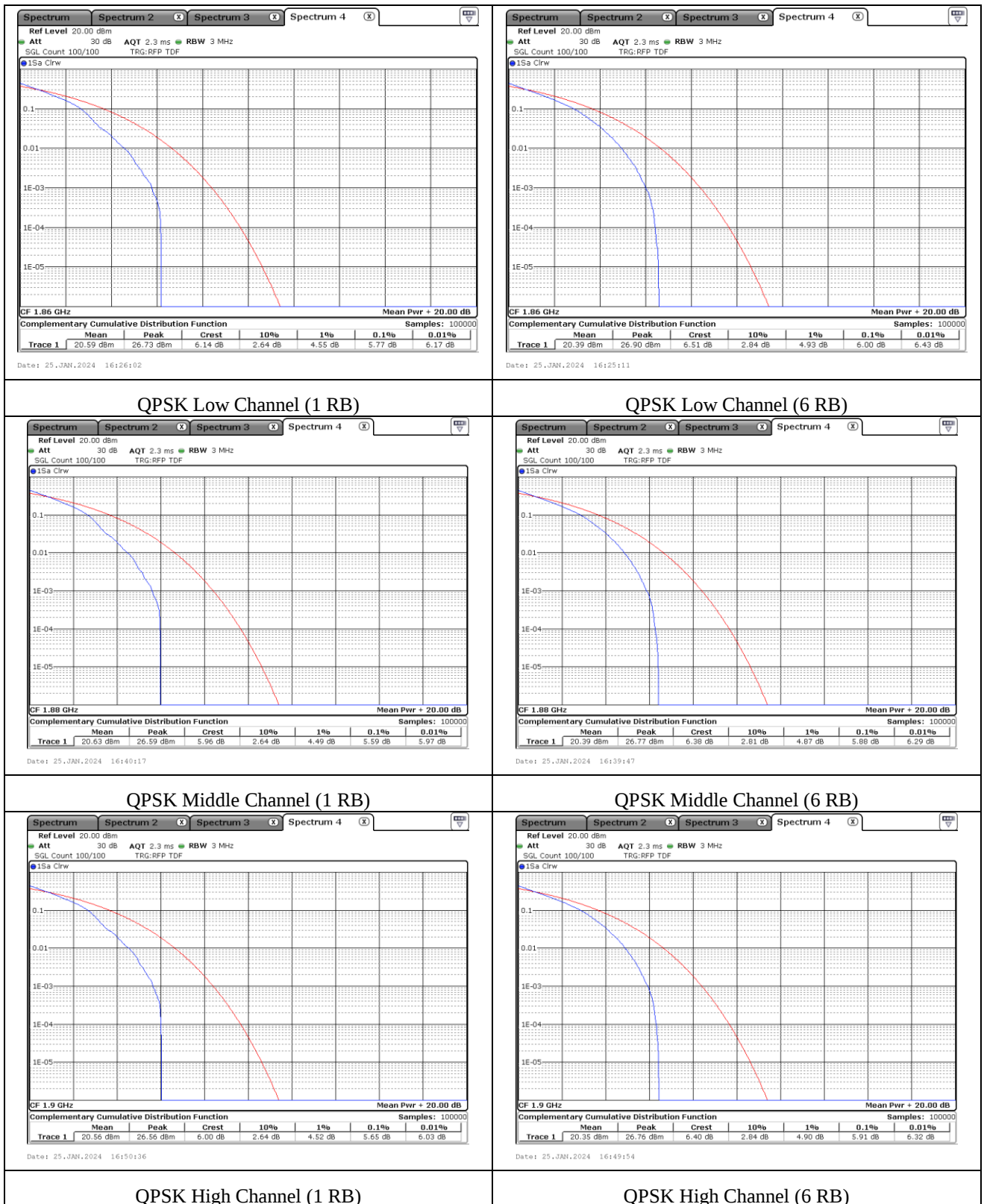


10.9 Test data for Band 2_Bandwidth 20 MHz

-. Test Result : Pass

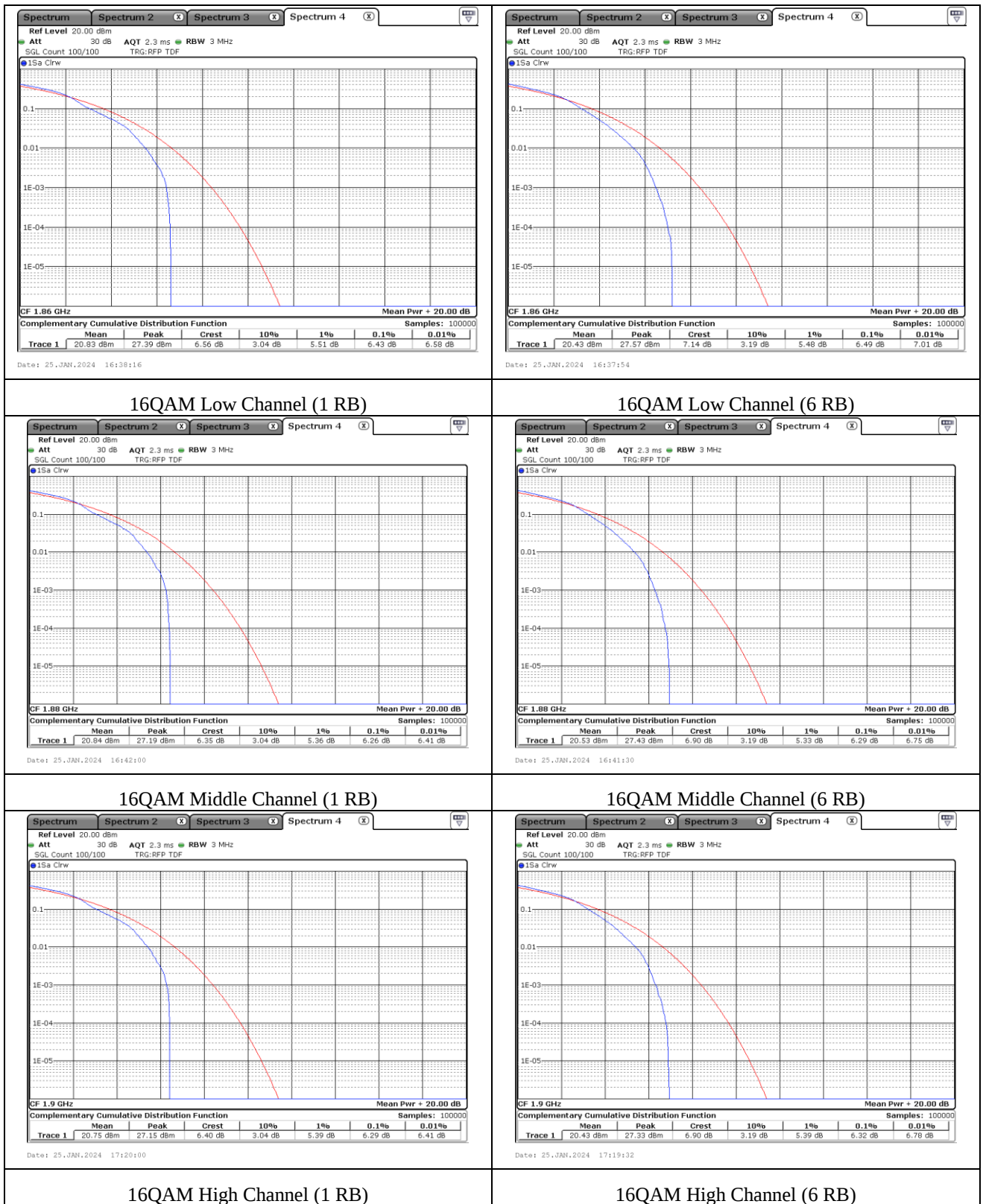
Test Mode	Channel	Peak-Average Ratio(PAR) CCDF 0.1 %	Limit (dB)	Result
LTE Band 2 QPSK				
1 RB	1 860.0 MHz	5.77	13.00	Pass
	1 880.0 MHz	5.59	13.00	Pass
	1 900.0 MHz	5.65	13.00	Pass
6 RB	1 860.0 MHz	6.00	13.00	Pass
	1 880.0 MHz	5.88	13.00	Pass
	1 900.0 MHz	5.91	13.00	Pass
LTE Band 2 16QAM				
1 RB	1 860.0 MHz	6.43	13.00	Pass
	1 880.0 MHz	6.26	13.00	Pass
	1 900.0 MHz	6.29	13.00	Pass
6 RB	1 860.0 MHz	6.49	13.00	Pass
	1 880.0 MHz	6.29	13.00	Pass
	1 900.0 MHz	6.32	13.00	Pass

Remark: Measured the using CCDFof spectrum analyzer.



QPSK High Channel (1 RB)

QPSK High Channel (6 RB)



11. OCCUPIED BANDWIDTH

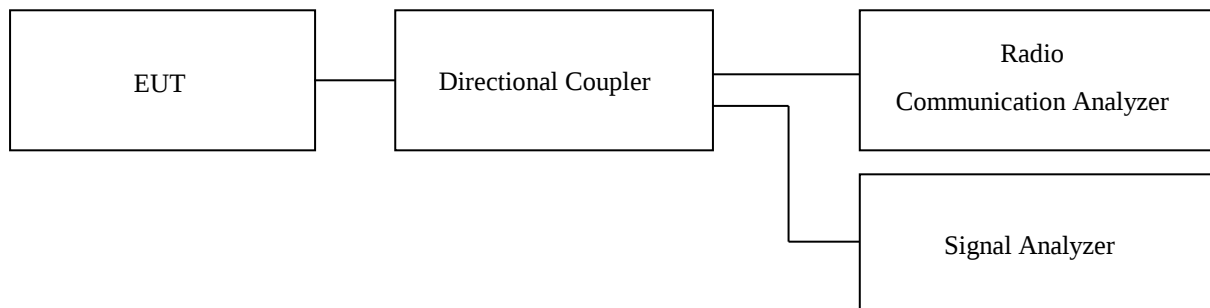
11.1 Operating environment

Temperature : 22 °C
Relative humidity : 45 % R.H.

11.2 Test set-up

The emission bandwidth (×dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated × dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3× the resolution bandwidth. When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured.

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3×RBW.



11.3 Test Date

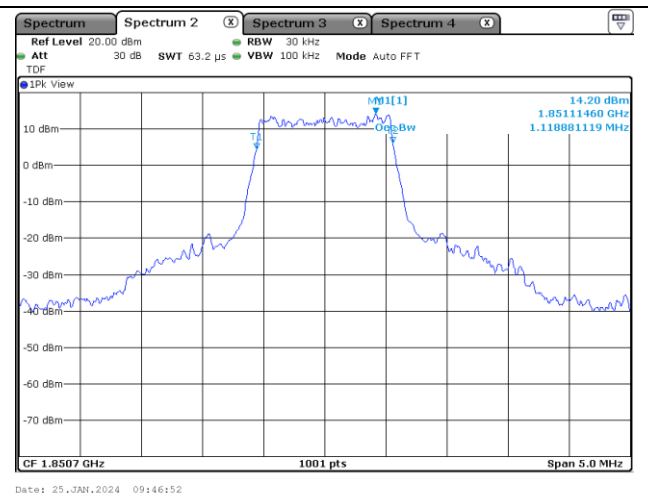
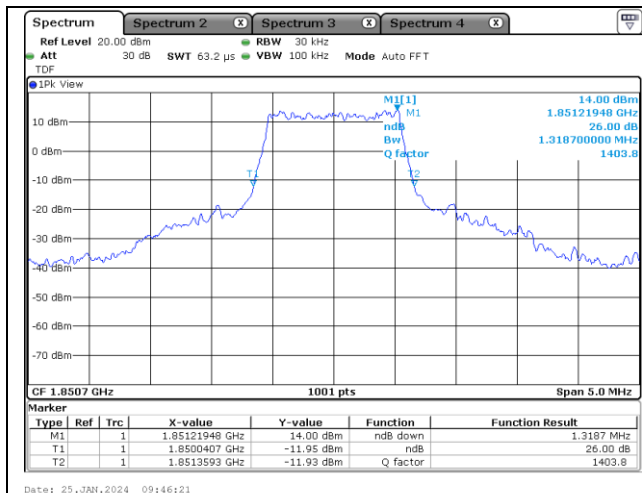
January 15, 2024 ~ February 08, 2024

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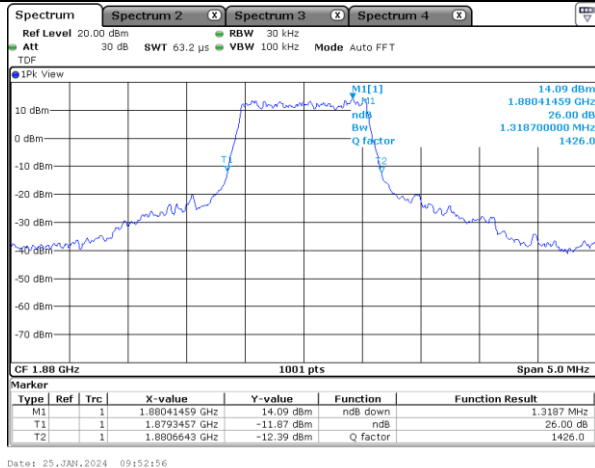
11.4 Test data for Band 2_Bandwidth 1.4 MHz

-. Test Result : Pass

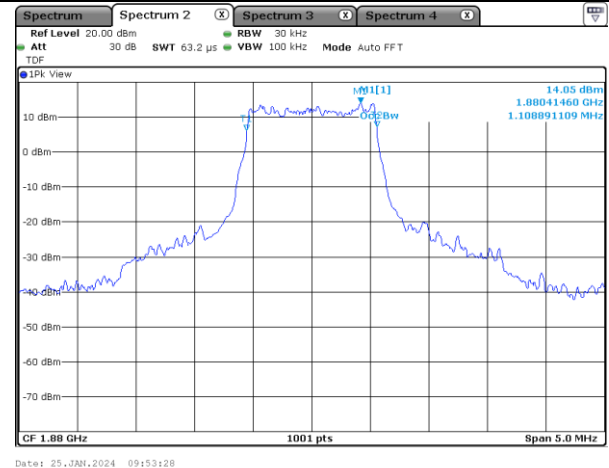
Test Mode	Channel	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Result
QPSK	1 850.7 MHz	1.32	1.12	PASS
	1 880.0 MHz	1.32	1.11	PASS
	1 909.3 MHz	1.32	1.11	PASS
16QAM	1 850.7 MHz	1.32	1.09	PASS
	1 880.0 MHz	1.31	1.09	PASS
	1 909.3 MHz	1.32	1.10	PASS



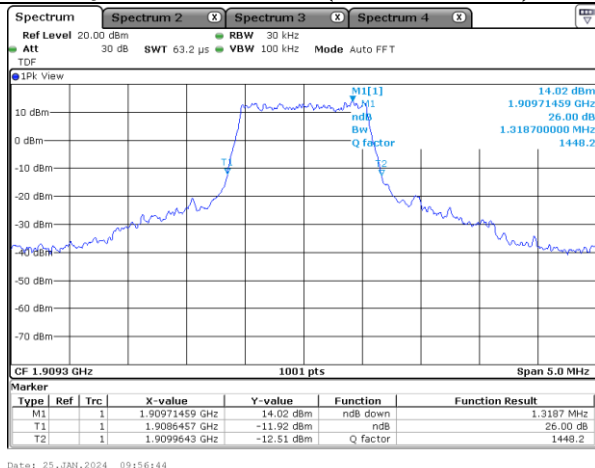
QPSK Low Channel (26 dB Bandwidth)



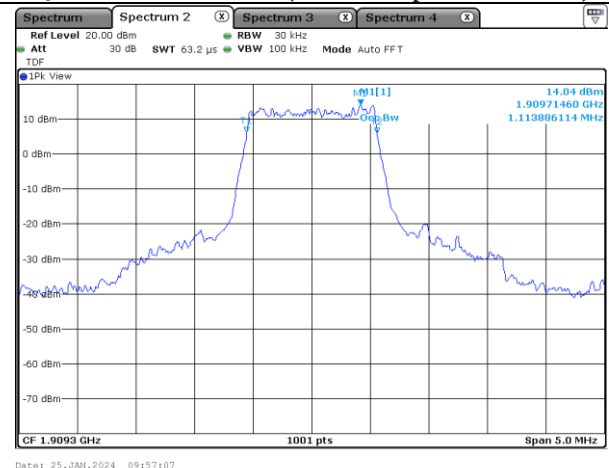
QPSK Low Channel (99 % Occupied Bandwidth)



