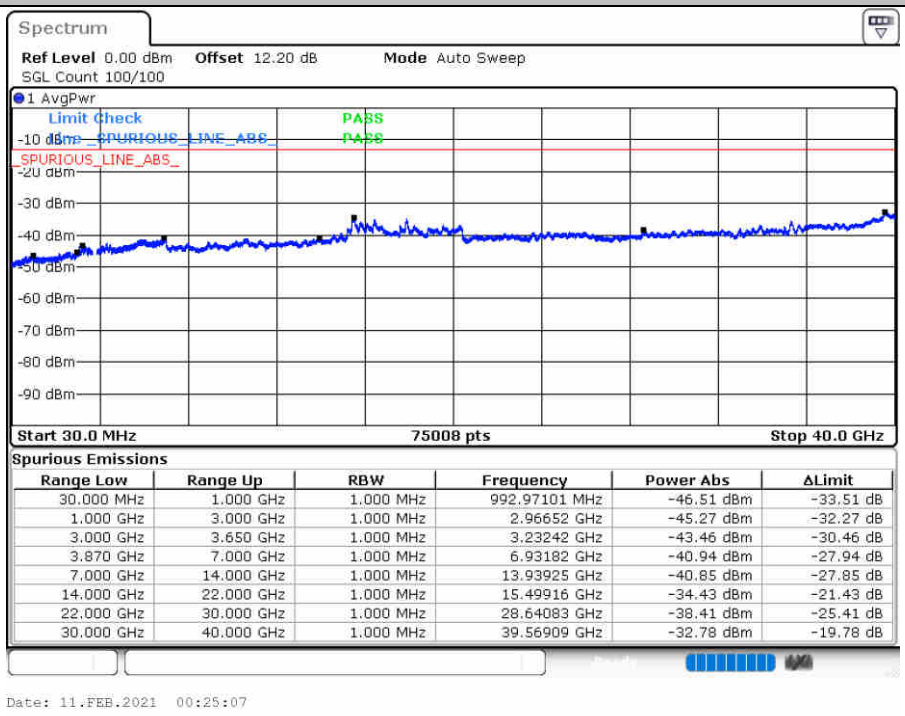
FR1 n78 / 100MHz / DFT-S OFDM / BPSK

Middle Channel / 1RB



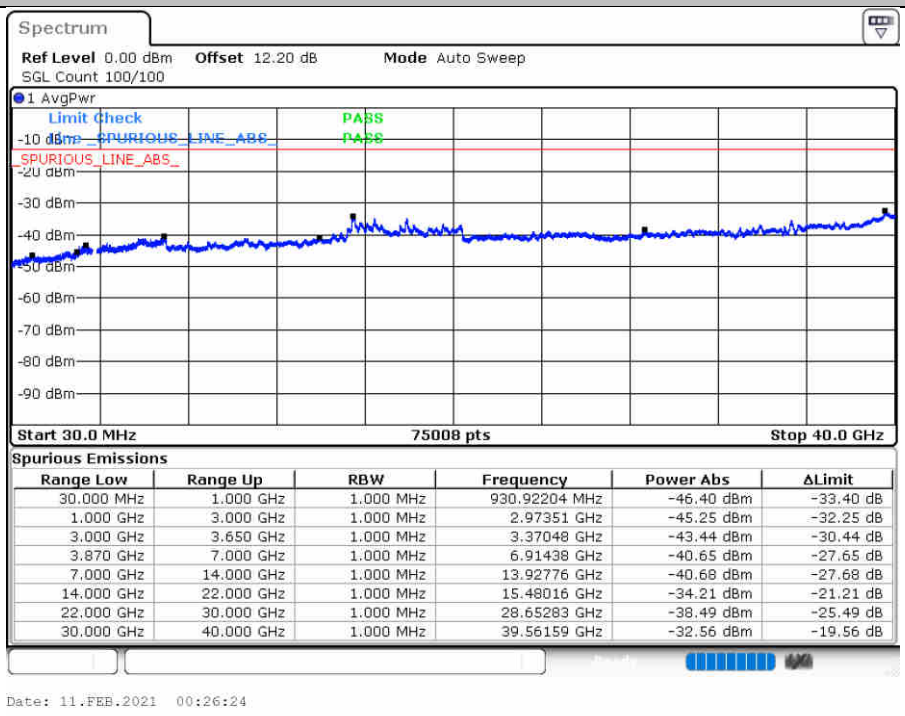
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.97101 MHz	-46.51 dBm	-33.51 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96652 GHz	-45.27 dBm	-32.27 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.23242 GHz	-43.46 dBm	-30.46 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.93182 GHz	-40.94 dBm	-27.94 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.93925 GHz	-40.85 dBm	-27.85 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.49916 GHz	-34.43 dBm	-21.43 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.64083 GHz	-38.41 dBm	-25.41 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.56909 GHz	-32.78 dBm	-19.78 dB

Date: 11.FEB.2021 00:25:07

FR1 n78 / 100MHz / DFT-S OFDM / QPSK

Middle Channel / 1RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	930.92204 MHz	-46.40 dBm	-33.40 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.97351 GHz	-45.25 dBm	-32.25 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.37048 GHz	-43.44 dBm	-30.44 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.91438 GHz	-40.65 dBm	-27.65 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.92776 GHz	-40.68 dBm	-27.68 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.48016 GHz	-34.21 dBm	-21.21 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.65283 GHz	-38.49 dBm	-25.49 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.56159 GHz	-32.56 dBm	-19.56 dB

Date: 11.FEB.2021 00:26:24

Frequency Stability

Test Conditions		NR n78 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Within Band
		Deviation (ppm)	Result
50	Normal Voltage	0.0018	PASS
40	Normal Voltage	0.0022	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0013	
10	Normal Voltage	0.0035	
0	Normal Voltage	0.0012	
-10	Normal Voltage	0.0019	
-20	Normal Voltage	0.0025	
-30	Normal Voltage	0.0017	
20	Maximum Voltage	0.0019	
20	Normal Voltage	0.0013	
20	Battery End Point	0.0018	

Note:

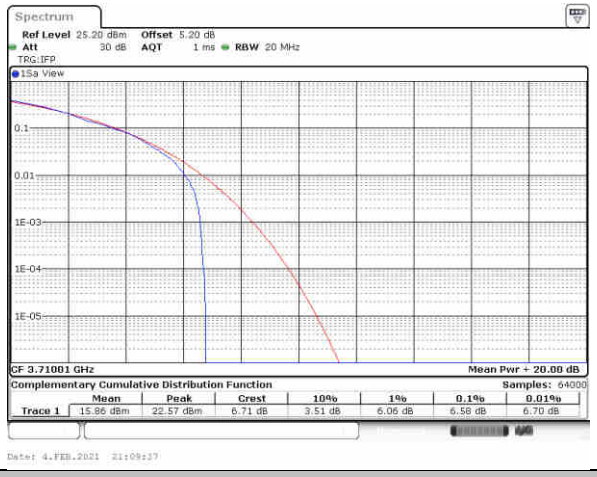
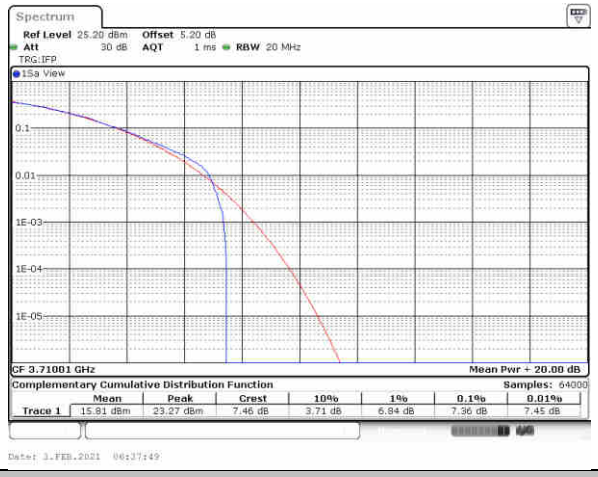
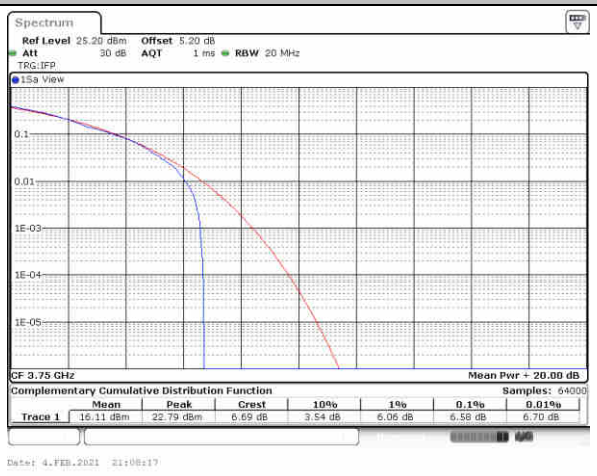
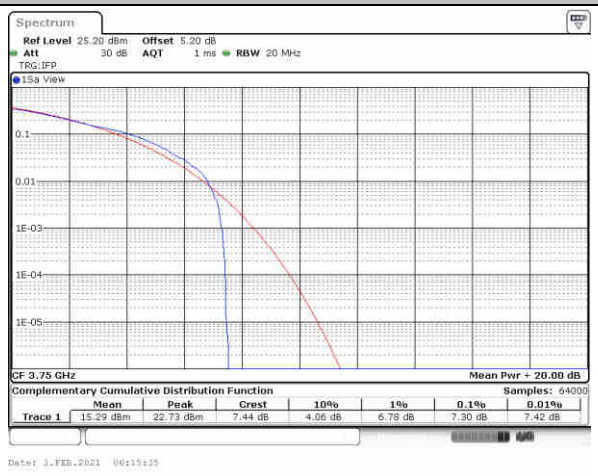
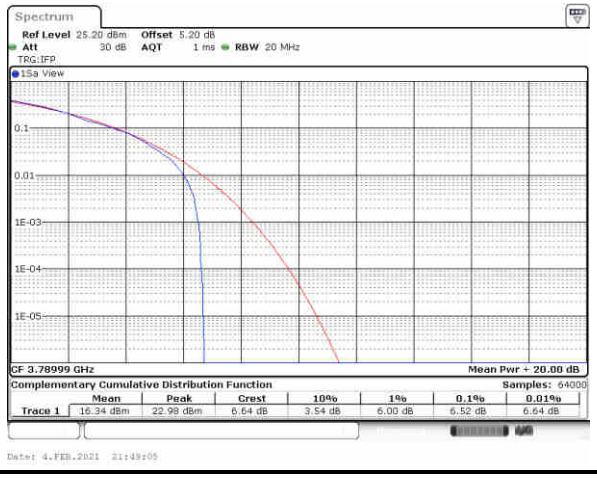
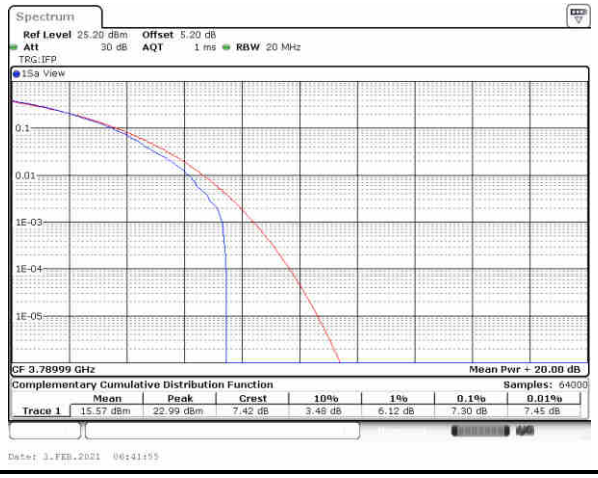
1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3.14 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

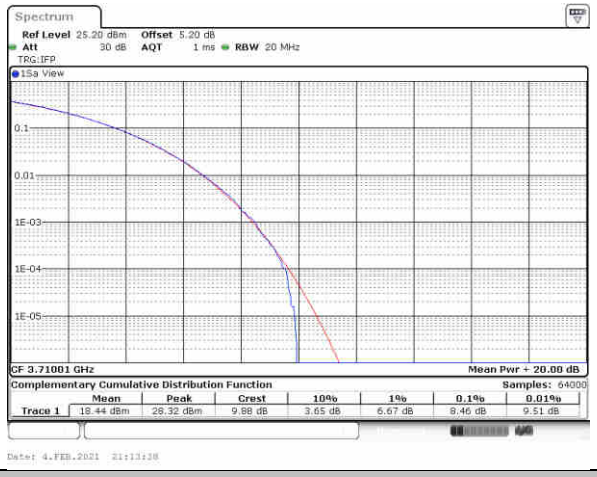
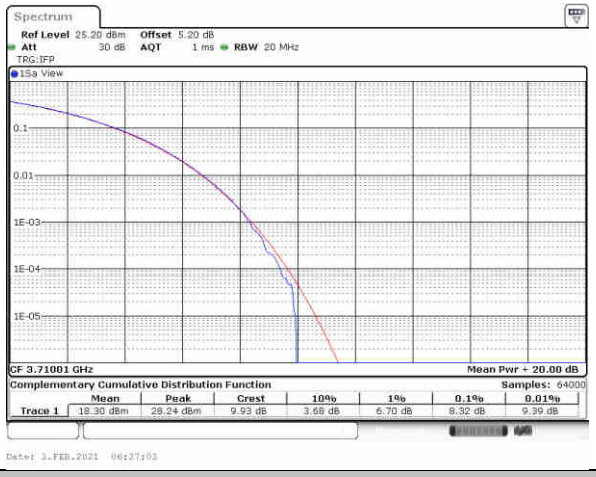
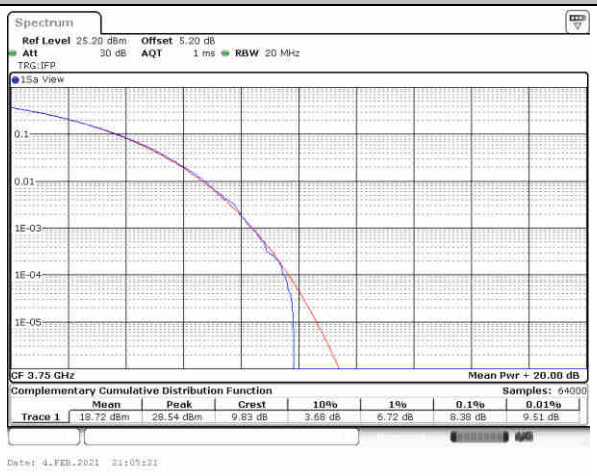
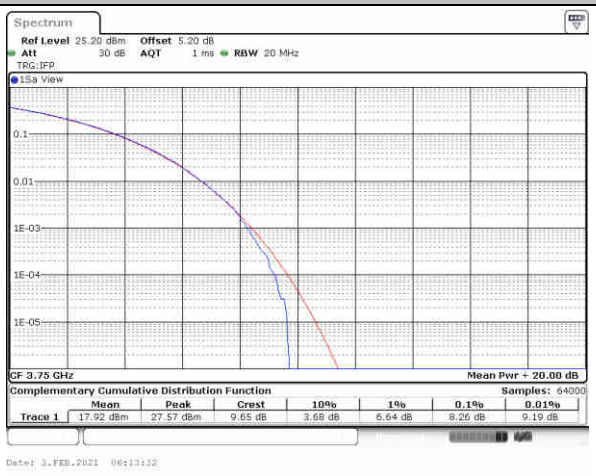
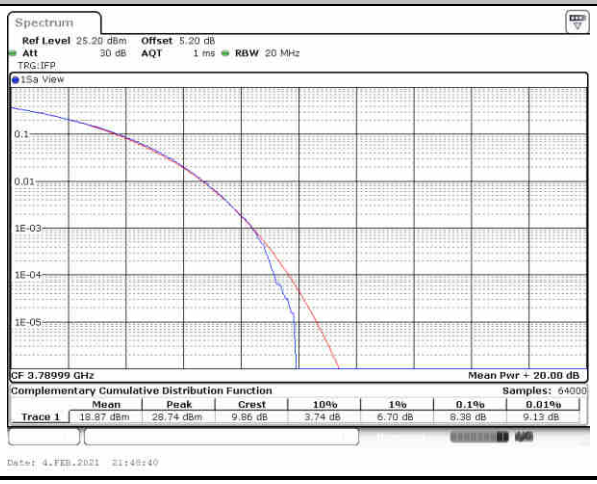
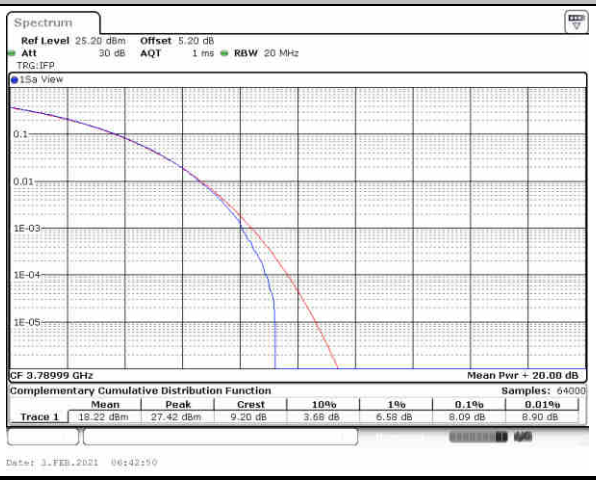
5G NR n78 UL_MIMO HPUE -SCS 15K

Peak-to-Average Ratio

Mode	FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M2)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.58	8.46			PASS
Middle CH	6.58	8.38			
Highest CH	6.52	8.38			

Mode	FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.36	8.32			PASS
Middle CH	7.30	8.26			
Highest CH	7.30	8.09			

FR1 UL-MIMO n78 / 20MHz / CP-OFDM	
QPSK(M2)	**QPSK(M)**
Lowest Channel / 1RB	**Lowest Channel / 1RB**
	
