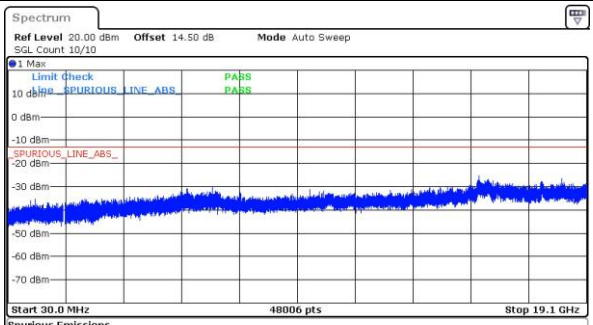
GSM1900 (GSM)

Lowest Channel

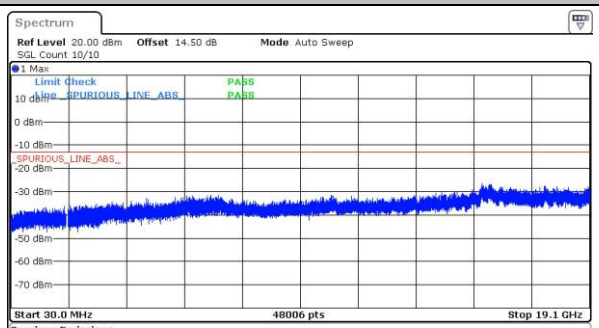


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	923.65067 MHz	-35.43 dBm	-22.43 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.35324 GHz	-37.06 dBm	-24.06 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.57073 GHz	-35.37 dBm	-22.37 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.75528 GHz	-30.42 dBm	-17.42 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.33060 GHz	-31.28 dBm	-18.28 dB
13.600 GHz	19.100 GHz	1.000 MHz	15.54666 GHz	-25.41 dBm	-12.41 dB

Date: 3.JAN.2025 00:24:44

Middle Channel

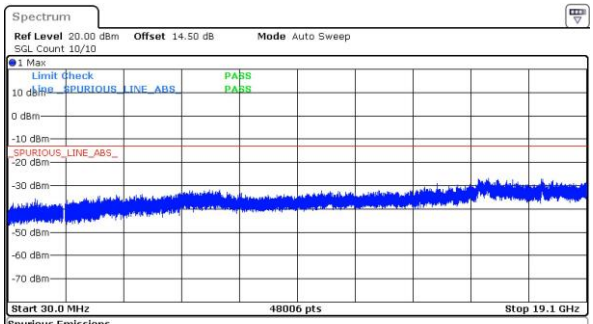


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	907.65367 MHz	-37.42 dBm	-24.42 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.78313 GHz	-36.41 dBm	-23.41 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.85049 GHz	-35.27 dBm	-22.27 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.61630 GHz	-31.54 dBm	-18.54 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.31928 GHz	-31.55 dBm	-18.55 dB
13.600 GHz	19.100 GHz	1.000 MHz	15.54784 GHz	-26.54 dBm	-13.54 dB

Date: 3.JAN.2025 00:29:31

Highest Channel



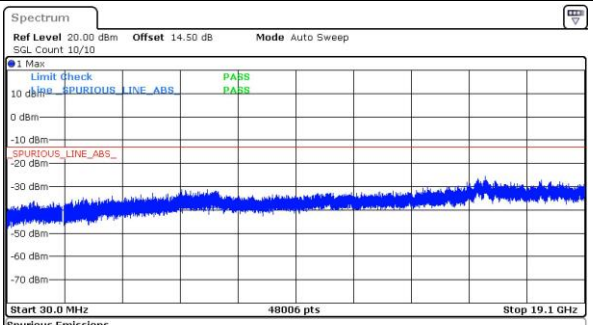
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	929.46777 MHz	-35.65 dBm	-22.65 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.14210 GHz	-37.46 dBm	-24.46 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.99234 GHz	-34.67 dBm	-21.67 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99775 GHz	-31.75 dBm	-18.75 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.50926 GHz	-31.78 dBm	-18.78 dB
13.600 GHz	19.100 GHz	1.000 MHz	15.87311 GHz	-26.94 dBm	-13.94 dB

Date: 3.JAN.2025 00:32:14

GSM1900 (EDGE class 8)

Lowest Channel

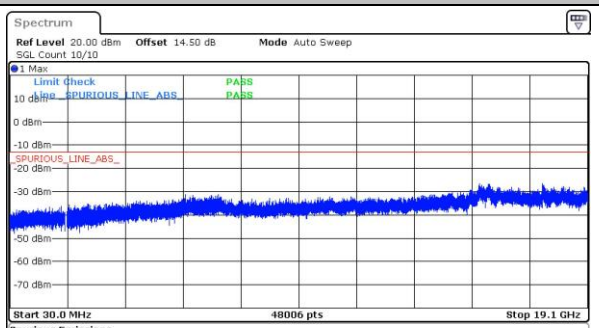


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	893.59570 MHz	-36.22 dBm	-23.22 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.56228 GHz	-36.60 dBm	-23.60 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.53181 GHz	-34.79 dBm	-21.79 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.65379 GHz	-31.13 dBm	-18.13 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.54838 GHz	-31.47 dBm	-18.47 dB
13.600 GHz	19.100 GHz	1.000 MHz	15.80986 GHz	-25.45 dBm	-12.45 dB

Date: 5.JAN.2025 23:32:55

Middle Channel

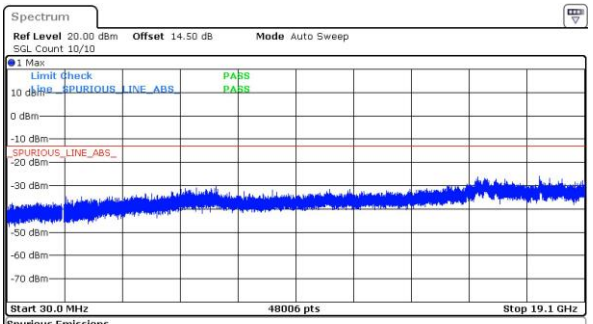


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	944.98001 MHz	-37.20 dBm	-24.20 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.72021 GHz	-36.19 dBm	-23.19 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.62199 GHz	-35.25 dBm	-22.25 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90476 GHz	-31.12 dBm	-18.12 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.59882 GHz	-31.99 dBm	-18.99 dB
13.600 GHz	19.100 GHz	1.000 MHz	17.61255 GHz	-26.63 dBm	-13.63 dB

Date: 5.JAN.2025 23:33:28

Highest Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	190.21239 MHz	-37.51 dBm	-24.51 dB
1.000 GHz	1.845 GHz	1.000 MHz	1.01626 GHz	-37.12 dBm	-24.12 dB
1.915 GHz	3.000 GHz	1.000 MHz	2.48503 GHz	-34.62 dBm	-21.62 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.92876 GHz	-30.12 dBm	-17.12 dB
7.000 GHz	13.600 GHz	1.000 MHz	11.34320 GHz	-31.54 dBm	-18.54 dB
13.600 GHz	19.100 GHz	1.000 MHz	17.61216 GHz	-26.06 dBm	-13.06 dB