QPSK Middle Channel (26 dB Bandwidth)

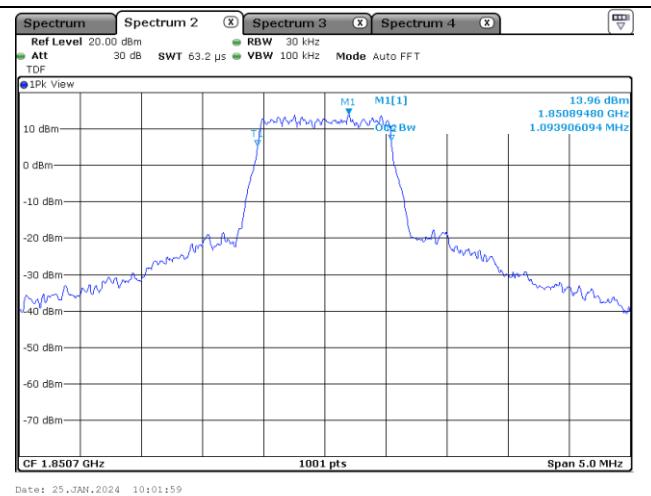
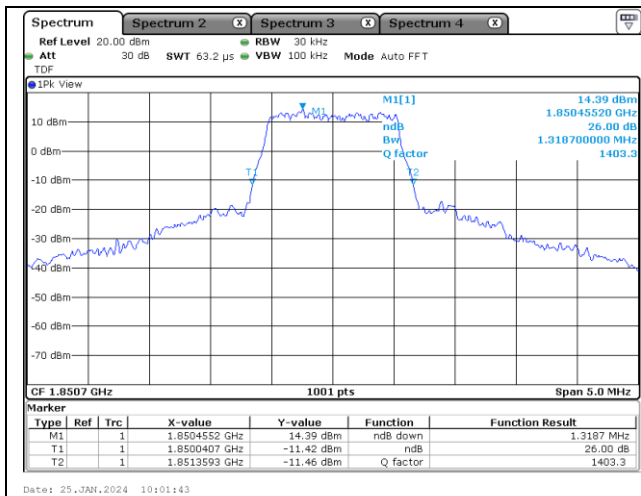


QPSK Middle Channel (99 % Occupied Bandwidth)

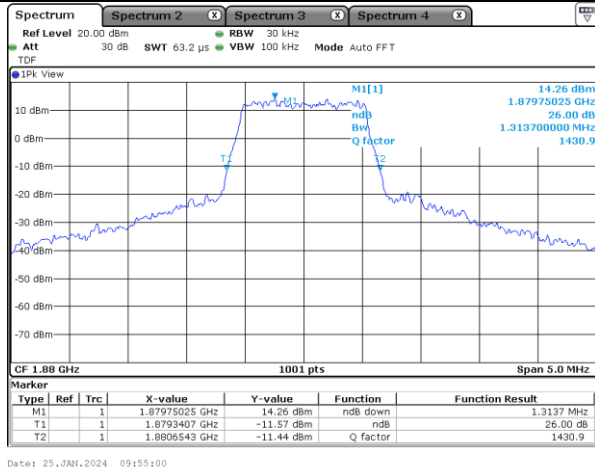


QPSK High Channel (26 dB Bandwidth)

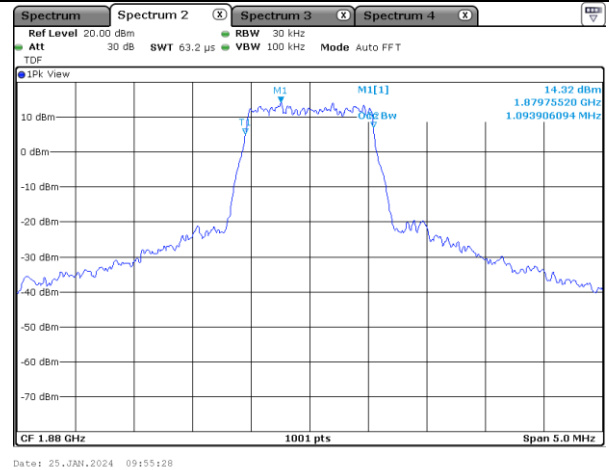
QPSK High Channel (99 % Occupied Bandwidth)



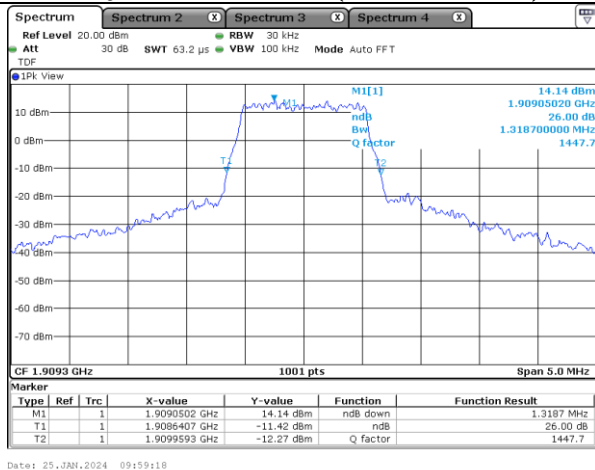
16QAM Low Channel (26 dB Bandwidth)



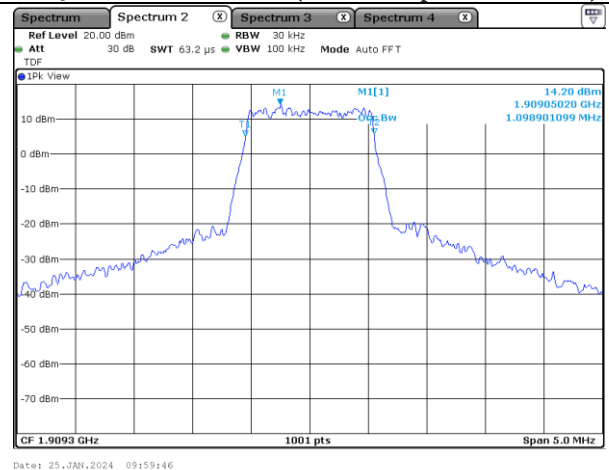
16QAM Low Channel (99 % Occupied Bandwidth)



16QAM Middle Channel (26 dB Bandwidth)



16QAM Middle Channel (99 % Occupied Bandwidth)



16QAM High Channel (26 dB Bandwidth)



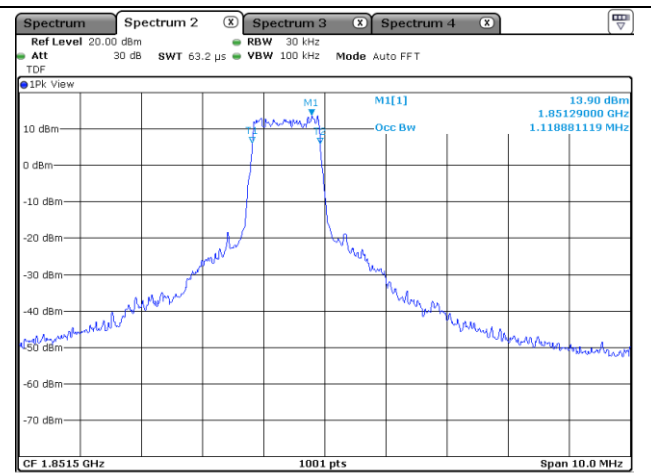
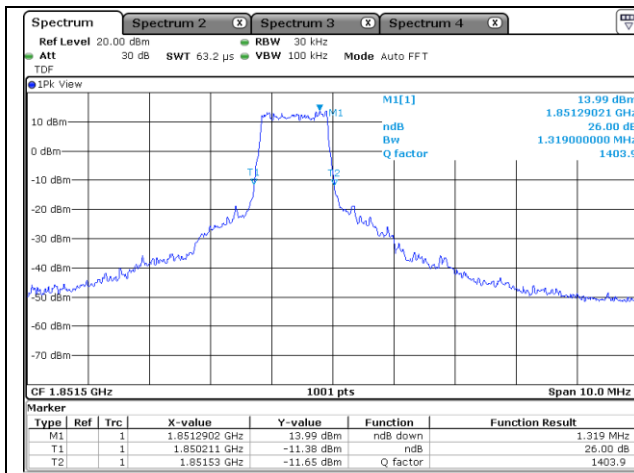
16QAM High Channel (99 % Occupied Bandwidth)



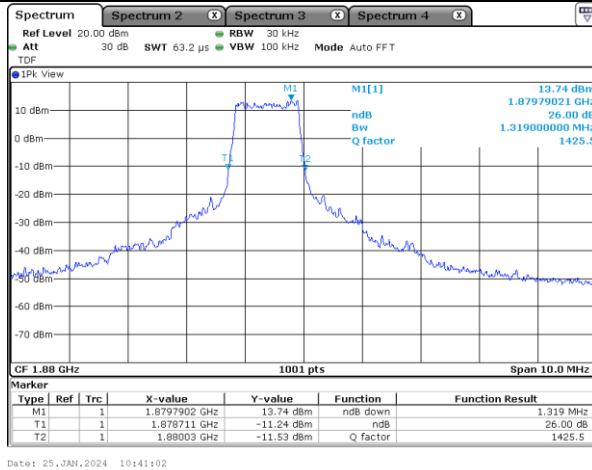
11.5 Test data for Band 2_Bandwidth 3 MHz

-. Test Result : Pass

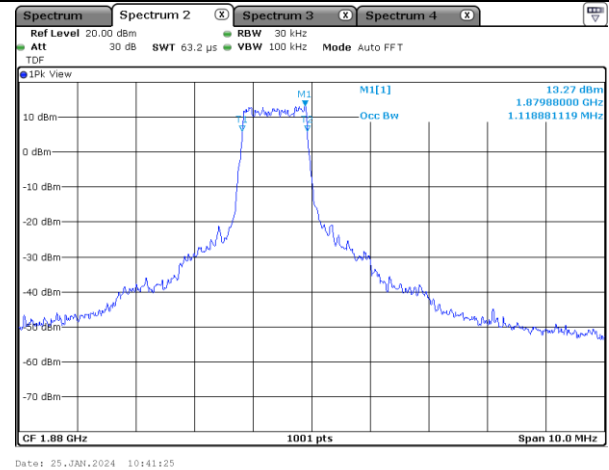
Test Mode	Channel	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Result
QPSK	1 851.5 MHz	1.32	1.12	PASS
	1 880.0 MHz	1.32	1.12	PASS
	1 908.5 MHz	1.32	1.12	PASS
16QAM	1 851.5 MHz	1.32	1.10	PASS
	1 880.0 MHz	1.32	1.10	PASS
	1 908.5 MHz	1.32	1.10	PASS



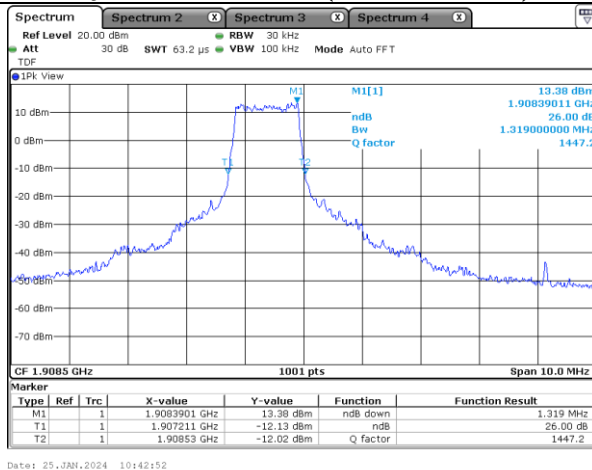
QPSK Low Channel (26 dB Bandwidth)



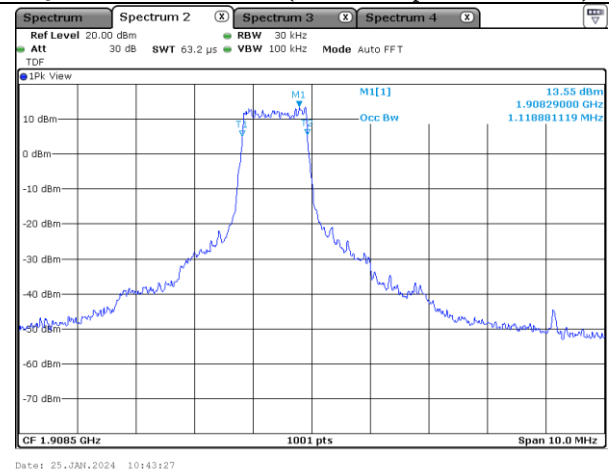
QPSK Low Channel (99 % Occupied Bandwidth)



QPSK Middle Channel (26 dB Bandwidth)

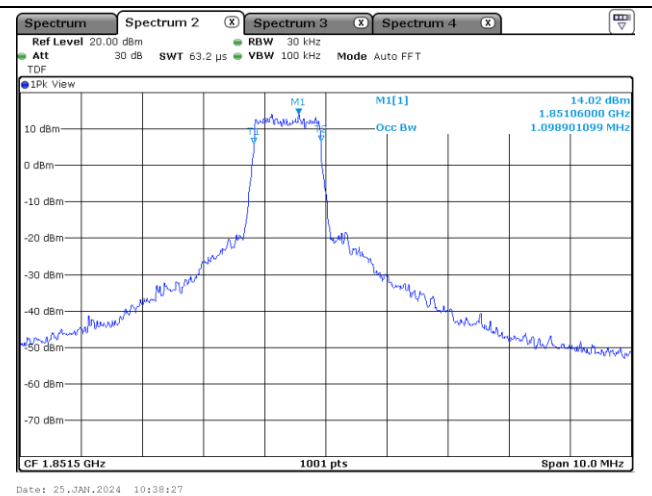
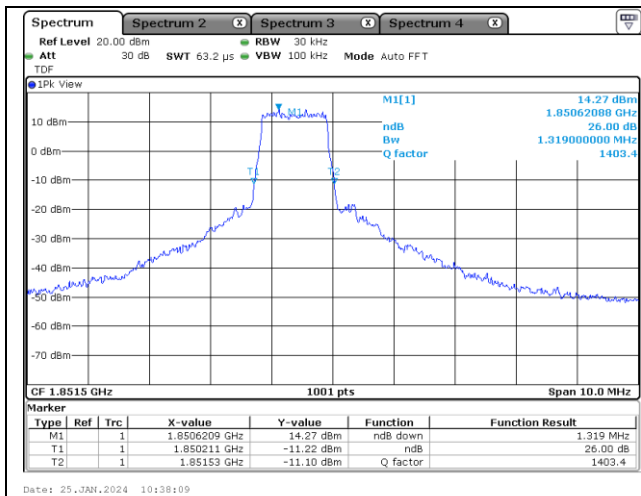


QPSK Middle Channel (99 % Occupied Bandwidth)

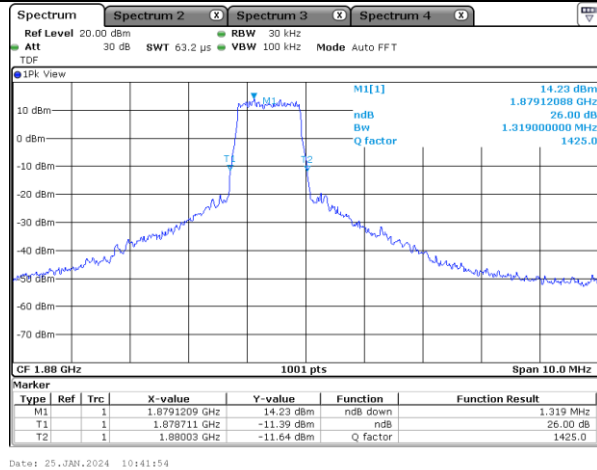


QPSK High Channel (26 dB Bandwidth)

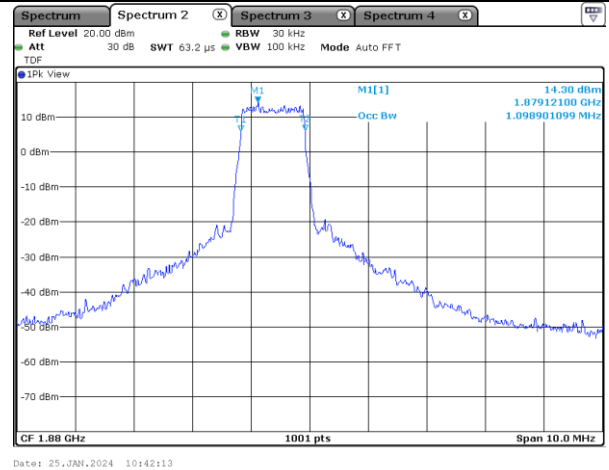
QPSK High Channel (99 % Occupied Bandwidth)