Middle Channel / 1 RB	**Middle Channel / 1 RB**
	
Highest Channel / 1 RB	**Highest Channel / 1 RB**
	

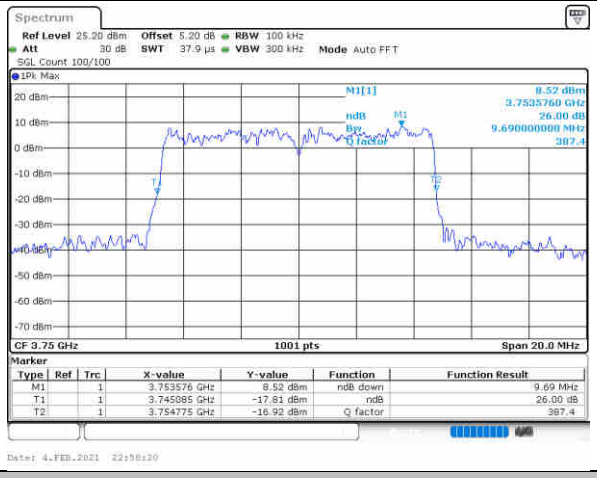
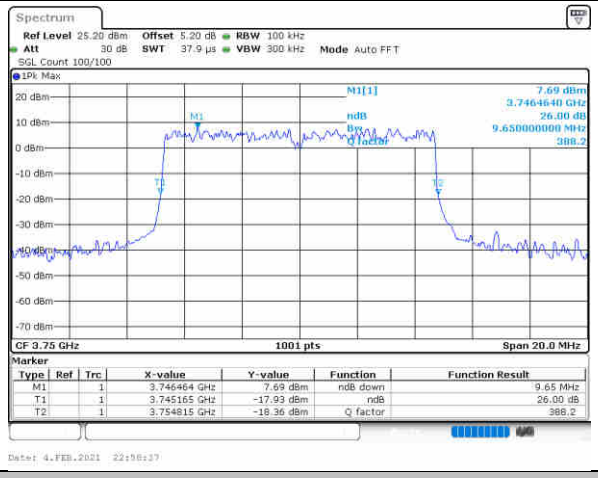
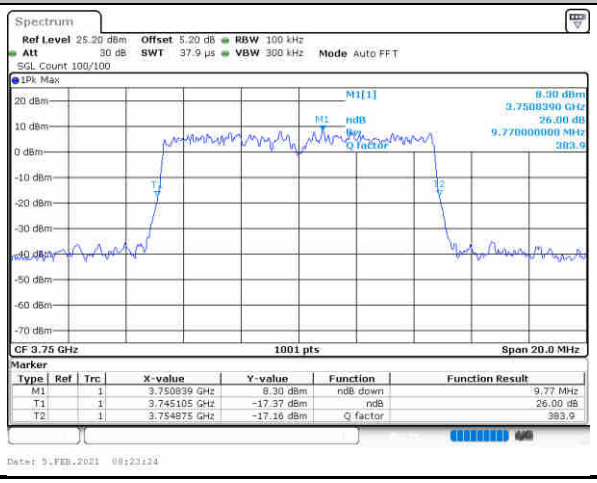
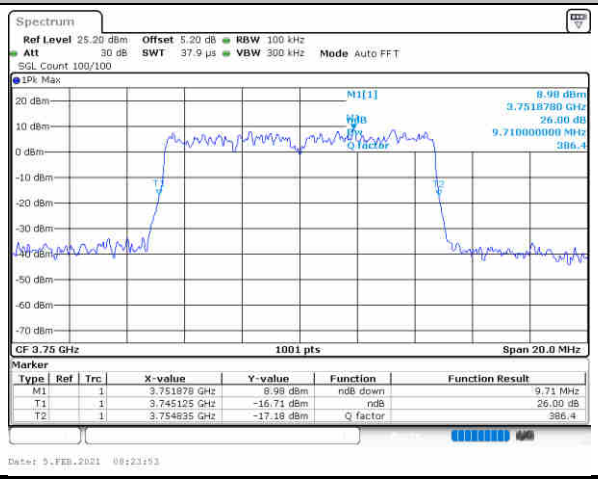
FR1 UL-MIMO n78 / 20MHz / CP-OFDM	
QPSK(M2)	**QPSK(M)**
Lowest Channel / Full RB	**Lowest Channel / Full RB**
	
Middle Channel / Full RB	**Middle Channel / Full RB**
	
Highest Channel / Full RB	**Highest Channel / Full RB**
	

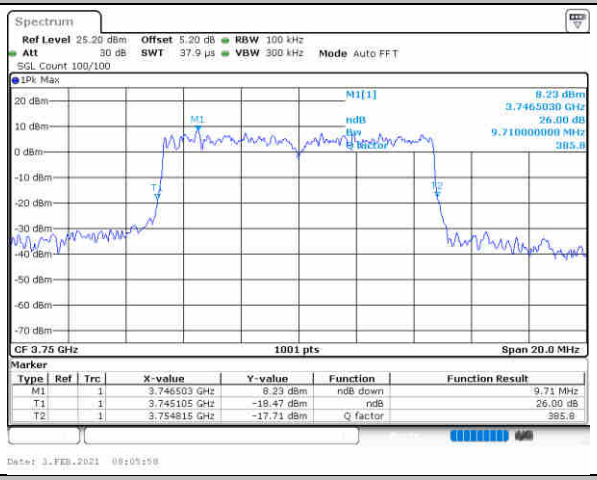
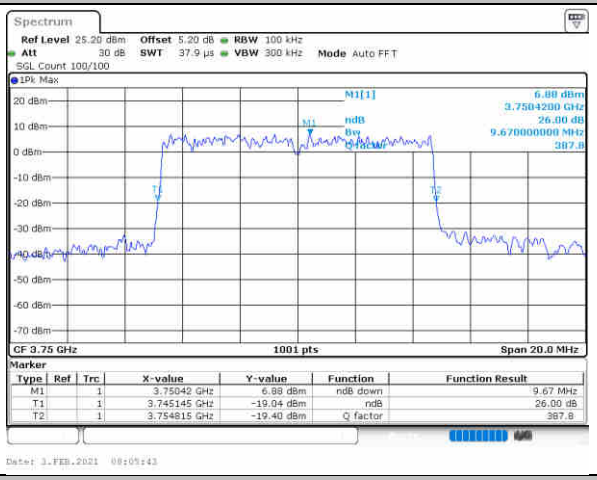
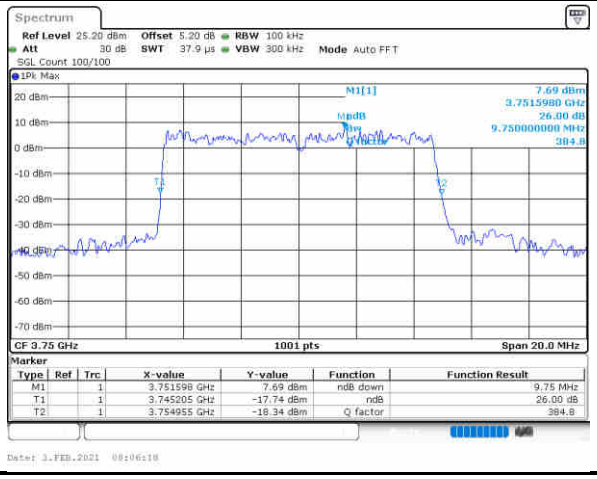
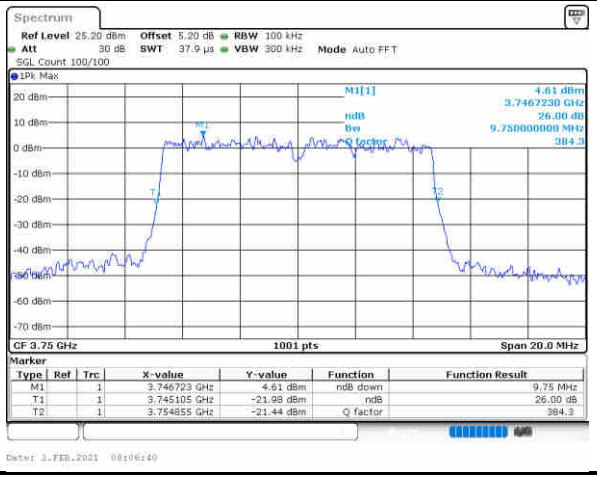
26dB Bandwidth

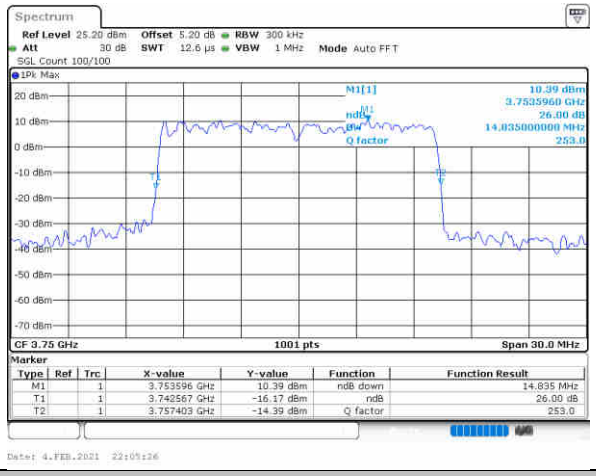
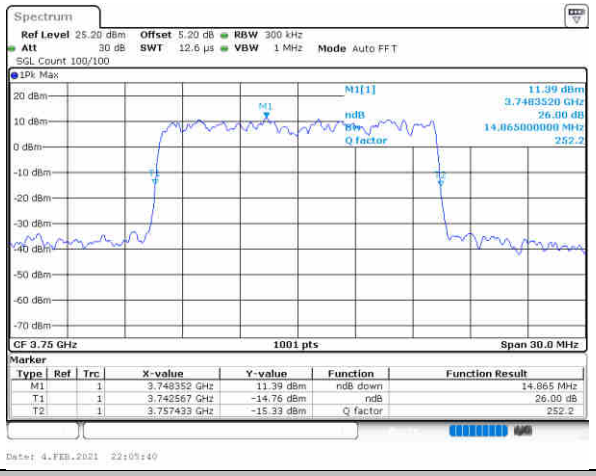
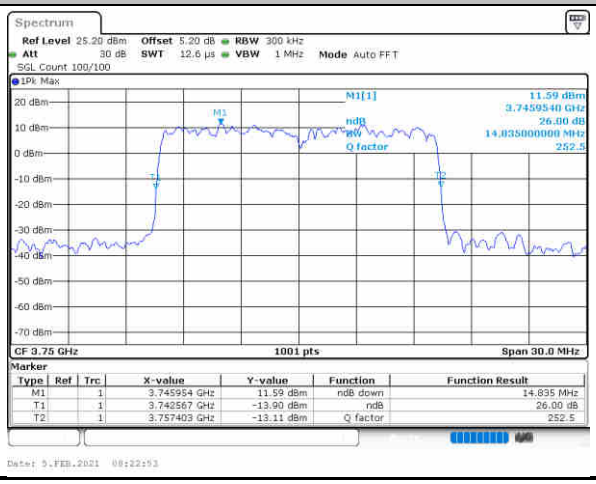
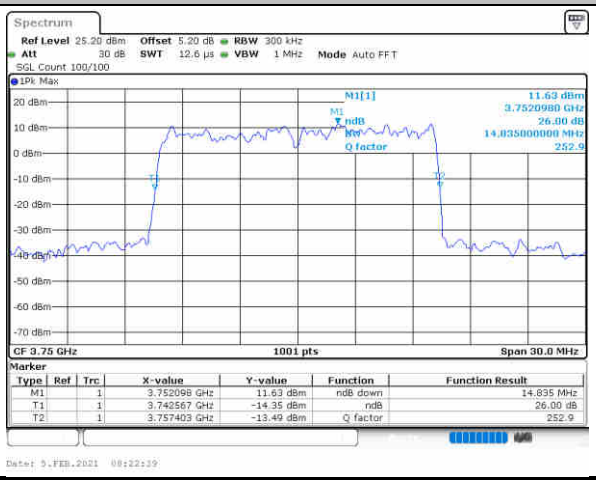
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	9.69	9.65	9.77	9.69	9.71	9.67	9.75	9.75

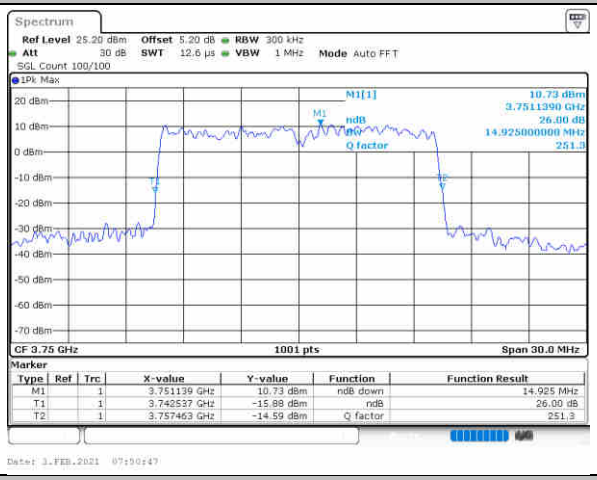
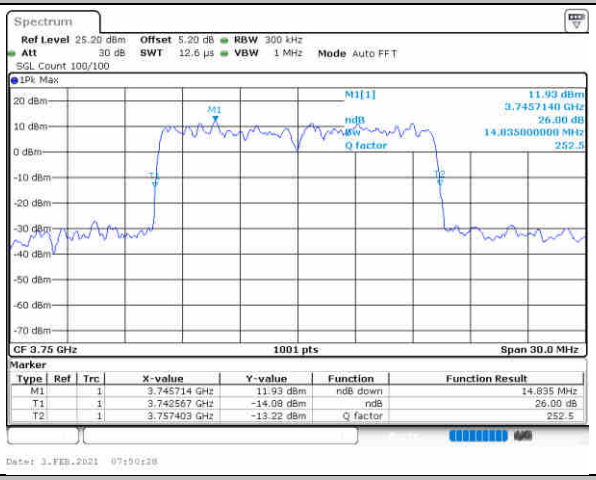
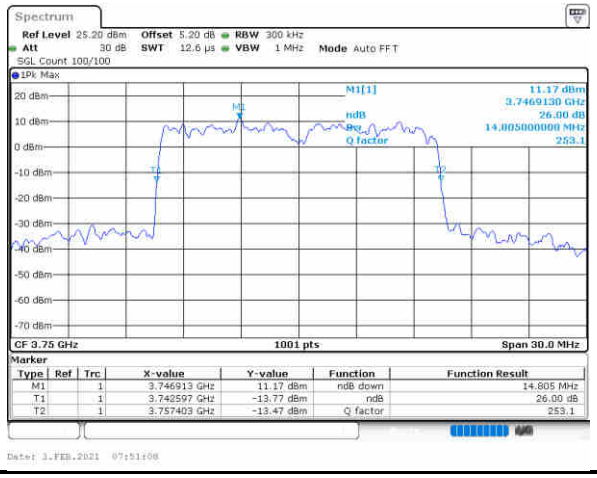
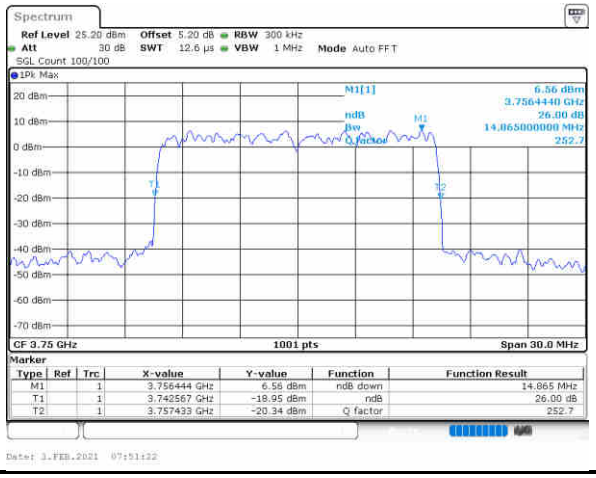
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	14.83	14.86	14.83	14.83	14.92	14.83	14.80	14.86

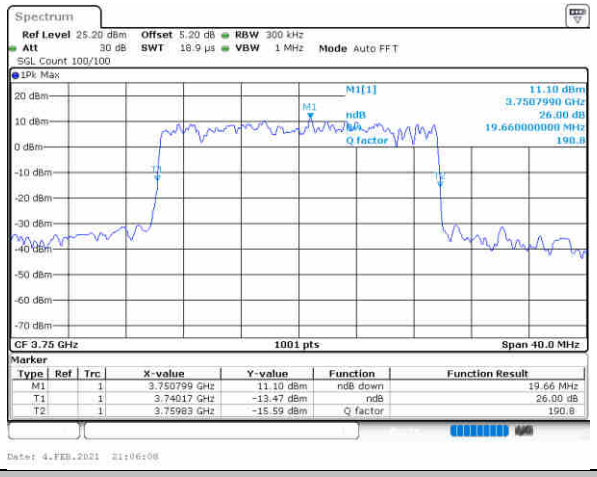
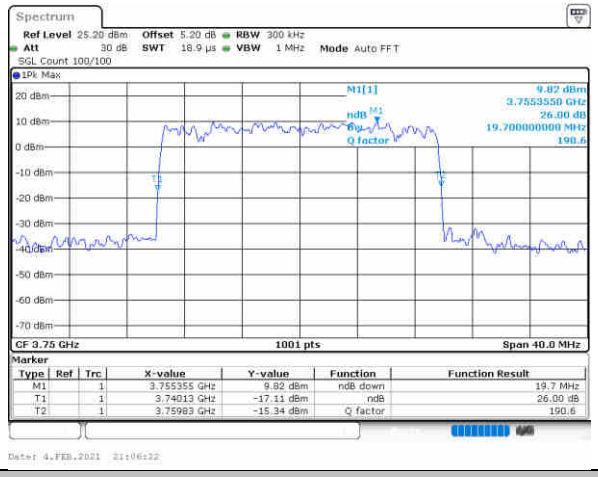
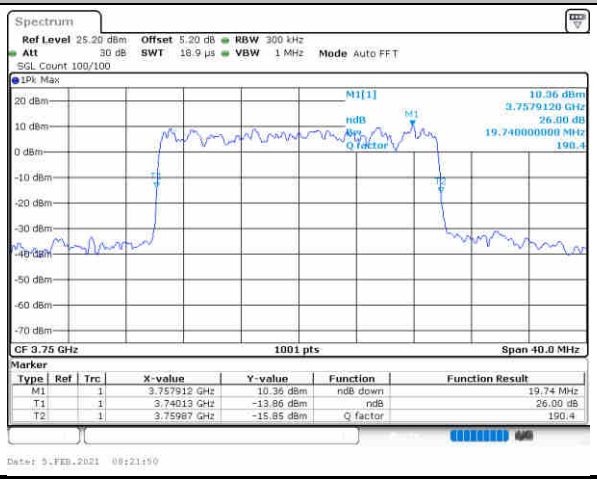
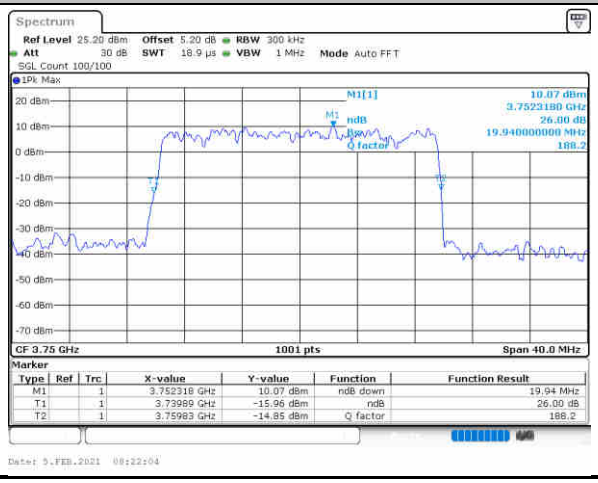
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	19.66	19.7	19.74	19.94	19.74	19.7	19.94	19.7