Date: 5.JAN.2025 23:35:47

Frequency Stability

Test Conditions	Middle Channel	GSM850 (GSM)	GSM850 (EDGE class 8)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0007	0.0001	PASS
40	Normal Voltage	0.0012	0.0004	
30	Normal Voltage	0.0023	0.0009	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0008	0.0007	
0	Normal Voltage	0.0020	0.0000	
-10	Normal Voltage	0.0016	0.0005	
-20	Normal Voltage	0.0018	0.0004	
-30	Normal Voltage	0.0004	0.0006	
20	Maximum Voltage	0.0008	0.0005	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0010	0.0002	

Test Conditions	Middle Channel	GSM1900 (GSM)	GSM1900 (EDGE class 8)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0001	0.0007	PASS
40	Normal Voltage	0.0004	0.0004	
30	Normal Voltage	0.0009	0.0003	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0007	0.0009	
0	Normal Voltage	0.0000	0.0006	
-10	Normal Voltage	0.0005	0.0013	
-20	Normal Voltage	0.0004	0.0003	
-30	Normal Voltage	0.0006	0.0010	
20	Maximum Voltage	0.0005	0.0005	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0002	0.0002	

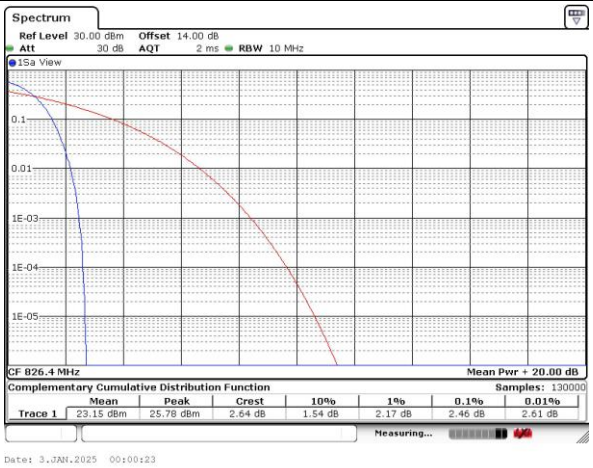
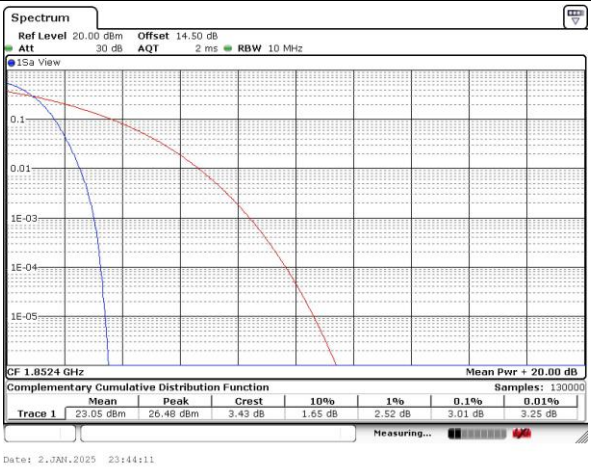
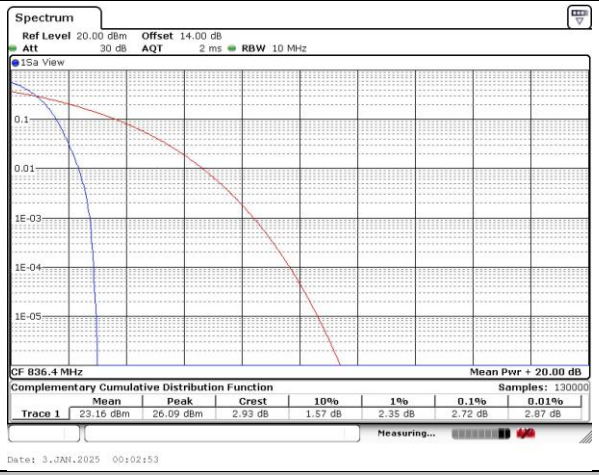
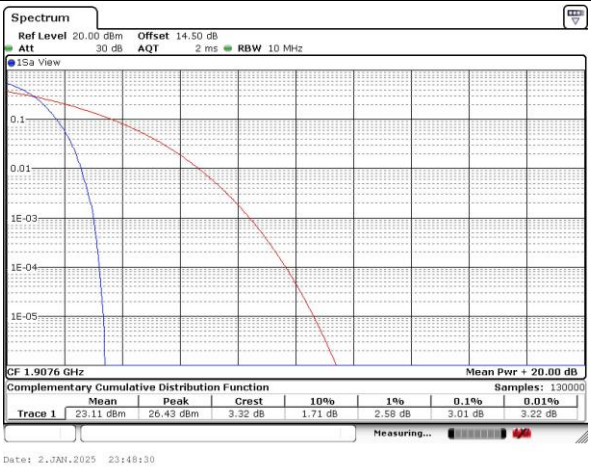
Note:

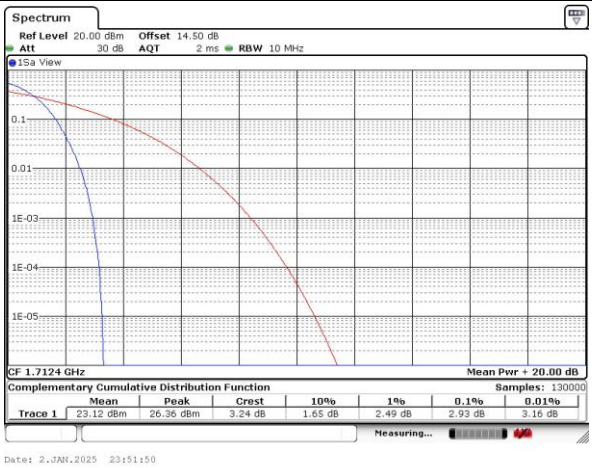
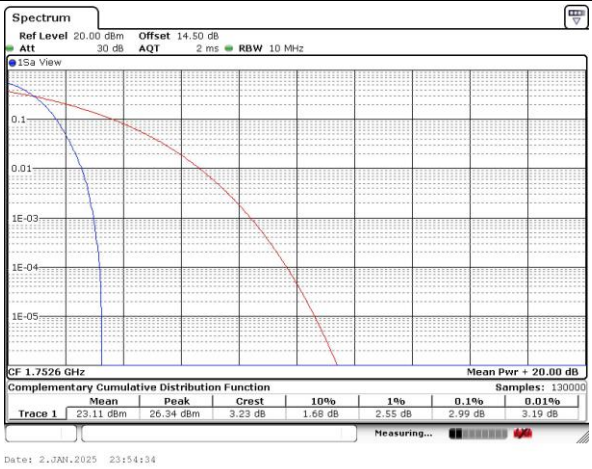
1. Normal Voltage = 3.91V；Minimum Voltage = 3.6 V；Maximum Voltage =4.5 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

A2. WCDMA

Peak-to-Average Ratio

Mode	WCDMA Band V(dB)	WCDMA Band II(dB)	WCDMA Band IV(dB)	Limit: 13dB
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps	Result
Lowest CH	2.46	3.01	2.93	PASS
Middle CH	2.72	3.04	3.01	
Highest CH	2.78	3.01	2.99	

WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)
Lowest Channel	**Lowest Channel**
	
