

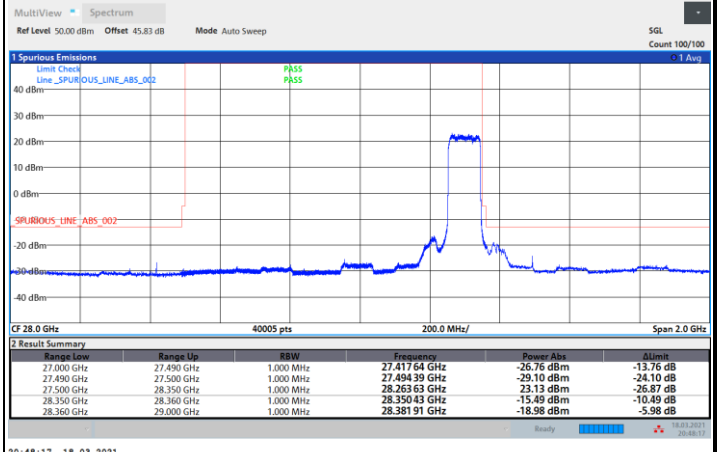
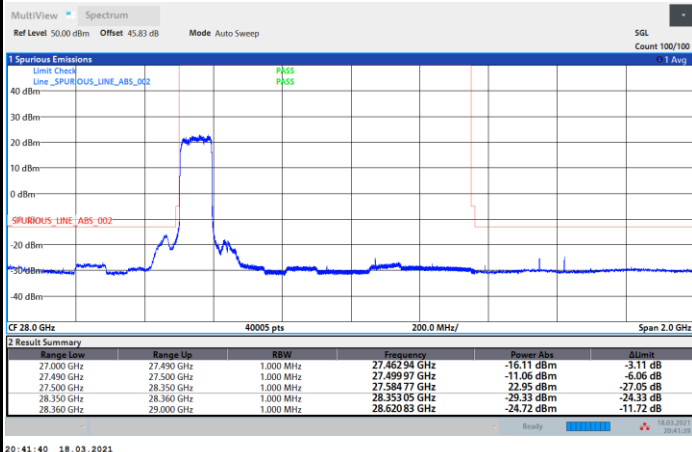


DFT-s-OFDM

NR Band n261 / 100MHz / BPSK

Lowest Band Edge / Full RB (64/0)

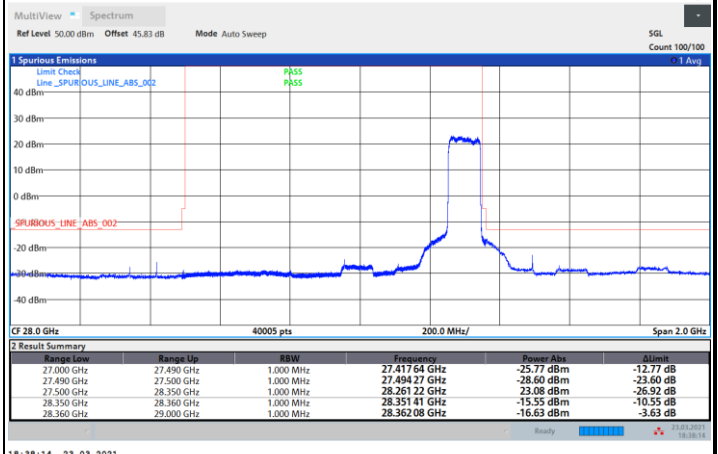
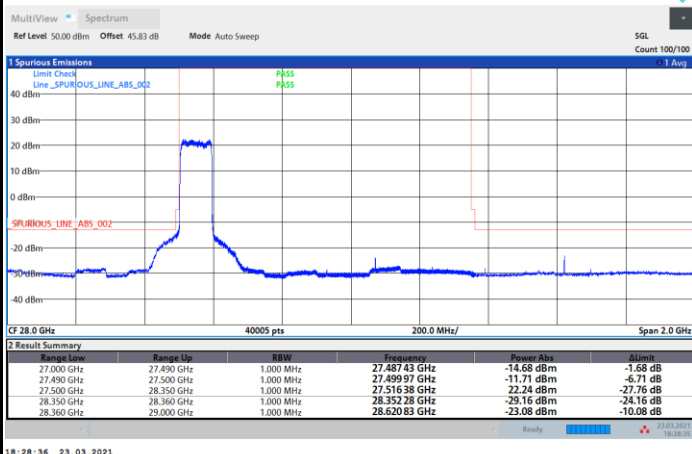
Lowest Band Edge / Full RB (64/0)



NR Band n261 / 100MHz / QPSK

Lowest Band Edge / Full RB (64/0)

Lowest Band Edge / Full RB (64/0)





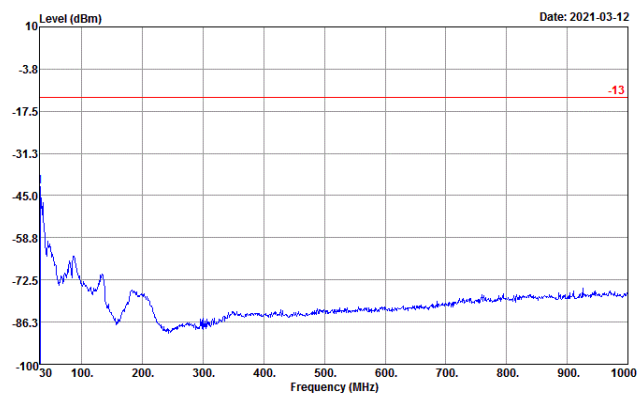
Spurious Emission

There is no significant spurious emission signal found for frequency started from 30MHz up to 18GHz.

Only the noise floor is reported.

NR Band n261 (30MHz-1GHz)

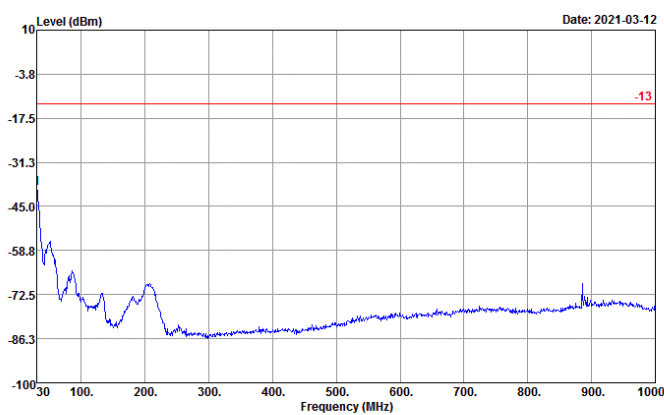
Horizontal



Site : 03CH10-HY
Condition : -13 EIRP_WO HORIZONTAL
Project : 130414
: n261 4Module ICC

Freq	Level	Over	Limit
MHz	dBm	dB	dBm
1	30.97	-42.13	-29.13 -13.00

Vertical



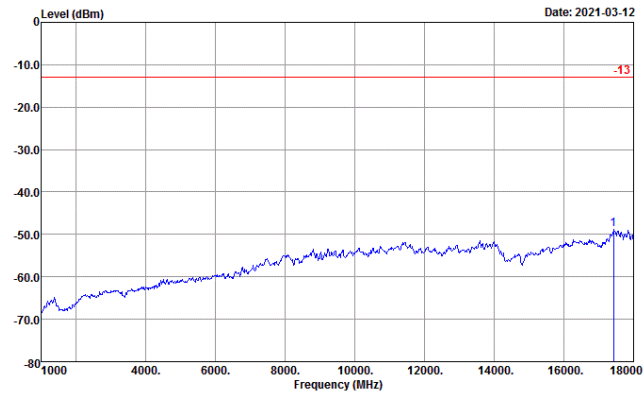
Site : 03CH10-HY
Condition : -13 EIRP_WO VERTICAL
Project : 130414
: n261 4Module ICC

Freq	Level	Over	Limit
MHz	dBm	dB	dBm
1	30.00	-39.30	-26.30 -13.00



NR Band n261 (1GHz-18GHz)

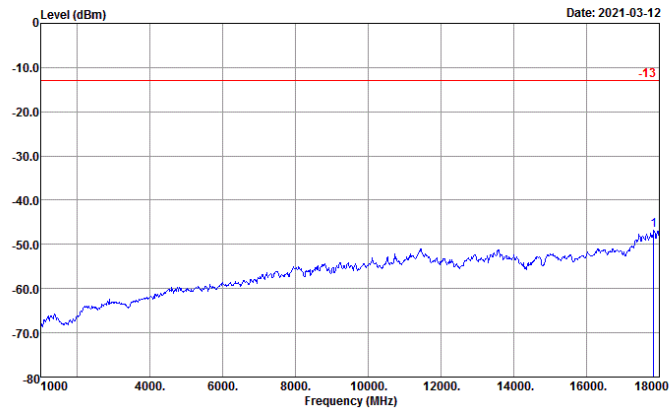
Horizontal



Site : 03CH10-HY
Condition : -13 EIRP_WO HORIZONTAL
Project : 130414

Freq	Level	Over Limit	
		Limit	Line
MHz	dBm	dB	dBm
1 17422.00	-48.73	-35.73	-13.00

Vertical



Site : 03CH10-HY
Condition : -13 EIRP_WO VERTICAL
Project : 130414

Freq	Level	Over Limit	
		Limit	Line
MHz	dBm	dB	dBm
1 17847.00	-46.81	-33.81	-13.00



Spurious emission between 18GHz to 40GHz worst case plot is reported as following.