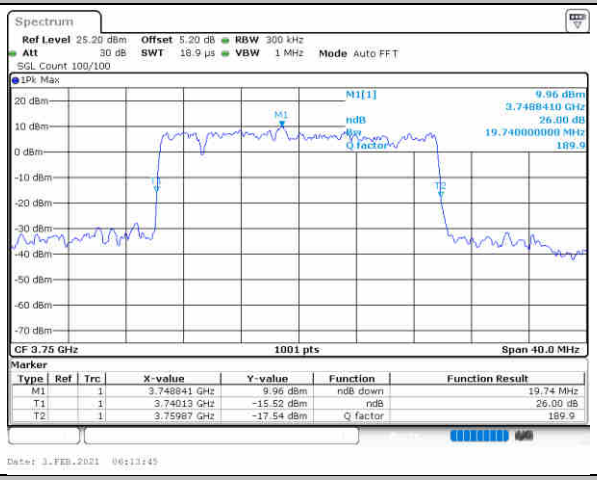
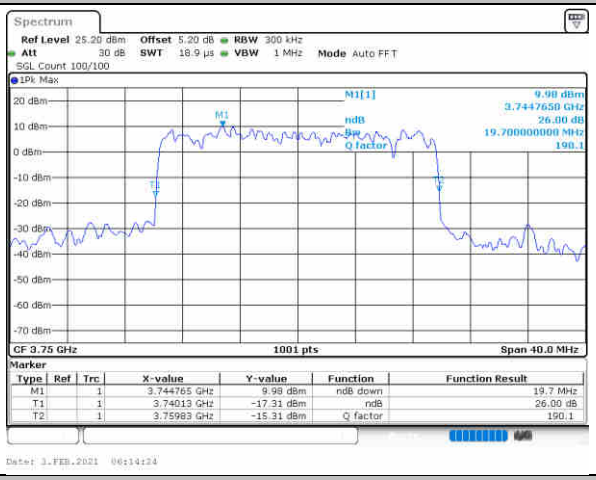
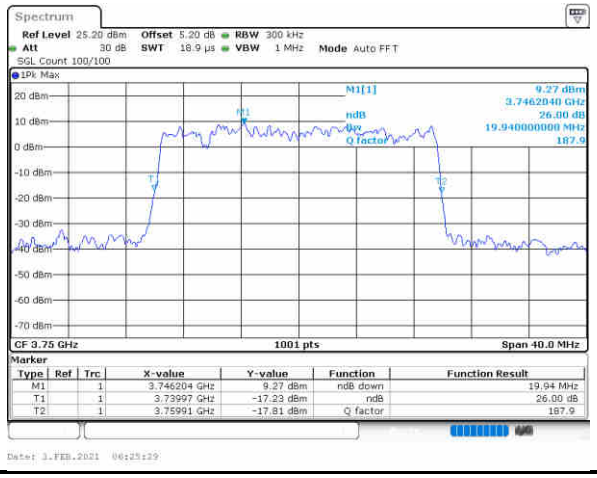
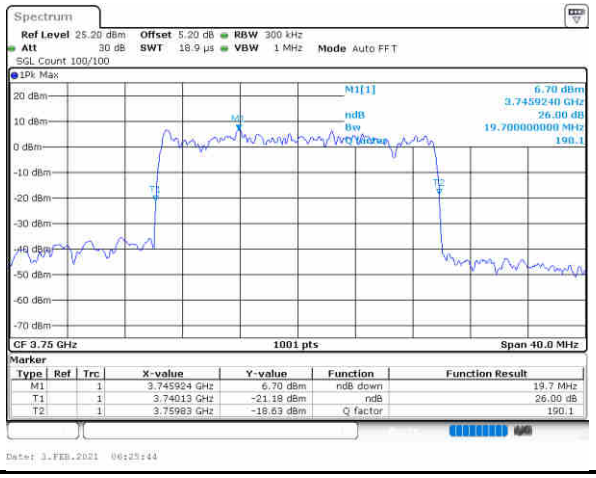
FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

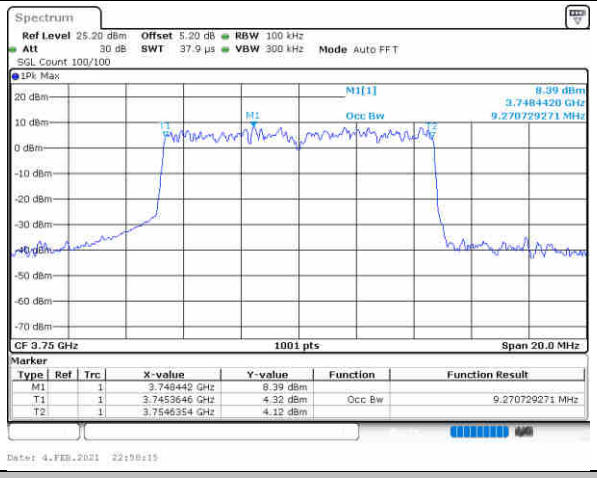
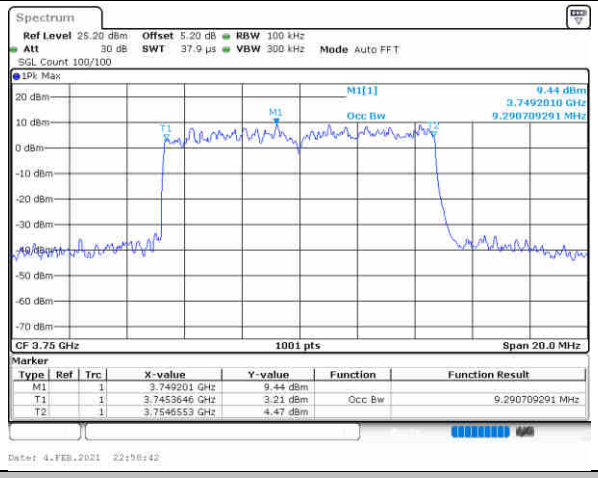
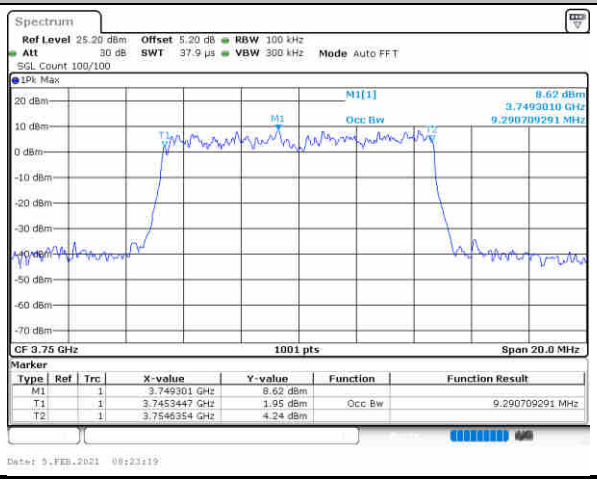
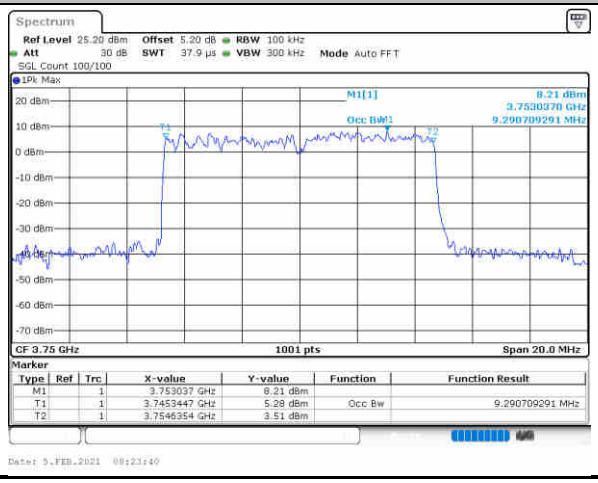
FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

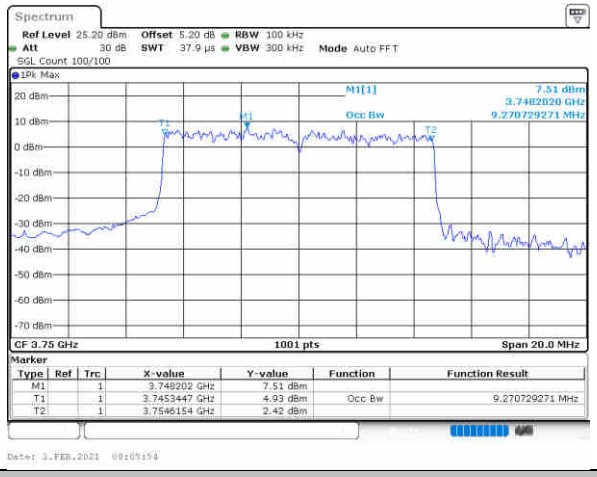
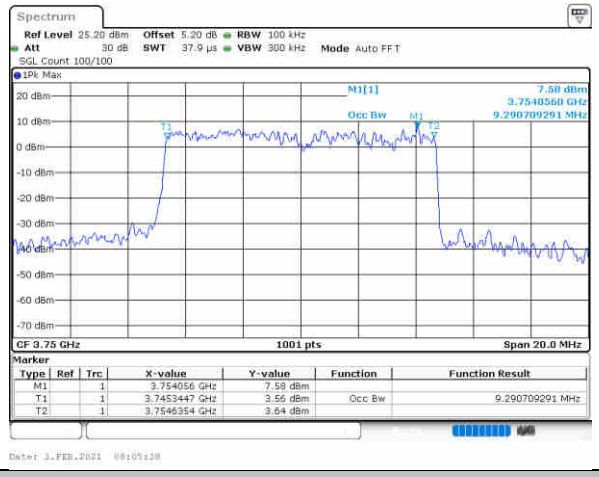
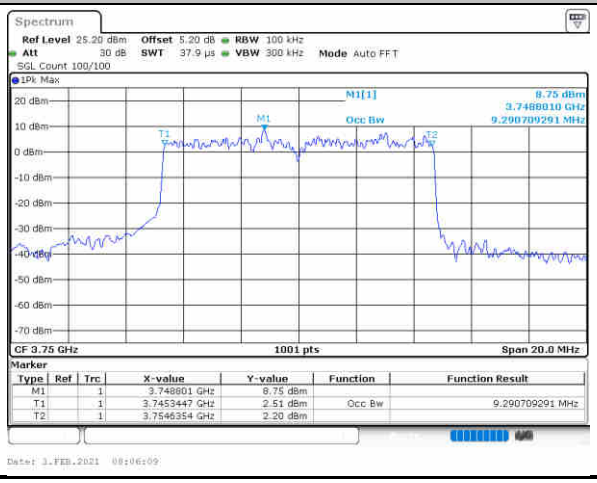
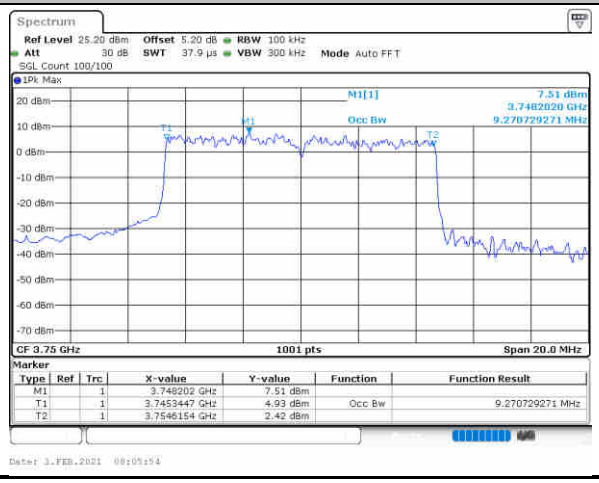
Occupied Bandwidth

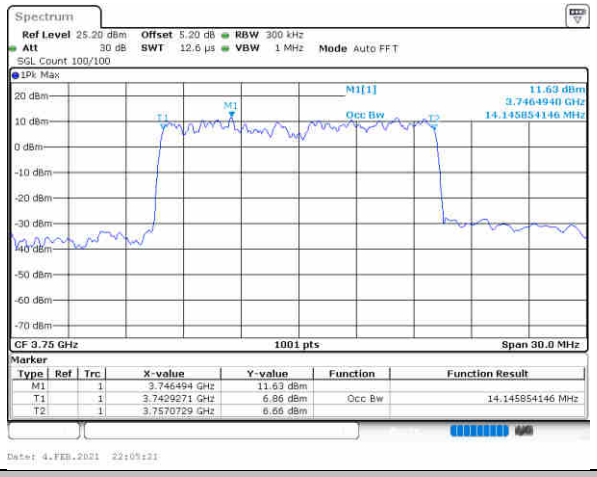
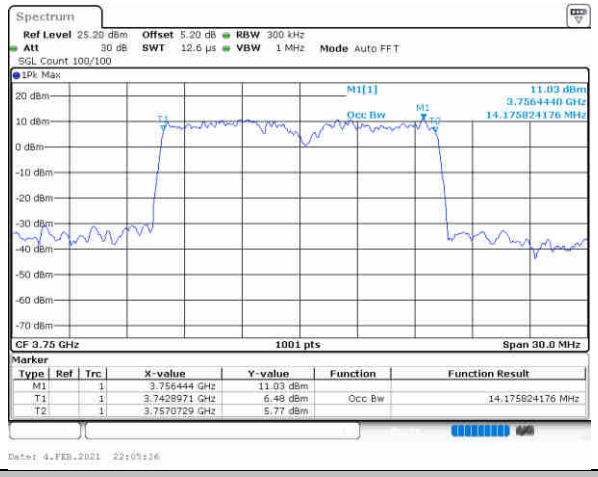
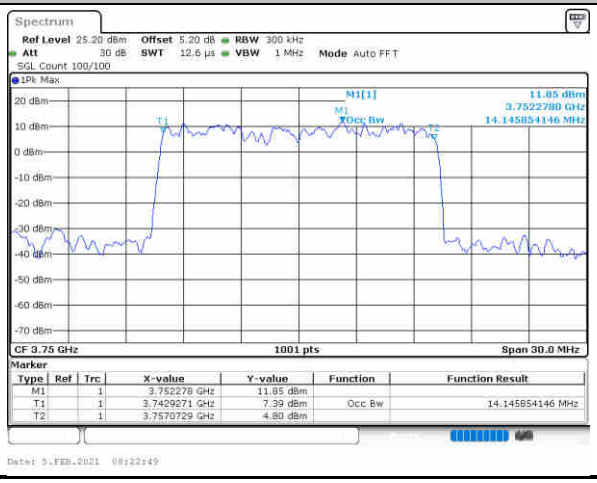
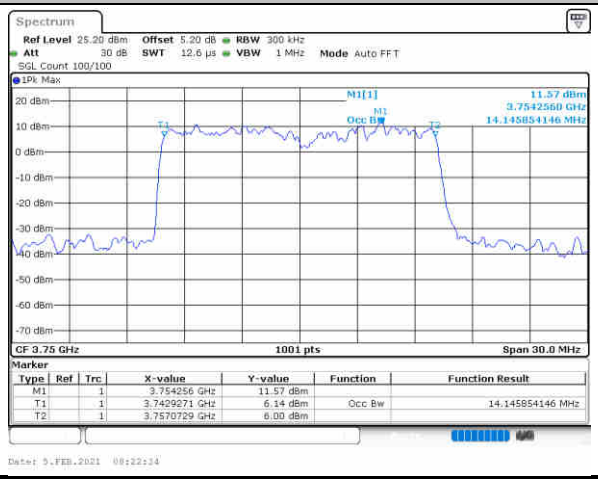
Mode	FR1 UL-MIMO n78 : OBW(MHz) / CP-OFDM							
	M2				M			
BW	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	9.27	9.29	9.29	9.29	9.27	9.29	9.29	9.31