Middle Channel	**Middle Channel**
	
Highest Channel	**Highest Channel**
	

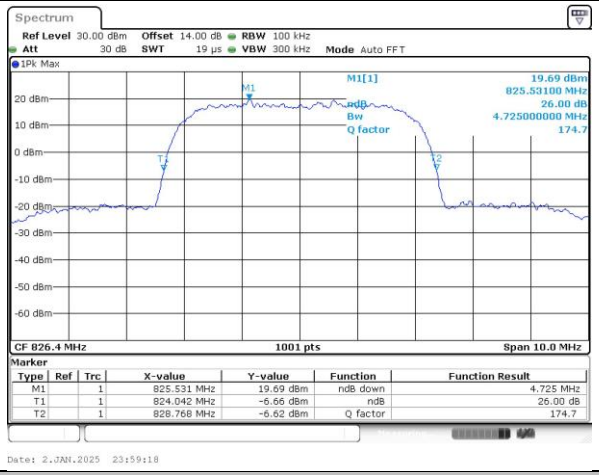
WCDMA Band IV (RMC 12.2Kbps)	
Lowest Channel	
	
Middle Channel	
Highest Channel	
	

26dB Bandwidth

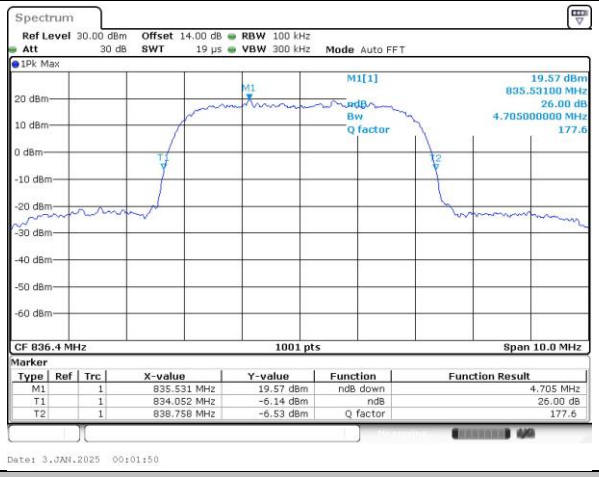
Mode	WCDMA Band V(MHz)	WCDMA Band II(MHz)	WCDMA Band IV(MHz)
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.73	4.71	4.70
Middle CH	4.71	4.70	4.70
Highest CH	4.71	4.69	4.70

WCDMA Band V (RMC 12.2Kbps)

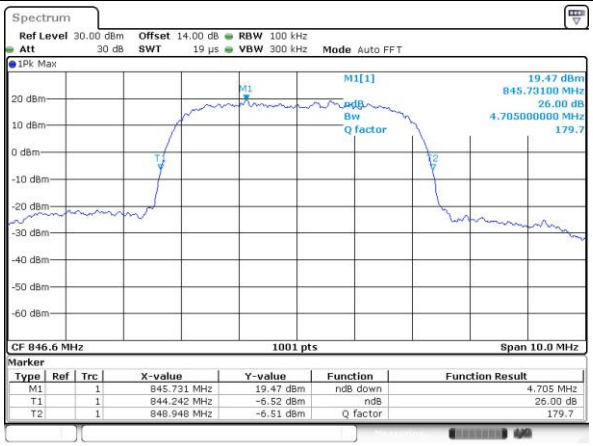
Lowest Channel



Middle Channel

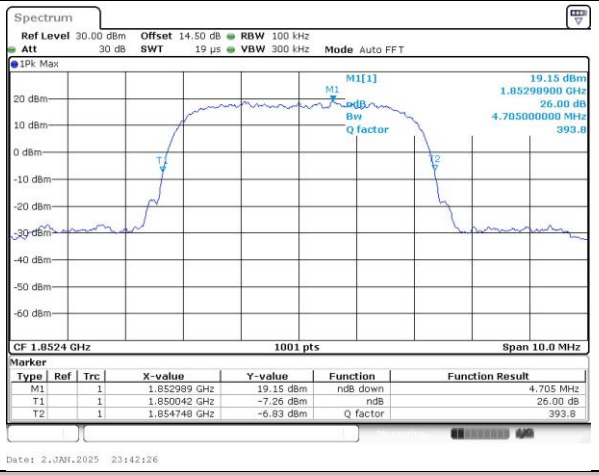


Highest Channel

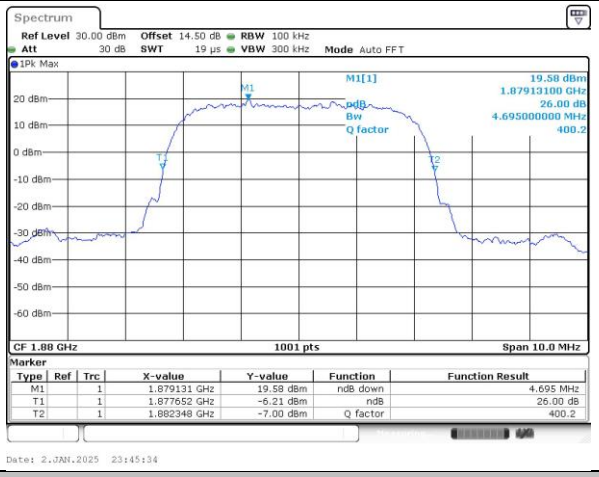


WCDMA Band II (RMC 12.2Kbps)

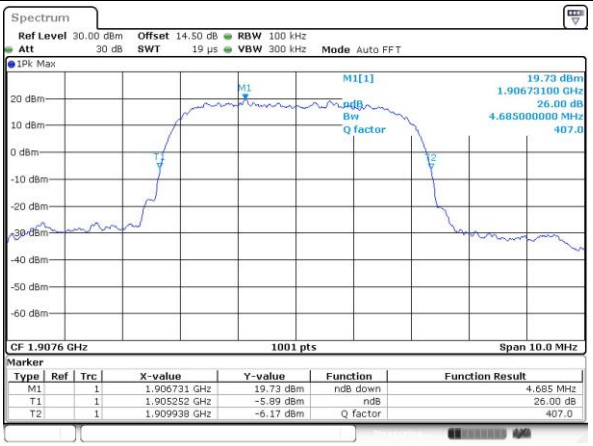
Lowest Channel



Middle Channel

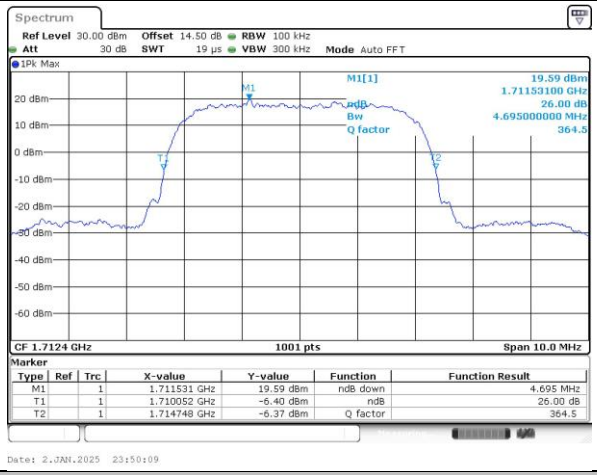


Highest Channel

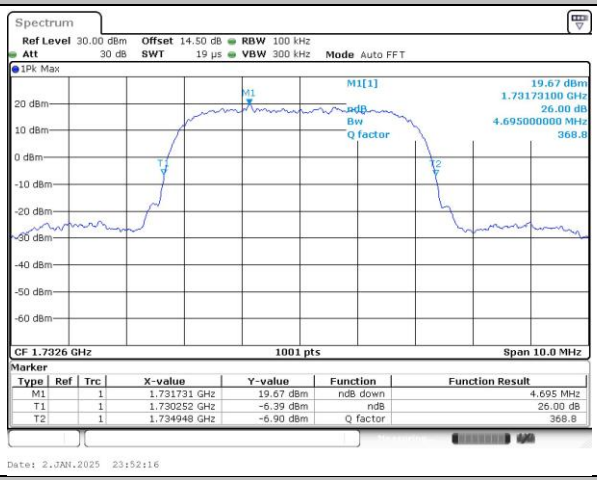


WCDMA Band IV (RMC 12.2Kbps)