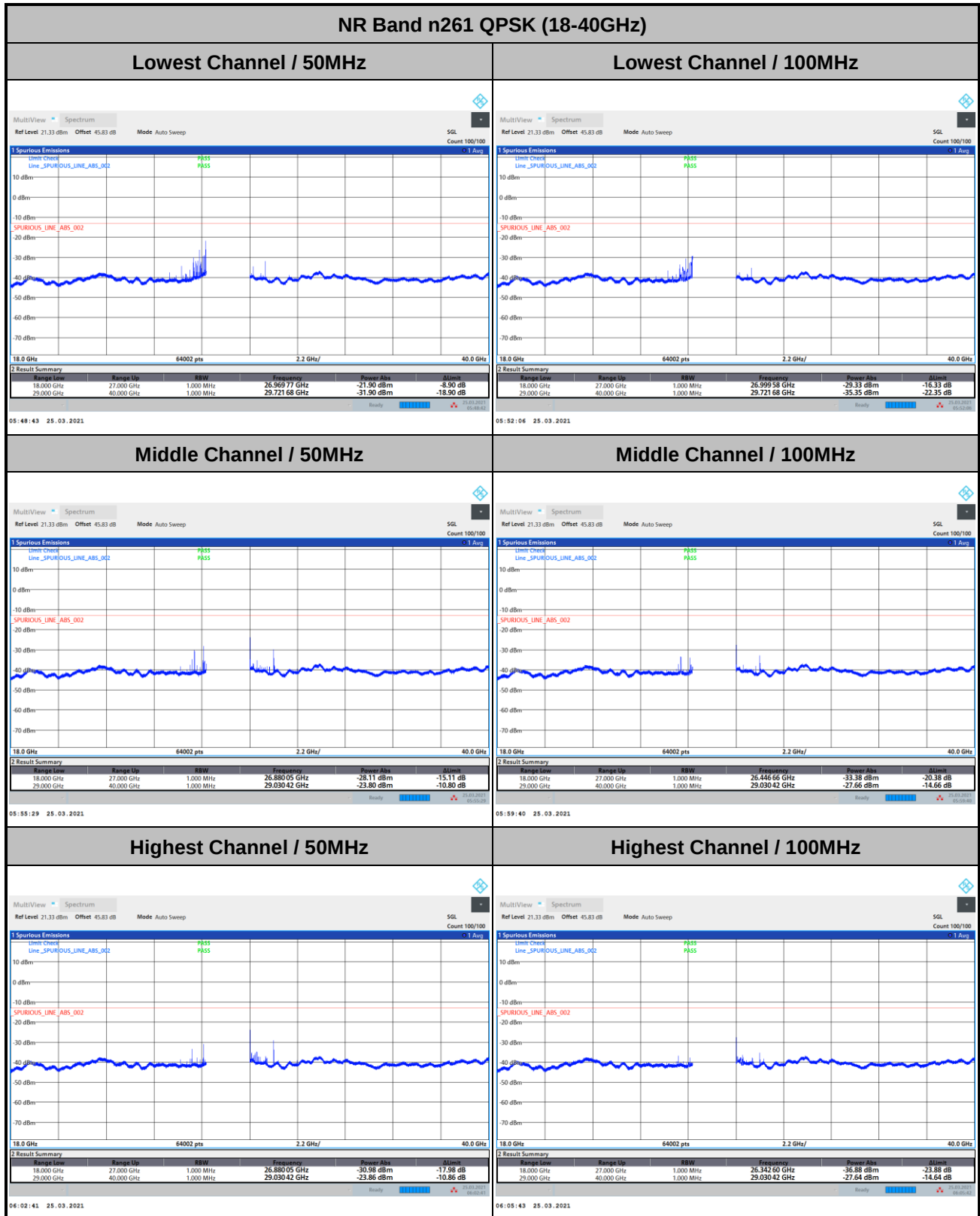
DFT-s-OFDM



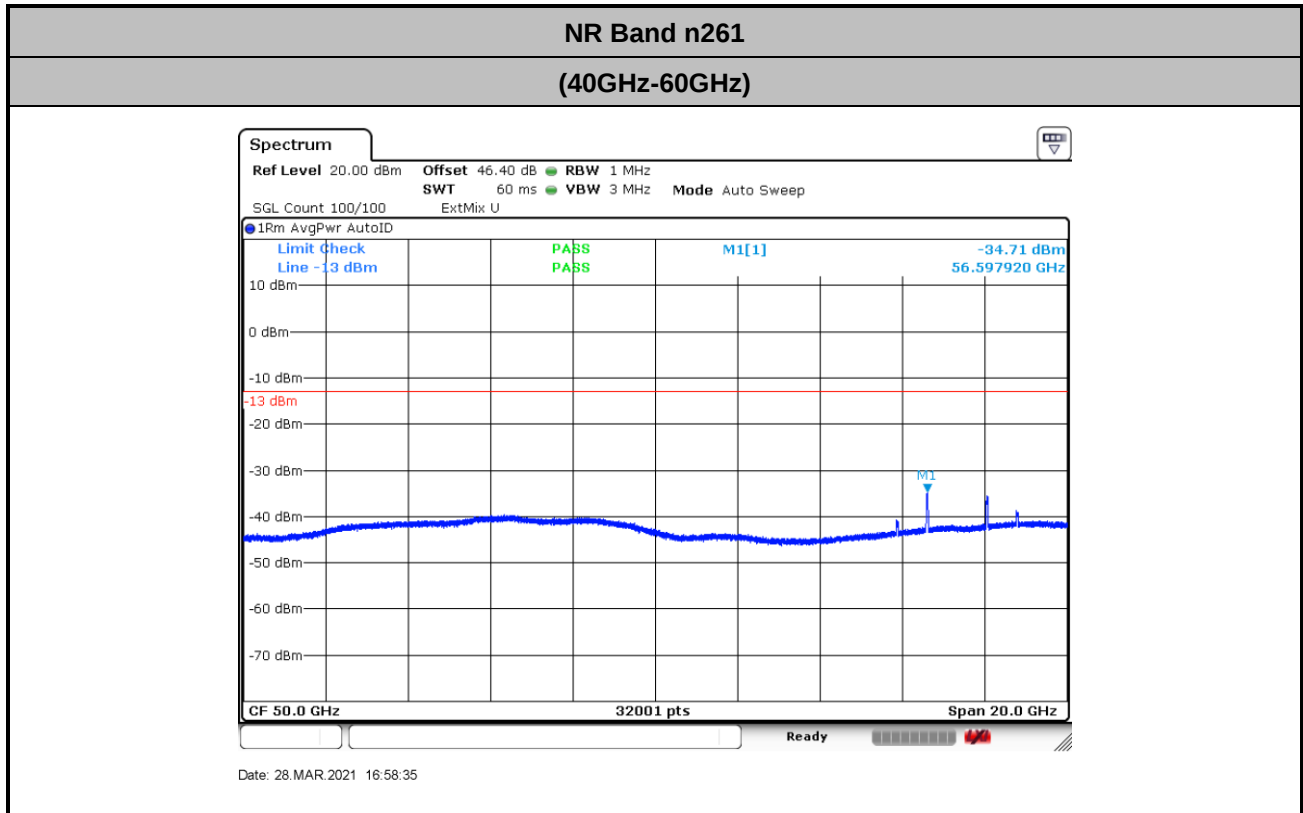
Remark: In band and out of band frequencies are omitted.



CP-OFDM



Remark: In band and out of band frequencies are omitted.

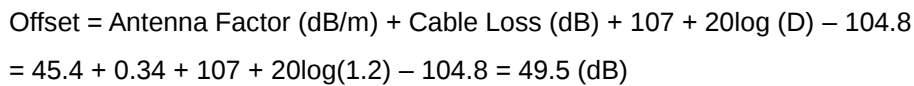


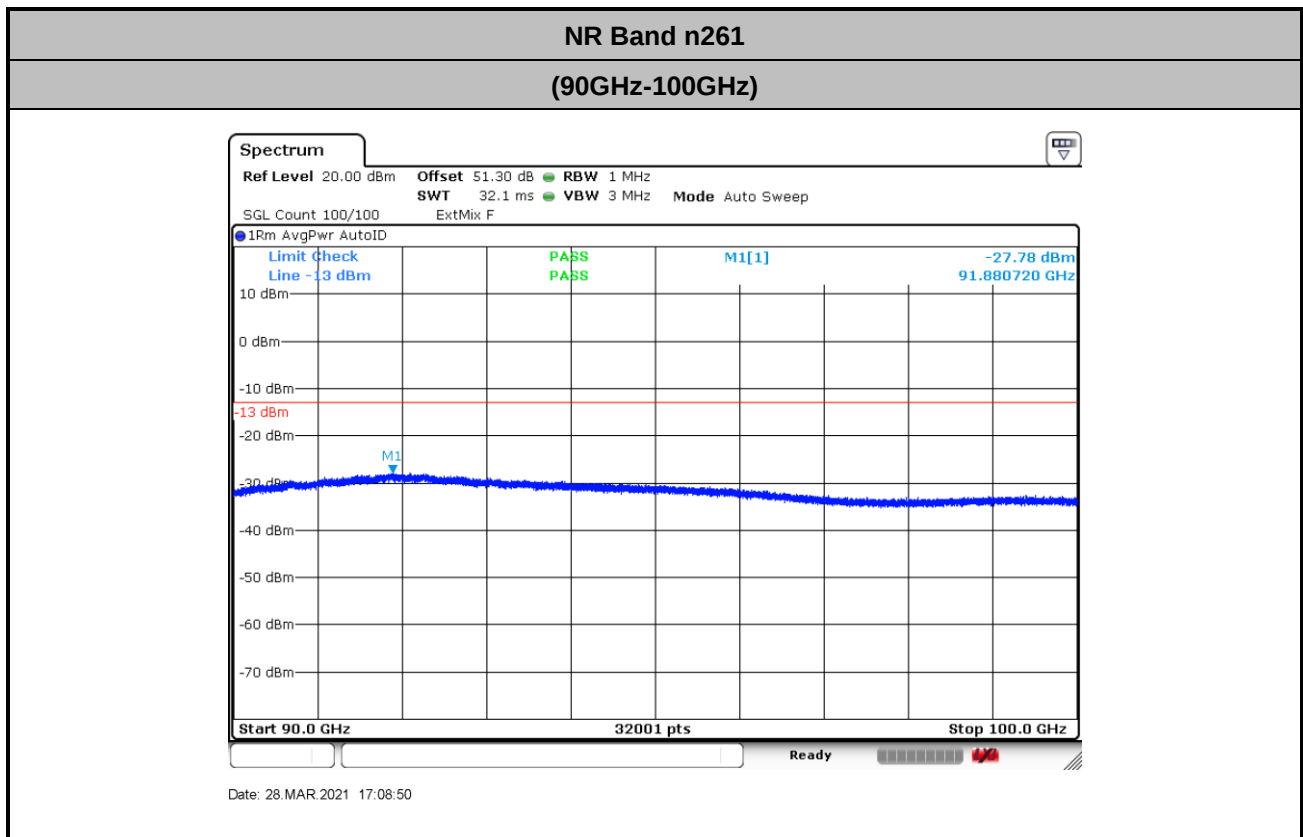
Offset = Antenna Factor (dB/m) + Cable Loss (dB) + 107 + 20log (D) – 104.8

= 42.3 + 0.34 + 107 + 20log(1.2) – 104.8 = 46.4 (dB)



(60GHz-90GHz)





Offset = Antenna Factor (dB/m) + Cable Loss (dB) + 107 + 20log (D) – 104.8
= 47.2 + 0.34 + 107 + 20log(1.2) – 104.8 = 51.3 (dB)

**Frequency Stability**

Test Conditions		NR Band n261 / Middle Channel			Limit
Temperature (°C)	Voltage (Volt)	CW tone			Note.
		Frequency (GHz)	Deviation (kHz)	Deviation (ppm)	Result
50	120	27.9248621	136.900	4.902	PASS
40	120	27.9248801	118.900	4.258	
30	120	27.9249001	98.900	3.542	
20(Ref.)	120	27.924999	0.000	0.000	
10	120	27.925034	-35.000	1.253	
0	120	27.9251159	-116.900	4.186	
-10	120	27.9251588	-159.800	5.722	
-20	120	27.9251718	-172.800	6.188	
-30	120	27.9251758	-176.800	6.331	
20	102	27.924983	16.000	0.573	
20	120	27.924991	8.000	0.286	
20	138	27.924978	21.000	0.752	

Note: The frequency fundamental emissions stay within the operation band.

Appendix B.5 Radiated Test: NR Band n261 (Beam ID: 63)

Occupied Bandwidth

Mode	DFT-s-OFDM NR Band n261 : 99%OBW(MHz)	
BW	50MHz	100MHz
Mod.	QPSK	QPSK
Lowest CH	45.27	90.14
Middle CH	45.40	90.40
Highest CH	45.29	90.08

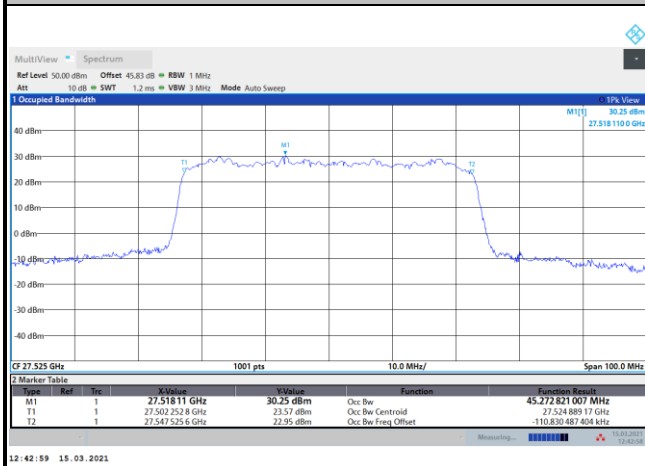
Mode	CP-OFDM NR Band n261 : 99%OBW(MHz)	
BW	50MHz	100MHz
Mod.	QPSK	QPSK
Lowest CH	45.07	92.73
Middle CH	45.06	92.35
Highest CH	45.25	92.55