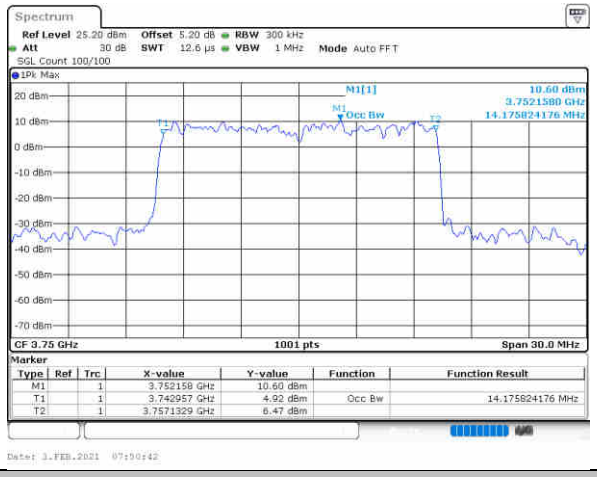
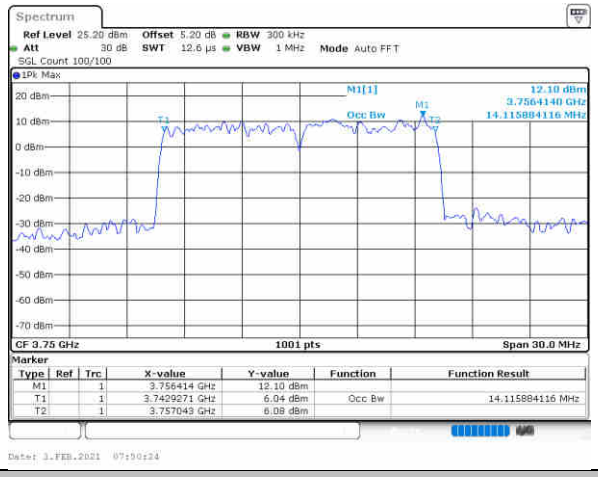
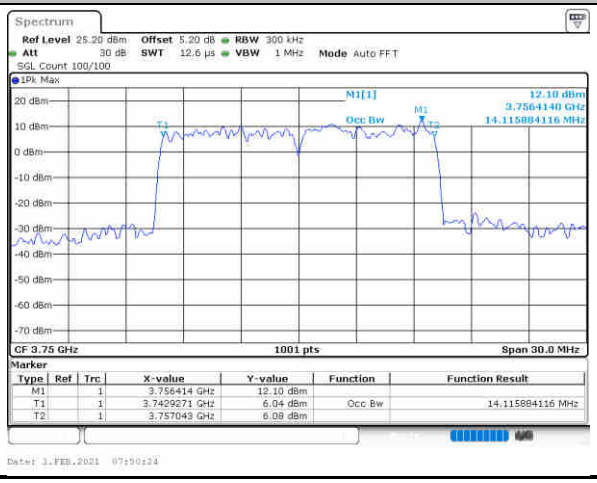
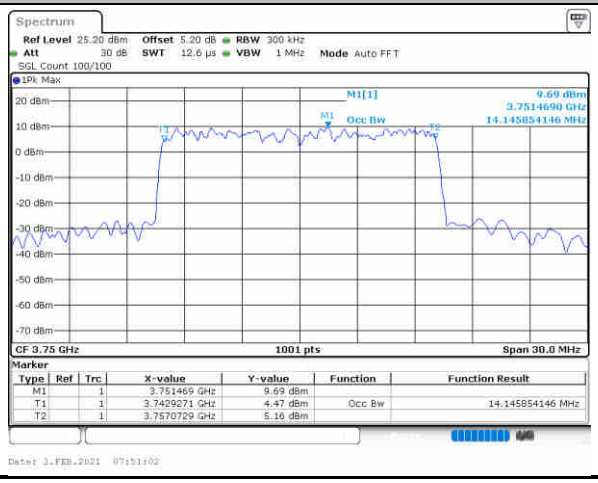
Mode	FR1 UL-MIMO n78 : OBW(MHz) / CP-OFDM							
	M2				M			
BW	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	14.15	14.18	14.15	14.15	14.18	14.12	14.15	14.12

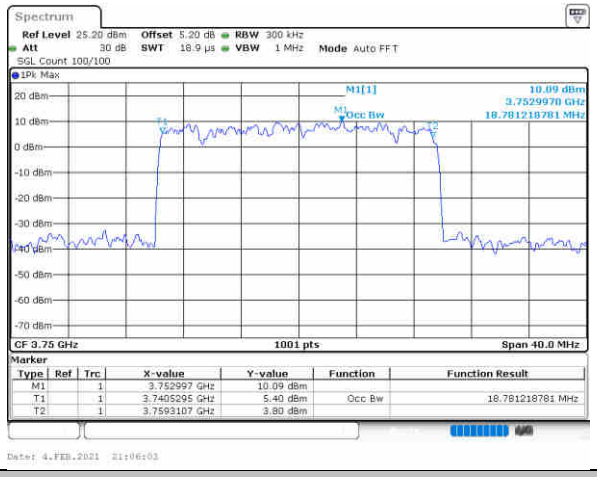
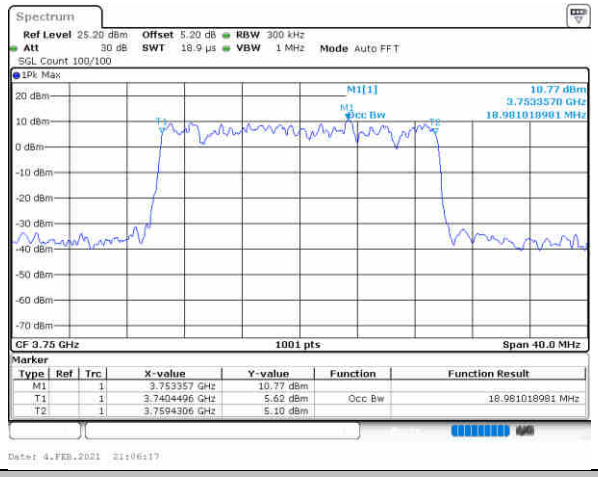
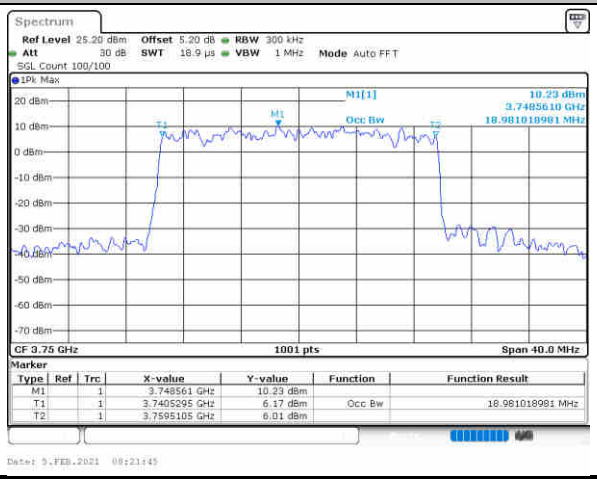
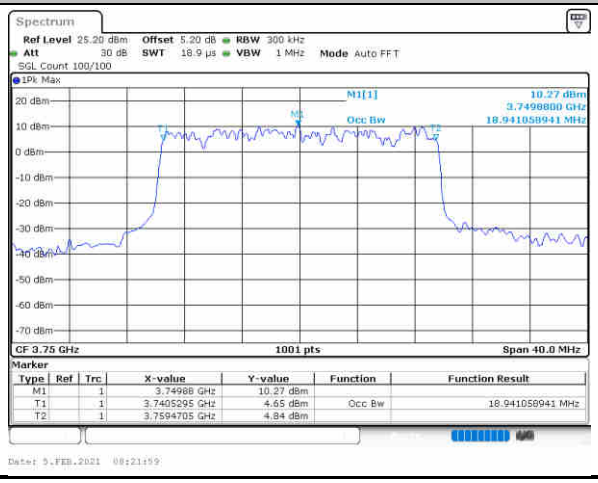
Mode	FR1 UL-MIMO n78 : OBW(MHz) / CP-OFDM							
	M2				M			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	18.78	18.98	18.98	18.94	18.94	18.98	18.98	18.90

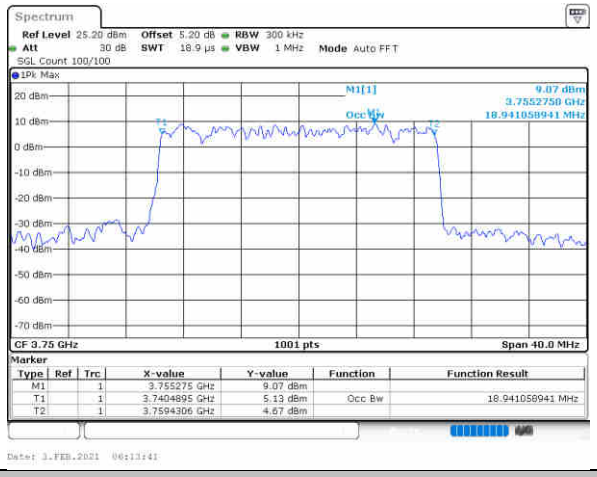
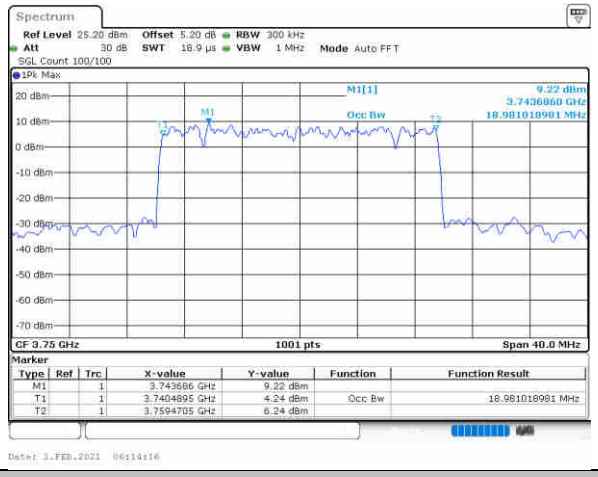
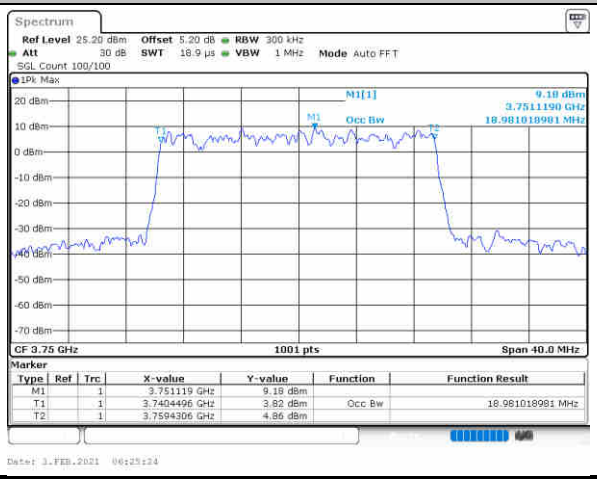
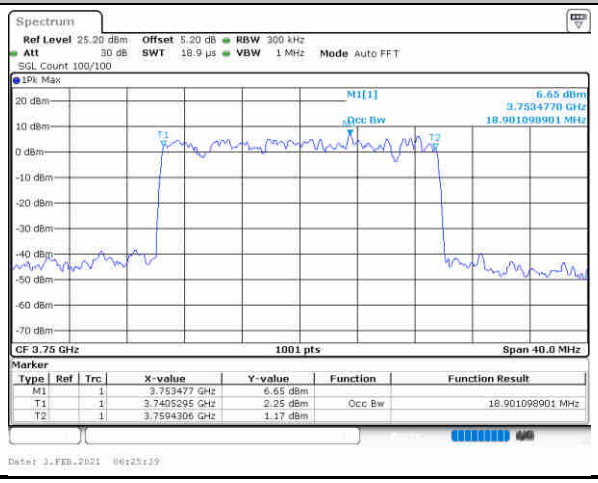
FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

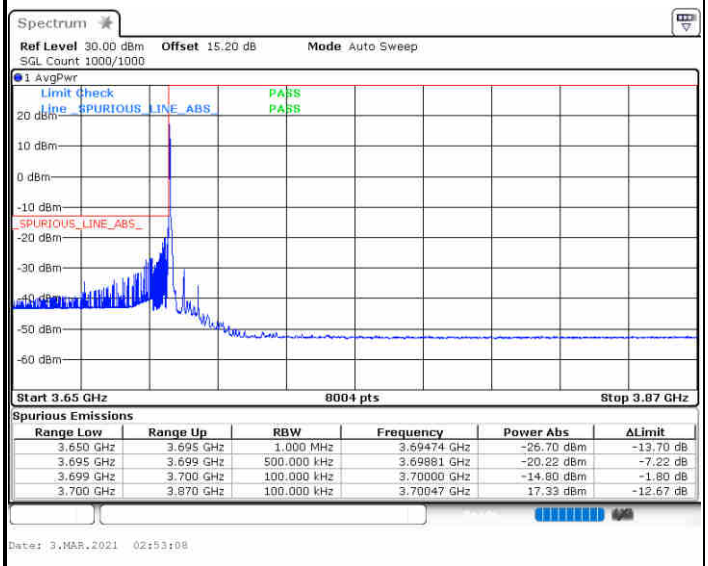
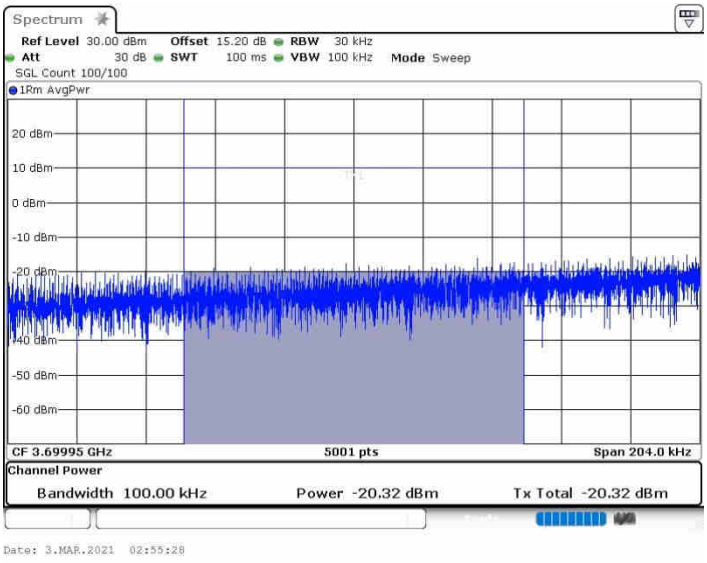
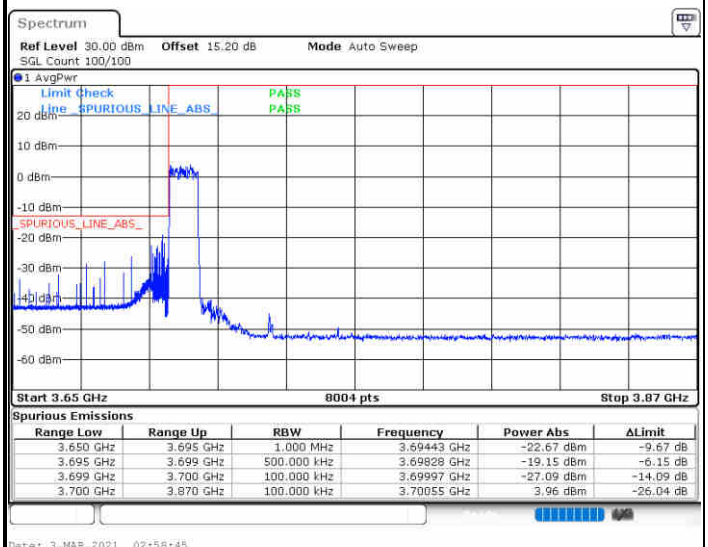
FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

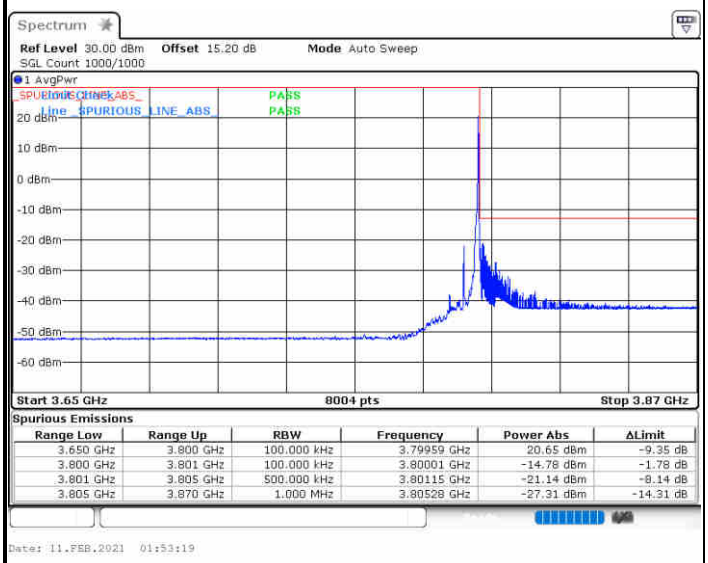
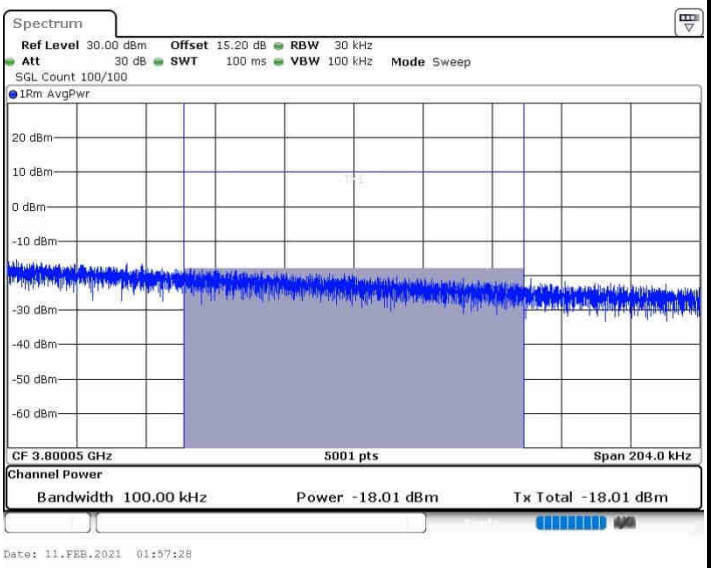
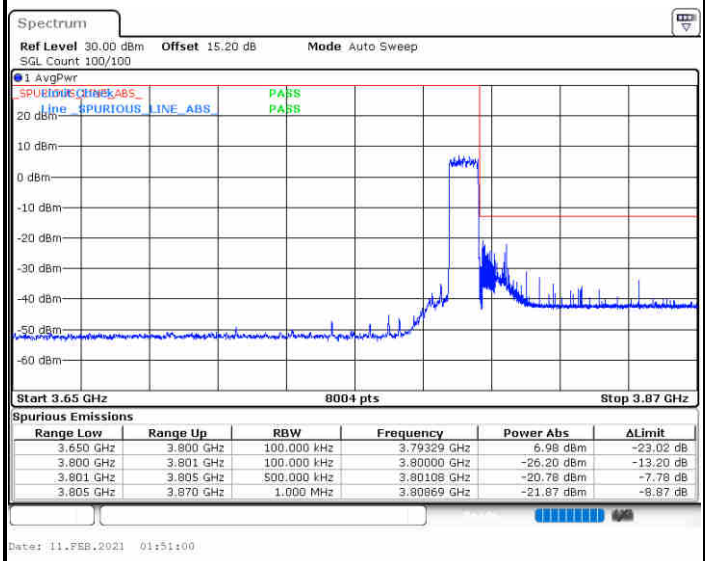
FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