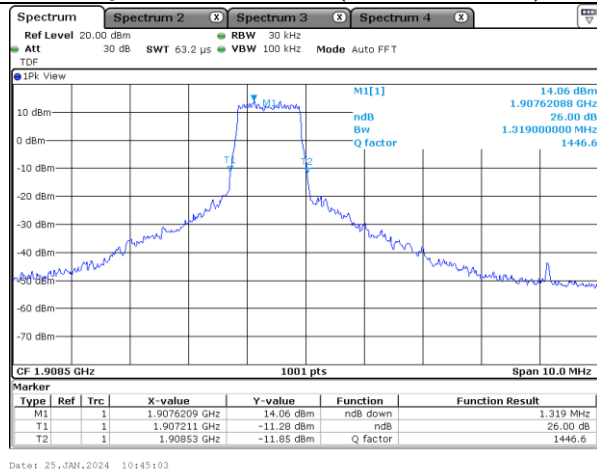
16QAM Low Channel (26 dB Bandwidth)



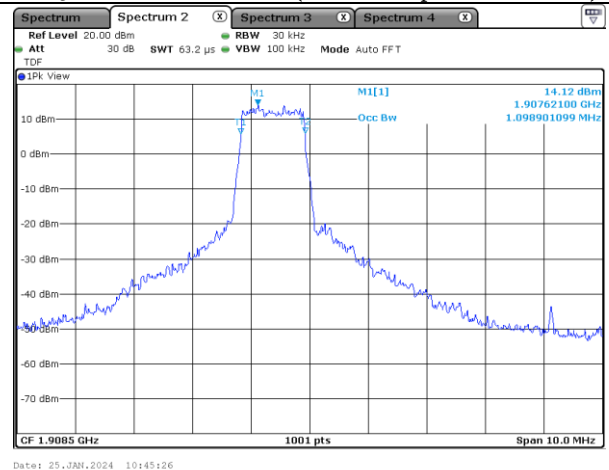
16QAM Low Channel (99 % Occupied Bandwidth)



16QAM Middle Channel (26 dB Bandwidth)



16QAM Middle Channel (99 % Occupied Bandwidth)



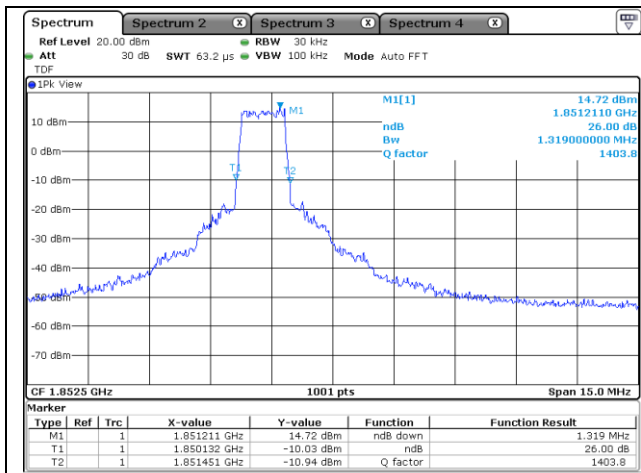
16QAM High Channel (26 dB Bandwidth)

16QAM High Channel (99 % Occupied Bandwidth)

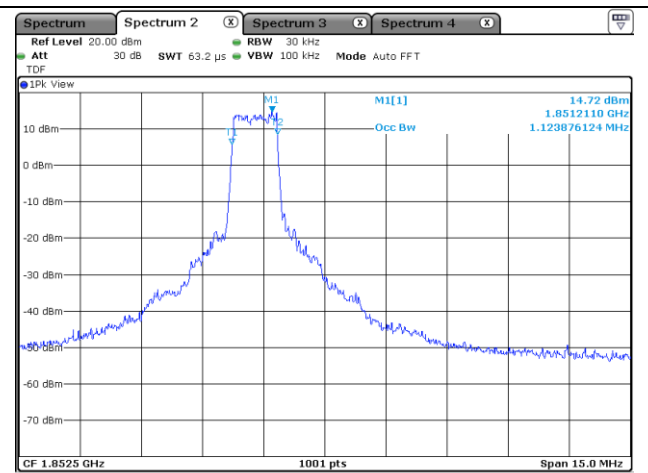
11.6 Test data for Band 2_Bandwidth 5 MHz

-. Test Result : Pass

Test Mode	Channel	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Result
QPSK	1 852.5 MHz	1.32	1.12	PASS
	1 880.0 MHz	1.32	1.12	PASS
	1 907.5 MHz	1.32	1.12	PASS
16QAM	1 852.5 MHz	1.35	1.14	PASS
	1 880.0 MHz	13.5	1.14	PASS
	1 907.5 MHz	1.35	1.14	PASS

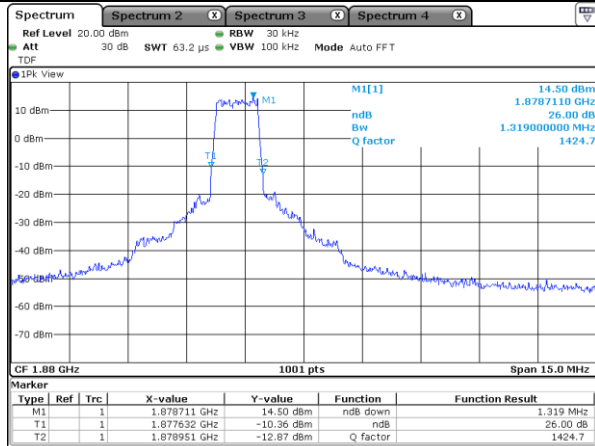


Date: 25.JAN.2024 11:19:18



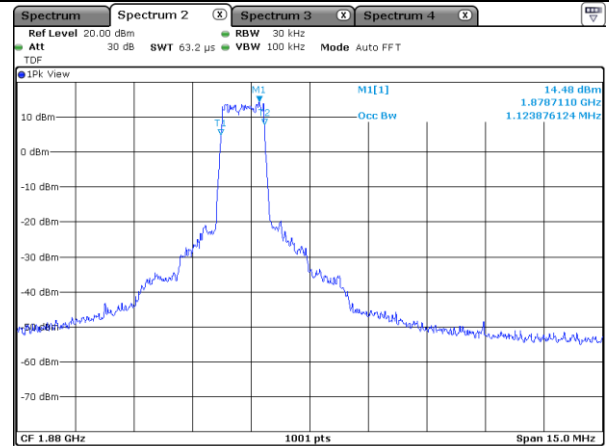
Date: 25.JAN.2024 11:19:41

QPSK Low Channel (26 dB Bandwidth)



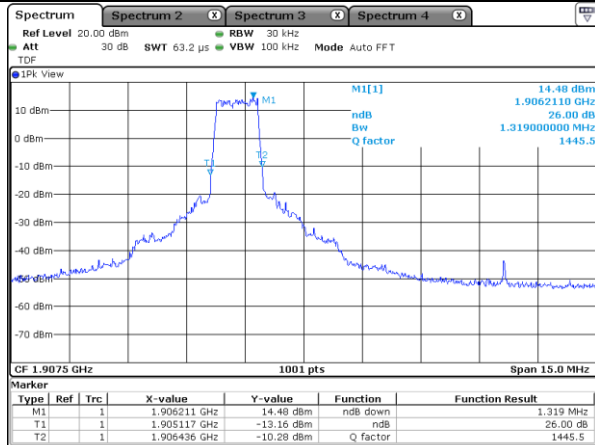
Date: 25.JAN.2024 11:18:58

QPSK Low Channel (99 % Occupied Bandwidth)



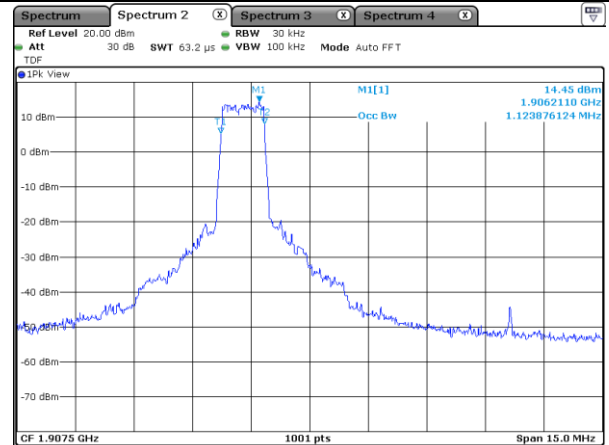
Date: 25.JAN.2024 11:19:23

QPSK Middle Channel (26 dB Bandwidth)



Date: 25.JAN.2024 11:40:52

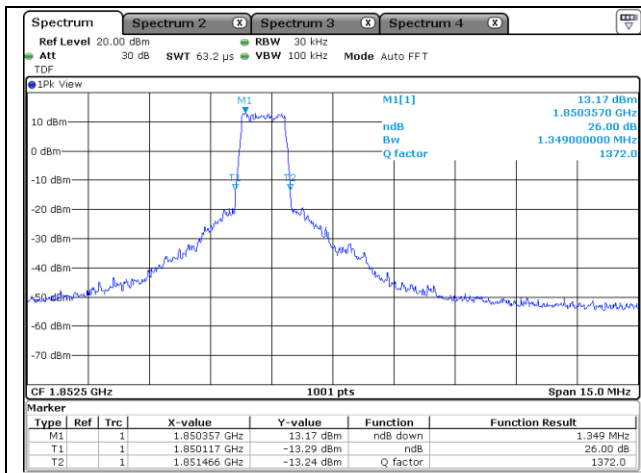
QPSK Middle Channel (99 % Occupied Bandwidth)



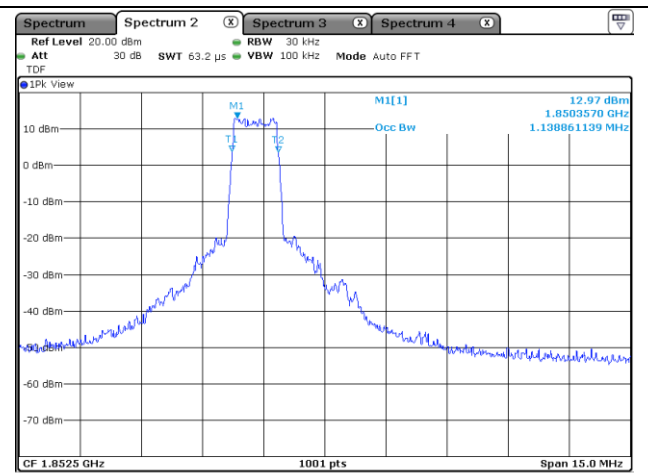
Date: 25.JAN.2024 11:41:16

QPSK High Channel (26 dB Bandwidth)

QPSK High Channel (99 % Occupied Bandwidth)

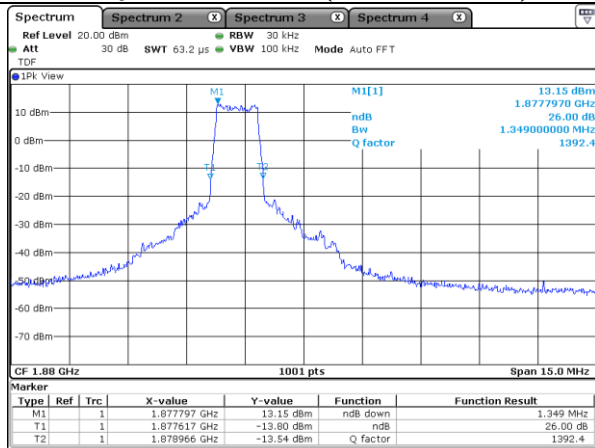


Date: 25.JAN.2024 11:21:23



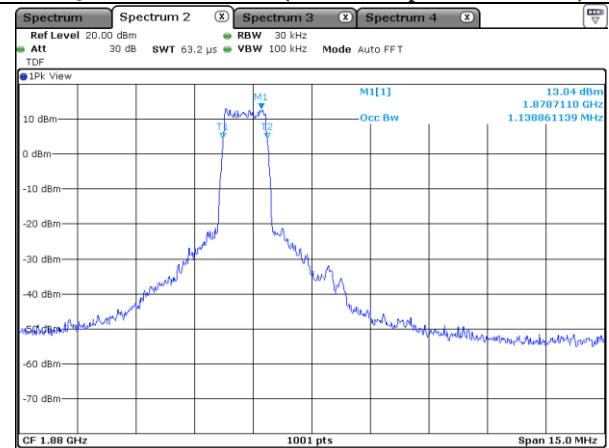
Date: 25.JAN.2024 11:21:53

16QAM Low Channel (26 dB Bandwidth)



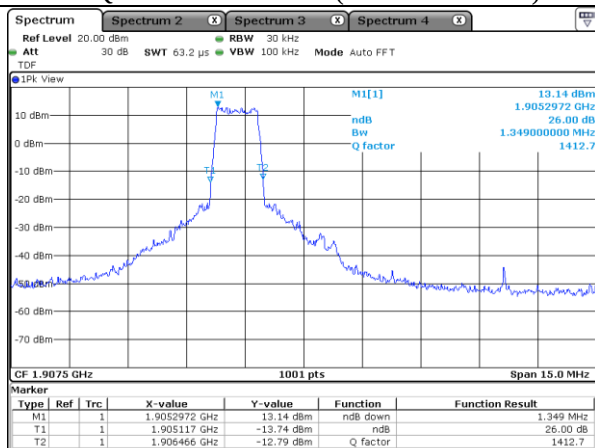
Date: 25.JAN.2024 11:13:49

16QAM Low Channel (99 % Occupied Bandwidth)



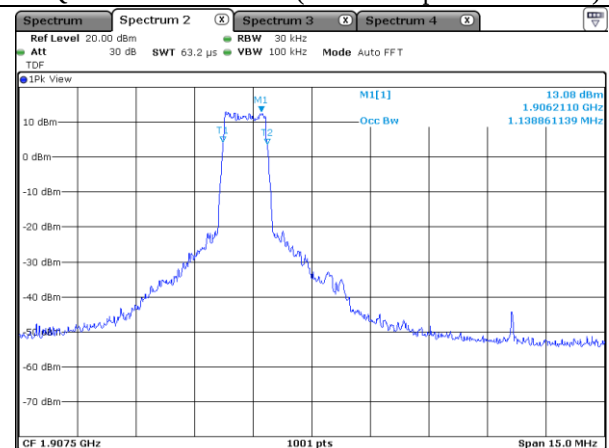
Date: 25.JAN.2024 11:40:04

16QAM Middle Channel (26 dB Bandwidth)



Date: 25.JAN.2024 11:42:59

16QAM Middle Channel (99 % Occupied Bandwidth)



Date: 25.JAN.2024 11:43:22

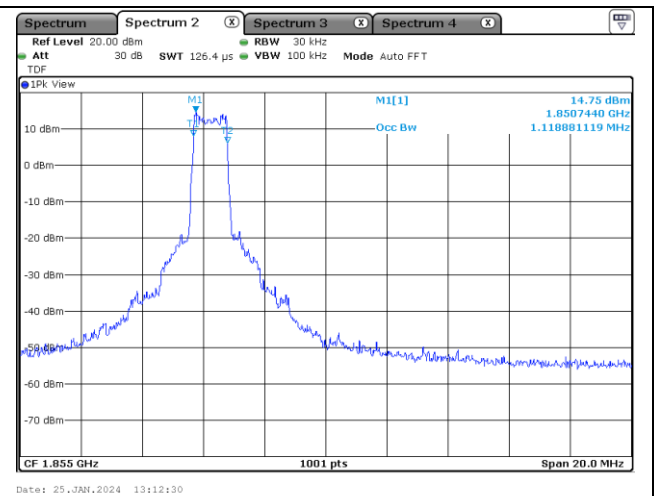
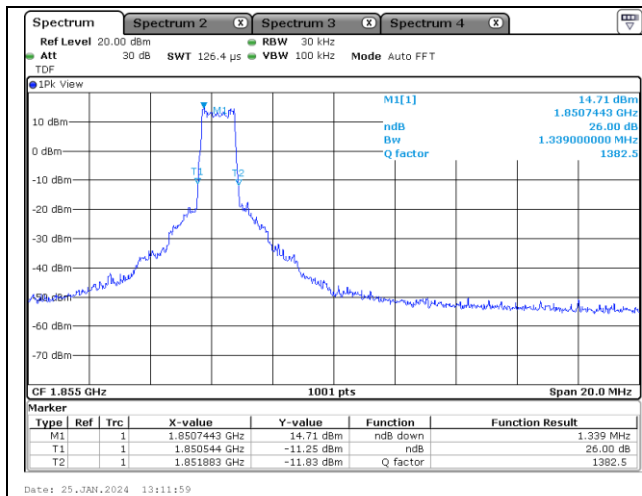
16QAM High Channel (26 dB Bandwidth)