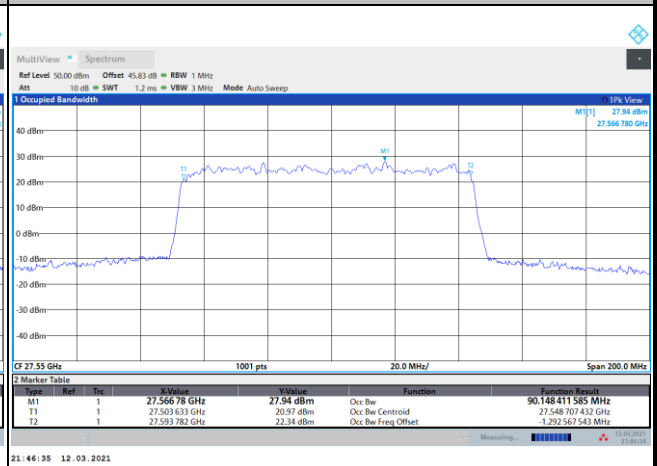
DFT-s-OFDM

NR Band n261

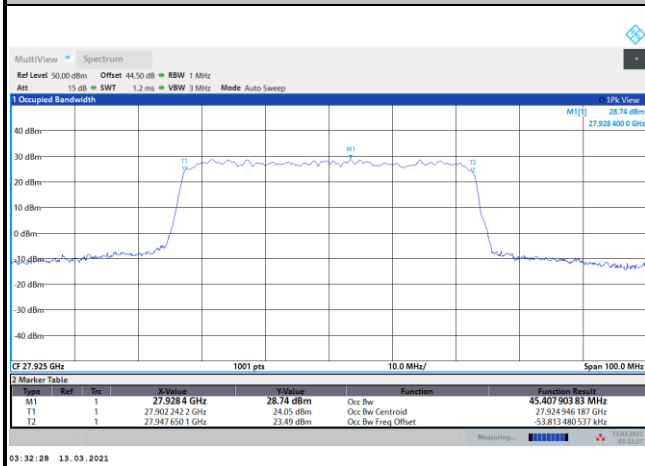
Lowest Channel / 50MHz / QPSK



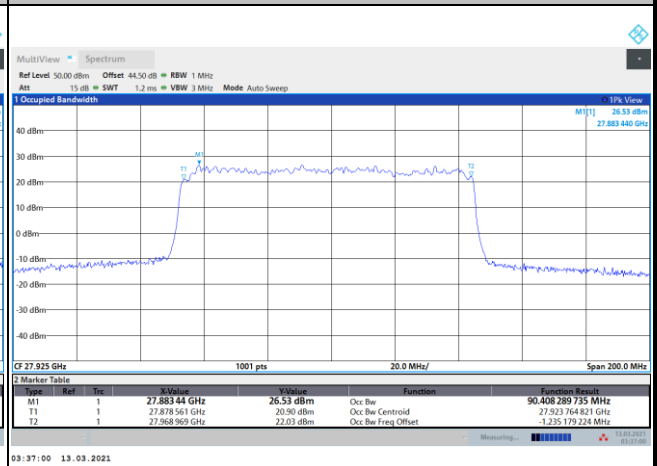
Lowest Channel / 100MHz / QPSK



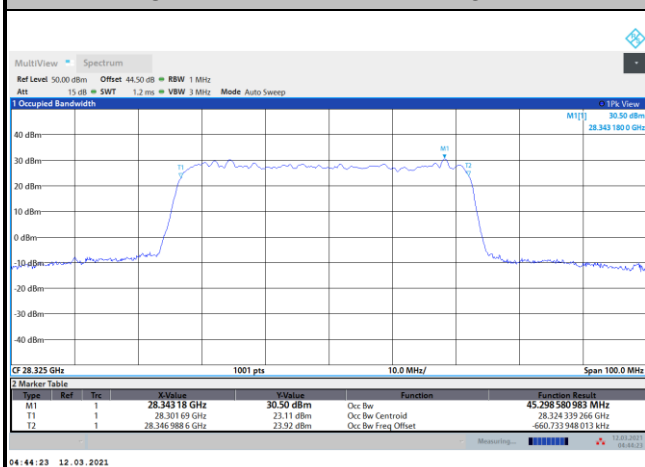
Middle Channel / 50MHz / QPSK



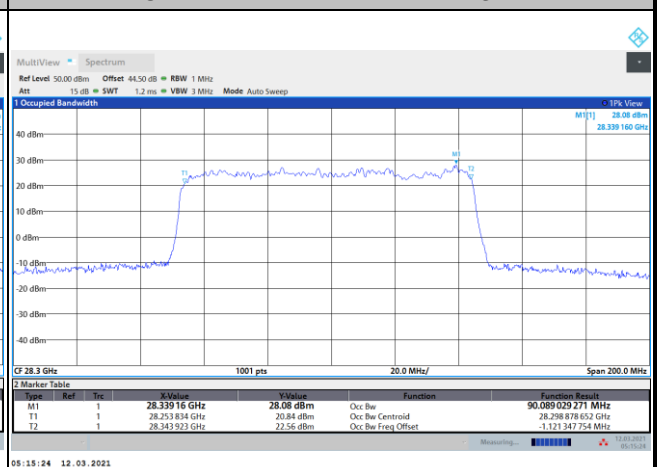
Middle Channel / 100MHz / QPSK



Highest Channel / 50MHz / QPSK



Highest Channel / 100MHz / QPSK

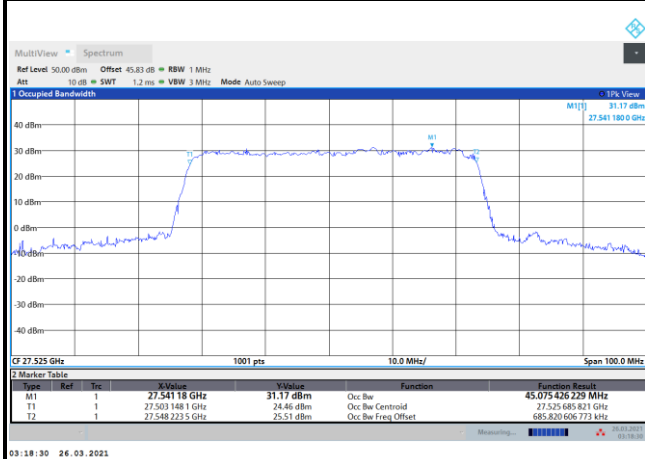




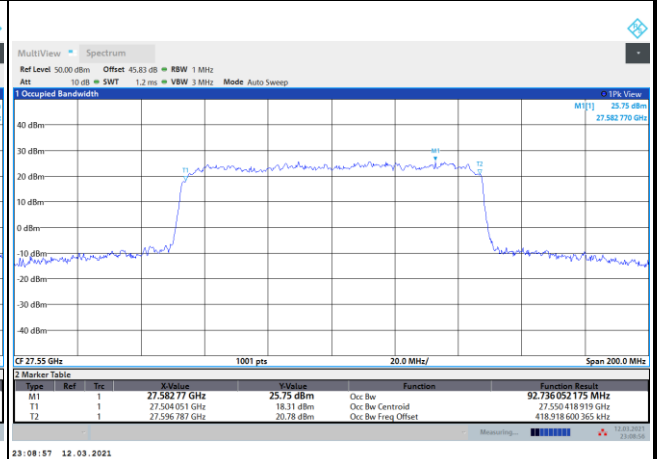
CP-OFDM

NR Band n261

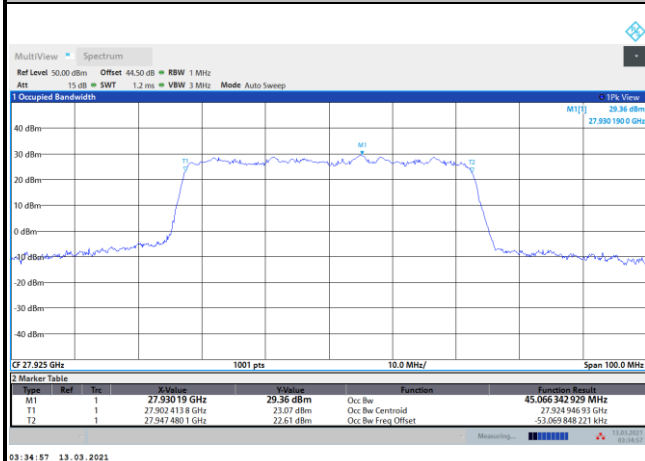
Lowest Channel / 50MHz / QPSK



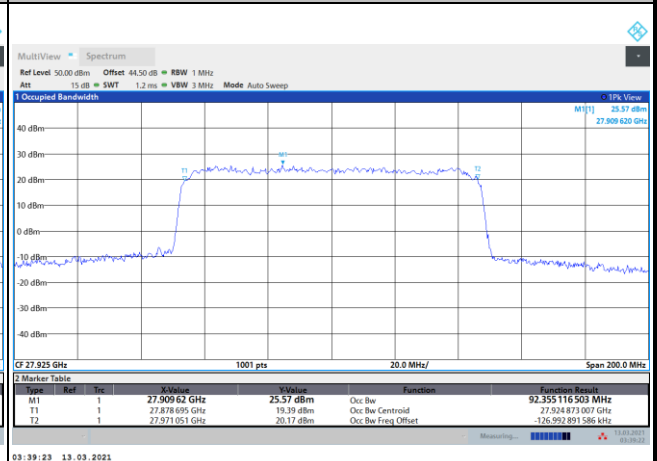
Lowest Channel / 100MHz / QPSK



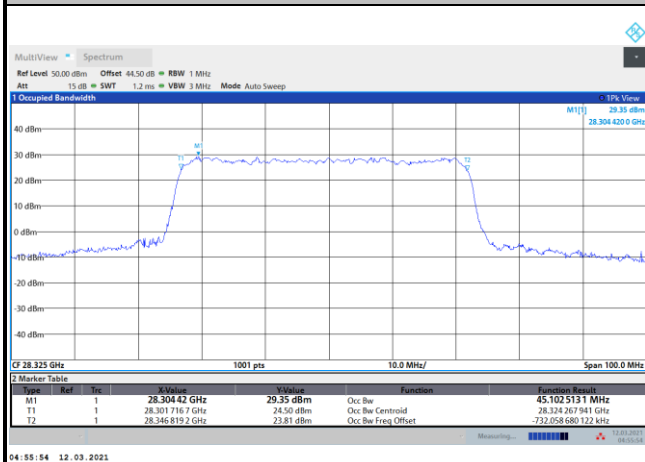
Middle Channel / 50MHz / QPSK



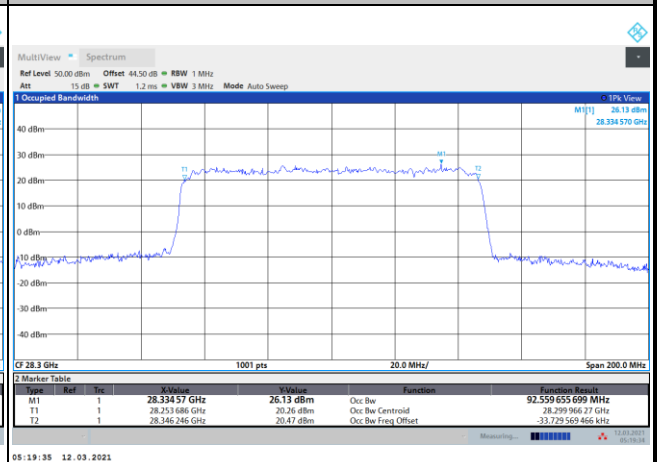
Middle Channel / 100MHz / QPSK



Highest Channel / 50MHz / QPSK



Highest Channel / 100MHz / QPSK



**Radiated Out of Band Emissions****Test Result:**

Mode		DFT-s-OFDM NR Band n261							
Channel	BW (MHz)	Modulation	RB Size/ allocation	0 ~ 10 %OB Limit (dBm/MHz)	0 ~ 10 %OB PSD (dBm/MHz)	Result	>10%OB Limit (dBm/MHz)	>10%OB PSD (dBm/MHz)	Result
Low	50	QPSK	32/0	-5	-11.15	Pass	-13	-14.98	Pass
Low	50	BPSK	32/0	-5	-9.49	Pass	-13	-15.83	Pass
Low	50	QPSK	8/0	-5	-19.10	Pass	-13	-19.11	Pass
Low	50	QPSK	10/11	-5	-14.25	Pass	-13	-17.33	Pass
Low	50	BPSK	10/11	-5	-15.97	Pass	-13	-21.43	Pass
High	50	QPSK	32/0	-5	-12.09	Pass	-13	-14.43	Pass
High	50	BPSK	32/0	-5	-11.04	Pass	-13	-17.92	Pass
High	50	QPSK	8/24	-5	-6.35	Pass	-13	-16.65	Pass
High	50	QPSK	10/11	-5	-17.17	Pass	-13	-18.73	Pass
High	50	BPSK	10/11	-5	-18.57	Pass	-13	-21.88	Pass
Low	100	QPSK	64/0	-5	-14.89	Pass	-13	-17.27	Pass
Low	100	BPSK	64/0	-5	-13.50	Pass	-13	-17.78	Pass
Low	100	QPSK	8/0	-5	-7.38	Pass	-13	-25.31	Pass
Low	100	QPSK	20/22	-5	-17.16	Pass	-13	-19.57	Pass
Low	100	BPSK	20/22	-5	-18.72	Pass	-13	-22.73	Pass
High	100	QPSK	64/0	-5	-18.87	Pass	-13	-18.51	Pass
High	100	BPSK	64/0	-5	-17.08	Pass	-13	-20.04	Pass
High	100	QPSK	8/58	-5	-9.07	Pass	-13	-19.01	Pass
High	100	QPSK	20/22	-5	-19.88	Pass	-13	-20.80	Pass
High	100	BPSK	20/22	-5	-20.83	Pass	-13	-20.76	Pass

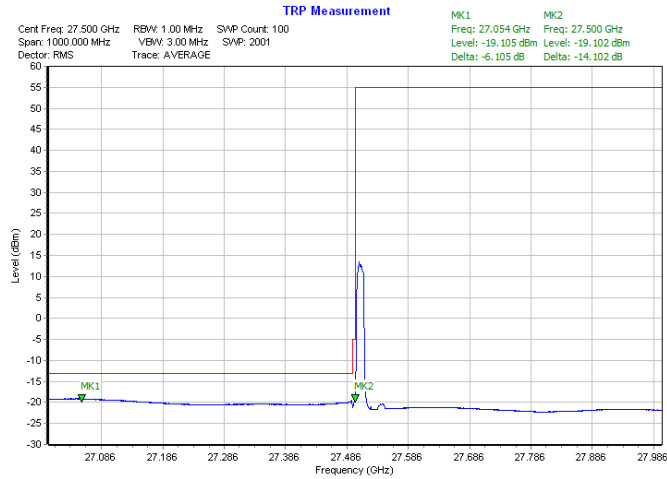
Note: Both DFT-s-OFDM and CP-OFDM waveforms are evaluated, and the DFT-s-OFDM is the worst case.



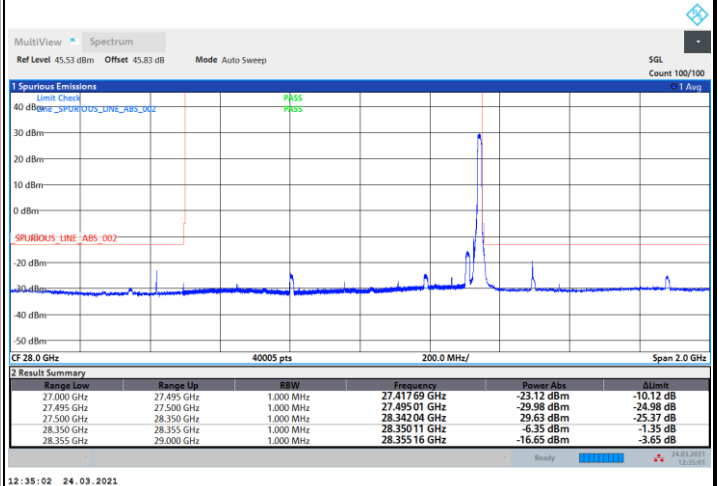
DFT-s-OFDM

NR Band n261 / 50MHz / QPSK

Lowest Band Edge / 8 RB (8/0)

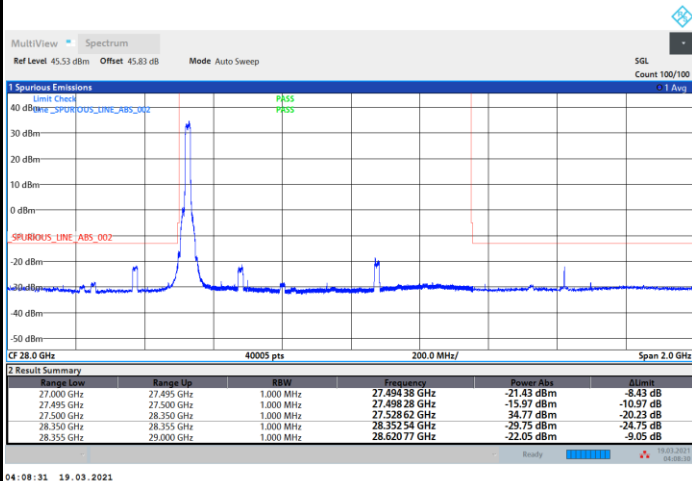


Highest Band Edge / 8 RB (8/24)

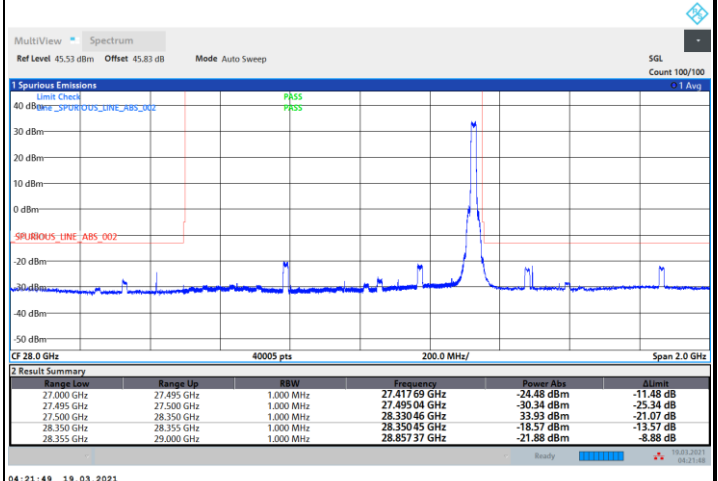


NR Band n261 / 50MHz / BPSK

Lowest Band Edge / Full RB (10/11)



Highest Band Edge / Full RB (10/11)