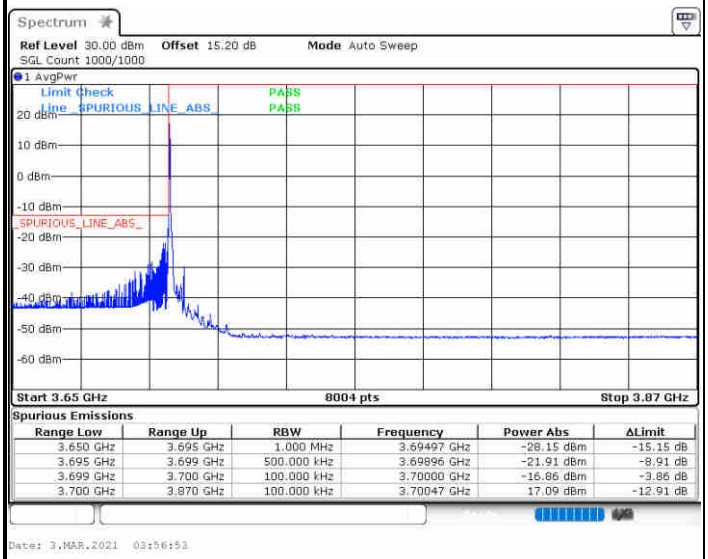
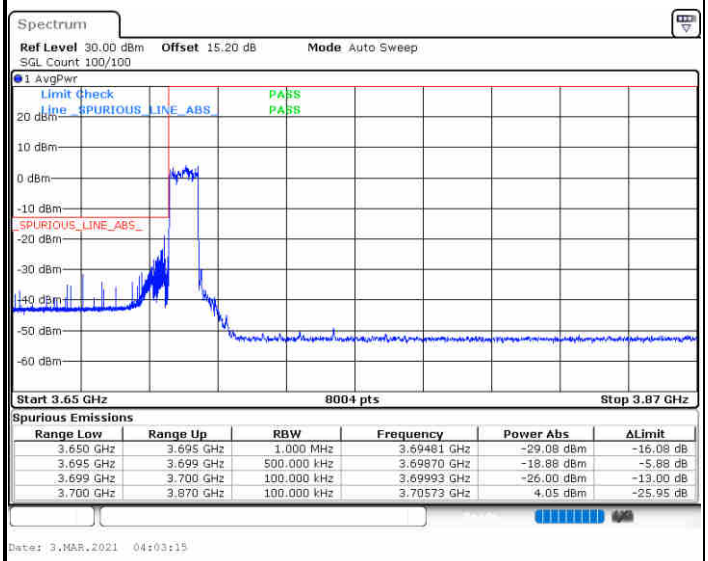
FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

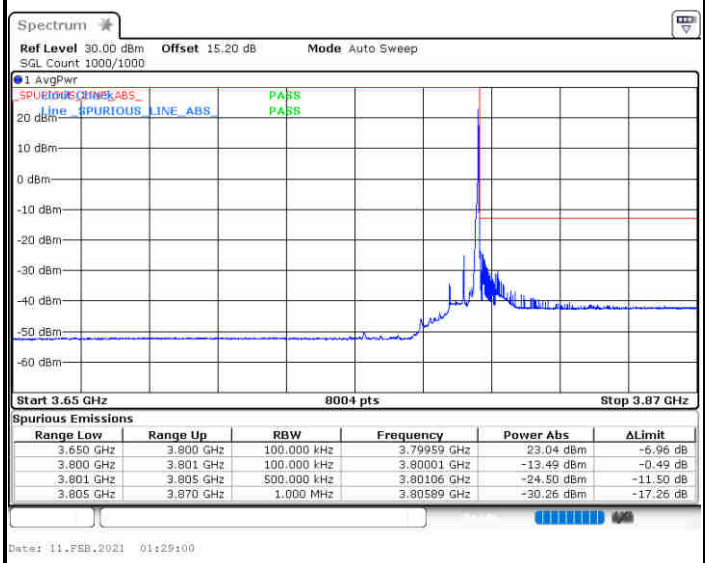
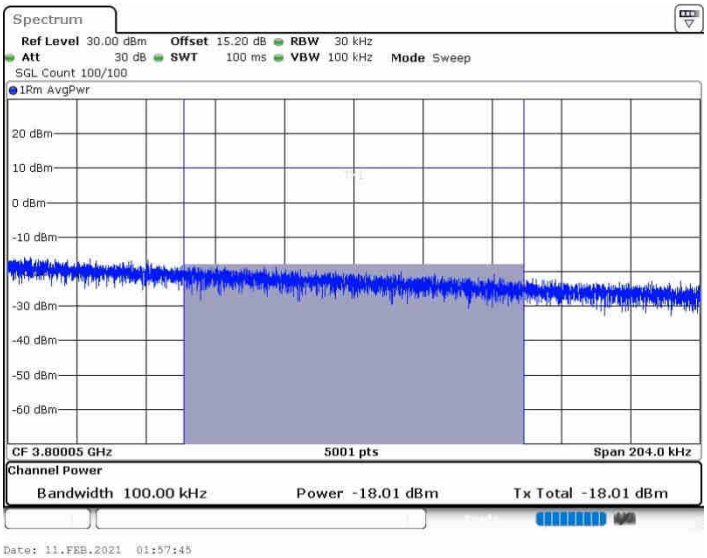
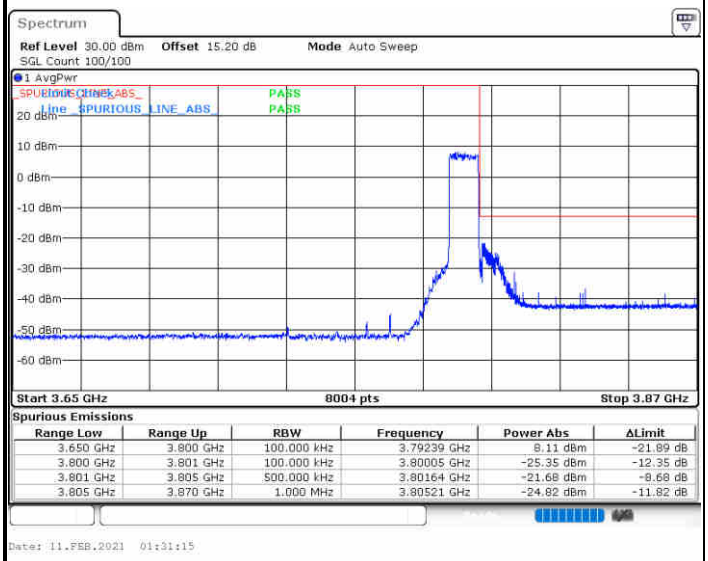
FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

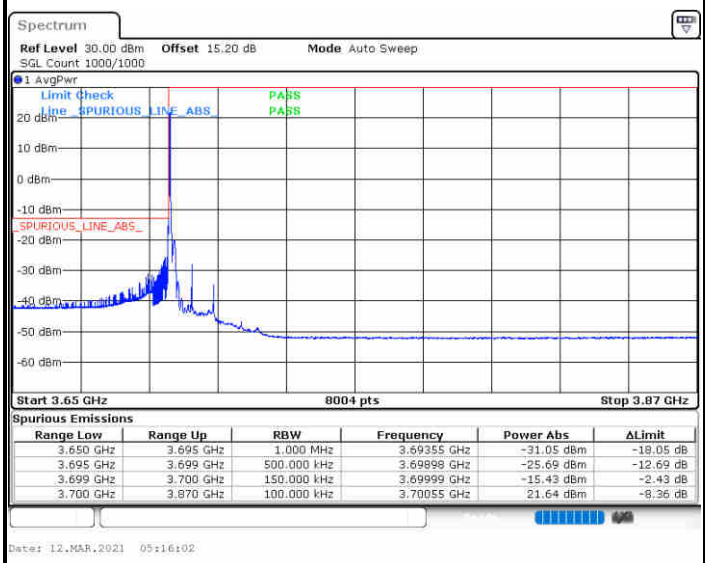
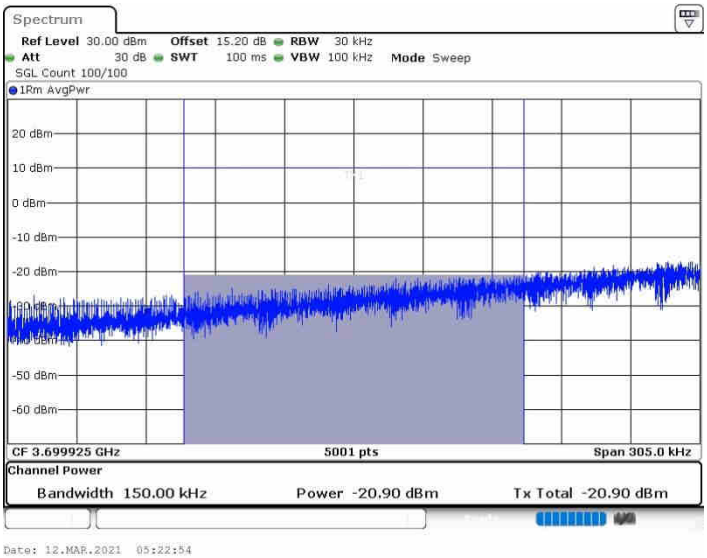
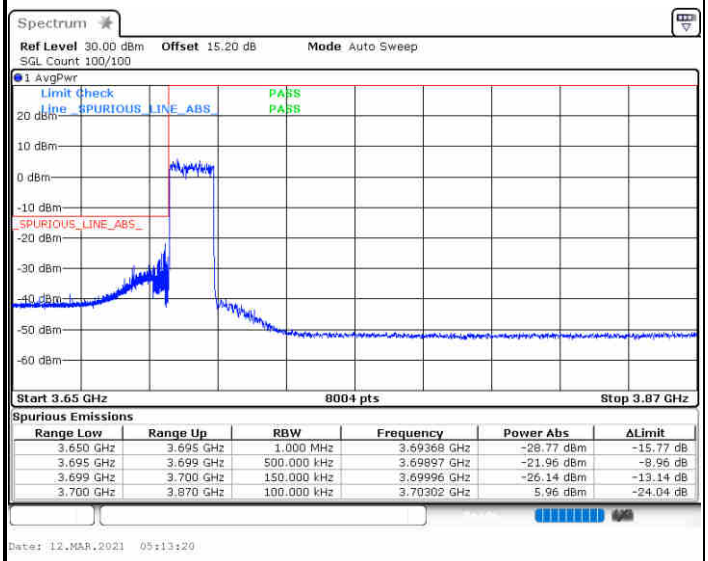
Conducted Band Edge

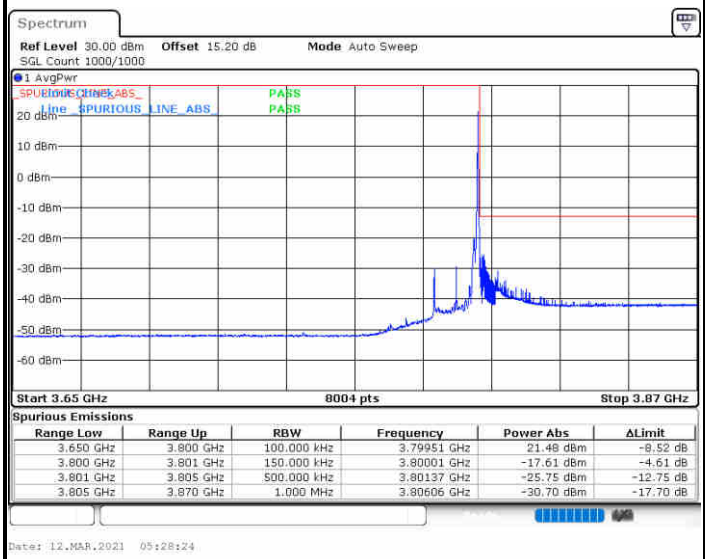
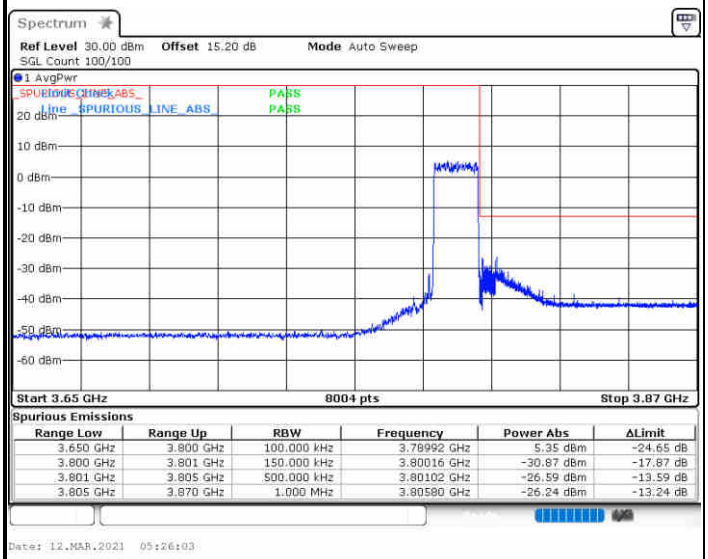
FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M2)	
Lowest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Lowest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

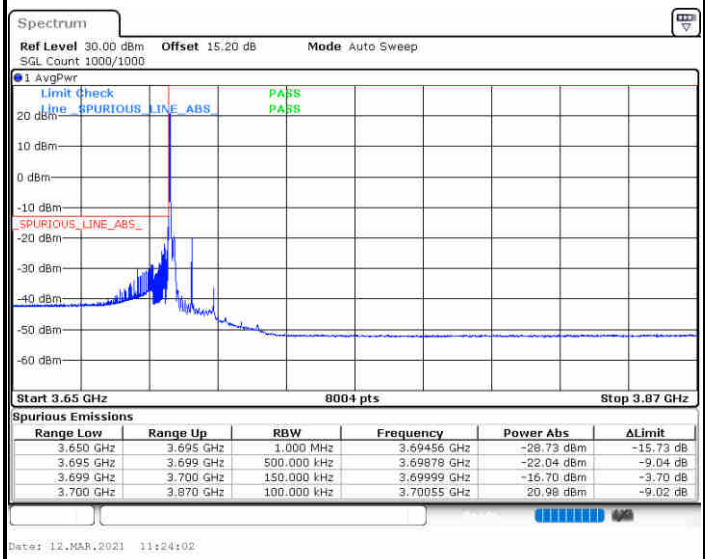
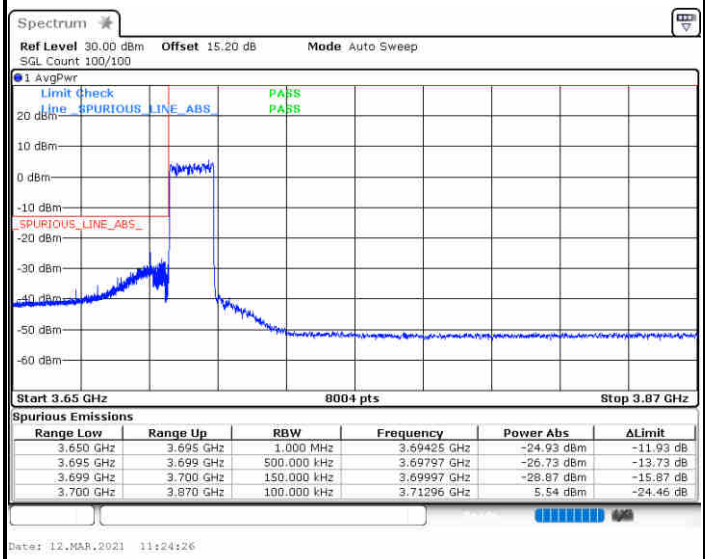
FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M2)	
Highest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Highest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

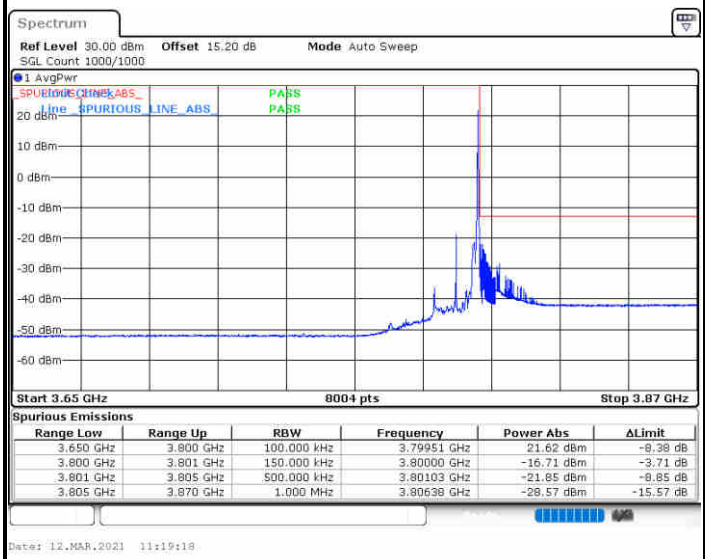
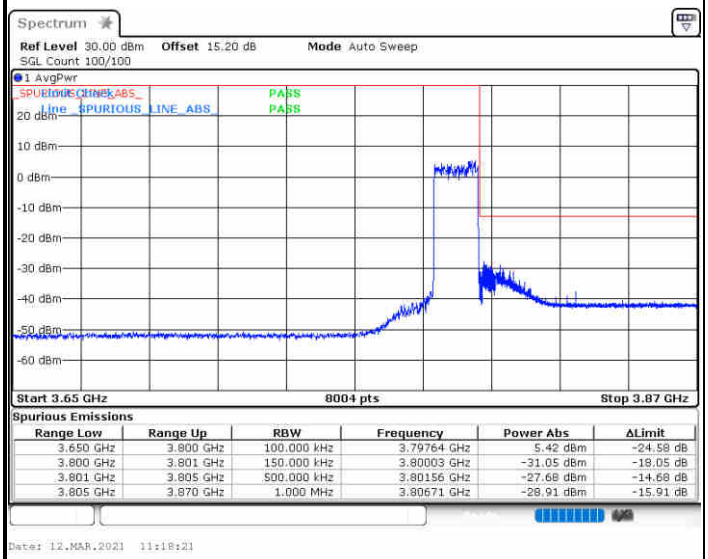
FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M)	
Lowest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	/
Lowest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