16QAM High Channel (99 % Occupied Bandwidth)

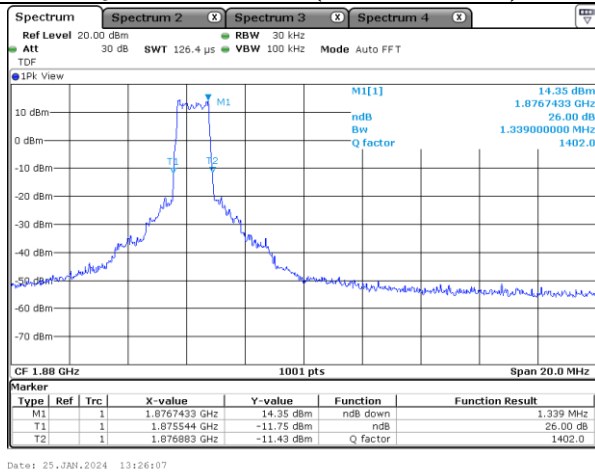
11.7 Test data for Band 2_Bandwidth 10 MHz

-. Test Result : Pass

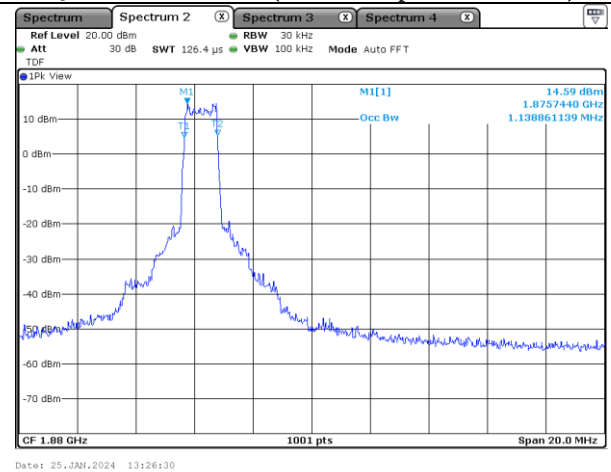
Test Mode	Channel	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Result
QPSK	1 855.0 MHz	1.34	1.12	PASS
	1 880.0 MHz	1.34	1.14	PASS
	1 905.0 MHz	1.34	1.14	PASS
16QAM	1 855.0 MHz	1.34	1.12	PASS
	1 880.0 MHz	1.36	1.12	PASS
	1 905.0 MHz	1.34	1.12	PASS



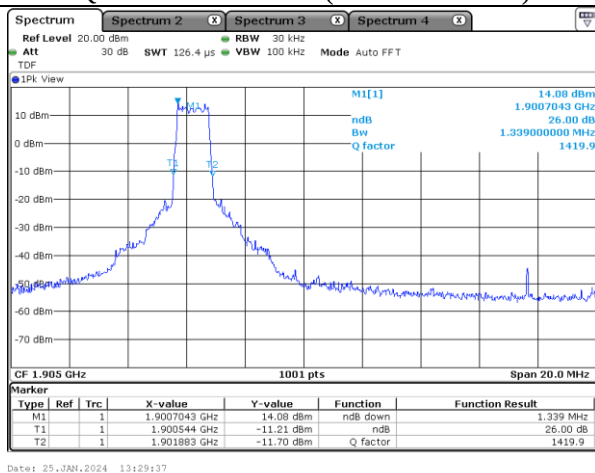
QPSK Low Channel (26 dB Bandwidth)



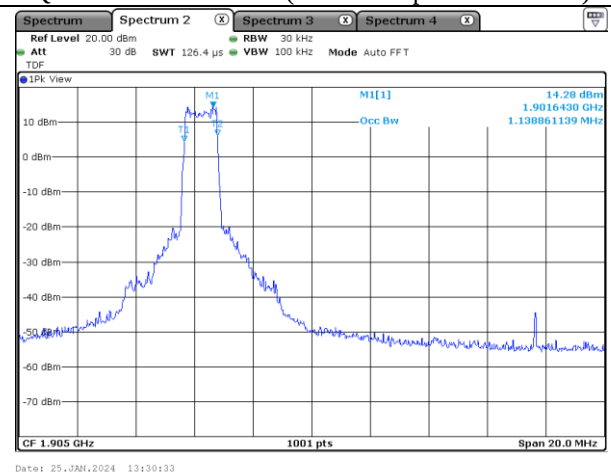
QPSK Low Channel (99 % Occupied Bandwidth)



QPSK Middle Channel (26 dB Bandwidth)

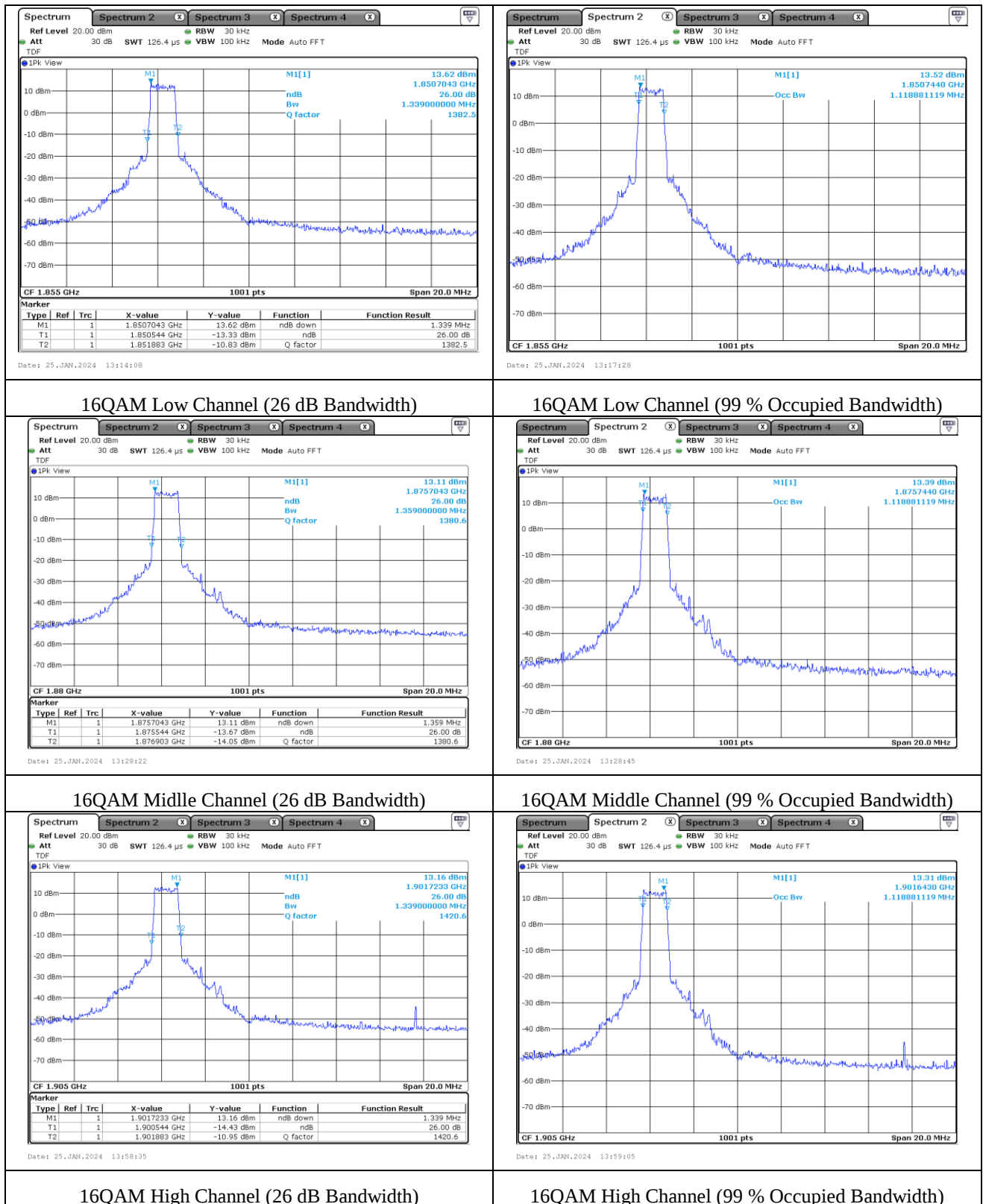


QPSK Middle Channel (99 % Occupied Bandwidth)



QPSK High Channel (26 dB Bandwidth)

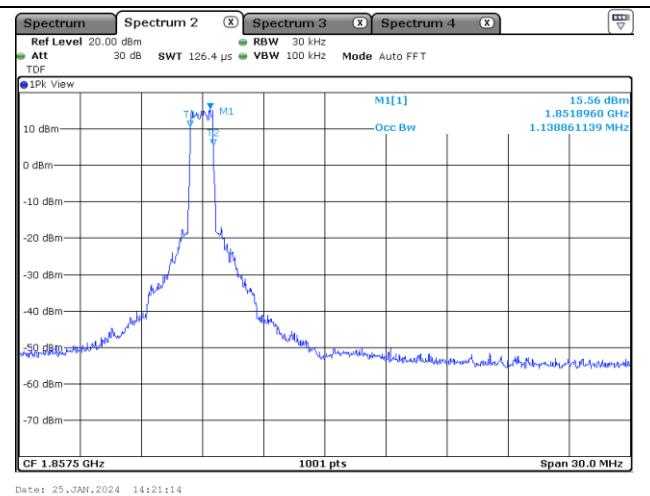
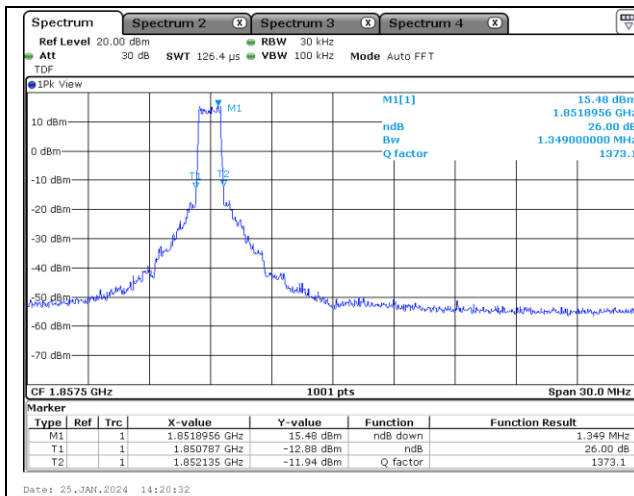
QPSK High Channel (99 % Occupied Bandwidth)



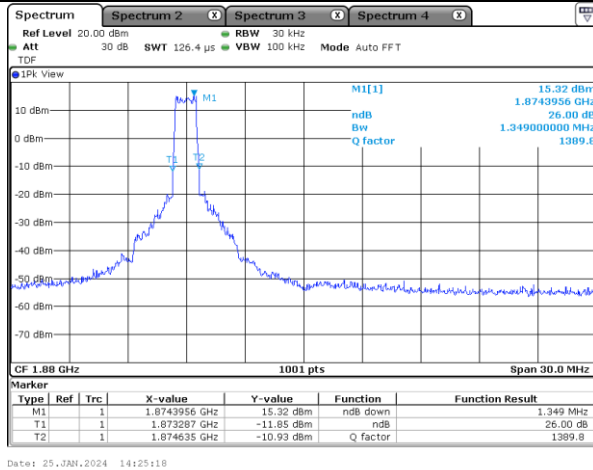
11.8 Test data for Band 2_Bandwidth 15 MHz

-. Test Result : Pass

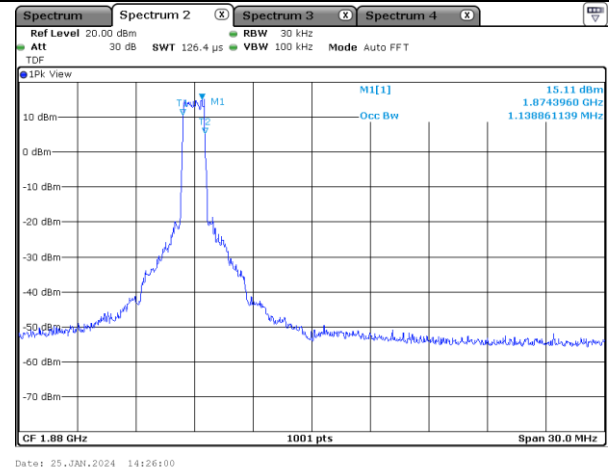
Test Mode	Channel	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Result
QPSK	1 857.5 MHz	1.35	1.14	PASS
	1 880.0 MHz	1.35	1.14	PASS
	1 902.5 MHz	1.35	1.14	PASS
16QAM	1 857.5 MHz	1.35	1.14	PASS
	1 880.0 MHz	1.35	1.14	PASS
	1 902.5 MHz	1.35	1.14	PASS



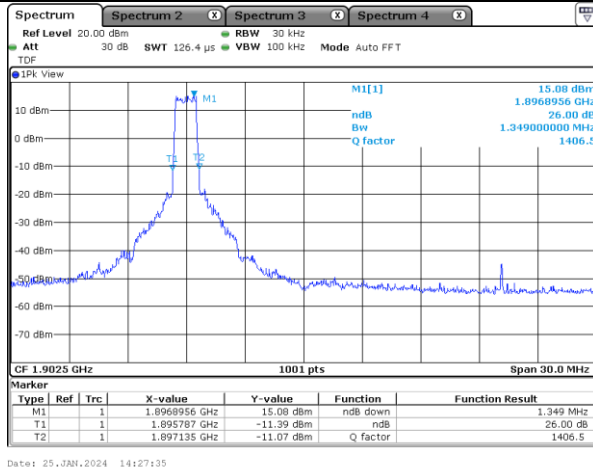
QPSK Low Channel (26 dB Bandwidth)



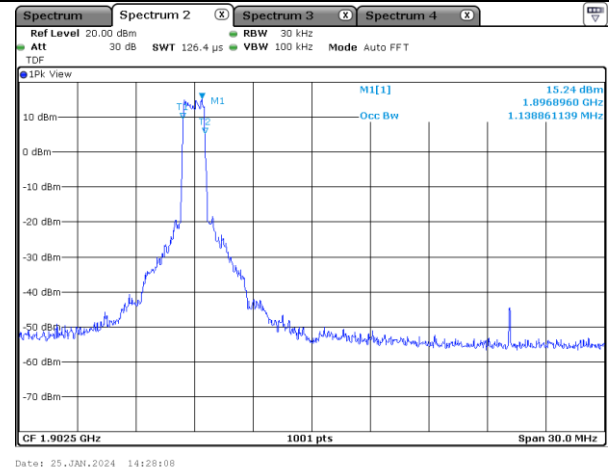
QPSK Low Channel (99 % Occupied Bandwidth)



QPSK Middle Channel (26 dB Bandwidth)