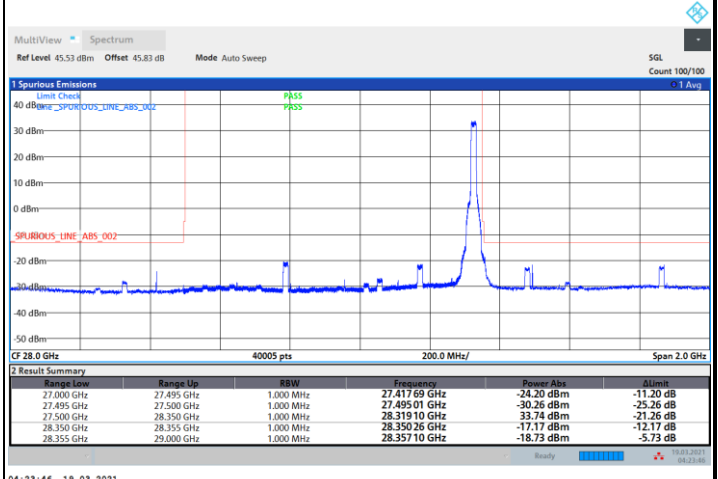
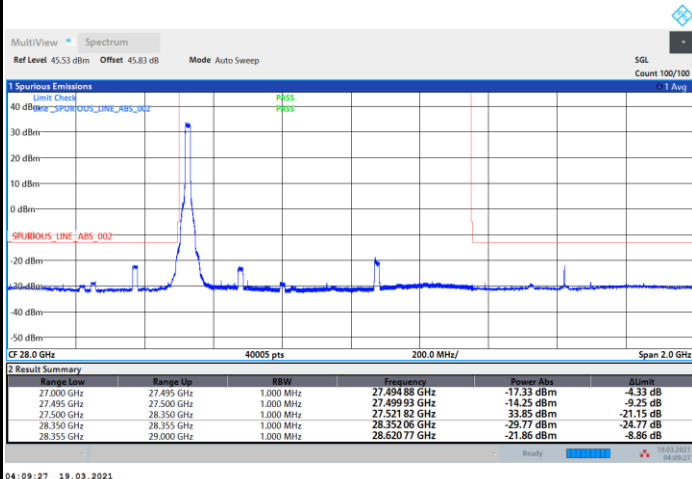


DFT-s-OFDM

NR Band n261 / 50MHz / QPSK

Lowest Band Edge / Full RB (10/11)

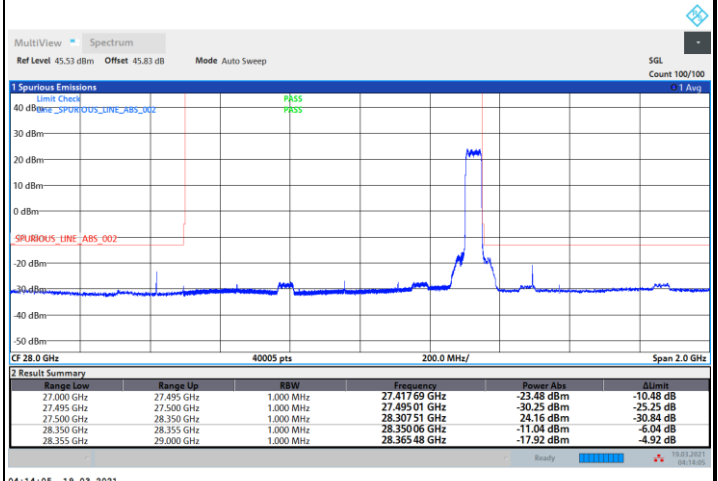
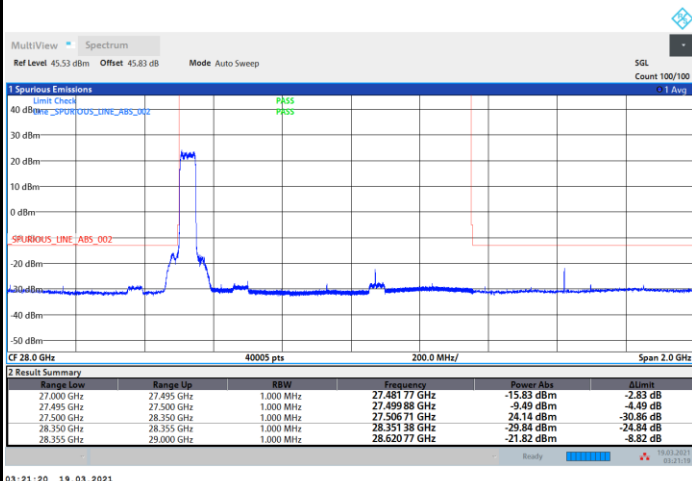
Highest Band Edge / Full RB (10/11)



NR Band n261 / 50MHz / BPSK

Lowest Band Edge / Full RB (32/0)

Highest Band Edge / Full RB (32/0)



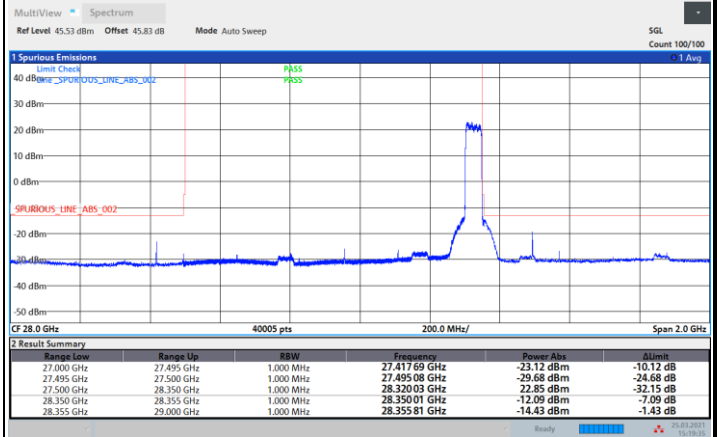
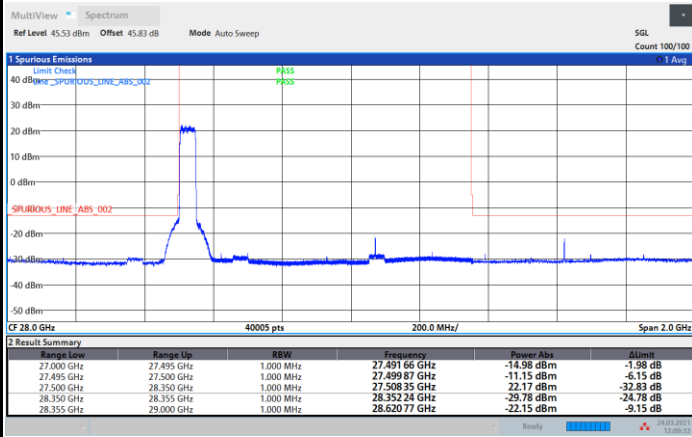


DFT-s-OFDM

NR Band n261 / 50MHz / QPSK

Lowest Band Edge / Full RB (32/0)

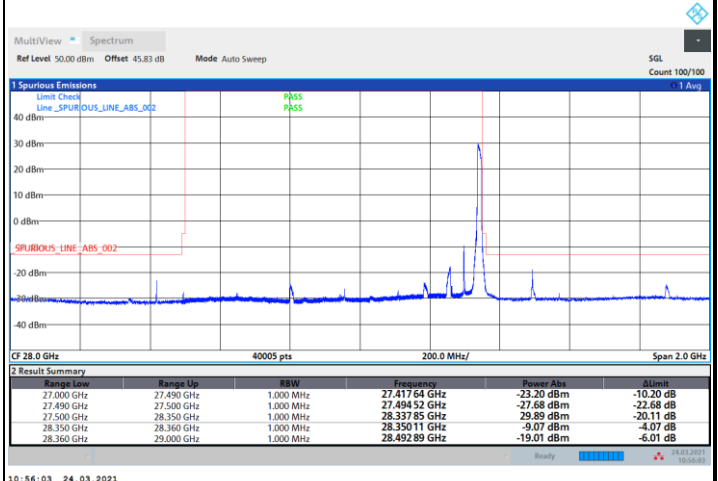
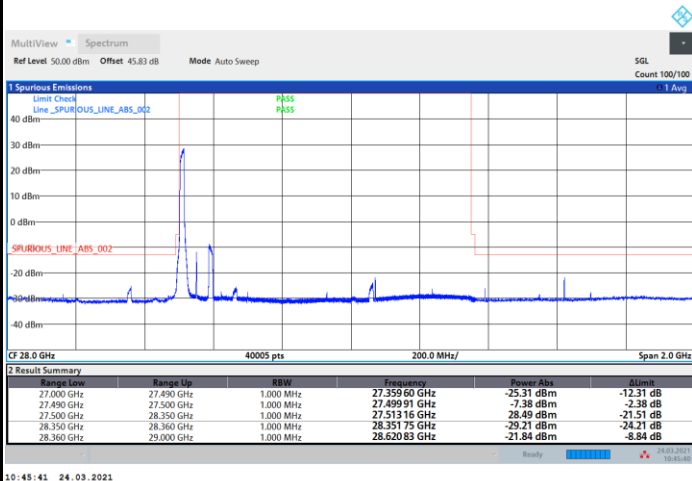
Highest Band Edge / Full RB (32/0)



NR Band n261 / 100MHz / QPSK

Lowest Band Edge / 8 RB (8/0)

Highest Band Edge / 8 RB (8/58)



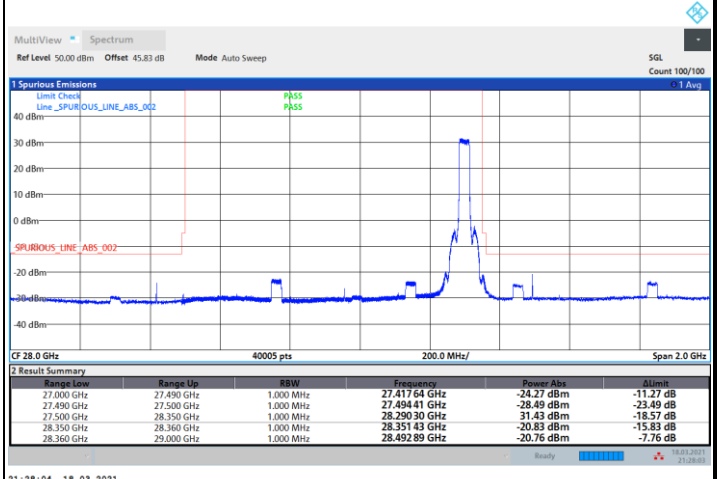
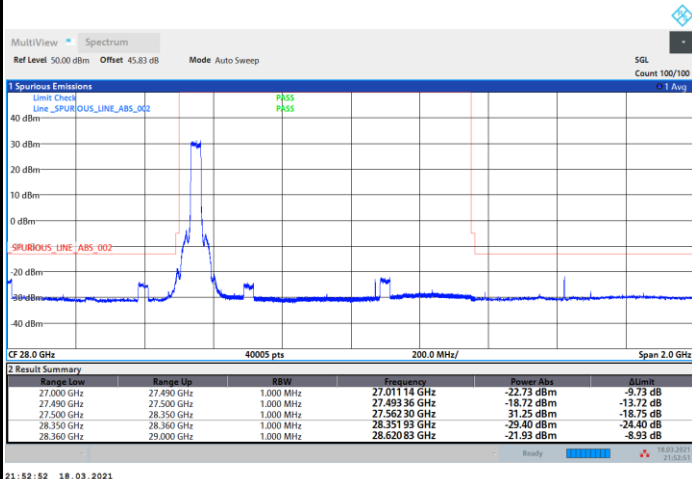


DFT-s-OFDM

NR Band n261 / 100MHz / BPSK

Lowest Band Edge / Full RB (20/22)

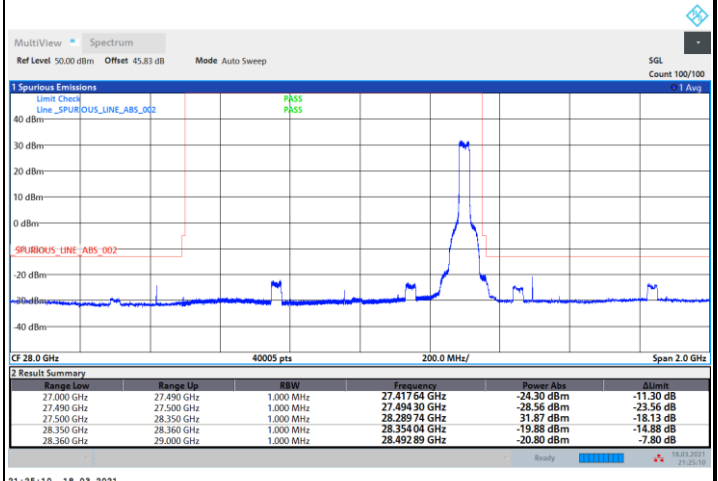
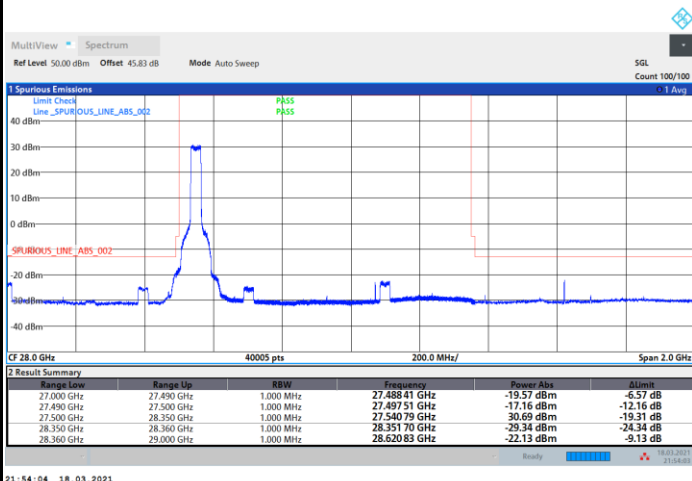
Highest Band Edge / Full RB (20/22)



NR Band n261 / 100MHz / QPSK

Lowest Band Edge / Full RB (20/22)

Highest Band Edge / Full RB (20/22)