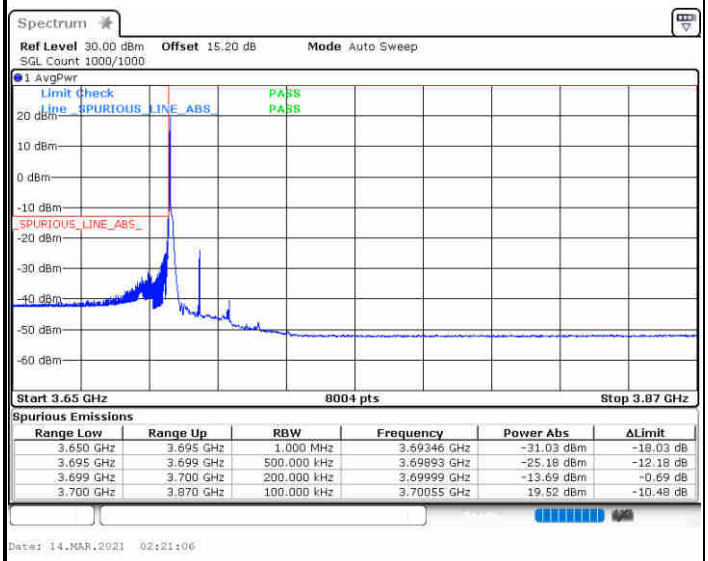
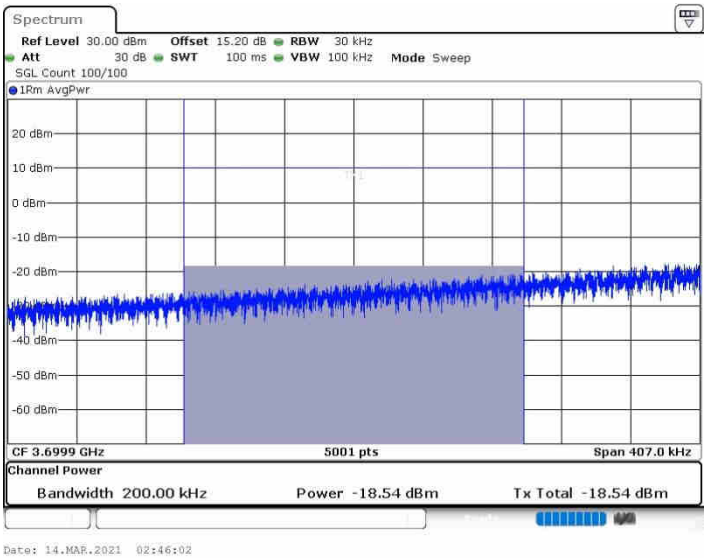
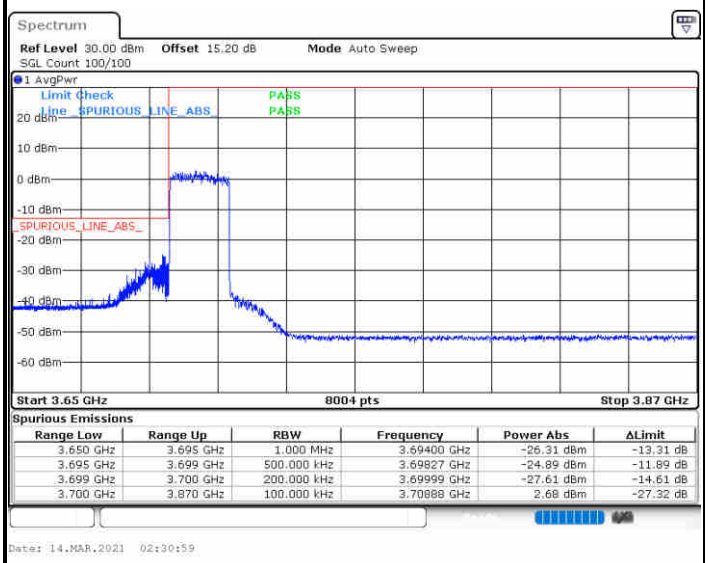
FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M)	
Highest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Highest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

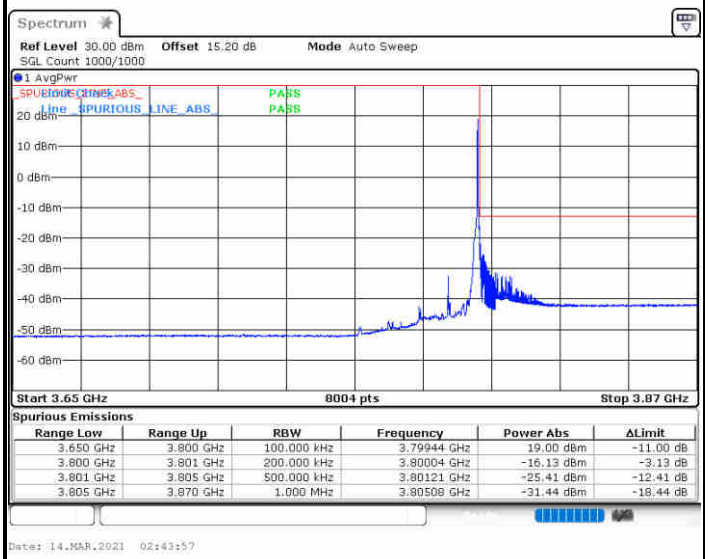
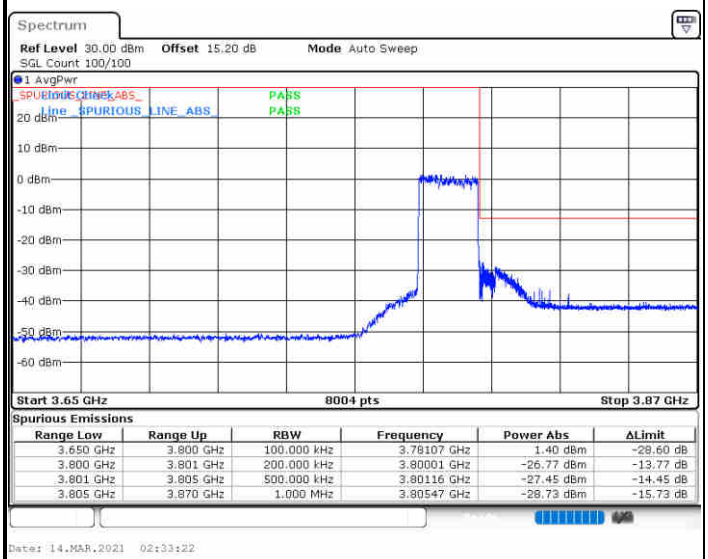
FR1 UL-MIMO n78 / 15MHz / CP-OFDM QPSK (M2)	
Lowest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Lowest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

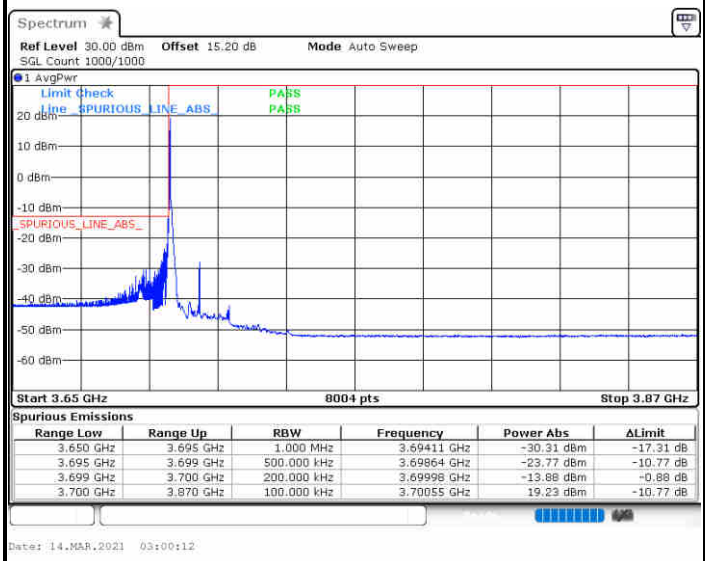
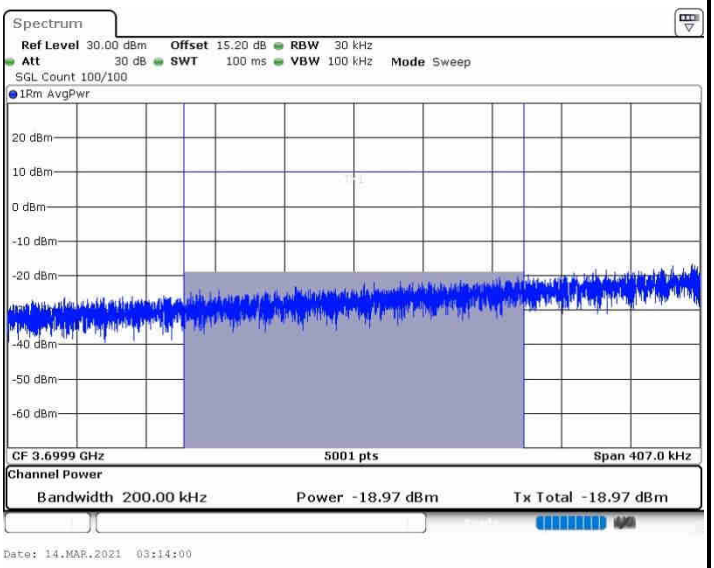
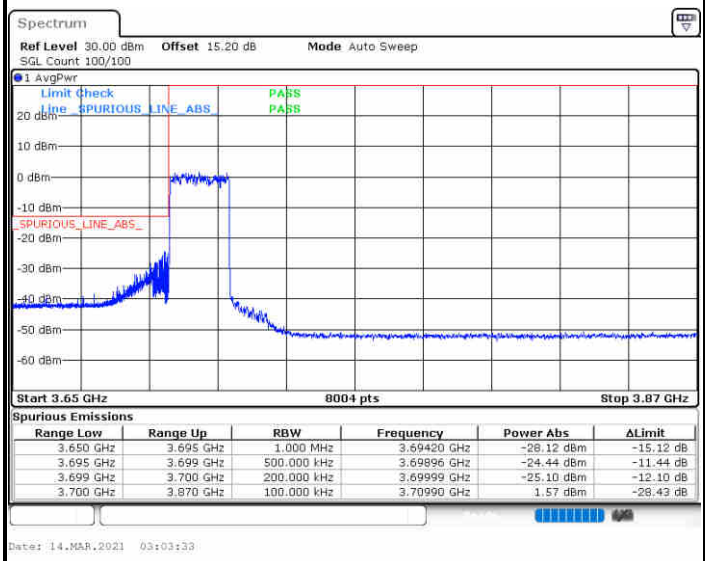
FR1 UL-MIMO n78 /15MHz / CP-OFDM QPSK (M2)	
Highest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	/
Highest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

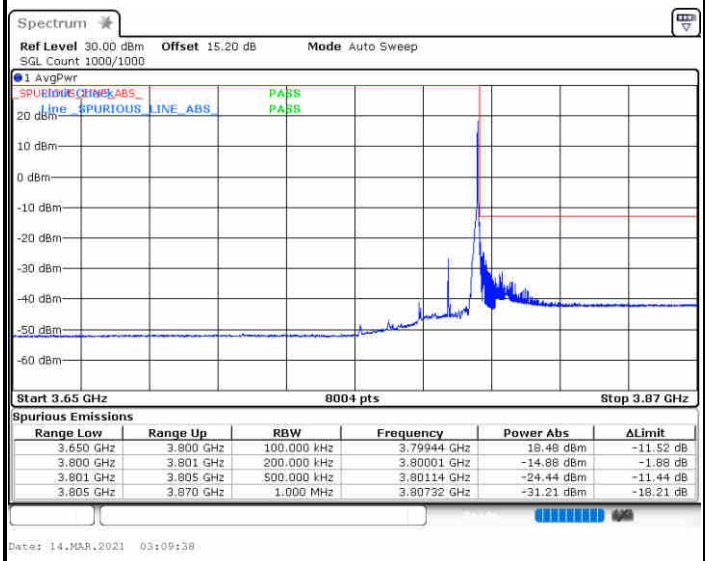
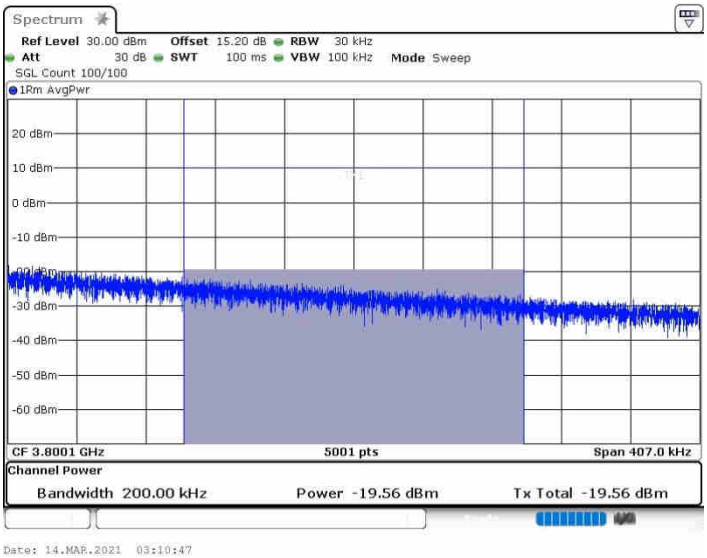
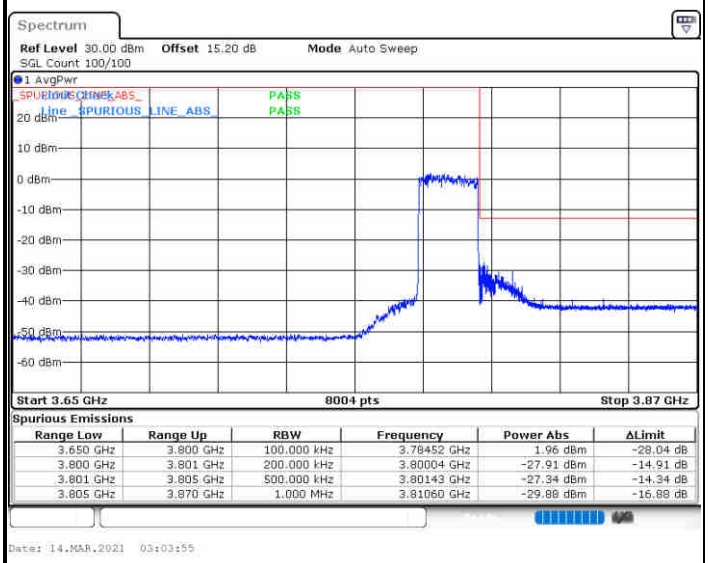
FR1 UL-MIMO n78 / 15MHz / CP-OFDM QPSK (M)	
Lowest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	/
Lowest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

FR1 UL-MIMO n78 /15MHz / CP-OFDM QPSK (M)	
Highest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	/
Highest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M2)	
Lowest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Lowest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M2)	
Highest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	/
Highest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

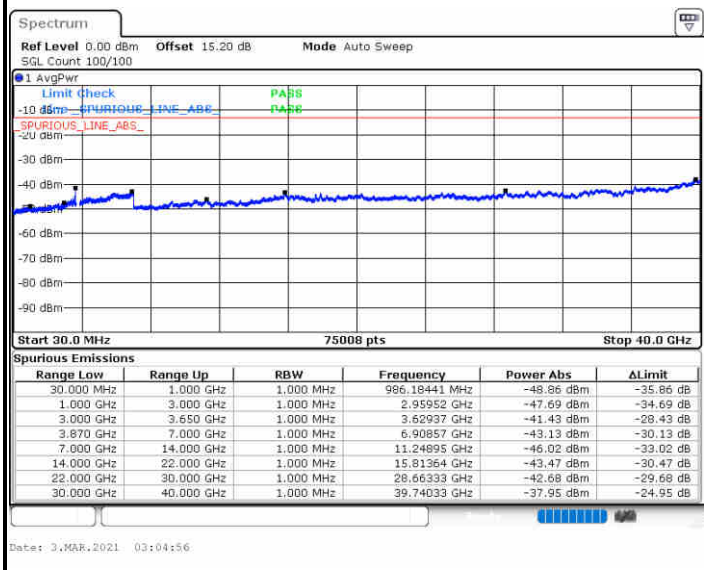
FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M)	
Lowest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Lowest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M)	
Highest Band Edge / 1 RB	**Channel Power < -13dBm Pass**
	
Highest Band Edge / Full RB	**Channel Power < -13dBm Pass**
	/

Conducted Spurious Emission

FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

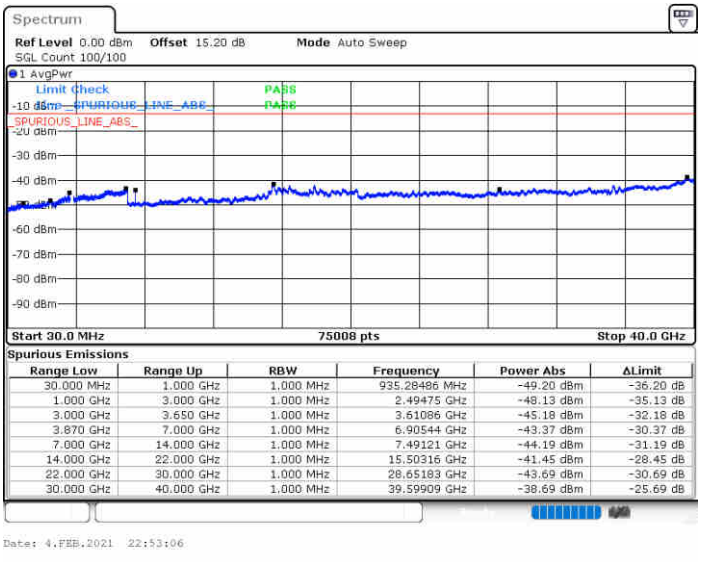


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	986.18441 MHz	-48.86 dBm	-35.86 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.95952 GHz	-47.69 dBm	-34.69 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.62937 GHz	-41.43 dBm	-28.43 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.90857 GHz	-43.13 dBm	-30.13 dB
7.000 GHz	14.000 GHz	1.000 MHz	11.24895 GHz	-46.02 dBm	-33.02 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.81364 GHz	-43.47 dBm	-30.47 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.66333 GHz	-42.68 dBm	-29.68 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.74033 GHz	-37.95 dBm	-24.95 dB

