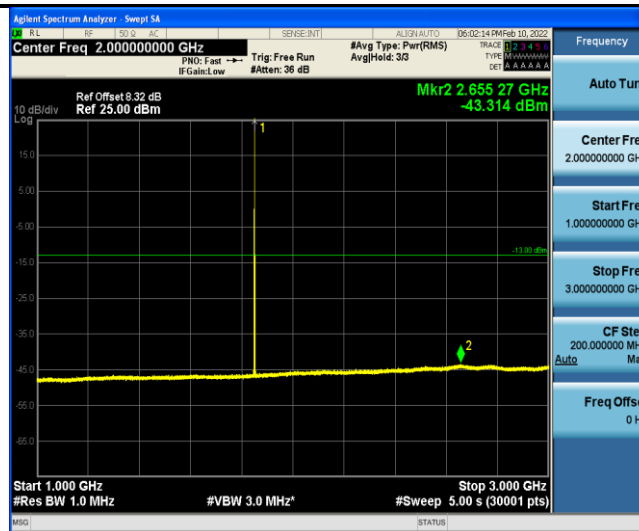
EGPRS1900-810-2-30~1000MHz



EGPRS1900-810-2-1000~18000MHz



EGPRS1900-810-2-1000~3000MHz



EGPRS1900-810-2-3000~10000MHz



EGPRS1900-810-2-10000~18000MHz

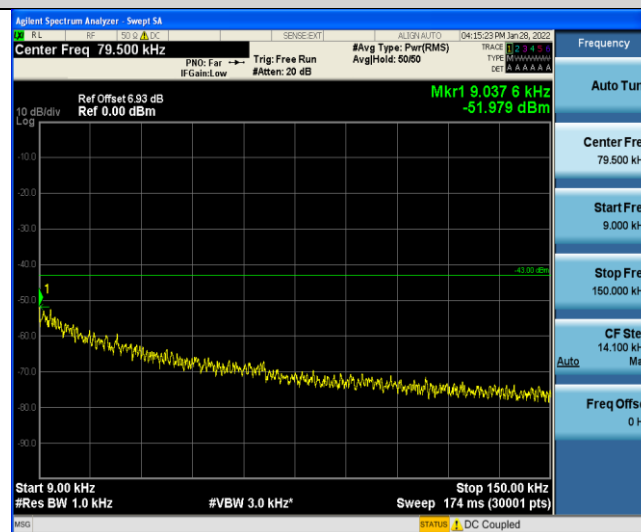


WCDMA:

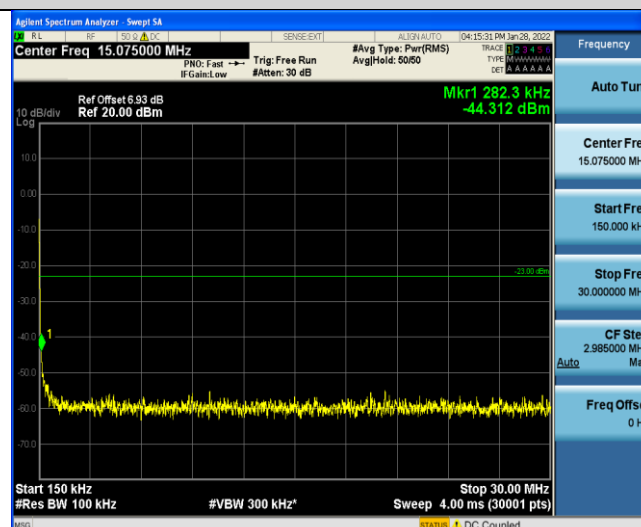
Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band II	9262	0.009~0.15MHz	0.01	-51.98	-43	PASS
Band II	9262	0.15~30MHz	0.28	-44.31	-23	PASS
Band II	9262	30~1000MHz	893.46	-37.36	-13	PASS
Band II	9262	1000~3000MHz	2663.73	-43.28	-13	PASS
Band II	9262	3000~10000MHz	3703.27	-57.29	-13	PASS
Band II	9262	10000~20000MHz	16773.67	-50.7	-13	PASS
Band II	9400	0.009~0.15MHz	0.01	-53.58	-43	PASS
Band II	9400	0.15~30MHz	0.28	-45.26	-23	PASS
Band II	9400	30~1000MHz	527.58	-37.48	-13	PASS
Band II	9400	1000~3000MHz	2646.8	-43.34	-13	PASS
Band II	9400	3000~10000MHz	9481.07	-57.67	-13	PASS
Band II	9400	10000~20000MHz	16795.67	-50.7	-13	PASS
Band II	9538	0.009~0.15MHz	0.01	-52.33	-43	PASS
Band II	9538	0.15~30MHz	0.29	-45.89	-23	PASS
Band II	9538	30~1000MHz	885.02	-37.42	-13	PASS
Band II	9538	1000~3000MHz	2671.33	-43.45	-13	PASS
Band II	9538	3000~10000MHz	9500.67	-57.84	-13	PASS
Band II	9538	10000~20000MHz	16825.33	-50.67	-13	PASS
Band IV	1312	0.009~0.15MHz	0.01	-53.51	-43	PASS
Band IV	1312	0.15~30MHz	0.28	-45.14	-23	PASS
Band IV	1312	30~1000MHz	918.39	-36.27	-13	PASS
Band IV	1312	1000~3000MHz	2637.6	-43.57	-13	PASS
Band IV	1312	3000~10000MHz	3423.03	-50.76	-13	PASS
Band IV	1312	10000~20000MHz	16836	-50.63	-13	PASS
Band IV	1413	0.009~0.15MHz	0.01	-52.48	-43	PASS
Band IV	1413	0.15~30MHz	0.28	-46.51	-23	PASS
Band IV	1413	30~1000MHz	956.25	-37.15	-13	PASS
Band IV	1413	1000~3000MHz	2765.67	-43.63	-13	PASS
Band IV	1413	3000~10000MHz	3466.9	-55.65	-13	PASS
Band IV	1413	10000~20000MHz	16841.33	-50.53	-13	PASS
Band IV	1513	0.009~0.15MHz	0.01	-52.2	-43	PASS
Band IV	1513	0.15~30MHz	0.28	-42.07	-23	PASS
Band IV	1513	30~1000MHz	885.83	-37.26	-13	PASS
Band IV	1513	1000~3000MHz	2641.33	-43.67	-13	PASS
Band IV	1513	3000~10000MHz	3503.77	-51.26	-13	PASS
Band IV	1513	10000~20000MHz	16847.67	-50.53	-13	PASS
Band V	4132	0.009~0.15MHz	0.01	-51.19	-33	PASS
Band V	4132	0.15~30MHz	0.32	-47.01	-13	PASS
Band V	4132	30~1000MHz	992.24	-37.31	-13	PASS

Band V	4132	1000~3000MHz	2651.93	-43.57	-13	PASS
Band V	4132	3000~10000MHz	9452.13	-57.96	-13	PASS
Band V	4132	10000~18000MHz	16832.8	-50.67	-13	PASS
Band V	4182	0.009~0.15MHz	0.01	-53.03	-33	PASS
Band V	4182	0.15~30MHz	0.28	-44.91	-13	PASS
Band V	4182	30~1000MHz	53.7	-37.46	-13	PASS
Band V	4182	1000~3000MHz	2658.2	-43.66	-13	PASS
Band V	4182	3000~10000MHz	9474.77	-57.96	-13	PASS
Band V	4182	10000~18000MHz	16848.27	-50.51	-13	PASS
Band V	4233	0.009~0.15MHz	0.01	-53.47	-33	PASS
Band V	4233	0.15~30MHz	0.31	-45.14	-13	PASS
Band V	4233	30~1000MHz	355.5	-37.97	-13	PASS
Band V	4233	1000~3000MHz	2659.27	-43.45	-13	PASS
Band V	4233	3000~10000MHz	5390.03	-57.86	-13	PASS
Band V	4233	10000~18000MHz	16816.53	-50.66	-13	PASS