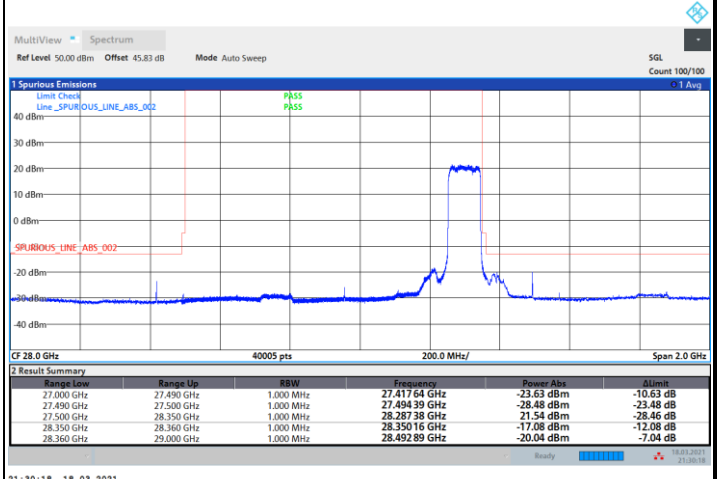
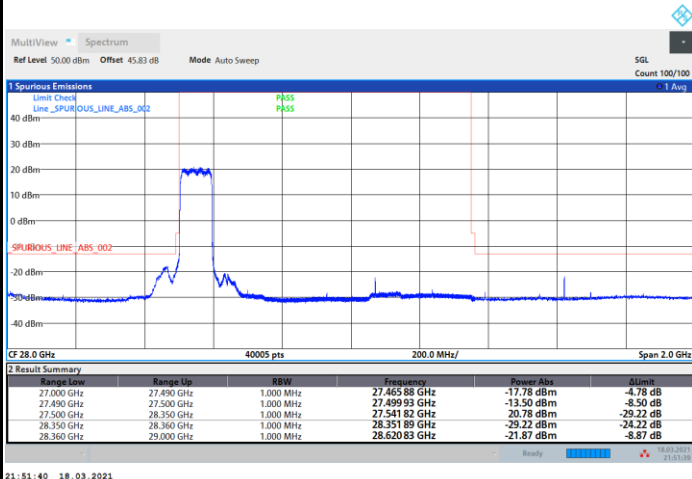


DFT-s-OFDM

NR Band n261 / 100MHz / BPSK

Lowest Band Edge / Full RB (64/0)

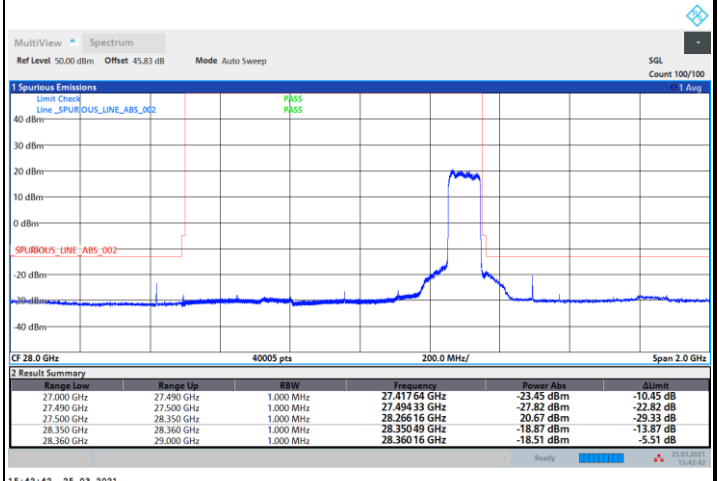
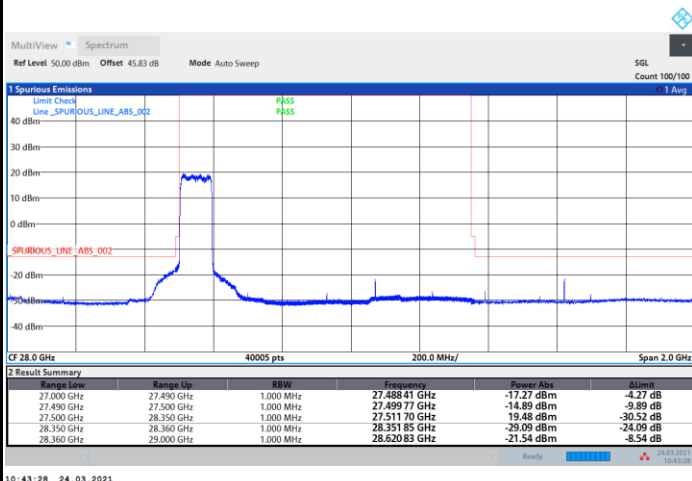
Lowest Band Edge / Full RB (64/0)



NR Band n261 / 100MHz / QPSK

Lowest Band Edge / Full RB (64/0)

Lowest Band Edge / Full RB (64/0)



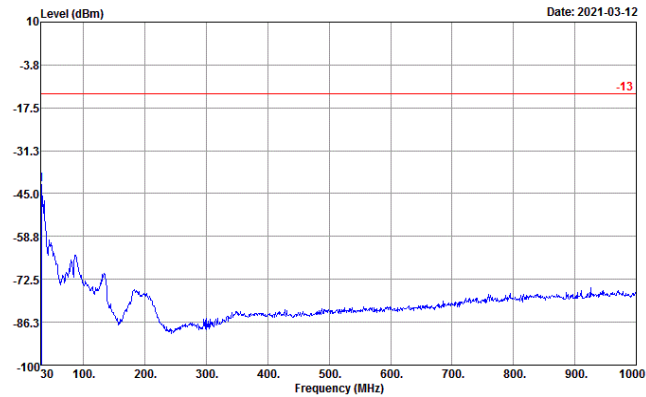
Spurious Emission

There is no significant spurious emission signal found for frequency started from 30MHz up to 18GHz.

Only the noise floor is reported.

NR Band n261 (30MHz-1GHz)

Horizontal

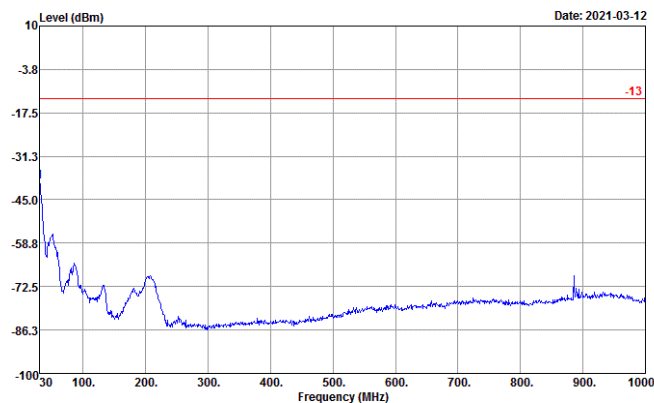


Site : 03CH10-HY
Condition : -13 EIRP_WO HORIZONTAL
Project : 130414
: n261 4Module 1CC

Freq	Level	Over	Limit
MHz	dBm	dB	dBm

1	30.97	-42.13	-29.13 -13.00
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Vertical



Site : 03CH10-HY
Condition : -13 EIRP_WO VERTICAL
Project : 130414
: n261 4Module 1CC

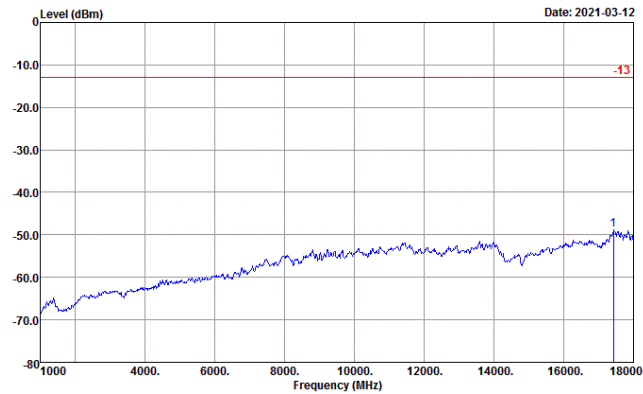
Freq	Level	Over	Limit
MHz	dBm	dB	dBm

1	30.00	-39.30	-26.30 -13.00
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NR Band n261 (1GHz-18GHz)

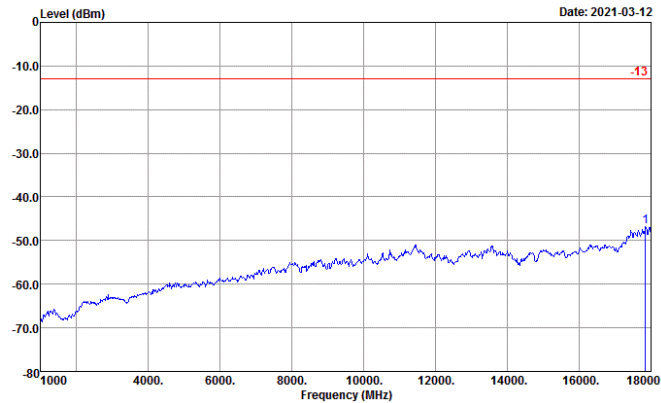
Horizontal



Site : 03CH10-HY
Condition : -13 EIRP_WO HORIZONTAL
Project : 130414
: n261 4 Module 1CC

Freq	Level	Over	Limit
MHz	dBm	Limit	Line
		dB	dBm
1	17422.00	-48.73	-35.73 -13.00

Vertical

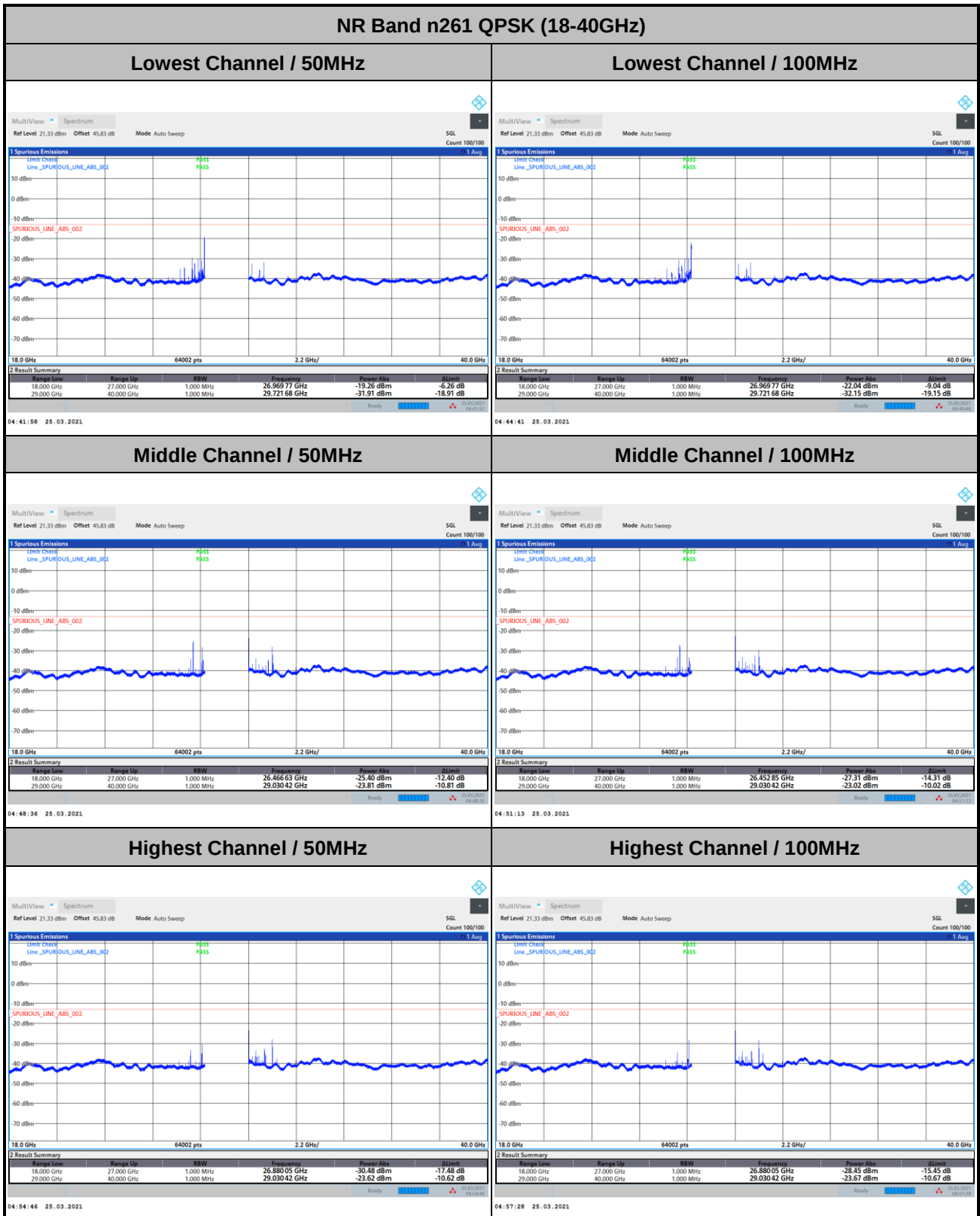


Site : 03CH10-HY
Condition : -13 EIRP_WO VERTICAL
Project : 130414
: n261 4 Module 1CC

Freq	Level	Over	Limit
MHz	dBm	Limit	Line
		dB	dBm
1	17847.00	-46.81	-33.81 -13.00