Date: 3.MAR.2021 03:04:56

Middle Channel / 1RB

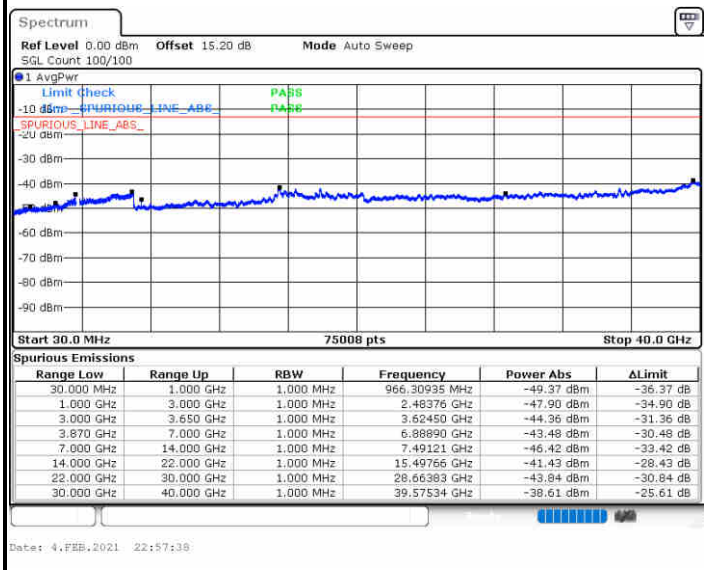


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	935.28486 MHz	-49.20 dBm	-36.20 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.49475 GHz	-48.13 dBm	-35.13 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.61086 GHz	-45.18 dBm	-32.18 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.90544 GHz	-43.37 dBm	-30.37 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.49121 GHz	-44.19 dBm	-31.19 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.50316 GHz	-41.45 dBm	-28.45 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.65103 GHz	-43.69 dBm	-30.69 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.59909 GHz	-38.69 dBm	-25.69 dB

Date: 4.FEB.2021 22:53:06

Highest Channel / 1RB



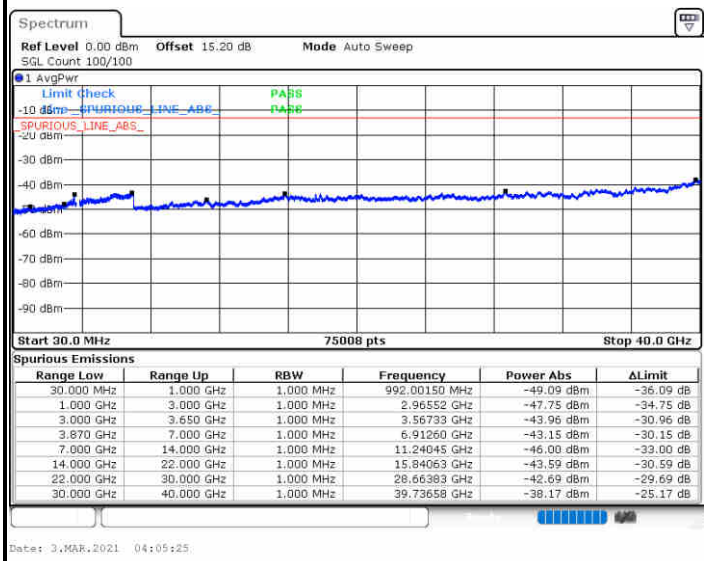
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	966.30935 MHz	-49.37 dBm	-36.37 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.48376 GHz	-47.90 dBm	-34.90 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.62450 GHz	-44.36 dBm	-31.36 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.88890 GHz	-43.48 dBm	-30.48 dB
7.000 GHz	14.000 GHz	1.000 MHz	7.49121 GHz	-46.42 dBm	-33.42 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.49766 GHz	-41.43 dBm	-28.43 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.66383 GHz	-43.84 dBm	-30.84 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.57534 GHz	-38.61 dBm	-25.61 dB

Date: 4.FEB.2021 22:57:38

FR1 UL-MIMO n78 / 10MHz / CP-OFDM QPSK (M)

Lowest Channel / 1RB

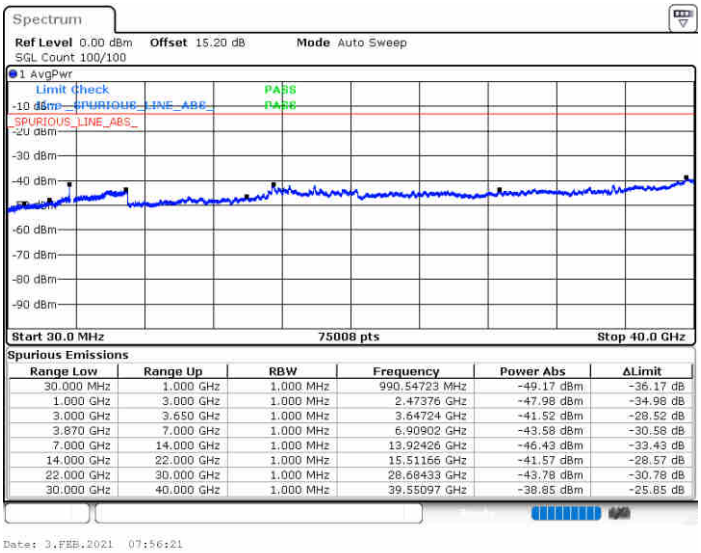


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.00150 MHz	-49.09 dBm	-36.09 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96552 GHz	-47.75 dBm	-34.75 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.56733 GHz	-43.96 dBm	-30.96 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.91260 GHz	-43.15 dBm	-30.15 dB
7.000 GHz	14.000 GHz	1.000 MHz	11.24045 GHz	-46.00 dBm	-33.00 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.84063 GHz	-43.59 dBm	-30.59 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.66383 GHz	-42.69 dBm	-29.69 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.73658 GHz	-38.17 dBm	-25.17 dB

Date: 3.MAR.2021 04:05:25

Middle Channel / 1RB

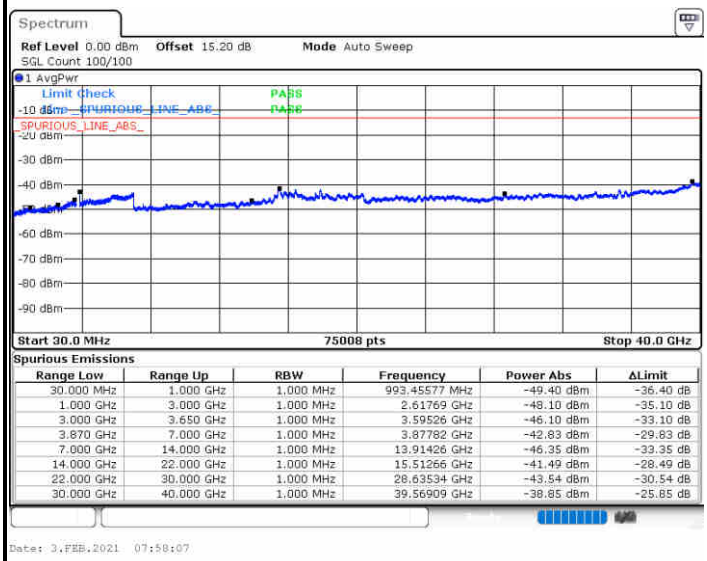


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.54723 MHz	-49.17 dBm	-36.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.47376 GHz	-47.98 dBm	-34.98 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.64724 GHz	-41.52 dBm	-28.52 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.90902 GHz	-43.58 dBm	-30.58 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.92426 GHz	-46.43 dBm	-33.43 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.51166 GHz	-41.57 dBm	-28.57 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.68433 GHz	-43.78 dBm	-30.78 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.55097 GHz	-38.85 dBm	-25.85 dB

Date: 3.FEB.2021 07:56:21

Highest Channel / 1RB



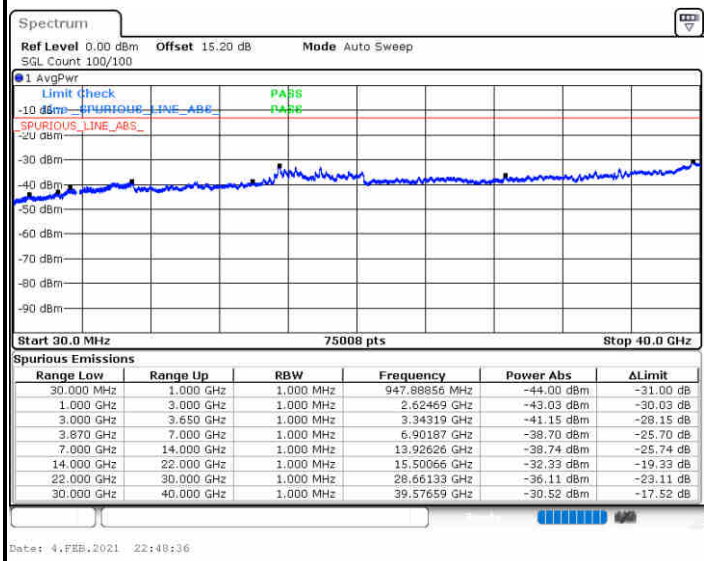
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	993.45577 MHz	-49.40 dBm	-36.40 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.61769 GHz	-48.10 dBm	-35.10 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.59526 GHz	-46.10 dBm	-33.10 dB
3.870 GHz	7.000 GHz	1.000 MHz	3.87782 GHz	-42.83 dBm	-29.83 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.91426 GHz	-46.35 dBm	-33.35 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.51266 GHz	-41.49 dBm	-28.49 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.63534 GHz	-43.54 dBm	-30.54 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.56909 GHz	-38.85 dBm	-25.85 dB

Date: 3.FEB.2021 07:58:07

FR1 UL-MIMO n78 / 15MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

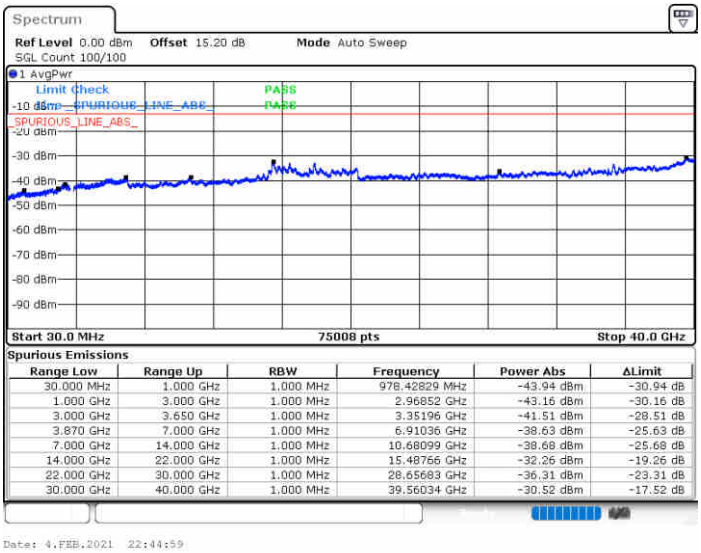


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	947.88856 MHz	-44.00 dBm	-31.00 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.62469 GHz	-43.03 dBm	-30.03 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.34319 GHz	-41.15 dBm	-28.15 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.90187 GHz	-38.70 dBm	-25.70 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.92626 GHz	-38.74 dBm	-25.74 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.50066 GHz	-32.33 dBm	-19.33 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.66133 GHz	-36.11 dBm	-23.11 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.57659 GHz	-30.52 dBm	-17.52 dB

Date: 4.FEB.2021 22:40:36

Middle Channel / 1RB

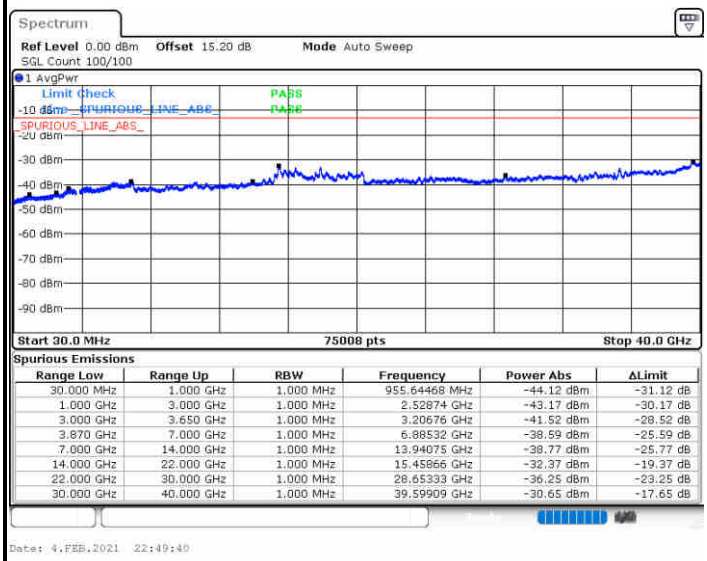


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	978.42829 MHz	-43.94 dBm	-30.94 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96852 GHz	-43.16 dBm	-30.16 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.35196 GHz	-41.51 dBm	-28.51 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.91036 GHz	-38.63 dBm	-25.63 dB
7.000 GHz	14.000 GHz	1.000 MHz	10.68099 GHz	-38.68 dBm	-25.68 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.48766 GHz	-32.26 dBm	-19.26 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.65683 GHz	-36.31 dBm	-23.31 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.56034 GHz	-30.52 dBm	-17.52 dB

Date: 4.FEB.2021 22:44:59

Highest Channel / 1RB



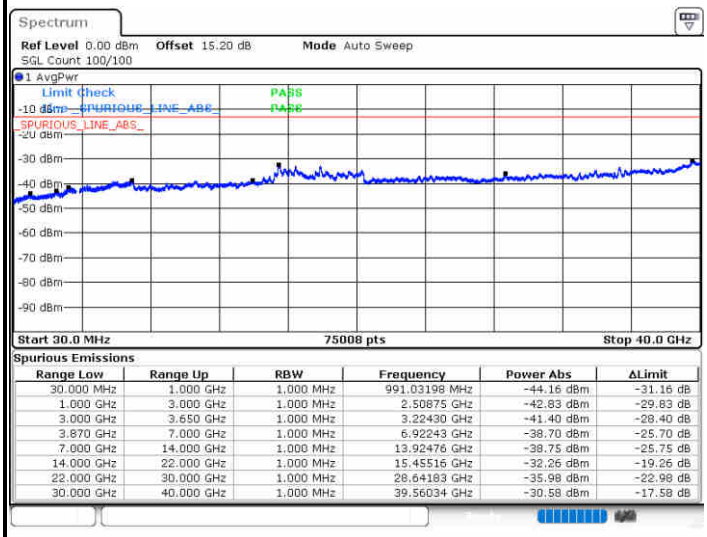
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	955.64468 MHz	-44.12 dBm	-31.12 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.52874 GHz	-43.17 dBm	-30.17 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.20676 GHz	-41.52 dBm	-28.52 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.88532 GHz	-38.59 dBm	-25.59 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.94075 GHz	-38.77 dBm	-25.77 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.45866 GHz	-32.37 dBm	-19.37 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.65333 GHz	-36.25 dBm	-23.25 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.59909 GHz	-30.65 dBm	-17.65 dB

Date: 4.FEB.2021 22:49:40

FR1 UL-MIMO n78 / 15MHz / CP-OFDM QPSK (M)

Lowest Channel / 1RB

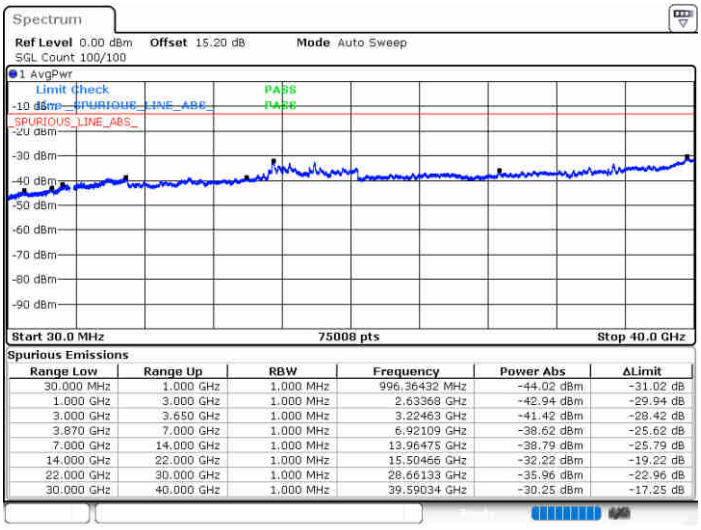


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.03198 MHz	-44.16 dBm	-31.16 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.50875 GHz	-42.83 dBm	-29.83 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.22430 GHz	-41.40 dBm	-28.40 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.92243 GHz	-38.70 dBm	-25.70 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.92476 GHz	-38.75 dBm	-25.75 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.45516 GHz	-32.26 dBm	-19.26 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.64183 GHz	-35.98 dBm	-22.98 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.56034 GHz	-30.58 dBm	-17.58 dB