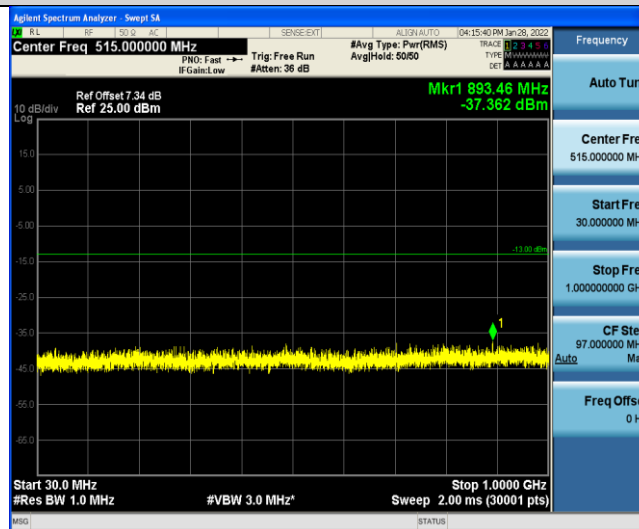
Band II-9262-0.009~0.15MHz



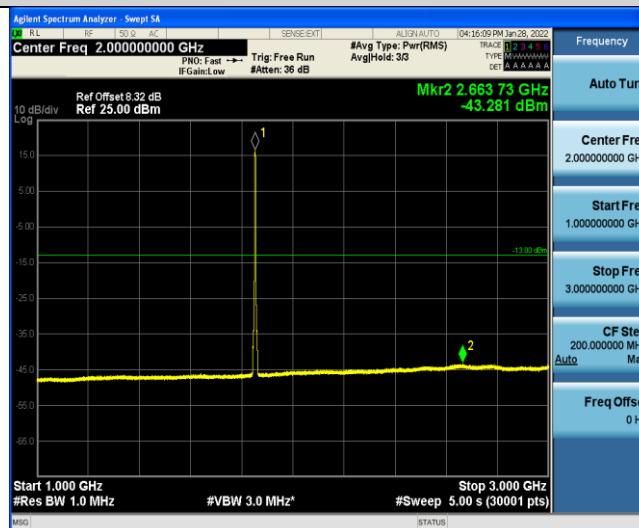
Band II-9262-0.15~30MHz



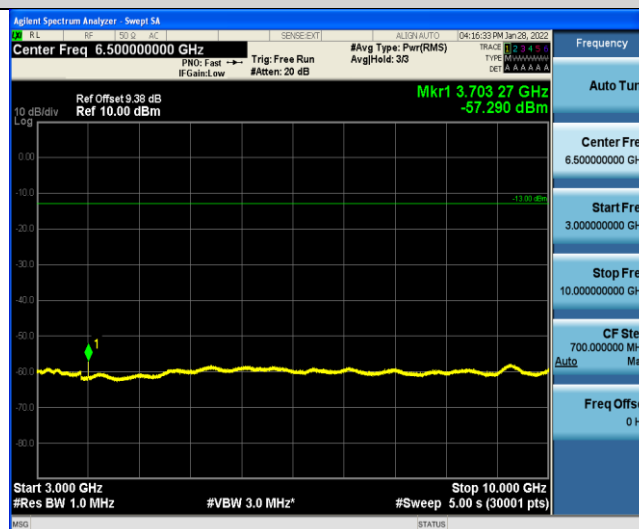
Band II-9262-30~1000MHz



Band II-9262-1000~3000MHz



Band II-9262-3000~10000MHz



Band II-9262-10000~20000MHz