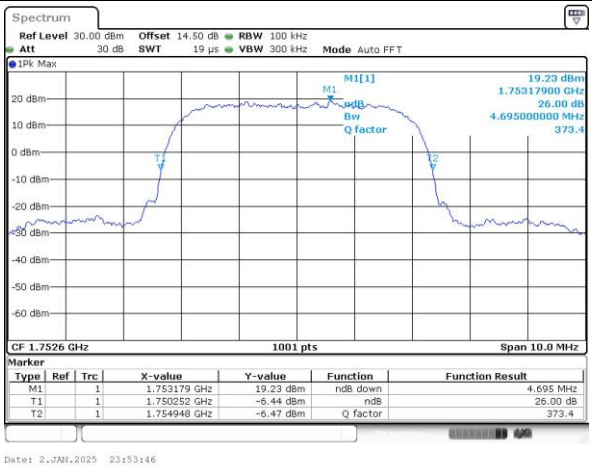
Lowest Channel



Middle Channel

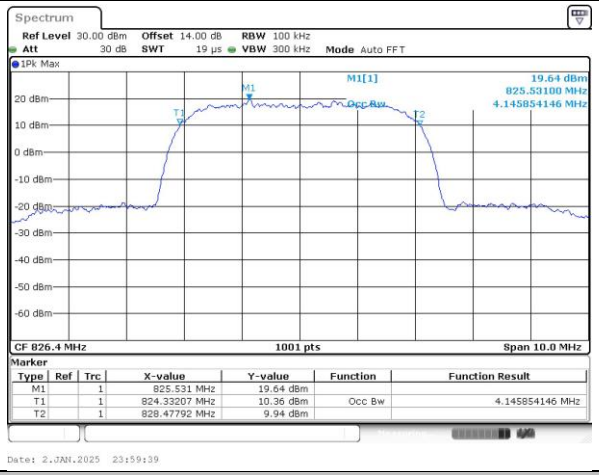
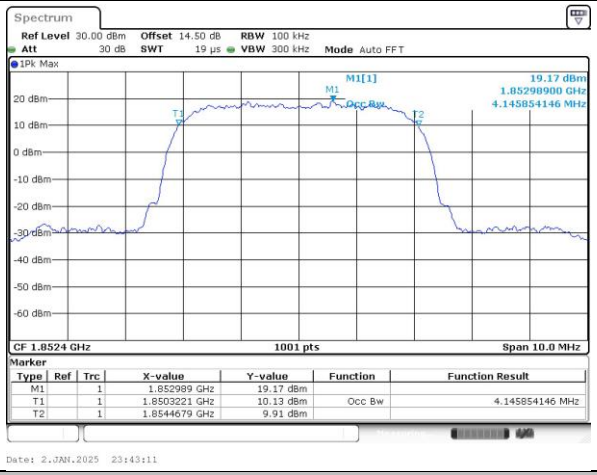
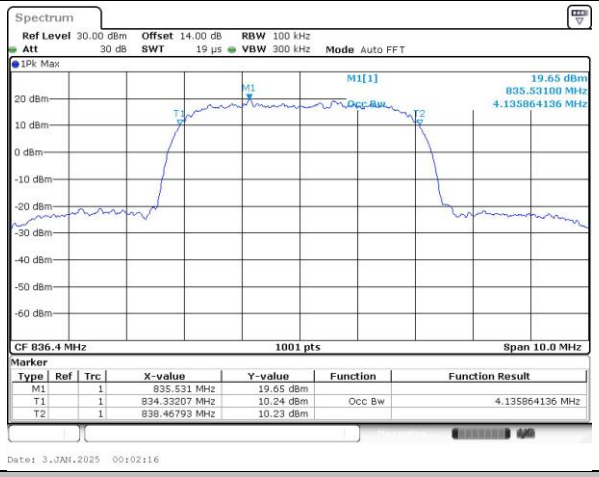
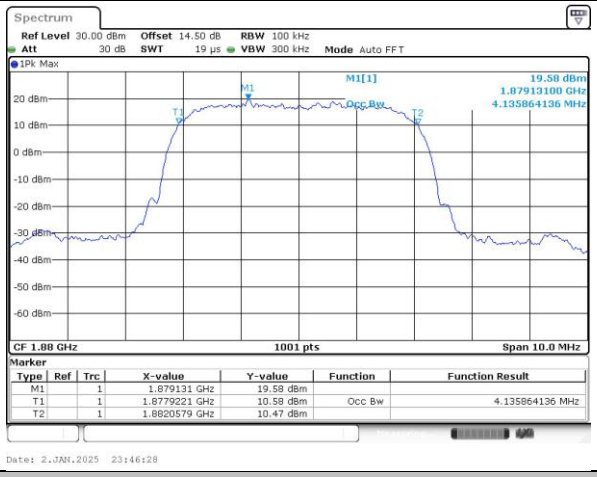
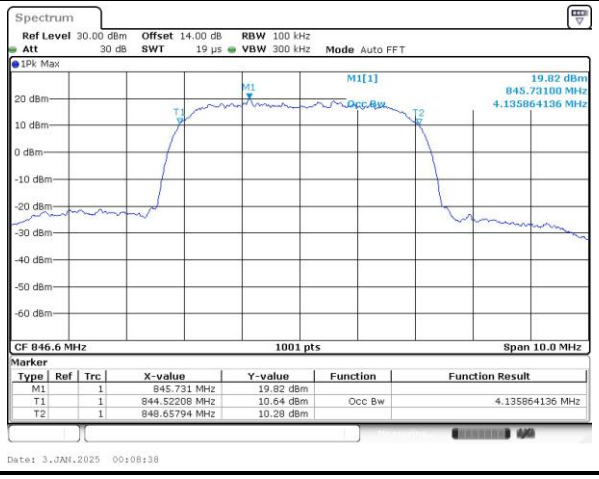
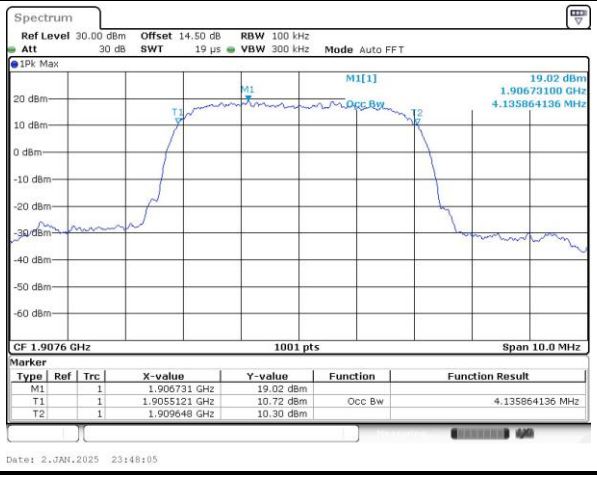