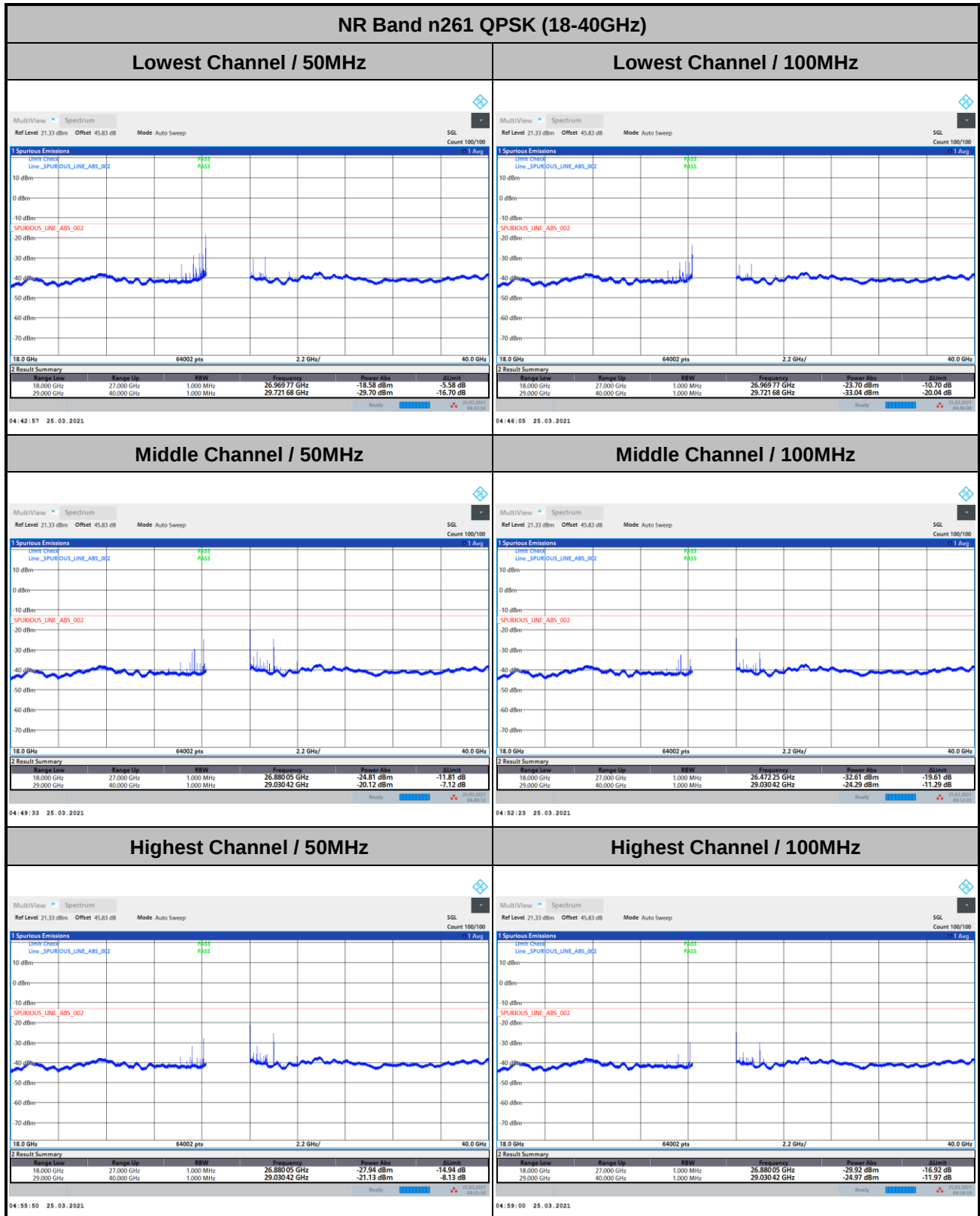
Spurious emission between 18GHz to 40GHz worst case plot is reported as following.

DFT-s-OFDM

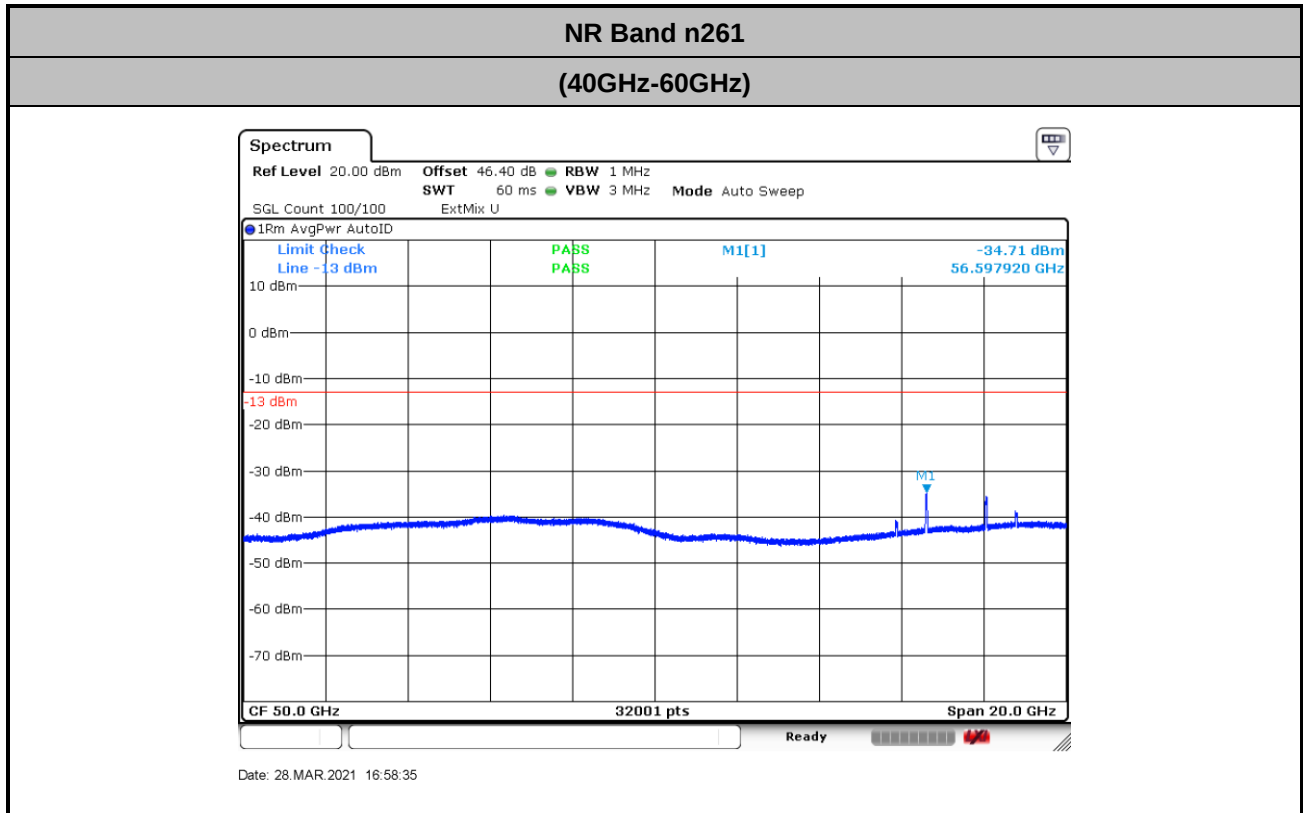
Remark: In band and out of band frequencies are omitted.



CP-OFDM

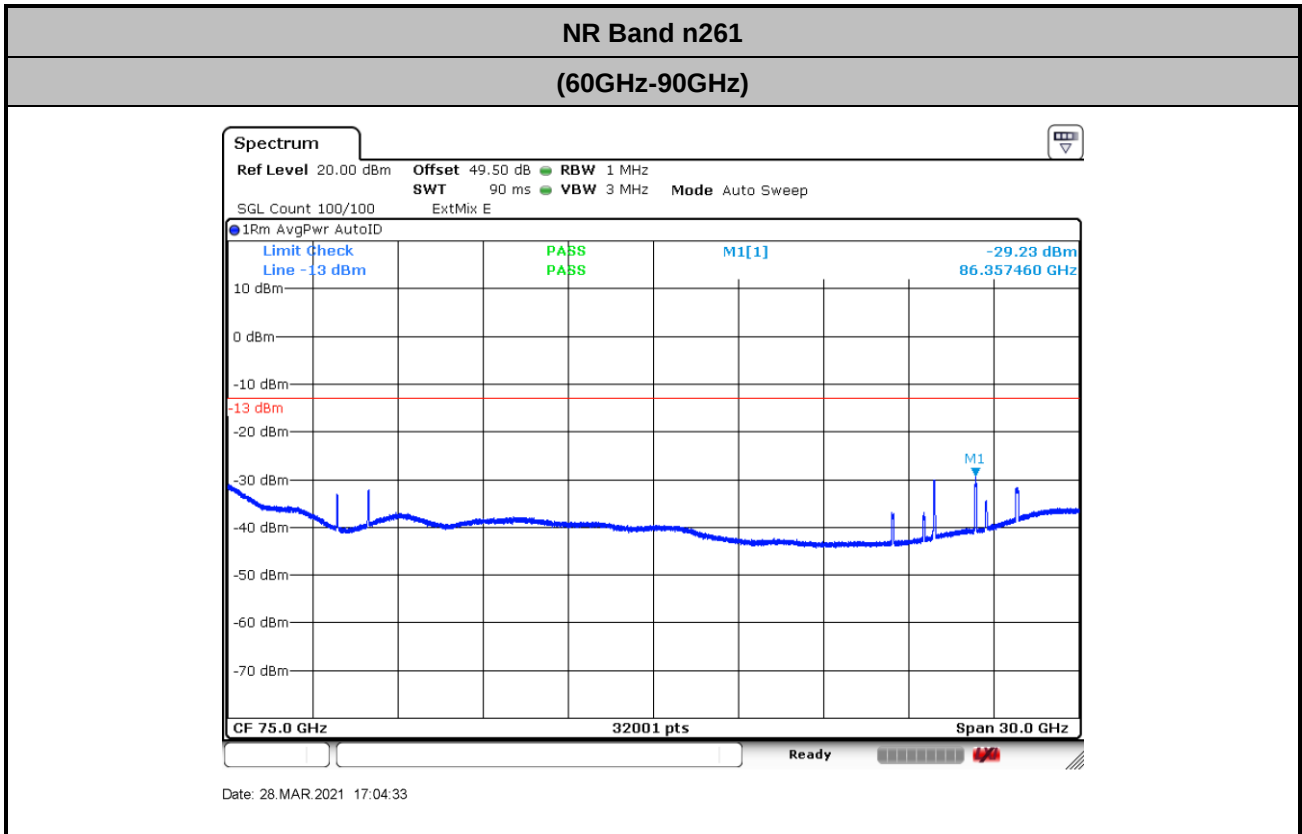


Remark: In band and out of band frequencies are omitted.

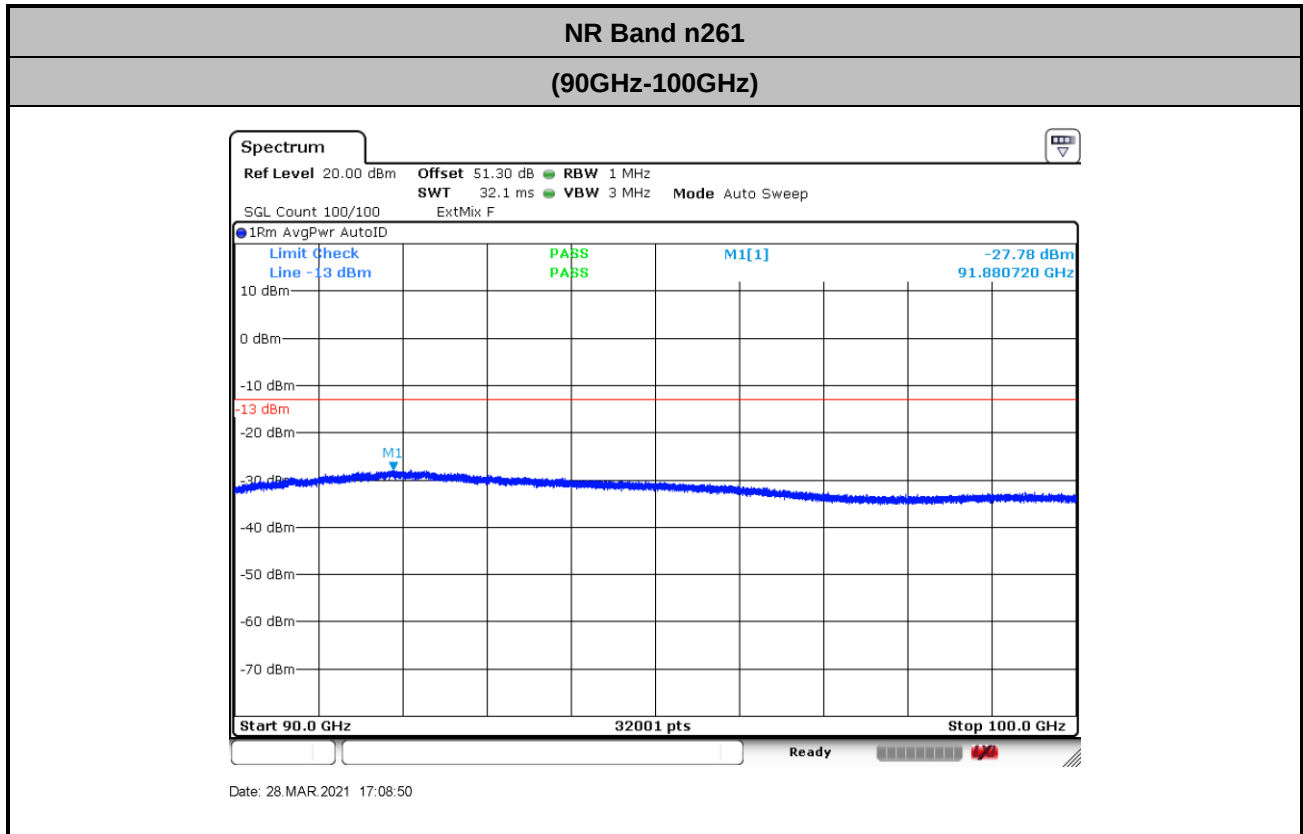


$$\text{Offset} = \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} + 107 + 20\log(D) - 104.8$$

$$= 42.3 + 0.34 + 107 + 20\log(1.2) - 104.8 = 46.4 \text{ (dB)}$$



Offset = Antenna Factor (dB/m) + Cable Loss (dB) + 107 + 20log (D) – 104.8
= 45.4 + 0.34 + 107 + 20log(1.2) – 104.8 = 49.5 (dB)



Offset = Antenna Factor (dB/m) + Cable Loss (dB) + 107 + 20log (D) – 104.8
 = 47.2 + 0.34 + 107 + 20log(1.2) – 104.8 = 51.3 (dB)

**Frequency Stability**

Test Conditions		NR Band n261 / Middle Channel			Limit
Temperature (°C)	Voltage (Volt)	CW tone			Note.
		Frequency (GHz)	Deviation (kHz)	Deviation (ppm)	Result
50	120	27.9248621	136.900	4.902	PASS
40	120	27.9248801	118.900	4.258	
30	120	27.9249001	98.900	3.542	
20(Ref.)	120	27.924999	0.000	0.000	
10	120	27.925034	-35.000	1.253	
0	120	27.9251159	-116.900	4.186	
-10	120	27.9251588	-159.800	5.722	
-20	120	27.9251718	-172.800	6.188	
-30	120	27.9251758	-176.800	6.331	
20	102	27.924983	16.000	0.573	
20	120	27.924991	8.000	0.286	
20	138	27.924978	21.000	0.752	

Note: The frequency fundamental emissions stay within the operation band.