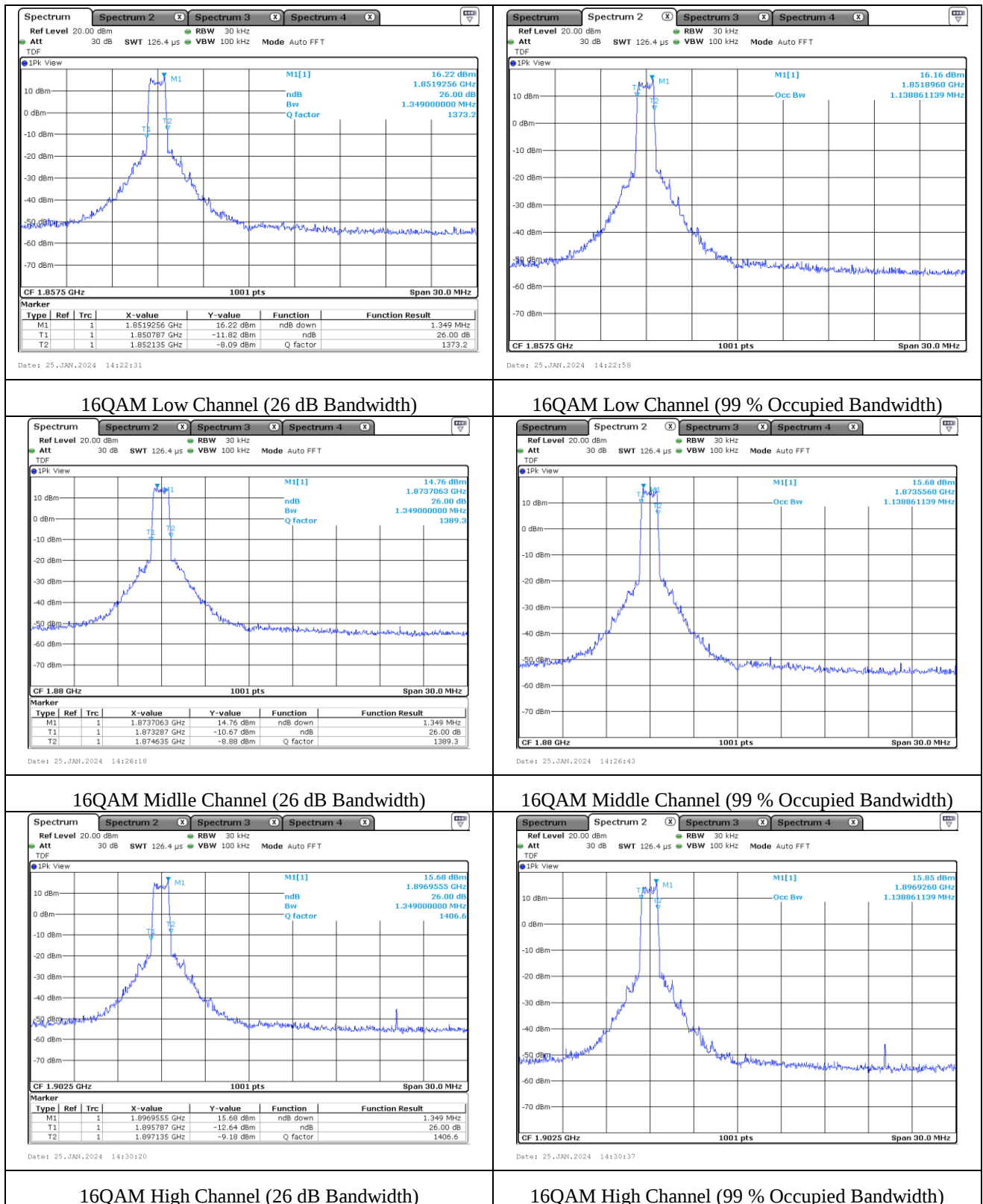


QPSK Middle Channel (99 % Occupied Bandwidth)



QPSK High Channel (26 dB Bandwidth)

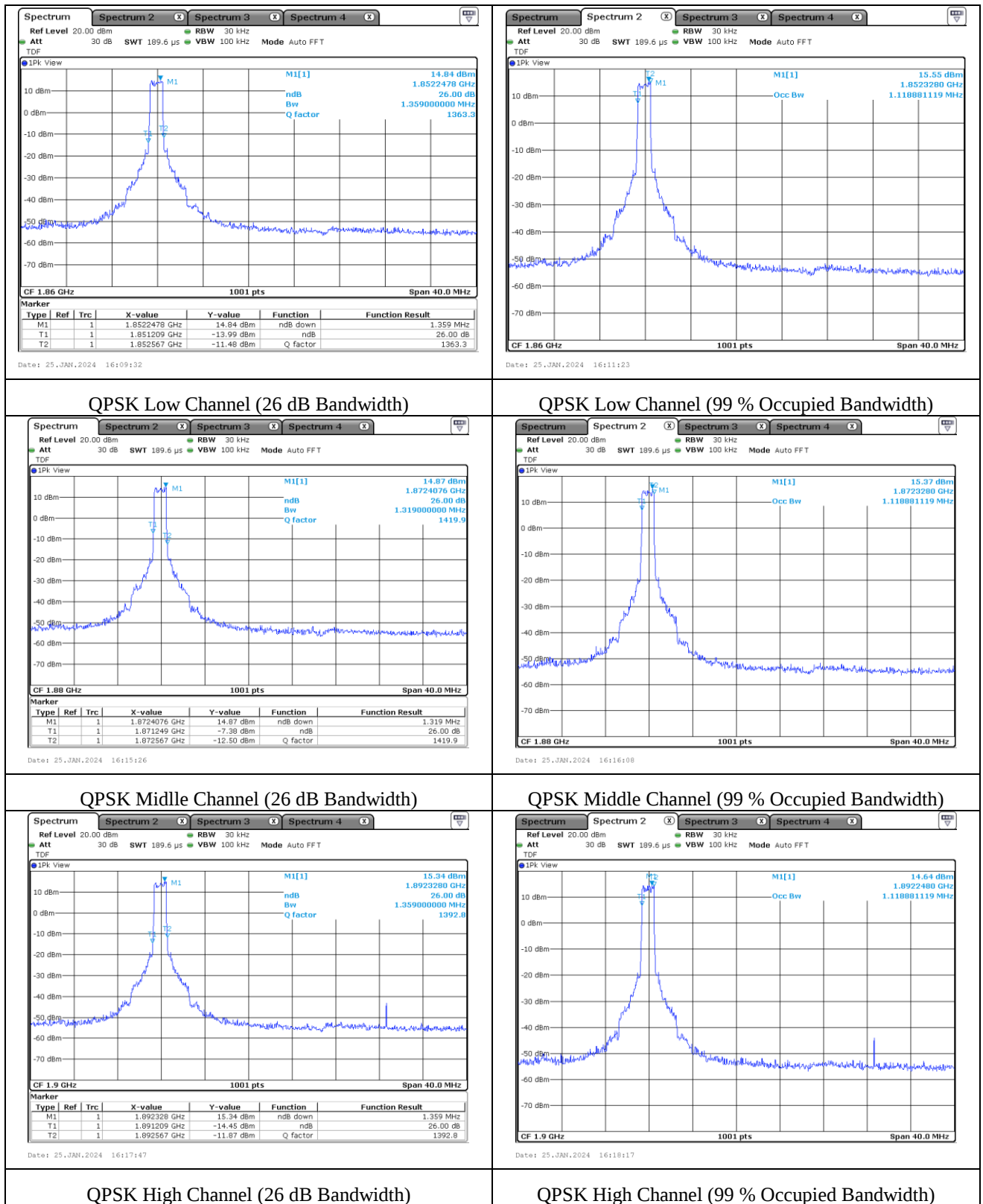
QPSK High Channel (99 % Occupied Bandwidth)

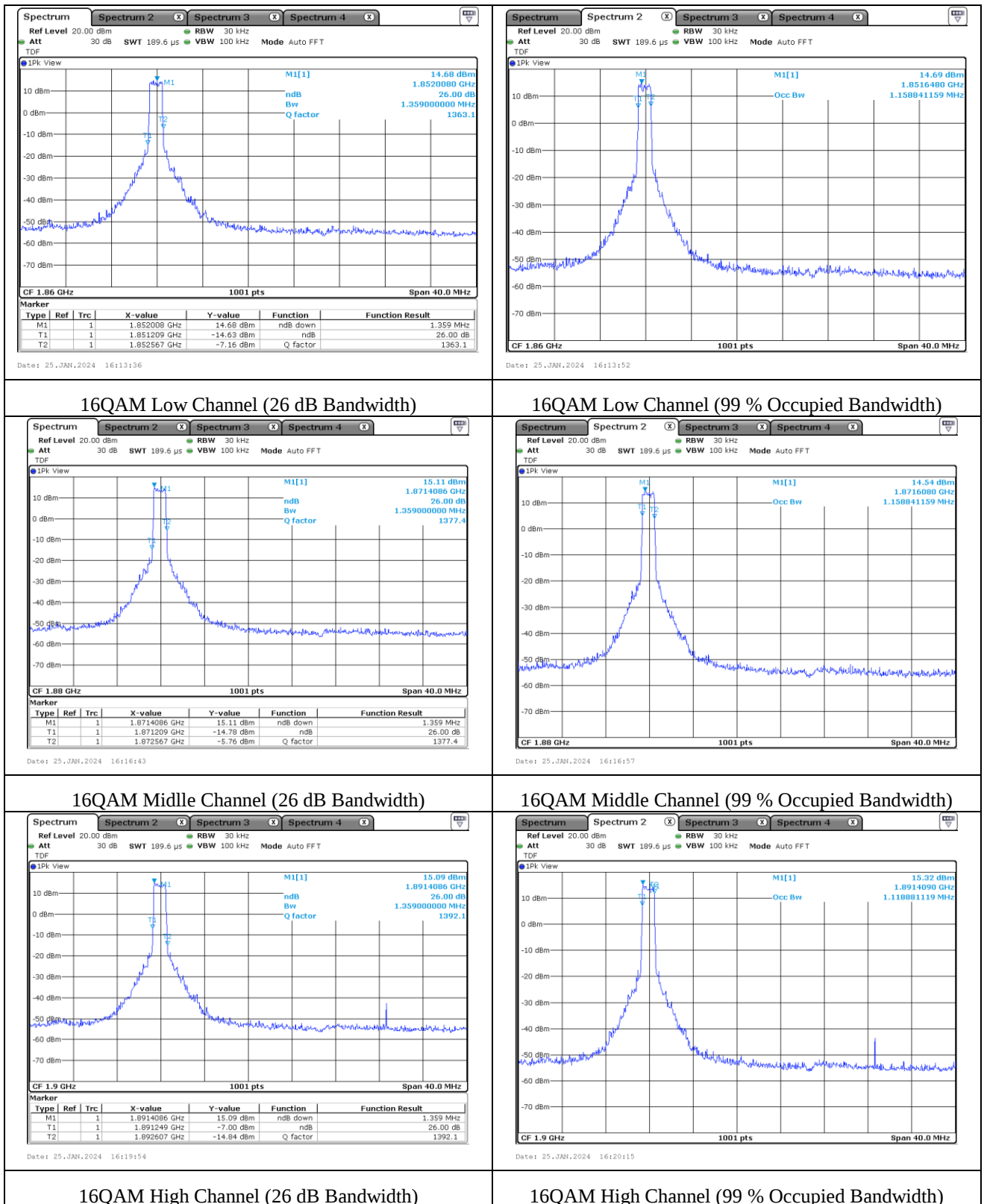


11.9 Test data for Band 2_Bandwidth 20 MHz

-. Test Result : Pass

Test Mode	Channel	26 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Result
QPSK	1 860.0 MHz	1.36	1.12	PASS
	1 880.0 MHz	1.32	1.12	PASS
	1 900.0 MHz	1.36	1.12	PASS
16QAM	1 860.0 MHz	1.36	1.16	PASS
	1 880.0 MHz	1.36	1.16	PASS
	1 900.0 MHz	1.36	1.12	PASS



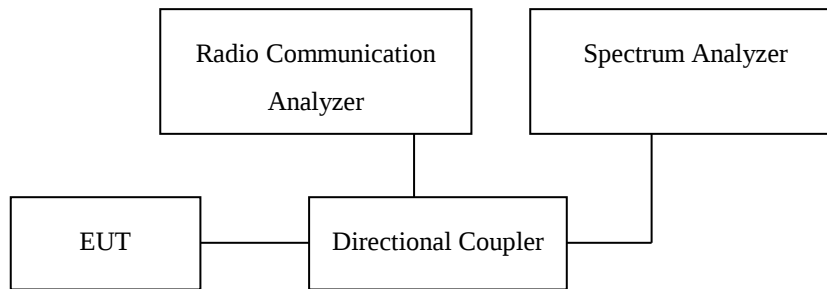


12. Conducted Band Edge

12.1 Operating environment

Temperature : 22 °C
Relative humidity : 45 % R.H.

12.2 Test set-up



(Configuration of conducted Emission measurement)

Conducted Spurious Emissions is tested in accordance with KDB971168 D01 Power Meas License Digital Systems v03, April 9, 2018, Section 6.

The EUT makes a call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels(low, middle and high operational range.)

The Conducted Spurious Emissions used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

12.3 Methods of Measurement

1. All measurements were done at low and high operational frequency range.
2. Set spectrum analyzer with RMS detector.
3. The center frequency of spectrum is the band edge frequency and set RBW of the spectrum is 20 kHz and VBW of the spectrum is 50 kHz

12.4 Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB.”

$$\begin{aligned}
 &= P(W) - [43 + 10\log(P)](\text{dB}) \\
 &= [30+10\text{Log}(P)] (\text{dBm}) - [43 + 10\log(P)](\text{dB}) \\
 &= -13 \text{ dBm}
 \end{aligned}$$

Limit	-13 dBm
-------	---------

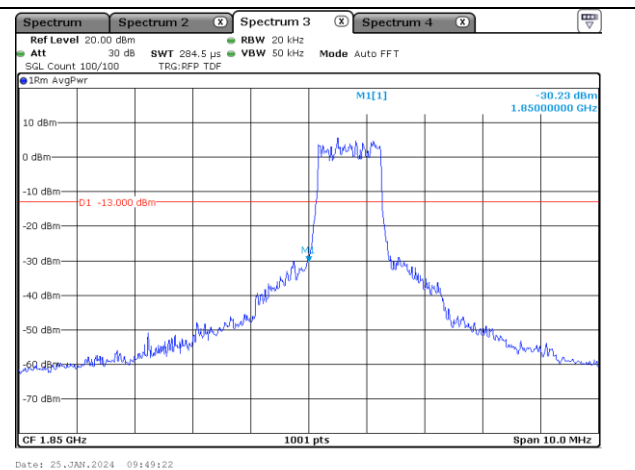
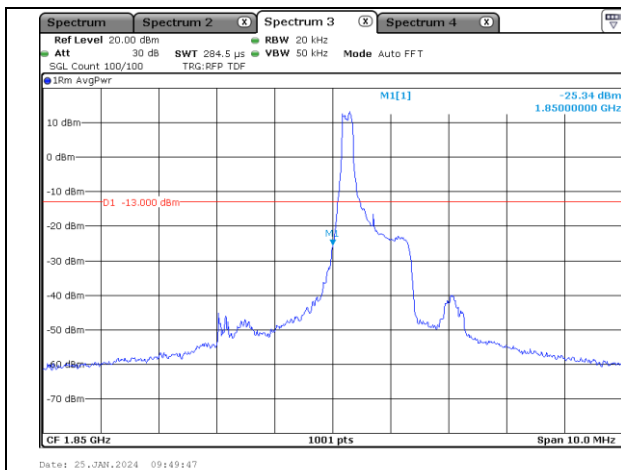
12.5 Test Date

January 15, 2024 ~ February 08, 2024

12.6 Test data for Band 2_Bandwidth 1.4 MHz

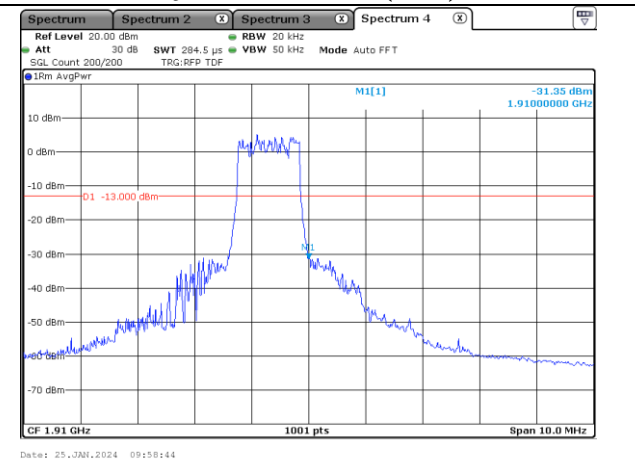
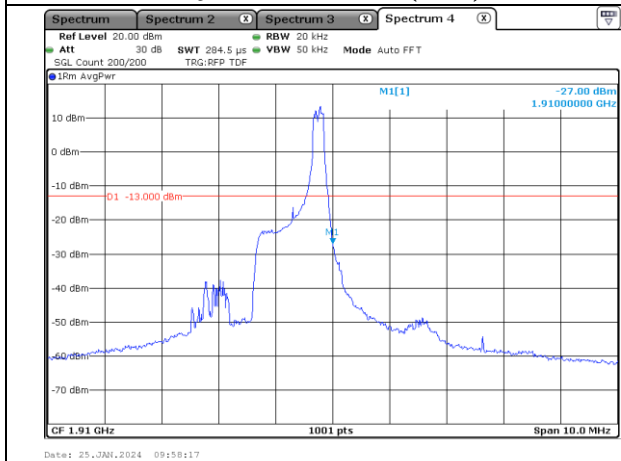
-. Test Result : Pass