Highest Channel



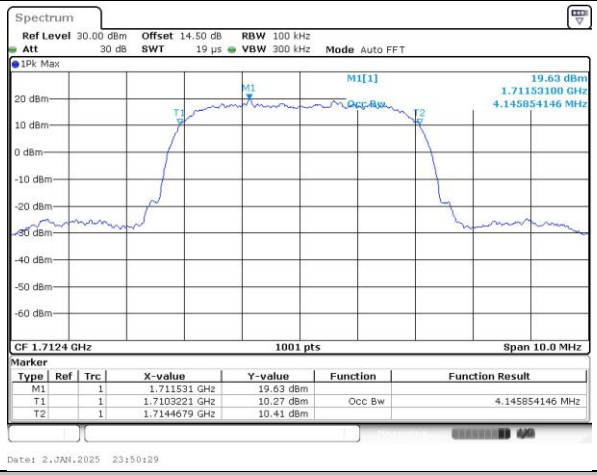
Occupied Bandwidth

Mode	WCDMA Band V(MHz)	WCDMA Band II(MHz)	WCDMA Band IV(MHz)
Mod.	RMC 12.2Kbps	RMC 12.2Kbps	RMC 12.2Kbps
Lowest CH	4.15	4.15	4.15
Middle CH	4.14	4.14	4.14
Highest CH	4.14	4.14	4.15

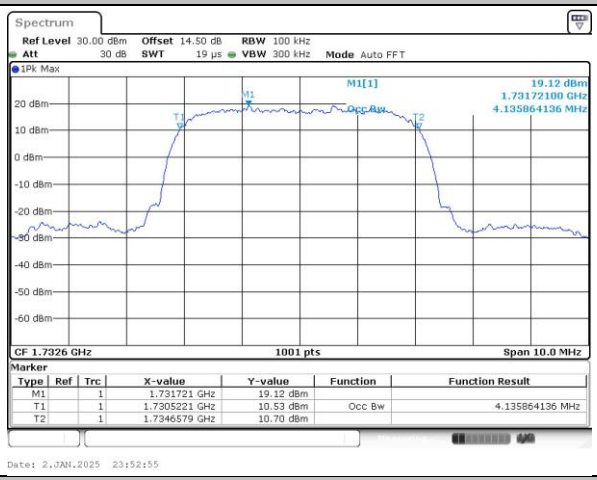
WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)
Lowest Channel	**Lowest Channel**
	
Middle Channel	**Middle Channel**
	
Highest Channel	**Highest Channel**
	

WCDMA Band IV (RMC 12.2Kbps)

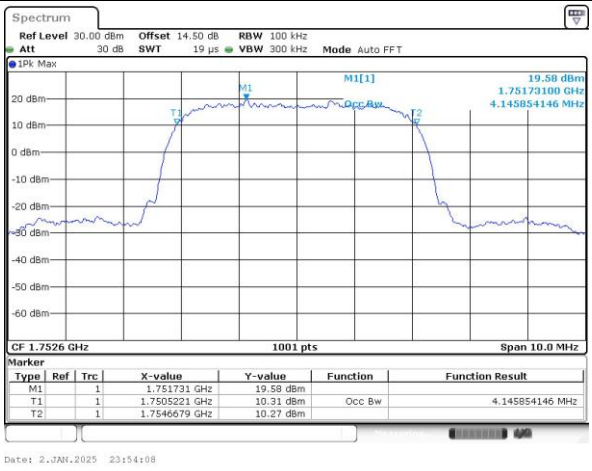
Lowest Channel



Middle Channel



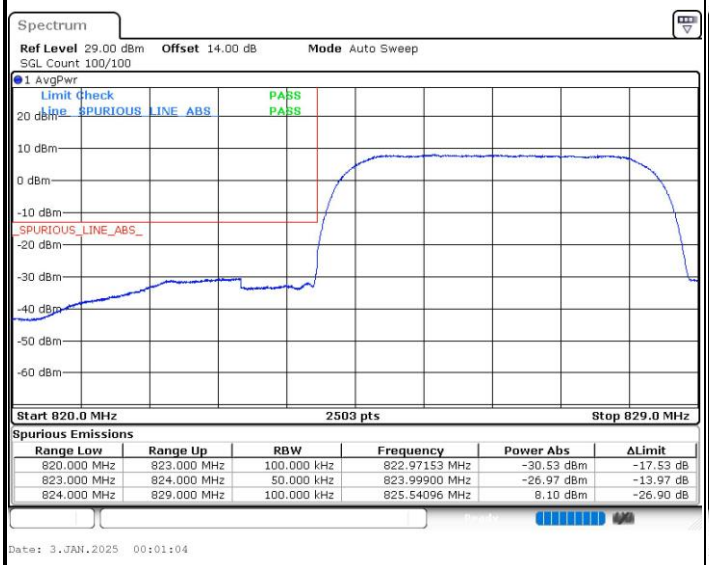
Highest Channel



Conducted Band Edge

WCDMA Band V (RMC 12.2Kbps)

Lowest Band Edge

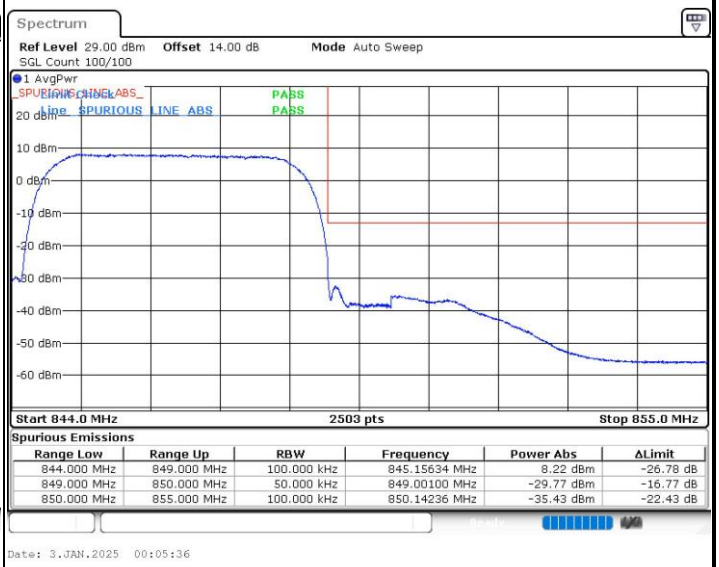


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
820.000 MHz	823.000 MHz	100.000 kHz	822.97153 MHz	-30.53 dBm	-17.53 dB
823.000 MHz	824.000 MHz	50.000 kHz	823.99900 MHz	-26.97 dBm	-13.97 dB
824.000 MHz	829.000 MHz	100.000 kHz	825.54096 MHz	8.10 dBm	-26.90 dB