Appendix B.6 Radiated Test: NR Band n261 (Beam ID: 319)

Occupied Bandwidth

Mode	DFT-s-OFDM NR Band n261 : 99%OBW(MHz)	
BW	50MHz	100MHz
Mod.	QPSK	QPSK
Lowest CH	45.44	90.38
Middle CH	45.41	90.35
Highest CH	45.30	90.45

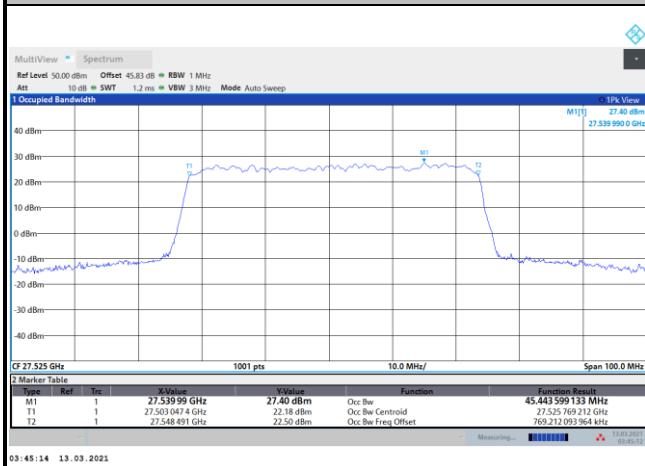
Mode	CP-OFDM NR Band n261 : 99%OBW(MHz)	
BW	50MHz	100MHz
Mod.	QPSK	QPSK
Lowest CH	45.09	92.54
Middle CH	45.06	92.29
Highest CH	45.11	92.56