Test Mode	Channel	Edge Frequency	Measured Value (dBm)	Limit (dBm)	Result
LTE Band 2 QPSK					
1 RB	1 850.7 MHz	1 850.0 MHz	-25.34	-13.00	PASS
	1 909.3 MHz	1 910.0 MHz	-27.00	-13.00	PASS
6 RB	1 850.7 MHz	1 850.0 MHz	-30.23	-13.00	PASS
	1 909.3 MHz	1 910.0 MHz	-31.35	-13.00	PASS
LTE Band 2 16QAM					
1 RB	1 850.7 MHz	1 850.0 MHz	-26.97	-13.00	PASS
	1 909.3 MHz	1 910.0 MHz	-26.55	-13.00	PASS
6 RB	1 850.7 MHz	1 850.0 MHz	-28.88	-13.00	PASS
	1 909.3 MHz	1 910.0 MHz	-28.69	-13.00	PASS



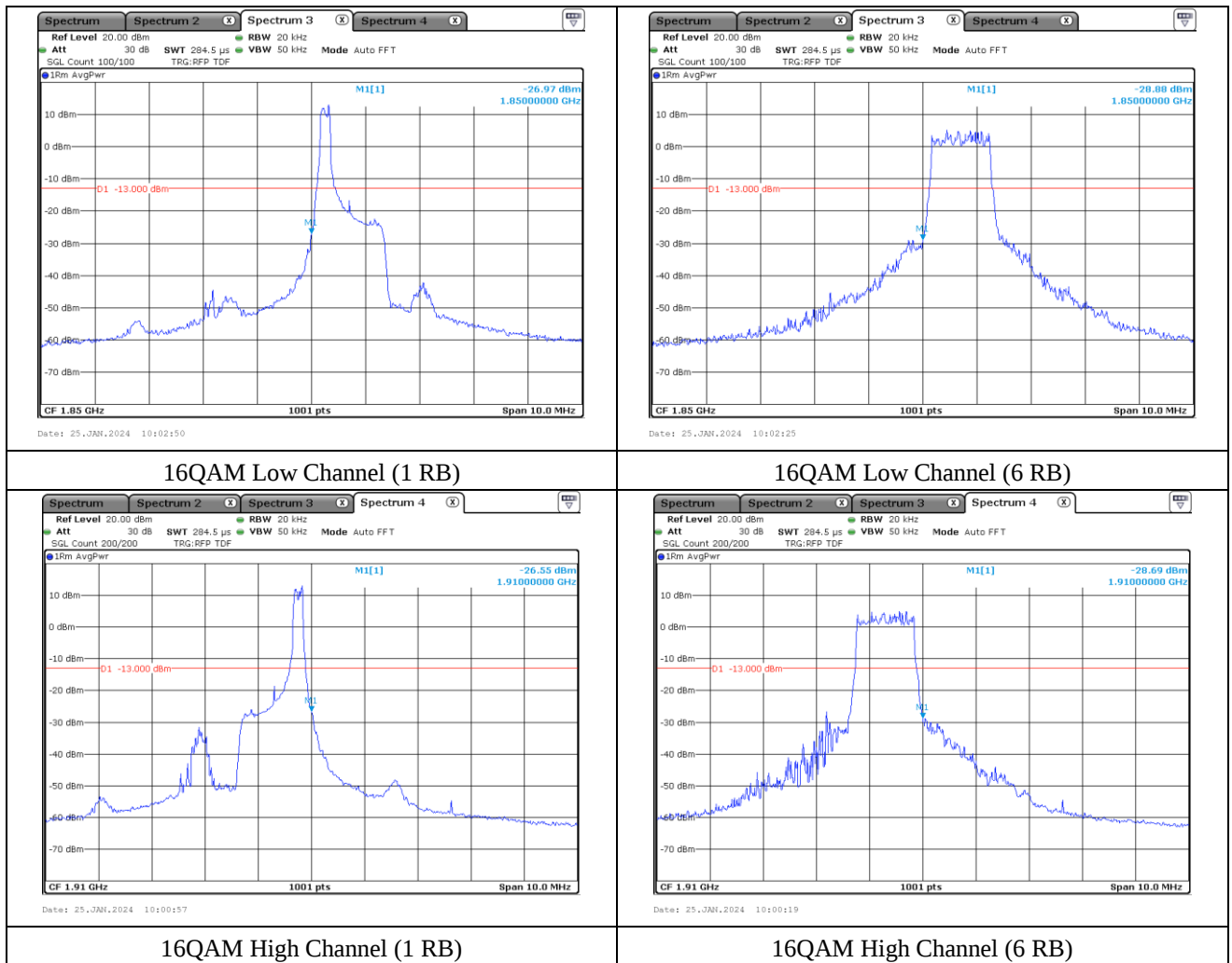
QPSK Low Channel (1 RB)

QPSK Low Channel (6 RB)



QPSK High Channel (1 RB)

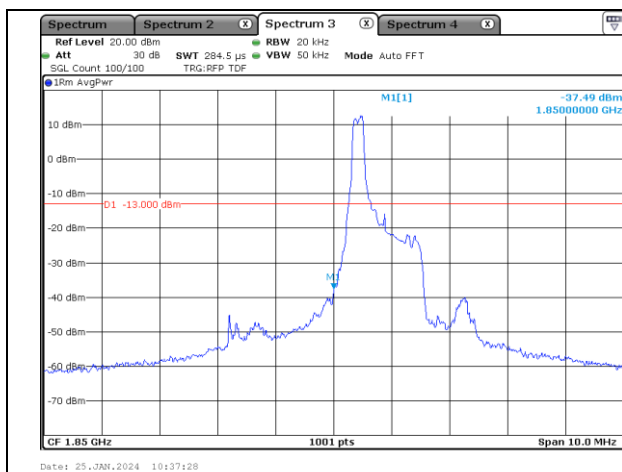
QPSK High Channel (6 RB)



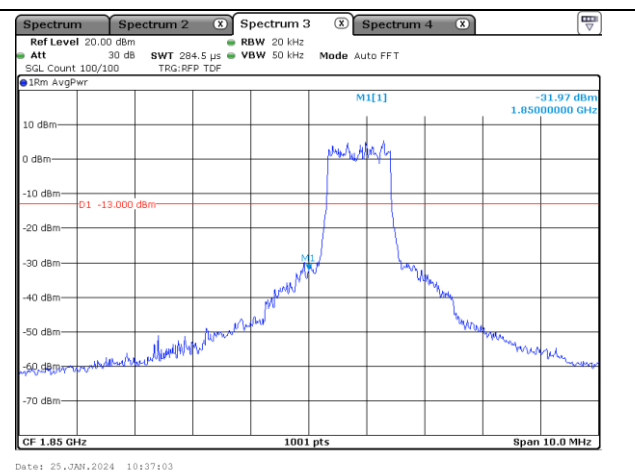
12.7 Test data for Band 2_Bandwidth 3 MHz

-. Test Result : Pass

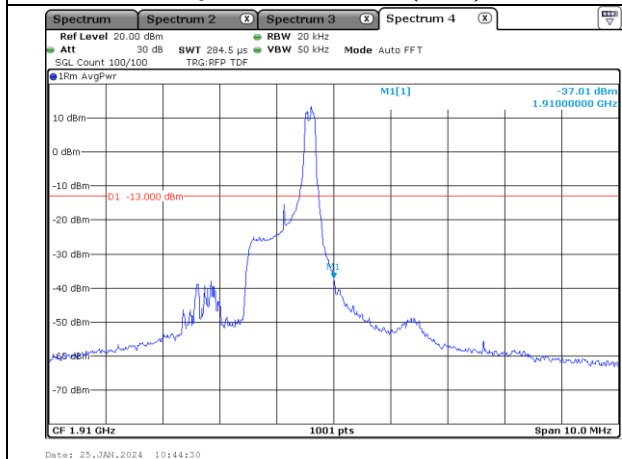
Test Mode	Channel	Edge Frequency	Measured Value (dBm)	Limit (dBm)	Result
LTE Band 2 QPSK					
1 RB	1 851.5 MHz	1 850.0 MHz	-37.49	-13.00	PASS
	1 908.5 MHz	1 910.0 MHz	-37.01	-13.00	PASS
6 RB	1 851.5 MHz	1 850.0 MHz	-31.97	-13.00	PASS
	1 908.5 MHz	1 910.0 MHz	-33.26	-13.00	PASS
LTE Band 2 16QAM					
1 RB	1 851.5 MHz	1 850.0 MHz	-38.61	-13.00	PASS
	1 908.5 MHz	1 910.0 MHz	-38.72	-13.00	PASS
6 RB	1 851.5 MHz	1 850.0 MHz	-32.56	-13.00	PASS
	1 908.5 MHz	1 910.0 MHz	-33.36	-13.00	PASS



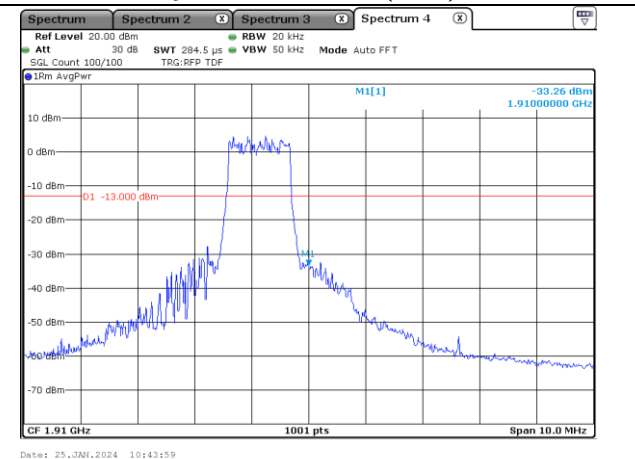
QPSK Low Channel (1 RB)



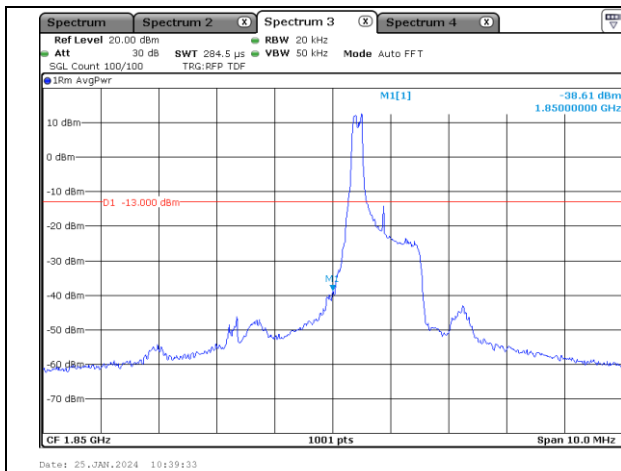
QPSK Low Channel (6 RB)



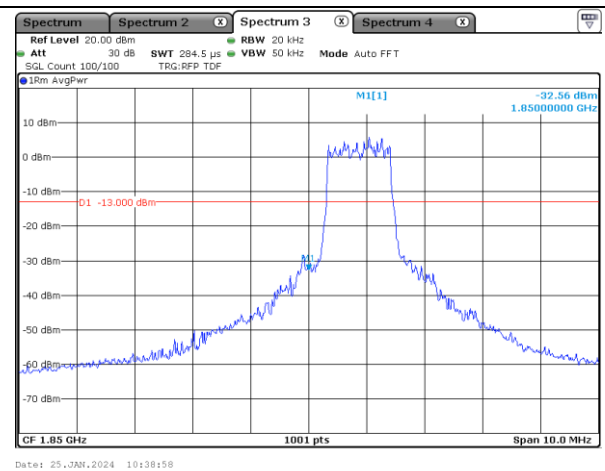
QPSK High Channel (1 RB)



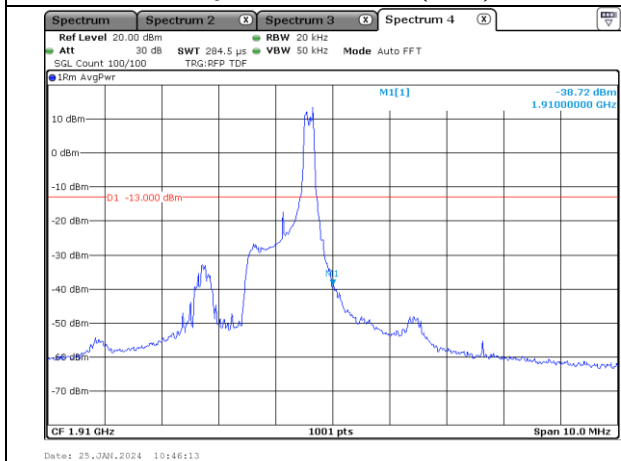
QPSK High Channel (6 RB)



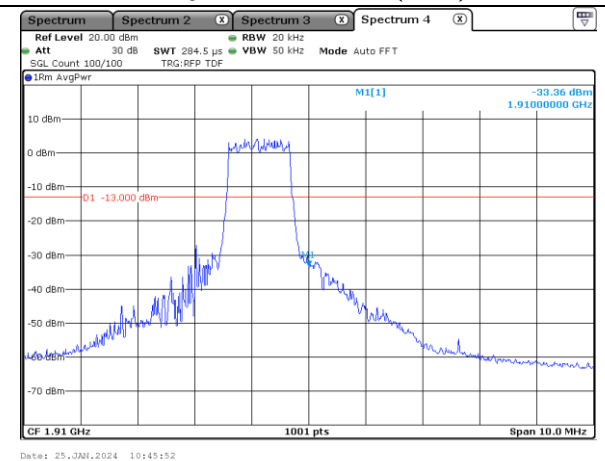
16QAM Low Channel (1 RB)



16QAM Low Channel (6 RB)



16QAM High Channel (1 RB)

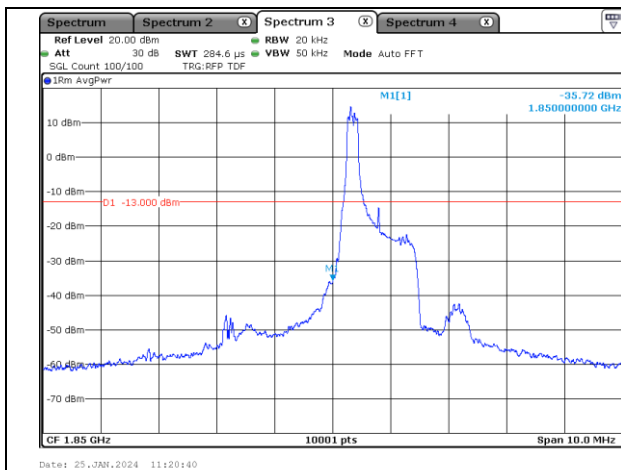


16QAM High Channel (6 RB)

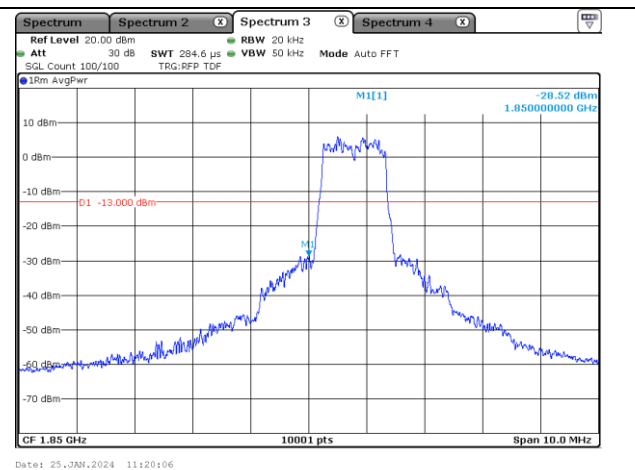
12.8 Test data for Band 2_Bandwidth 5 MHz