Date: 3.JAN.2025 00:01:04

Highest Band Edge



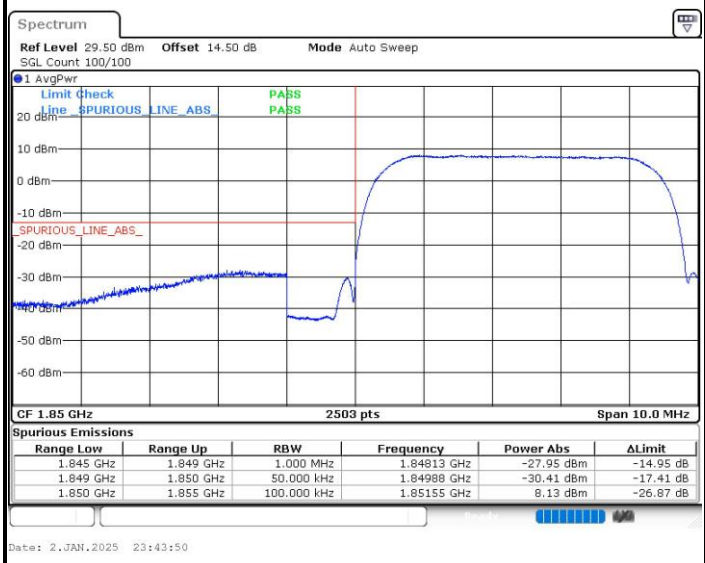
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
844.000 MHz	849.000 MHz	100.000 kHz	845.15634 MHz	8.22 dBm	-26.78 dB
849.000 MHz	850.000 MHz	50.000 kHz	849.00100 MHz	-29.77 dBm	-16.77 dB
850.000 MHz	855.000 MHz	100.000 kHz	850.14236 MHz	-35.43 dBm	-22.43 dB

Date: 3.JAN.2025 00:05:36

WCDMA Band II (RMC 12.2Kbps)

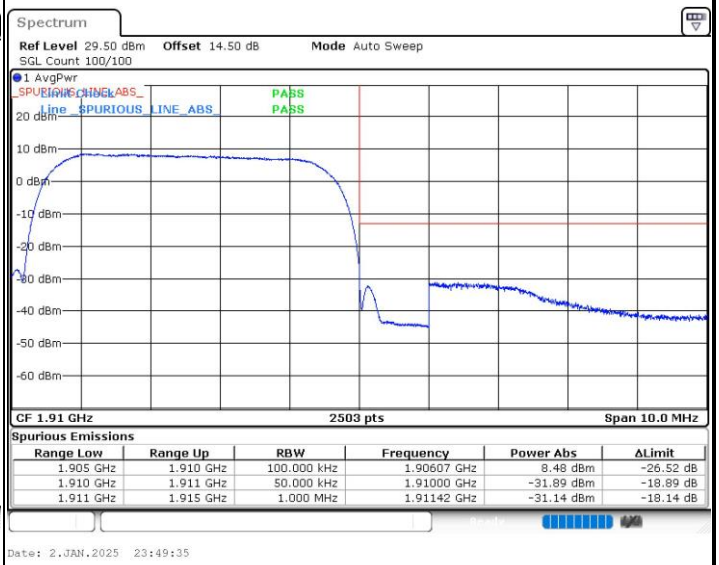
Lowest Band Edge



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.845 GHz	1.849 GHz	1.000 MHz	1.84813 GHz	-27.95 dBm	-14.95 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84988 GHz	-30.41 dBm	-17.41 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85155 GHz	8.13 dBm	-26.87 dB

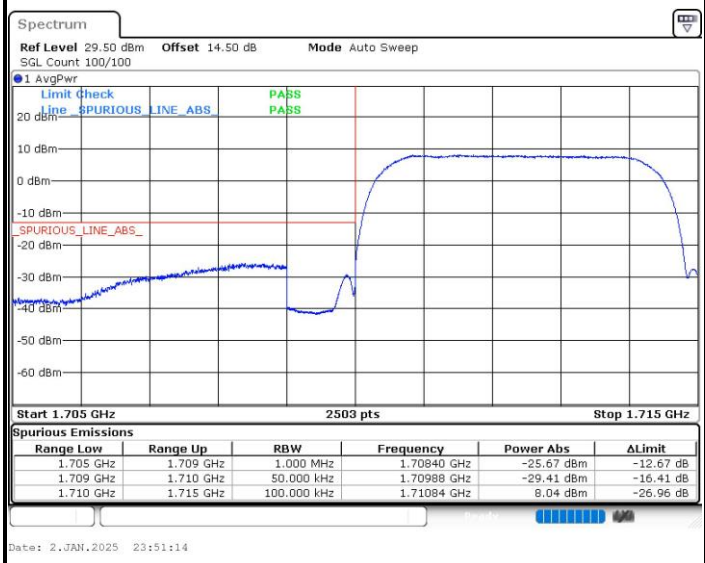
Highest Band Edge

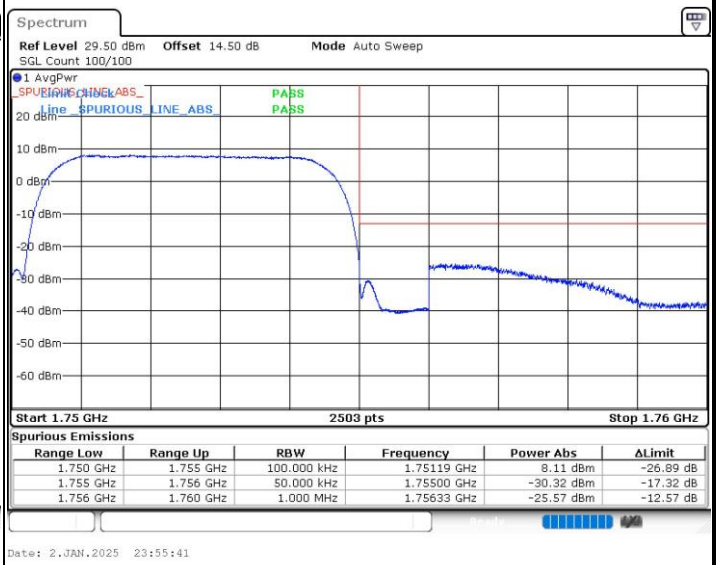


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90607 GHz	8.48 dBm	-26.52 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-31.89 dBm	-18.89 dB
1.911 GHz	1.915 GHz	1.000 MHz	1.91142 GHz	-31.14 dBm	-18.14 dB

WCDMA Band IV (RMC 12.2Kbps)	
Lowest Band Edge	**Highest Band Edge**

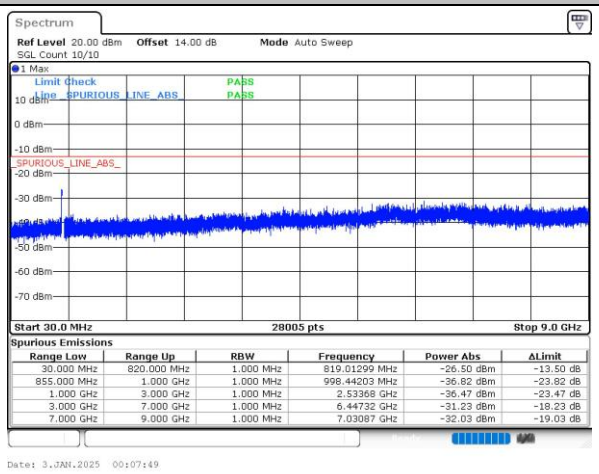




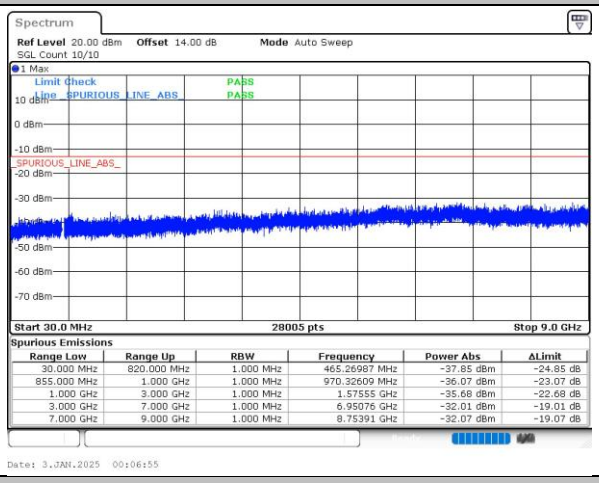
Conducted Spurious Emission

WCDMA Band V (RMC 12.2Kbps)