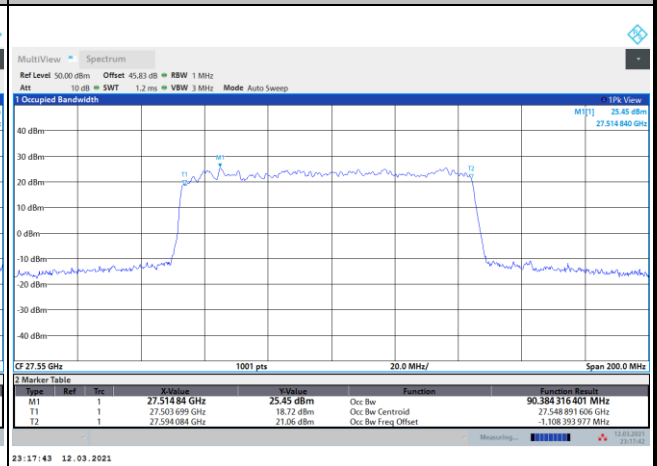
DFT-s-OFDM

NR Band n261

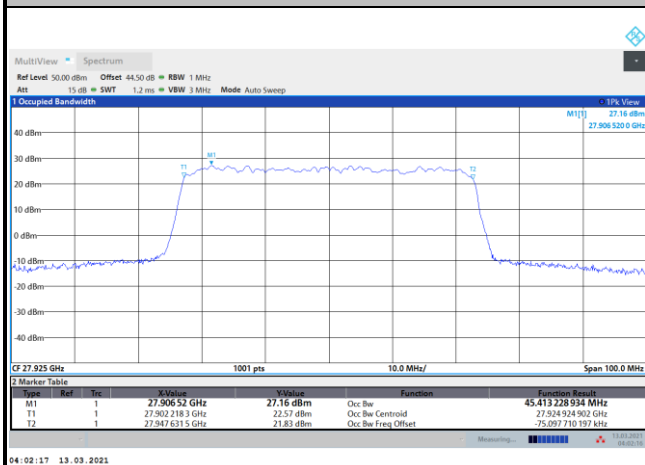
Lowest Channel / 50MHz / QPSK



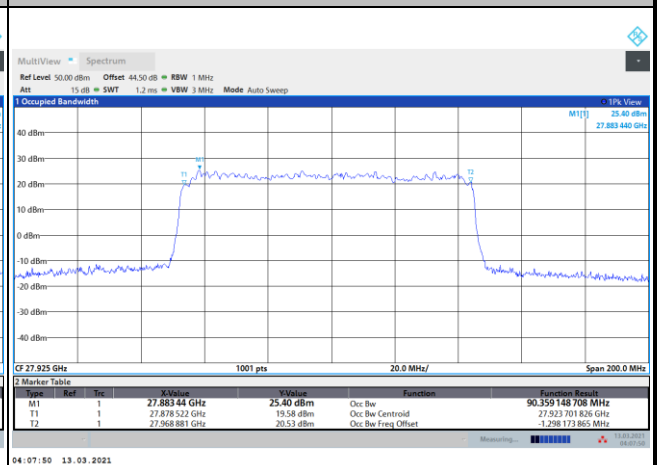
Lowest Channel / 100MHz / QPSK



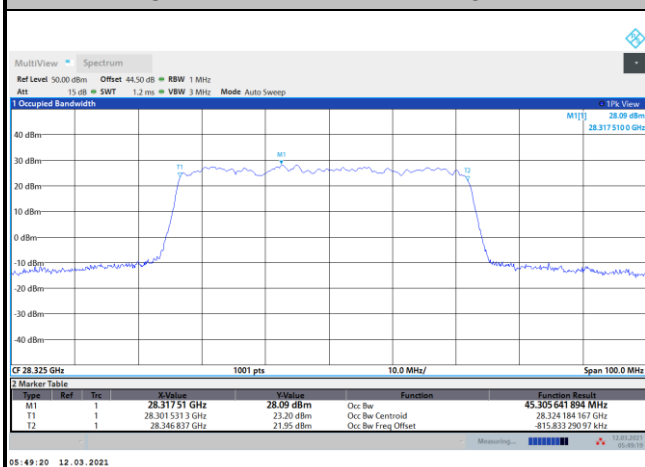
Middle Channel / 50MHz / QPSK



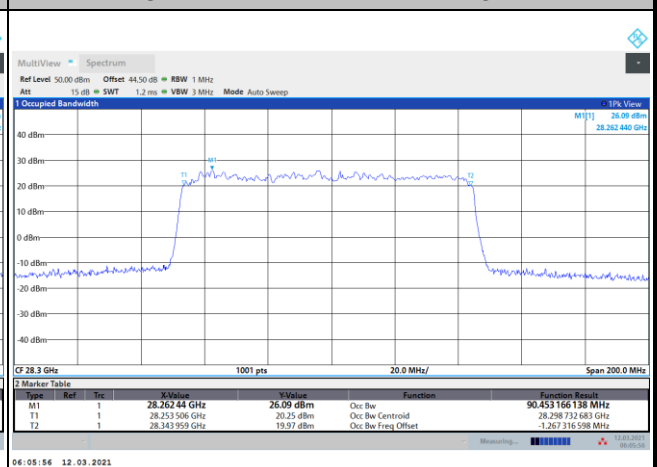
Middle Channel / 100MHz / QPSK



Highest Channel / 50MHz / QPSK



Highest Channel / 100MHz / QPSK

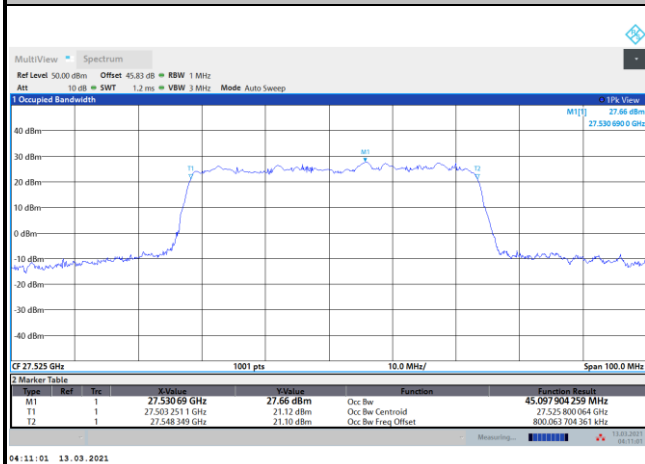




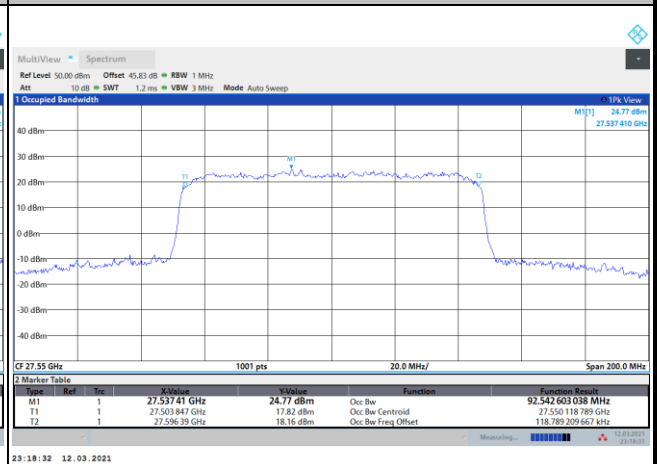
CP-OFDM

NR Band n261

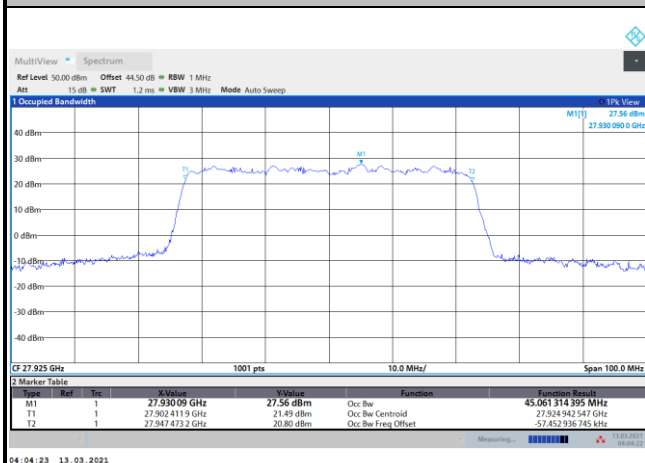
Lowest Channel / 50MHz / QPSK



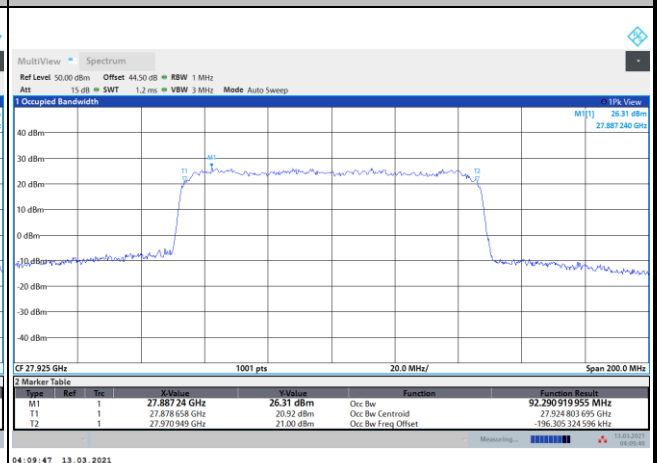
Lowest Channel / 100MHz / QPSK



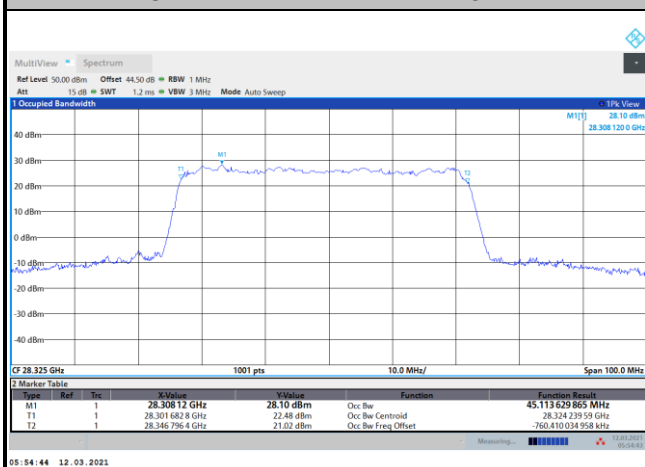
Middle Channel / 50MHz / QPSK



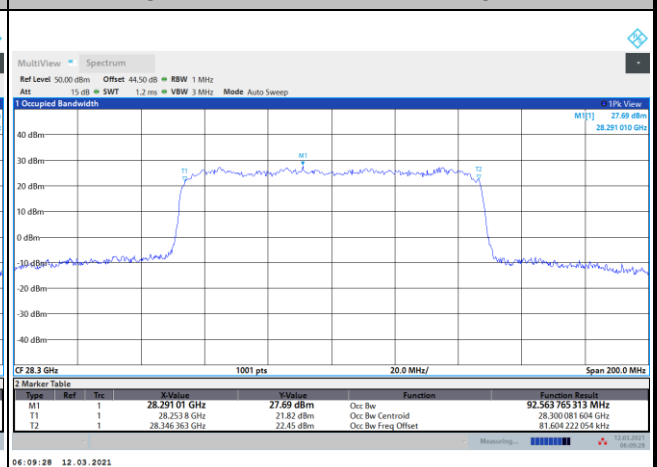
Middle Channel / 100MHz / QPSK



Highest Channel / 50MHz / QPSK



Highest Channel / 100MHz / QPSK



**Radiated Out of Band Emissions****Test Result:**

Mode		DFT-s-OFDM NR Band n261							
Channel	BW (MHz)	Modulation	RB Size/ allocation	0 ~ 10 %OB Limit (dBm/MHz)	0 ~ 10 %OB PSD (dBm/MHz)	Result	>10%OB Limit (dBm/MHz)	>10%OB PSD (dBm/MHz)	Result
Low	50	QPSK	32/0	-5	-11.66	Pass	-13	-16.89	Pass
Low	50	BPSK	32/0	-5	-10.57	Pass	-13	-17.52	Pass
Low	50	QPSK	8/0	-5	-7.78	Pass	-13	-16.49	Pass
Low	50	QPSK	10/11	-5	-15.75	Pass	-13	-15.09	Pass
Low	50	BPSK	10/11	-5	-17.64	Pass	-13	-14.30	Pass
High	50	QPSK	32/0	-5	-12.16	Pass	-13	-14.52	Pass
High	50	BPSK	32/0	-5	-11.84	Pass	-13	-19.76	Pass
High	50	QPSK	8/24	-5	-6.00	Pass	-13	-18.65	Pass
High	50	QPSK	10/11	-5	-18.47	Pass	-13	-18.96	Pass
High	50	BPSK	10/11	-5	-20.49	Pass	-13	-17.71	Pass
Low	100	QPSK	64/0	-5	-16.49	Pass	-13	-18.60	Pass
Low	100	BPSK	64/0	-5	-14.79	Pass	-13	-19.82	Pass
Low	100	QPSK	8/0	-5	-9.98	Pass	-13	-19.25	Pass
Low	100	QPSK	20/22	-5	-18.69	Pass	-13	-17.93	Pass
Low	100	BPSK	20/22	-5	-20.34	Pass	-13	-17.65	Pass
High	100	QPSK	64/0	-5	-19.81	Pass	-13	-21.39	Pass
High	100	BPSK	64/0	-5	-19.23	Pass	-13	-22.37	Pass
High	100	QPSK	8/58	-5	-10.96	Pass	-13	-20.53	Pass
High	100	QPSK	20/22	-5	-21.56	Pass	-13	-20.74	Pass
High	100	BPSK	20/22	-5	-22.45	Pass	-13	-20.14	Pass

Note: Both DFT-s-OFDM and CP-OFDM waveforms are evaluated, and the DFT-s-OFDM is the worst case.

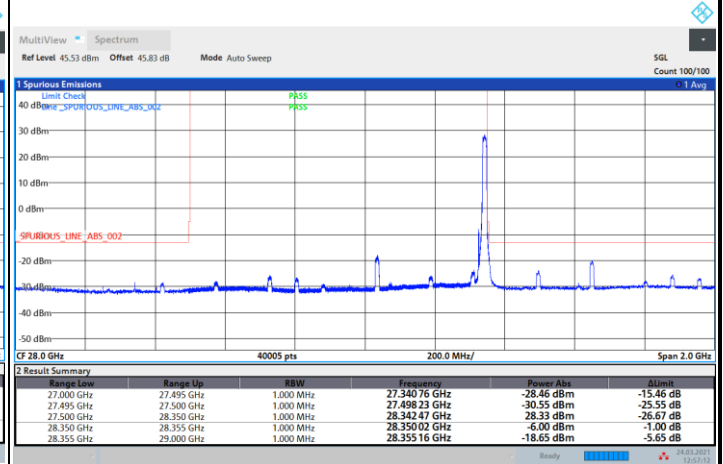
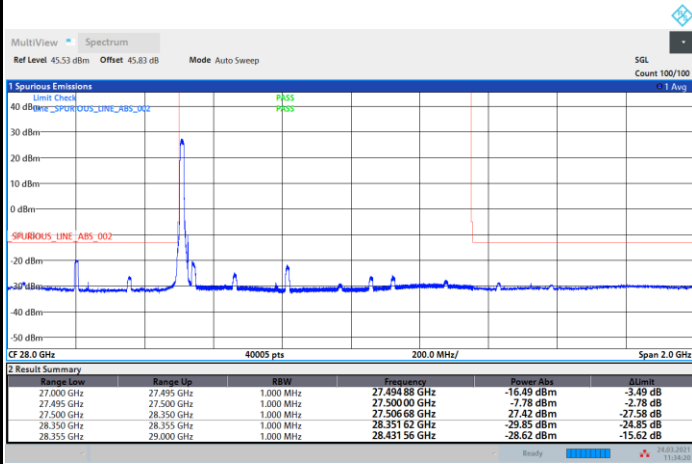


DFT-s-OFDM

NR Band n261 / 50MHz / QPSK

Lowest Band Edge / 8 RB (8/0)

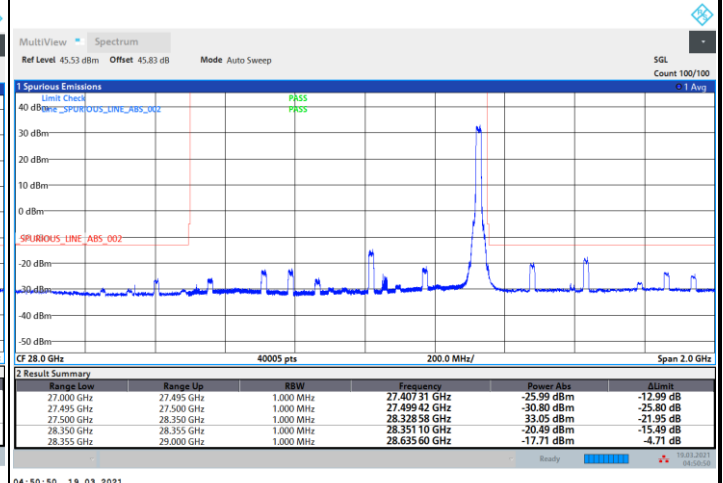
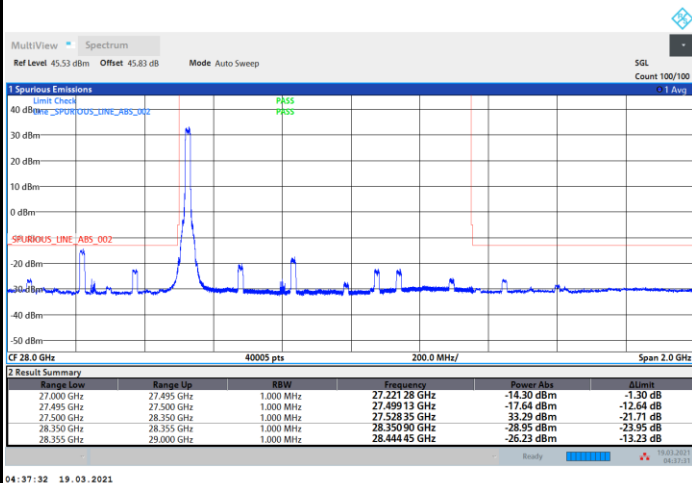
Highest Band Edge / 8 RB (8/24)



NR Band n261 / 50MHz / BPSK

Lowest Band Edge / Full RB (10/11)

Highest Band Edge / Full RB (10/11)



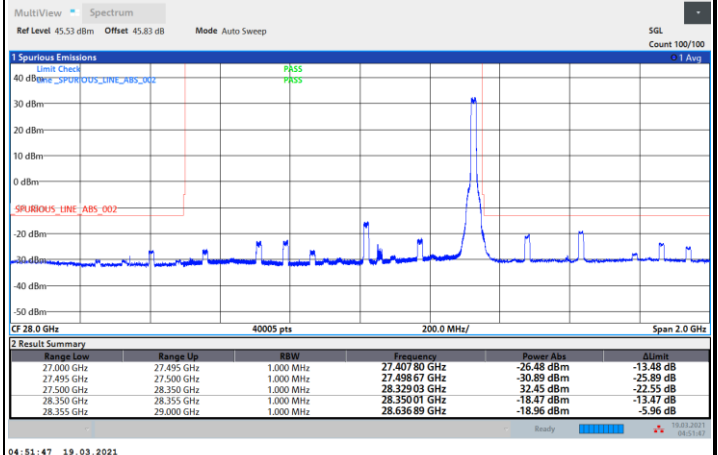
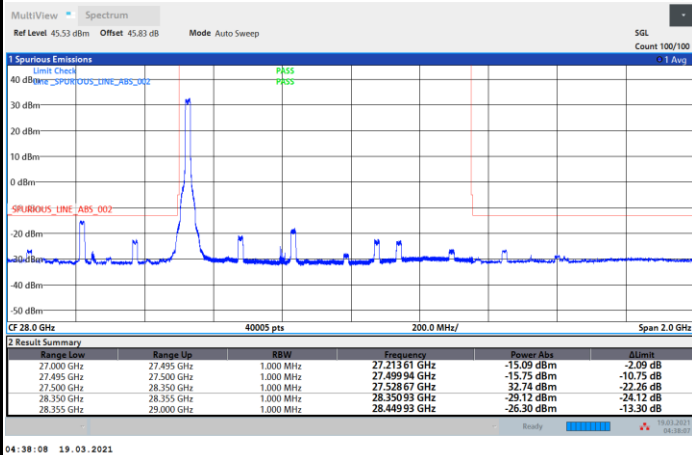


DFT-s-OFDM

NR Band n261 / 50MHz / QPSK

Lowest Band Edge / Full RB (10/11)

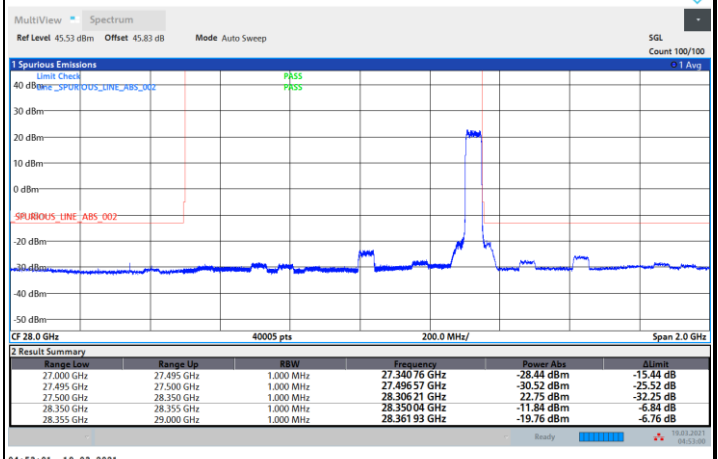
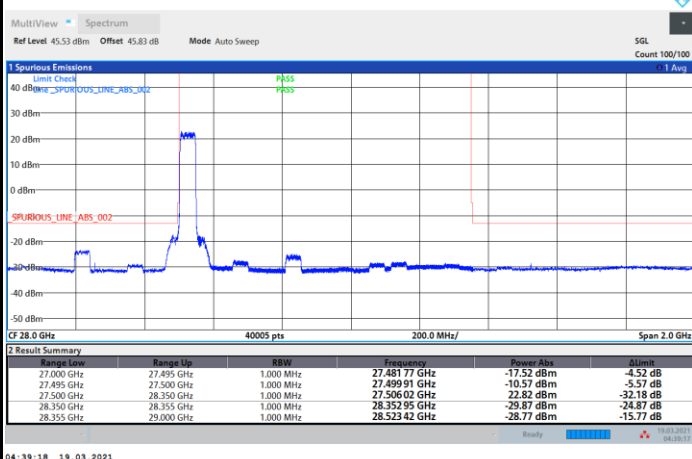
Highest Band Edge / Full RB (10/11)



NR Band n261 / 50MHz / BPSK

Lowest Band Edge / Full RB (32/0)

Highest Band Edge / Full RB (32/0)



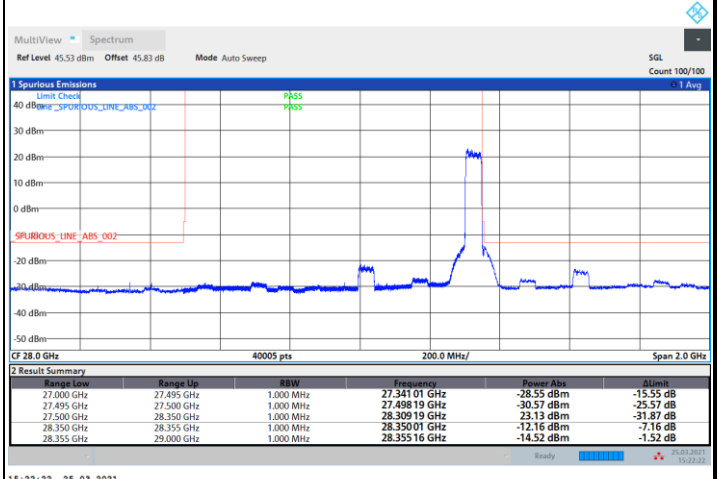
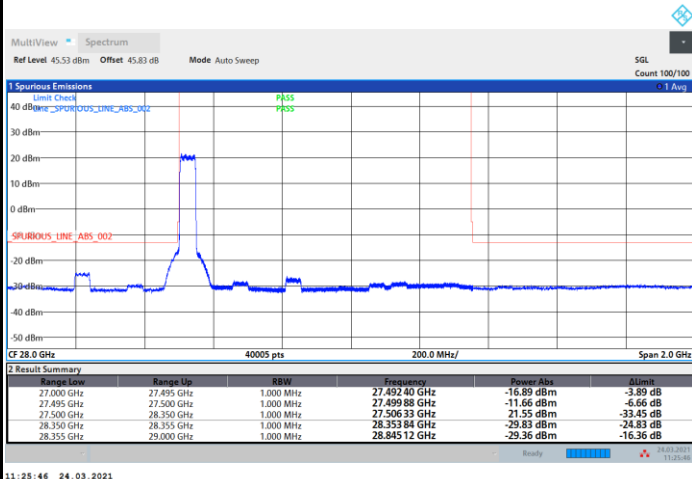


DFT-s-OFDM

NR Band n261 / 50MHz / QPSK

Lowest Band Edge / Full RB (32/0)

Highest Band Edge / Full RB (32/0)



NR Band n261 / 100MHz / QPSK

Lowest Band Edge / 8 RB (8/0)

Highest Band Edge / 8 RB (8/58)