-. Test Result : Pass

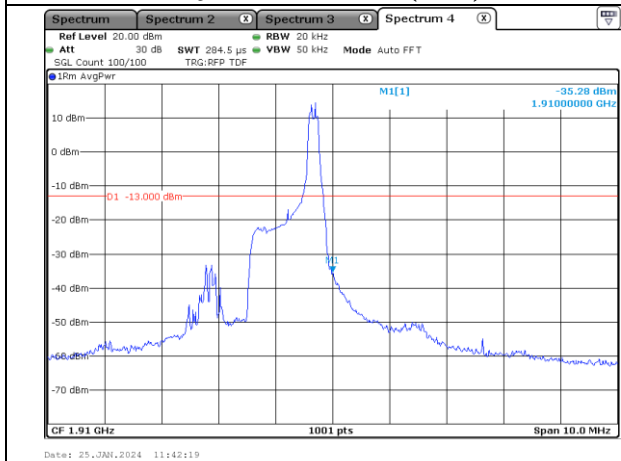
Test Mode	Channel	Edge Frequency	Measured Value (dBm)	Limit (dBm)	Result
LTE Band 2 QPSK					
1 RB	1 852.5 MHz	1 850.0 MHz	-35.72	-13.00	PASS
	1 907.5 MHz	1 910.0 MHz	-35.28	-13.00	PASS
6 RB	1 852.5 MHz	1 850.0 MHz	-28.52	-13.00	PASS
	1 907.5 MHz	1 910.0 MHz	-30.70	-13.00	PASS
LTE Band 2 16QAM					
1 RB	1 852.5 MHz	1 850.0 MHz	-32.06	-13.00	PASS
	1 907.5 MHz	1 910.0 MHz	-34.47	-13.00	PASS
6 RB	1 852.5 MHz	1 850.0 MHz	-29.70	-13.00	PASS
	1 907.5 MHz	1 910.0 MHz	-31.88	-13.00	PASS



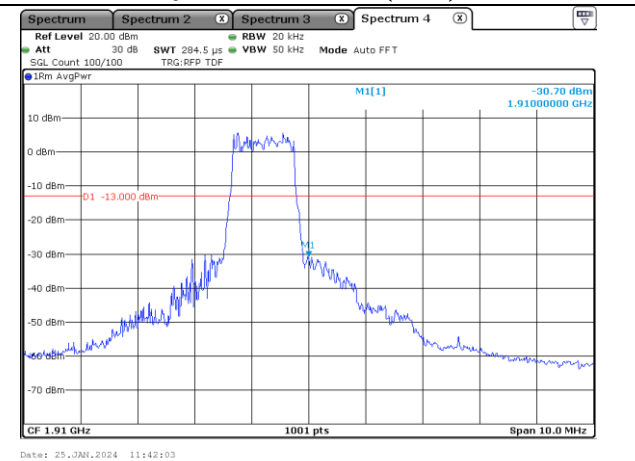
QPSK Low Channel (1 RB)



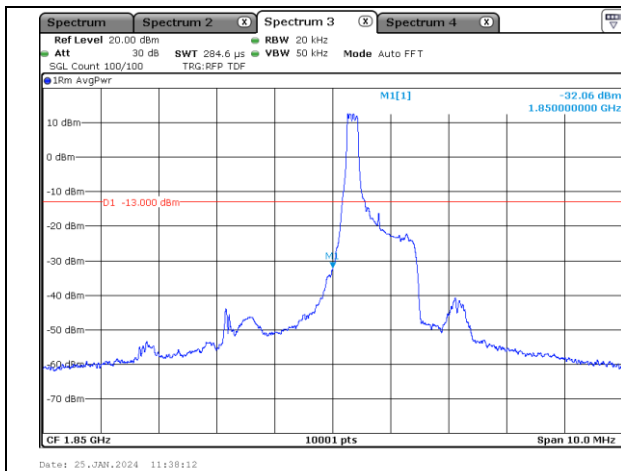
QPSK Low Channel (6 RB)



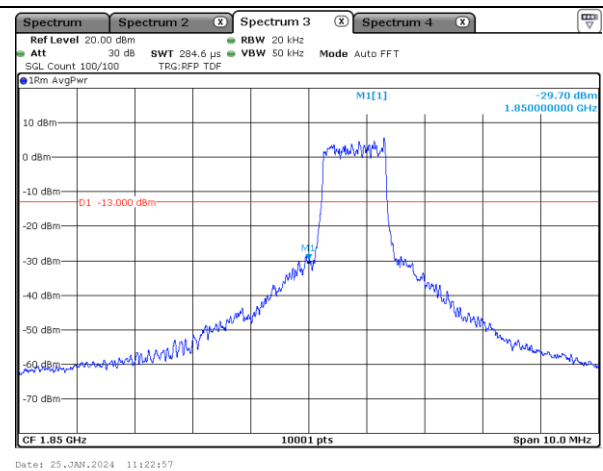
QPSK High Channel (1 RB)



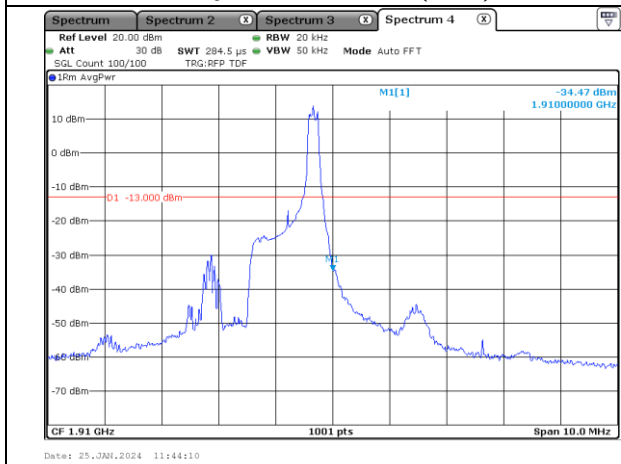
QPSK High Channel (6 RB)



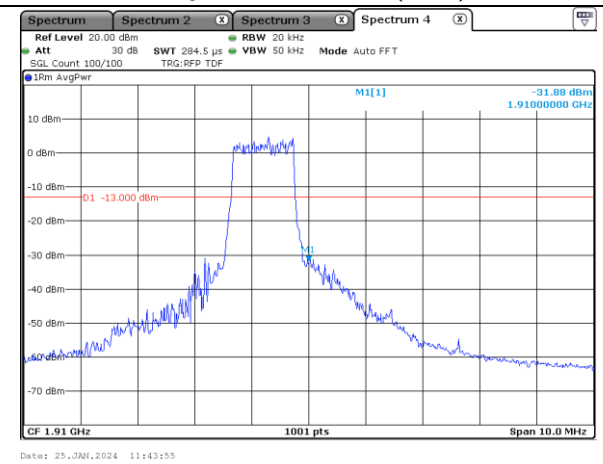
16QAM Low Channel (1 RB)



16QAM Low Channel (6 RB)



16QAM High Channel (1 RB)

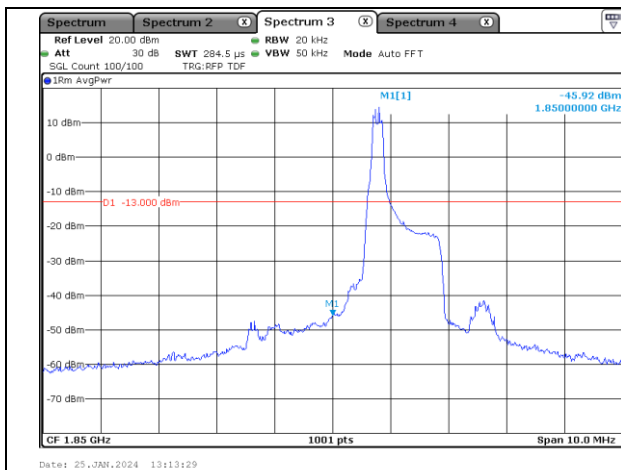


16QAM High Channel (6 RB)

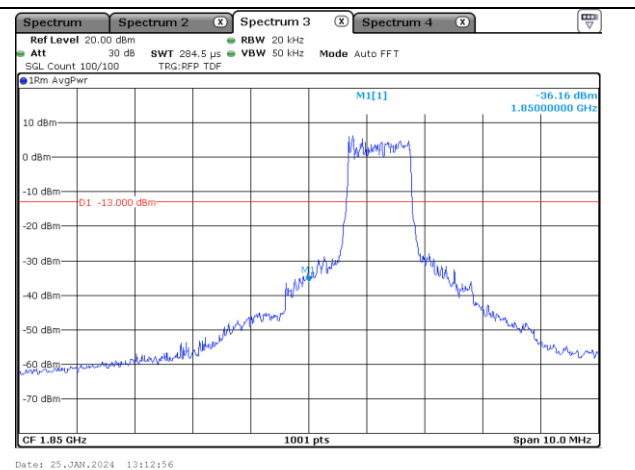
12.9 Test data for Band 2_Bandwidth 10 MHz

-. Test Result : Pass

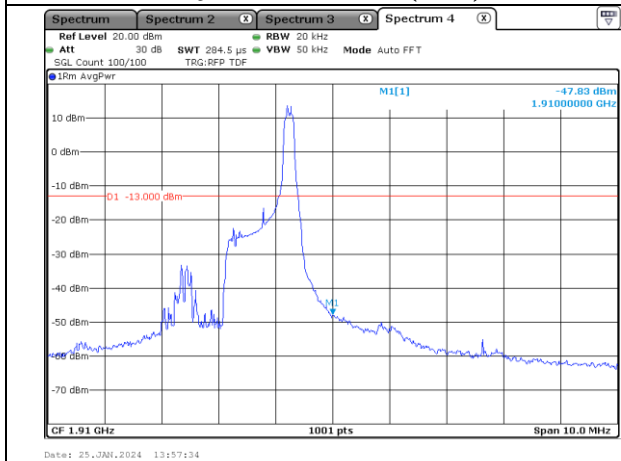
Test Mode	Channel	Edge Frequency	Measured Value (dBm)	Limit (dBm)	Result
LTE Band 2 QPSK					
1 RB	1 855.0 MHz	1 850.0 MHz	-45.92	-13.00	PASS
	1 905.0 MHz	1 910.0 MHz	-47.83	-13.00	PASS
6 RB	1 855.0 MHz	1 850.0 MHz	-36.16	-13.00	PASS
	1 905.0 MHz	1 910.0 MHz	-36.19	-13.00	PASS
LTE Band 2 16QAM					
1 RB	1 855.0 MHz	1 850.0 MHz	-46.40	-13.00	PASS
	1 905.0 MHz	1 910.0 MHz	-46.76	-13.00	PASS
6 RB	1 855.0 MHz	1 850.0 MHz	-35.96	-13.00	PASS
	1 905.0 MHz	1 910.0 MHz	-35.67	-13.00	PASS



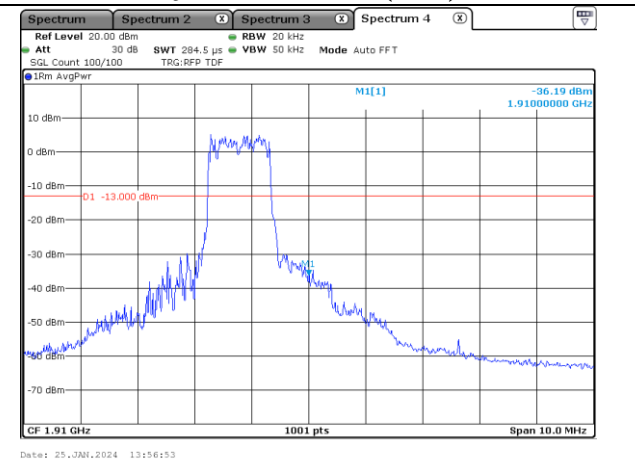
QPSK Low Channel (1 RB)



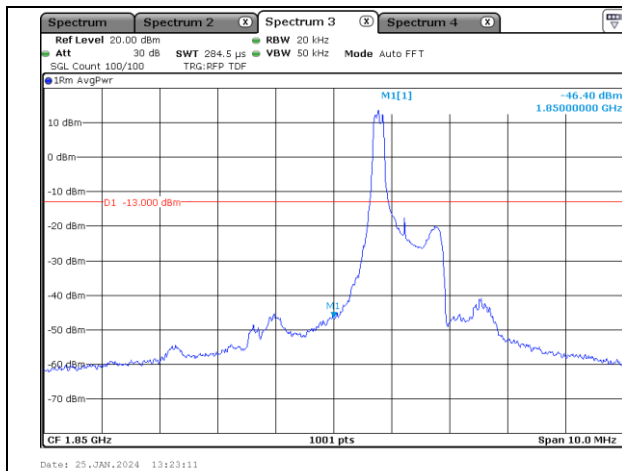
QPSK Low Channel (6 RB)



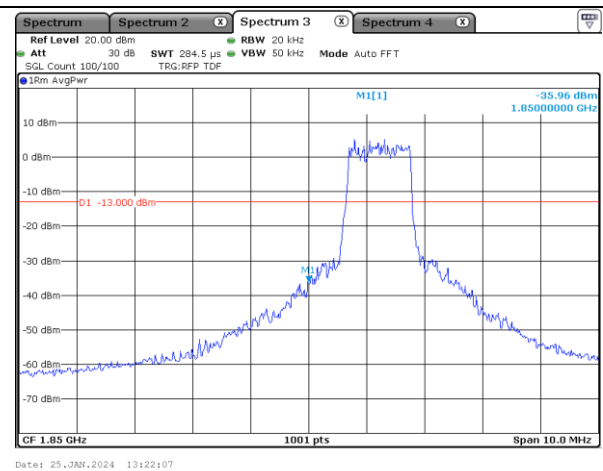
QPSK High Channel (1 RB)



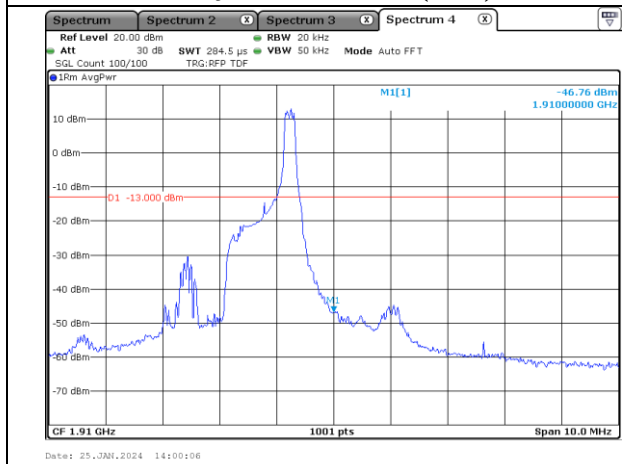
QPSK High Channel (6 RB)



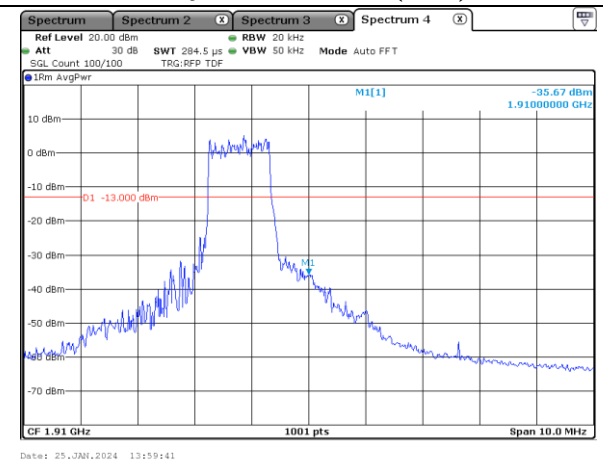
16QAM Low Channel (1 RB)



16QAM Low Channel (6 RB)



16QAM High Channel (1 RB)

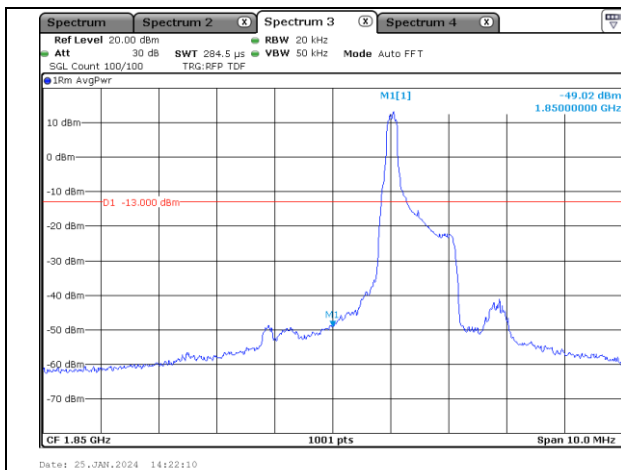


16QAM High Channel (6 RB)