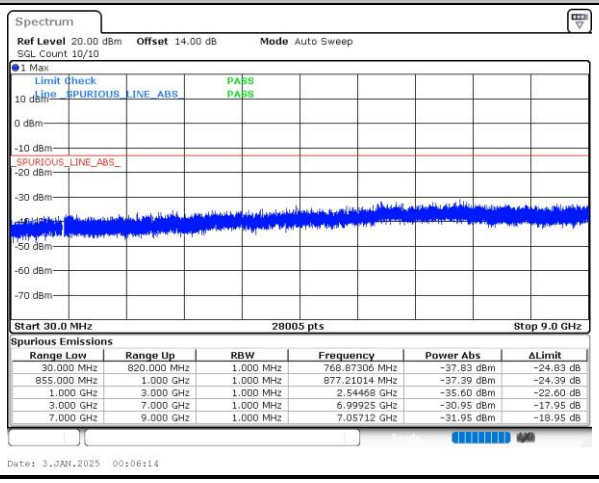
Lowest Channel



Middle Channel

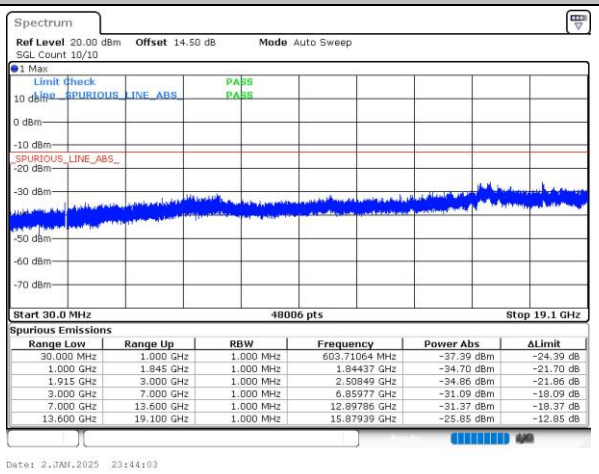


Highest Channel

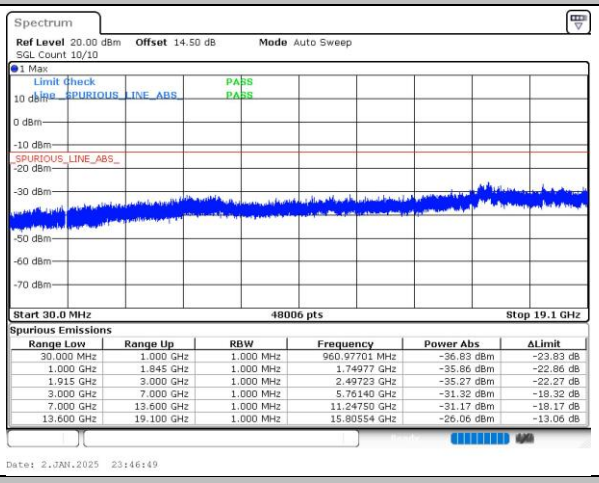


WCDMA Band II (RMC 12.2Kbps)

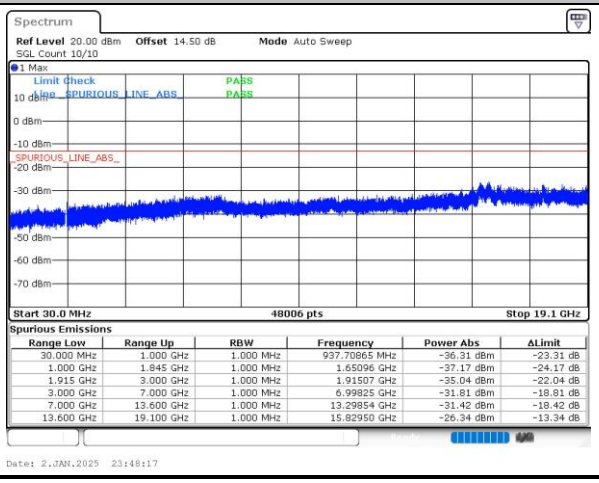
Lowest Channel



Middle Channel

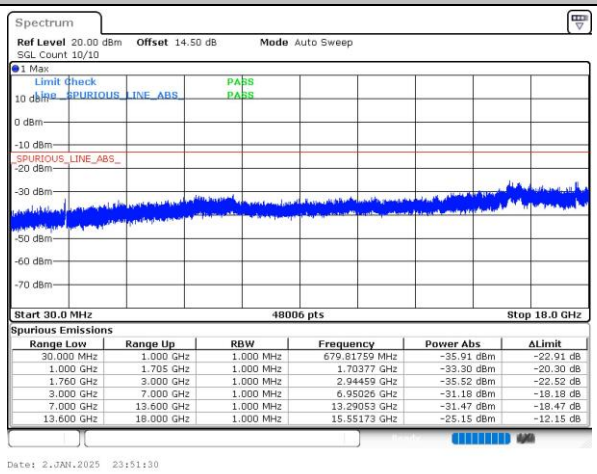


Highest Channel



WCDMA Band IV (RMC 12.2Kbps)

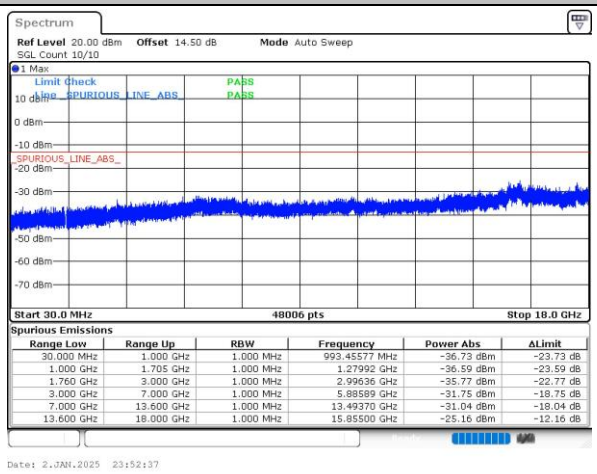
Lowest Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	679.81759 MHz	-35.91 dBm	-22.91 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.70377 GHz	-33.30 dBm	-20.30 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.94459 GHz	-35.52 dBm	-22.52 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95026 GHz	-31.18 dBm	-18.18 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.29053 GHz	-31.47 dBm	-18.47 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.55173 GHz	-25.15 dBm	-12.15 dB

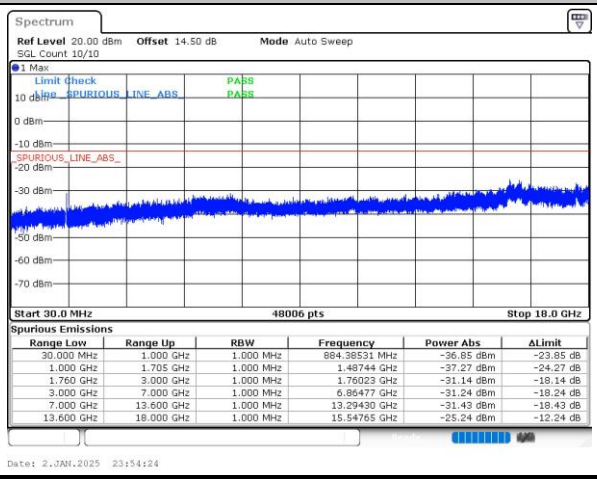
Middle Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	993.45577 MHz	-36.73 dBm	-23.73 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.27992 GHz	-36.59 dBm	-23.59 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.99636 GHz	-35.77 dBm	-22.77 dB
3.000 GHz	7.000 GHz	1.000 MHz	5.88589 GHz	-31.75 dBm	-18.75 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.49370 GHz	-31.04 dBm	-18.04 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.85500 GHz	-25.16 dBm	-12.16 dB

Highest Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	884.38531 MHz	-36.85 dBm	-23.85 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.48744 GHz	-37.27 dBm	-24.27 dB
1.760 GHz	3.000 GHz	1.000 MHz	1.76023 GHz	-31.14 dBm	-18.14 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.86477 GHz	-31.24 dBm	-18.24 dB
7.000 GHz	13.600 GHz	1.000 MHz	13.29430 GHz	-31.43 dBm	-18.43 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.54765 GHz	-25.24 dBm	-12.24 dB

Frequency Stability

Test Conditions	Middle Channel	WCDMA Band V (RMC 12.2Kbps)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0013	PASS
40	Normal Voltage	0.0006	
30	Normal Voltage	0.0023	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0005	
0	Normal Voltage	0.0009	
-10	Normal Voltage	0.0017	
-20	Normal Voltage	0.0019	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0011	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0004	

Test Conditions	Middle Channel	WCDMA Band II (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0008	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0013	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0010	
-20	Normal Voltage	0.0011	
-30	Normal Voltage	0.0012	
20	Maximum Voltage	0.0007	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

Test Conditions	Middle Channel	WCDMA Band IV (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0007	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0005	
-10	Normal Voltage	0.0009	
-20	Normal Voltage	0.0010	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0006	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0003	

Note:

1. Normal Voltage = 3.91V；Minimum Voltage = 3.6 V；Maximum Voltage =4.5 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Kuang Jia	Temperature :	22~25℃
		Relative Humidity :	48~52%

Note: Pre-scanned harmonic for the different antennas, we choose the worst antenna mode to perform final test and record in the report.

GSM850 (GSM)_ANT0									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-61.87	-13	-48.87	-73.55	-65.12	4.00	9.40	H
	2509.2	-57.17	-13	-44.17	-76.17	-60.74	4.88	10.60	H
	3345.6	-56.30	-13	-43.30	-77.27	-61.23	5.52	12.60	H
	1672.8	-55.96	-13	-42.96	-68.35	-59.21	4.00	9.40	V
	2509.2	-57.38	-13	-44.38	-76.59	-60.95	4.88	10.60	V
	3345.6	-56.24	-13	-43.24	-77.51	-61.17	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM850 (EDGE 1 Tx slots) _ANT0									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-62.92	-13	-49.92	-74.60	-66.17	4.00	9.40	H
	2509.2	-58.36	-13	-45.36	-77.36	-61.93	4.88	10.60	H
	3345.6	-58.01	-13	-45.01	-78.98	-62.94	5.52	12.60	H
	1672.8	-57.59	-13	-44.59	-69.98	-60.84	4.00	9.40	V
	2509.2	-57.07	-13	-44.07	-76.28	-60.64	4.88	10.60	V
	3345.6	-57.48	-13	-44.48	-78.75	-62.41	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM1900 (GSM) _ANT2									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-57.79	-13	-44.79	-80.08	-64.54	5.85	12.60	H
	5640	-57.64	-13	-44.64	-81.60	-63.44	7.30	13.10	H
	7520	-55.64	-13	-42.64	-82.13	-58.79	8.35	11.50	H
	3760	-55.57	-13	-42.57	-81.02	-62.32	5.85	12.60	V
	5640	-57.27	-13	-44.27	-81.38	-63.07	7.30	13.10	V
	7520	-55.59	-13	-42.59	-82.06	-58.74	8.35	11.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GSM1900 (EDGE 1 Tx slots) _ANT2									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-57.87	-13	-44.87	-80.16	-64.62	5.85	12.60	H
	5640	-57.59	-13	-44.59	-81.55	-63.39	7.30	13.10	H
	7520	-54.95	-13	-41.95	-81.44	-58.10	8.35	11.50	H
	3760	-55.62	-13	-42.62	-81.07	-62.37	5.85	12.60	V
	5640	-57.38	-13	-44.38	-81.49	-63.18	7.30	13.10	V
	7520	-55.40	-13	-42.40	-81.87	-58.55	8.35	11.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band V(RMC 12.2Kbps) _ANT0									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-67.14	-13	-54.14	-78.82	-70.39	4.00	9.40	H
	2509.2	-61.19	-13	-48.19	-80.19	-64.76	4.88	10.60	H
	3345.6	-60.76	-13	-47.76	-81.73	-65.69	5.52	12.60	H
	1672.8	-65.88	-13	-52.88	-78.27	-69.13	4.00	9.40	V
	2509.2	-61.21	-13	-48.21	-80.42	-64.78	4.88	10.60	V
	3345.6	-60.17	-13	-47.17	-81.44	-65.10	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band II(RMC 12.2Kbps) _ANT2									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-57.86	-13	-44.86	-80.15	-64.61	5.85	12.60	H
	5640	-57.59	-13	-44.59	-81.55	-63.39	7.30	13.10	H
	7520	-54.91	-13	-41.91	-81.40	-58.06	8.35	11.50	H
	3760	-55.47	-13	-42.47	-80.92	-62.22	5.85	12.60	V
	5640	-57.42	-13	-44.42	-81.53	-63.22	7.30	13.10	V
	7520	-55.49	-13	-42.49	-81.96	-58.64	8.35	11.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA Band IV(RMC 12.2Kbps) _ANT2									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3465.2	-59.82	-13	-46.82	-81.67	-66.67	5.65	12.50	H
	5197.8	-57.70	-13	-44.70	-81.76	-63.37	7.13	12.80	H
	6930.4	-56.68	-13	-43.68	-82.30	-60.08	8.40	11.80	H
	3465.2	-59.51	-13	-46.51	-81.16	-66.36	5.65	12.50	V
	5197.8	-57.55	-13	-44.55	-81.88	-63.22	7.13	12.80	V
	6930.4	-55.61	-13	-42.61	-82.15	-59.01	8.40	11.80	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.