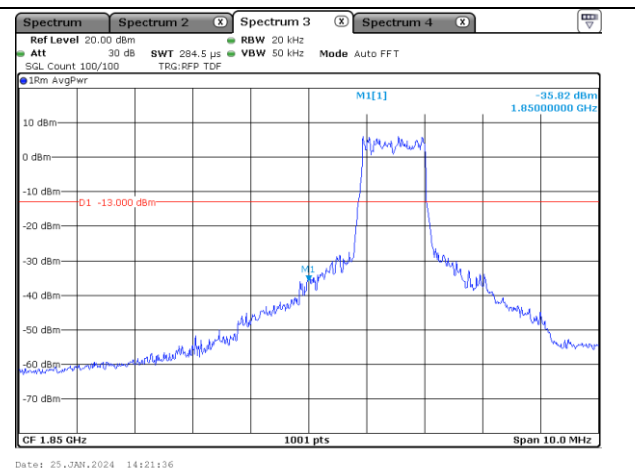
12.10 Test data for Band 2_Bandwidth 15 MHz

-. Test Result : Pass

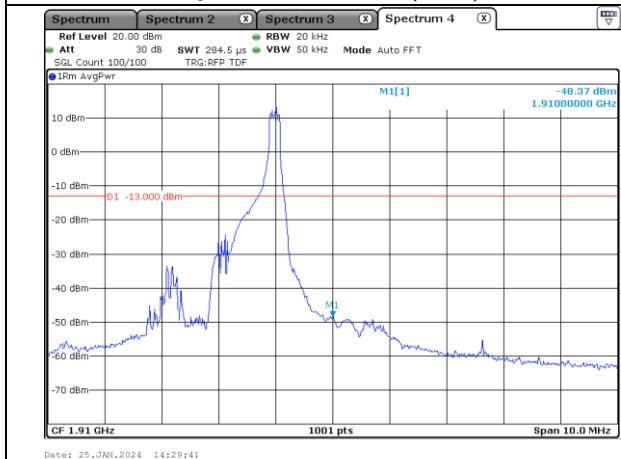
Test Mode	Channel	Edge Frequency	Measured Value (dBm)	Limit (dBm)	Result
LTE Band 2 QPSK					
1 RB	1 857.5 MHz	1 850.0 MHz	-49.02	-13.00	PASS
	1 902.5 MHz	1 910.0 MHz	-48.37	-13.00	PASS
6 RB	1 857.5 MHz	1 850.0 MHz	-35.82	-13.00	PASS
	1 902.5 MHz	1 910.0 MHz	-38.12	-13.00	PASS
LTE Band 2 16QAM					
1 RB	1 857.5 MHz	1 850.0 MHz	-49.60	-13.00	PASS
	1 902.5 MHz	1 910.0 MHz	-49.86	-13.00	PASS
6 RB	1 857.5 MHz	1 850.0 MHz	-34.89	-13.00	PASS
	1 902.5 MHz	1 910.0 MHz	-36.12	-13.00	PASS



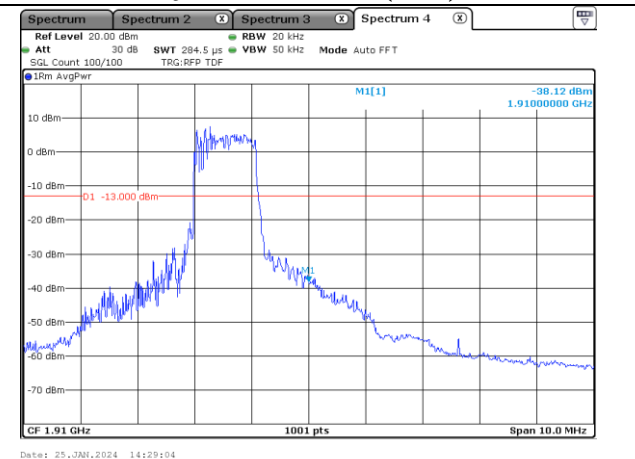
QPSK Low Channel (1 RB)



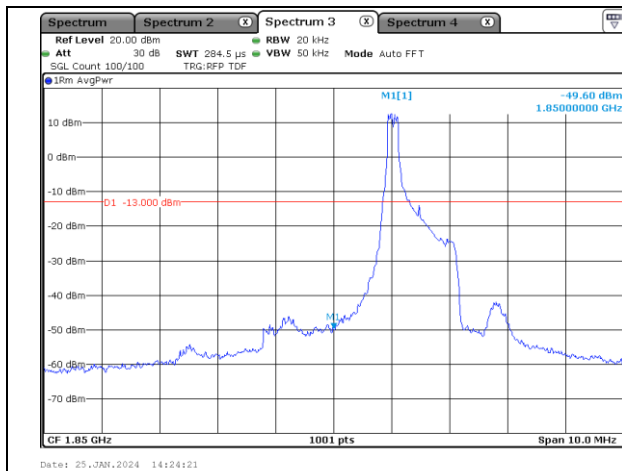
QPSK Low Channel (6 RB)



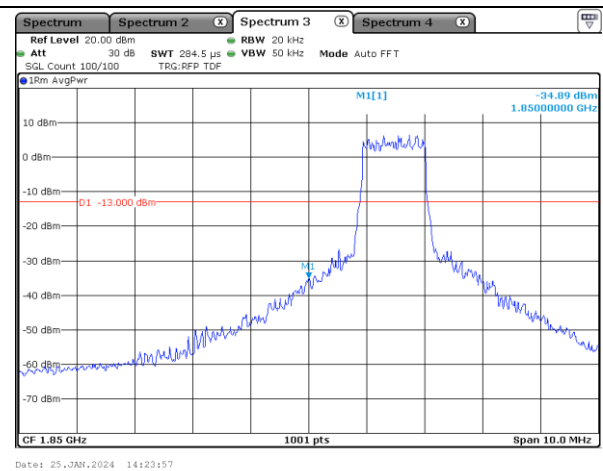
QPSK High Channel (1 RB)



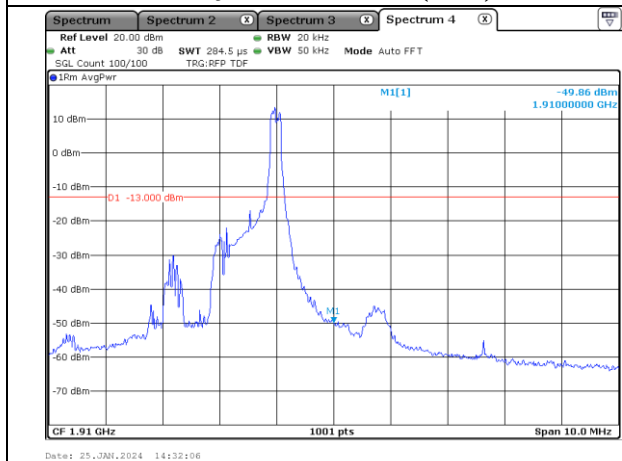
QPSK High Channel (6 RB)



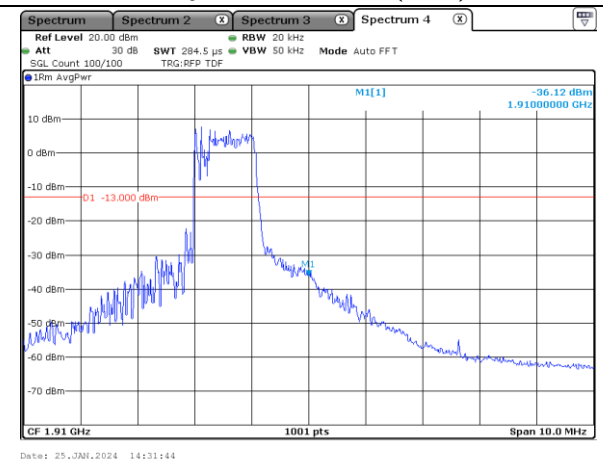
16QAM Low Channel (1 RB)



16QAM Low Channel (6 RB)



16QAM High Channel (1 RB)

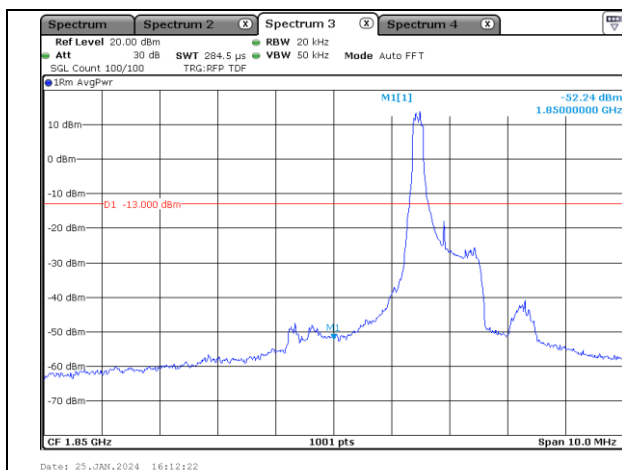


16QAM High Channel (6 RB)

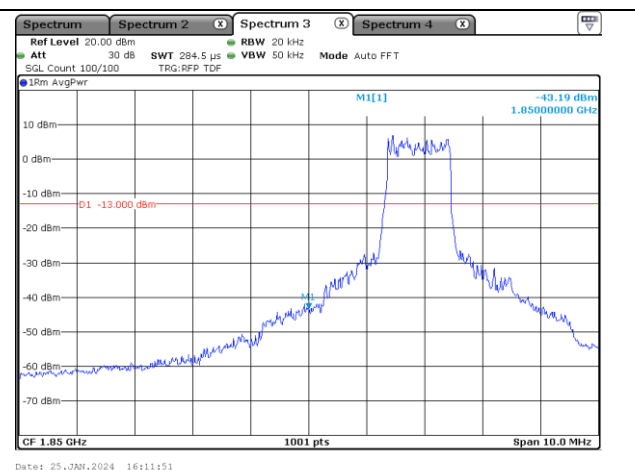
12.11 Test data for Band 2_Bandwidth 20 MHz

-. Test Result : Pass

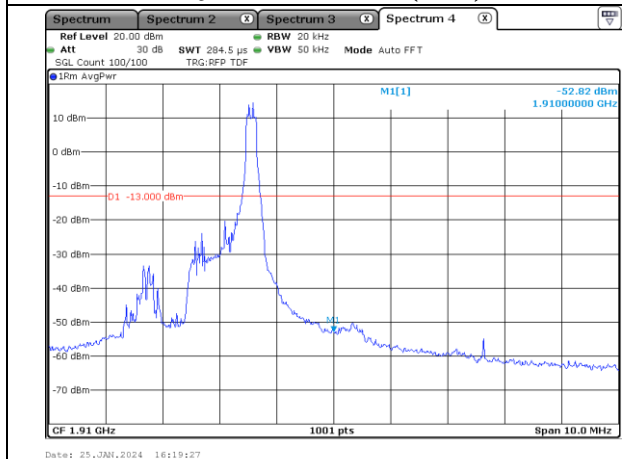
Test Mode	Channel	Edge Frequency	Measured Value (dBm)	Limit (dBm)	Result
LTE Band 2 QPSK					
1 RB	1 860.0 MHz	1 850.0 MHz	-52.24	-13.00	PASS
	1 900.0 MHz	1 910.0 MHz	-52.82	-13.00	PASS
6 RB	1 860.0 MHz	1 850.0 MHz	-43.19	-13.00	PASS
	1 900.0 MHz	1 910.0 MHz	-44.81	-13.00	PASS
LTE Band 2 16QAM					
1 RB	1 860.0 MHz	1 850.0 MHz	-51.47	-13.00	PASS
	1 900.0 MHz	1 910.0 MHz	-52.66	-13.00	PASS
6 RB	1 860.0 MHz	1 850.0 MHz	-43.86	-13.00	PASS
	1 900.0 MHz	1 910.0 MHz	-42.40	-13.00	PASS



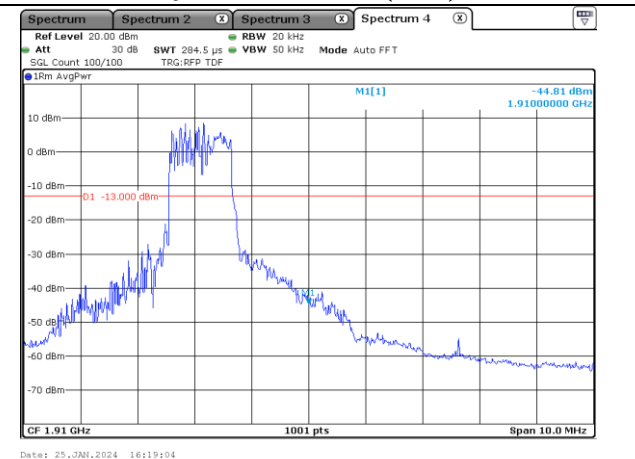
QPSK Low Channel (1 RB)



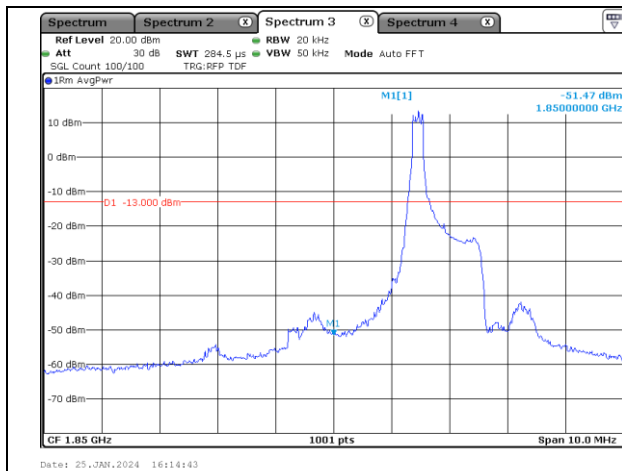
QPSK Low Channel (6 RB)



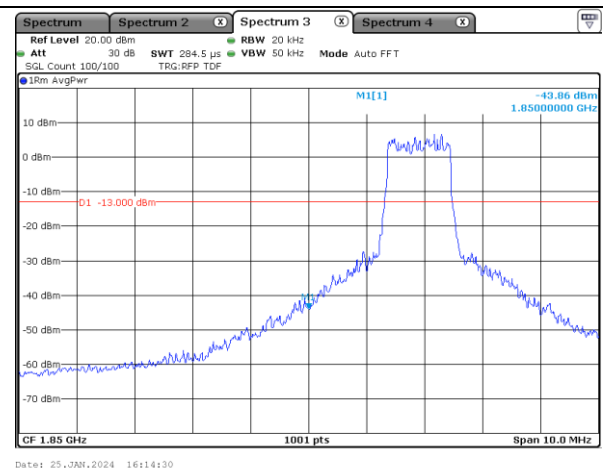
QPSK High Channel (1 RB)



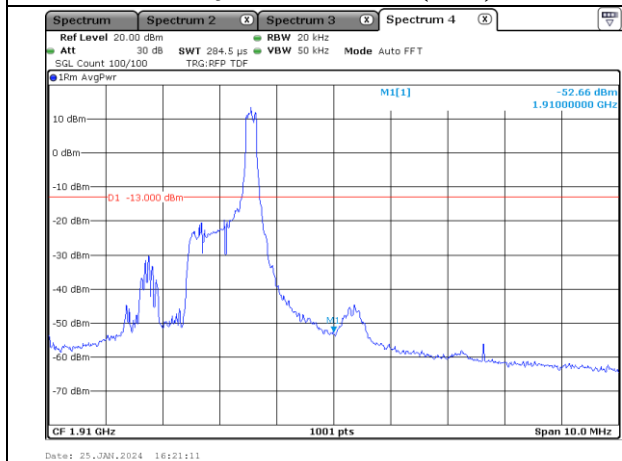
QPSK High Channel (6 RB)



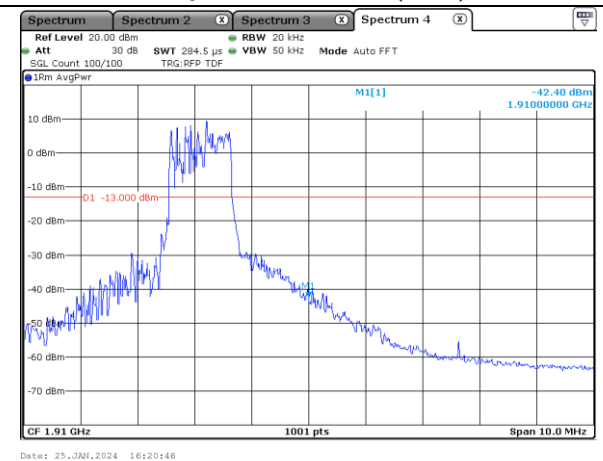
16QAM Low Channel (1 RB)



16QAM Low Channel (6 RB)



16QAM High Channel (1 RB)



16QAM High Channel (6 RB)