Date: 3.FEB.2021 07:37:32

Middle Channel / 1RB

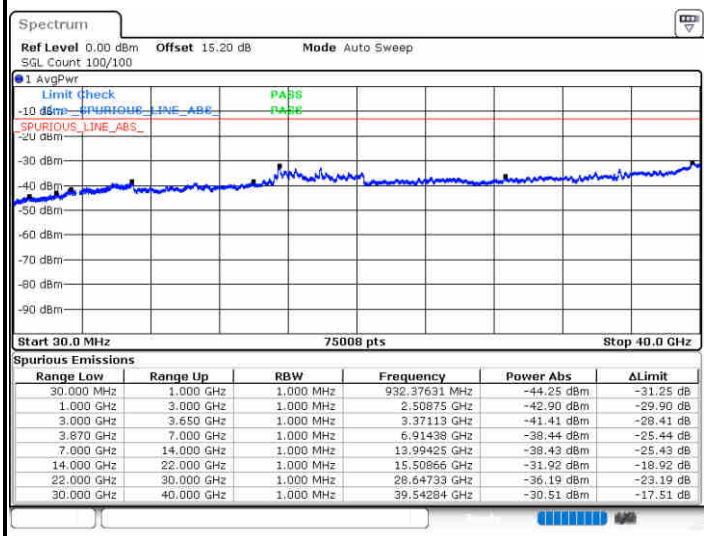


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.36432 MHz	-44.02 dBm	-31.02 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63368 GHz	-42.94 dBm	-29.94 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.22463 GHz	-41.42 dBm	-28.42 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.92109 GHz	-38.62 dBm	-25.62 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.96475 GHz	-38.79 dBm	-25.79 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.50466 GHz	-32.22 dBm	-19.22 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.66133 GHz	-35.96 dBm	-22.96 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.59034 GHz	-30.25 dBm	-17.25 dB

Date: 3.FEB.2021 07:33:37

Highest Channel / 1RB



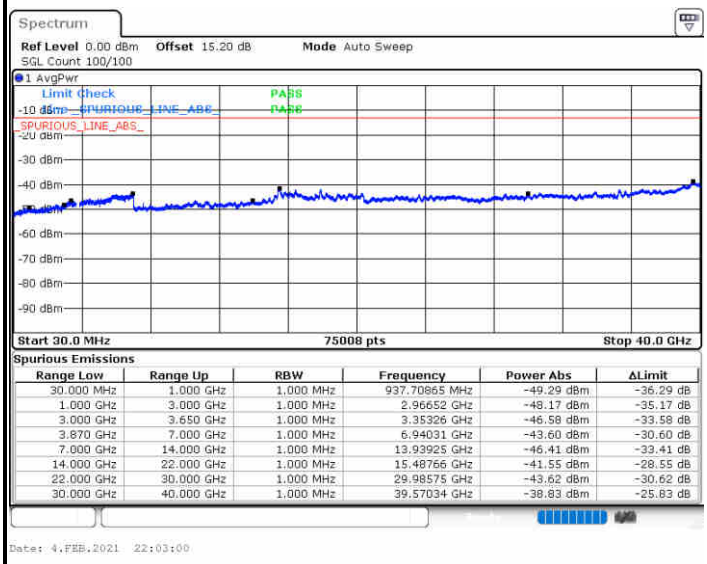
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	932.37631 MHz	-44.25 dBm	-31.25 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.50875 GHz	-42.90 dBm	-29.90 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.37113 GHz	-41.41 dBm	-28.41 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.91438 GHz	-38.44 dBm	-25.44 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.99425 GHz	-38.43 dBm	-25.43 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.50866 GHz	-31.92 dBm	-18.92 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.64733 GHz	-36.19 dBm	-23.19 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.54284 GHz	-30.51 dBm	-17.51 dB

Date: 3.FEB.2021 07:39:17

FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M2)

Lowest Channel / 1RB

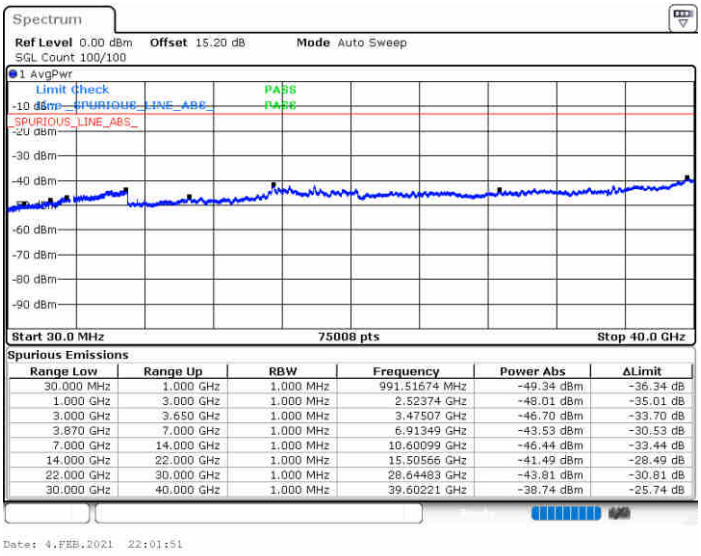


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	937.70865 MHz	-49.29 dBm	-36.29 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96652 GHz	-48.17 dBm	-35.17 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.35326 GHz	-46.58 dBm	-33.58 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.94031 GHz	-43.60 dBm	-30.60 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.93925 GHz	-46.41 dBm	-33.41 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.48766 GHz	-41.55 dBm	-28.55 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.98575 GHz	-43.62 dBm	-30.62 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.57034 GHz	-38.83 dBm	-25.83 dB

Date: 4.FEB.2021 22:03:00

Middle Channel / 1RB

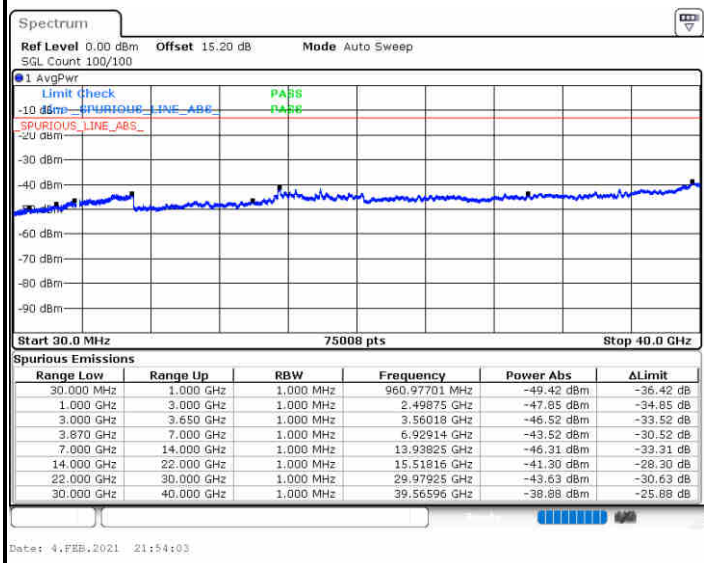


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	991.51674 MHz	-49.34 dBm	-36.34 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.52374 GHz	-48.01 dBm	-35.01 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.47507 GHz	-46.70 dBm	-33.70 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.91349 GHz	-43.53 dBm	-30.53 dB
7.000 GHz	14.000 GHz	1.000 MHz	10.60099 GHz	-46.44 dBm	-33.44 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.50566 GHz	-41.49 dBm	-28.49 dB
22.000 GHz	30.000 GHz	1.000 MHz	28.64483 GHz	-43.81 dBm	-30.81 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.60221 GHz	-38.74 dBm	-25.74 dB

Date: 4.FEB.2021 22:01:51

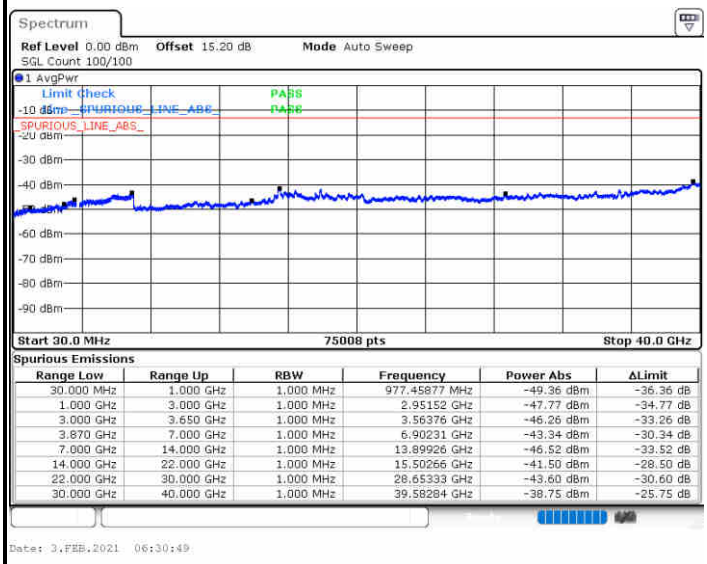
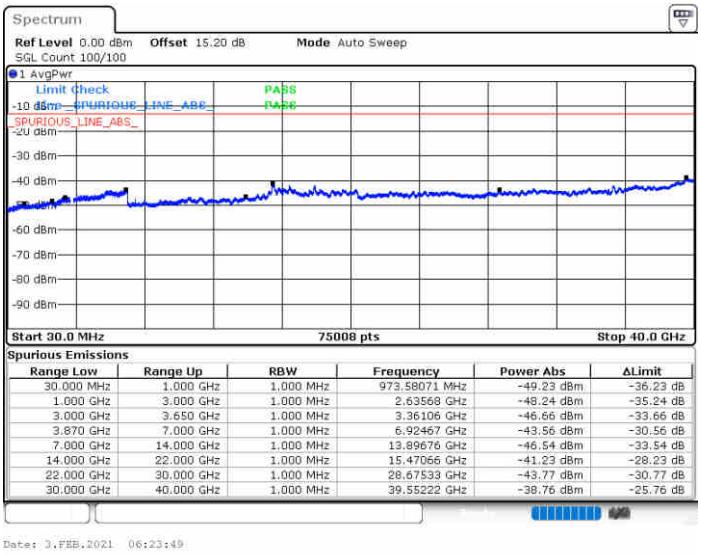
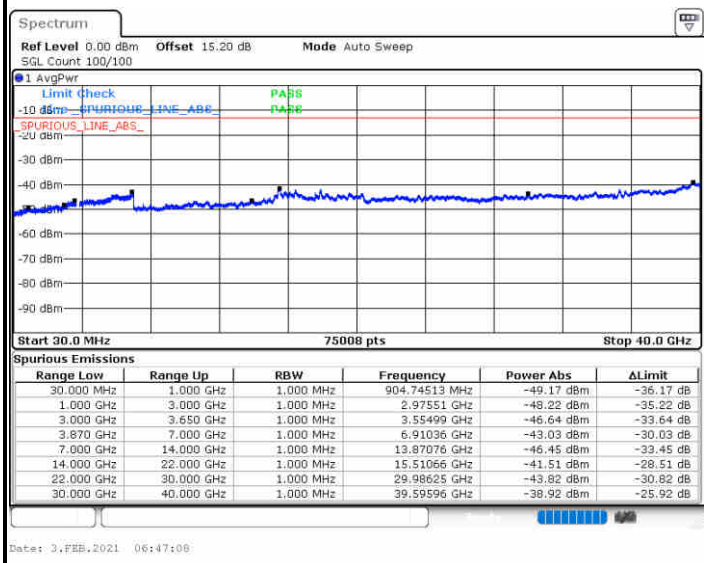
Highest Channel / 1RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	960.97701 MHz	-49.42 dBm	-36.42 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.49875 GHz	-47.85 dBm	-34.85 dB
3.000 GHz	3.650 GHz	1.000 MHz	3.56018 GHz	-46.52 dBm	-33.52 dB
3.870 GHz	7.000 GHz	1.000 MHz	6.92914 GHz	-43.52 dBm	-30.52 dB
7.000 GHz	14.000 GHz	1.000 MHz	13.93825 GHz	-46.31 dBm	-33.31 dB
14.000 GHz	22.000 GHz	1.000 MHz	15.51816 GHz	-41.30 dBm	-28.30 dB
22.000 GHz	30.000 GHz	1.000 MHz	29.97925 GHz	-43.63 dBm	-30.63 dB
30.000 GHz	40.000 GHz	1.000 MHz	39.56596 GHz	-38.88 dBm	-25.88 dB

Date: 4.FEB.2021 21:54:03

FR1 UL-MIMO n78 / 20MHz / CP-OFDM QPSK (M)	
Lowest Channel / 1RB	**Middle Channel / 1RB**
	
Highest Channel / 1RB	
	

Frequency Stability

Test Conditions		NR UL-MIMO n78 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Within Band
		Deviation (ppm)	Result
50	Normal Voltage	0.0016	PASS
40	Normal Voltage	0.0020	
30	Normal Voltage	0.0021	
20(Ref.)	Normal Voltage	0.0015	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0013	
-10	Normal Voltage	0.0027	
-20	Normal Voltage	0.0010	
-30	Normal Voltage	0.0015	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0027	
20	Battery End Point	0.0022	

Note:

1. Normal Voltage =3.3 V. ; Battery End Point (BEP) =3.14 V. ; Maximum Voltage =4.4 V.

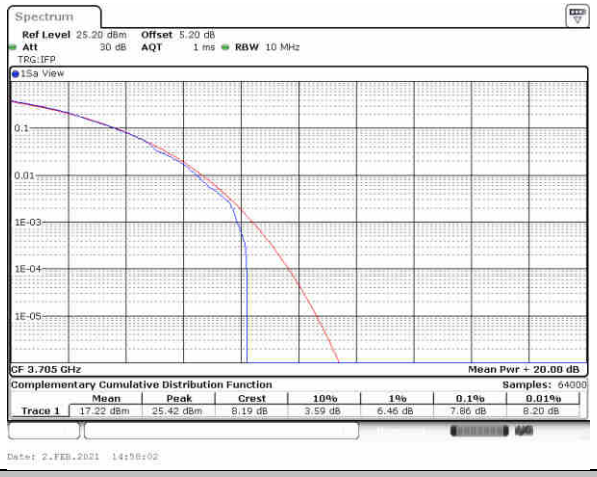
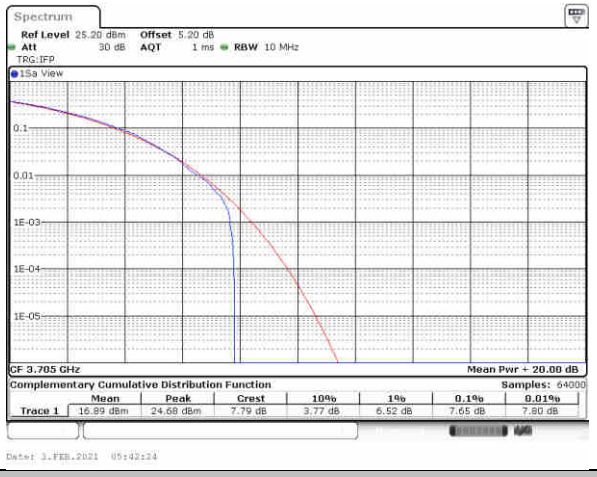
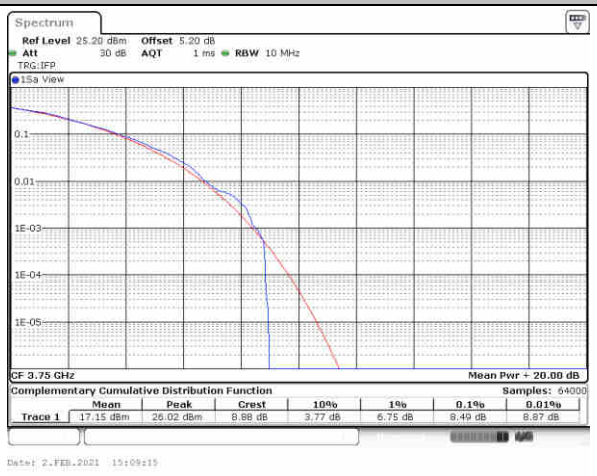
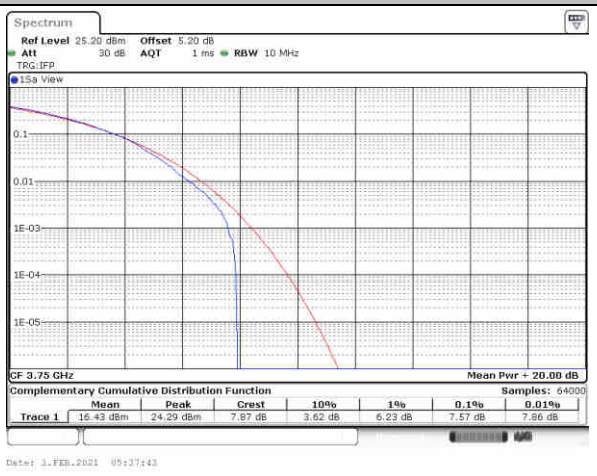
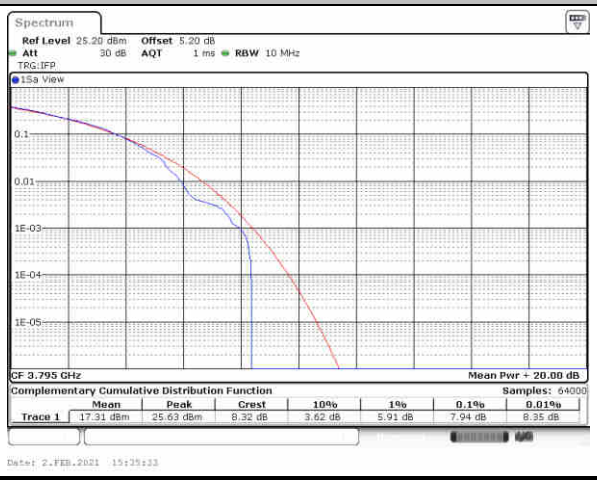
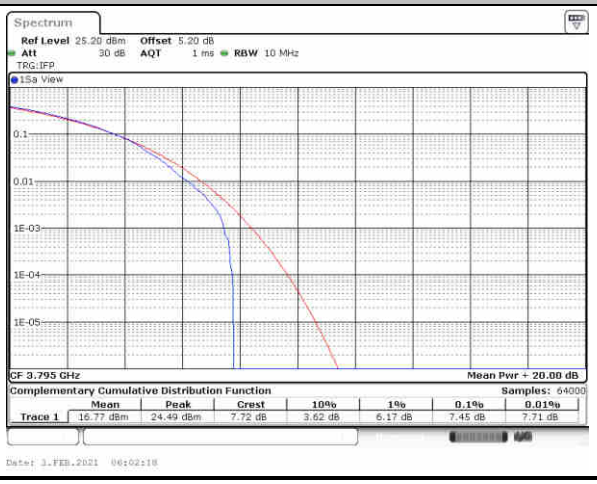
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

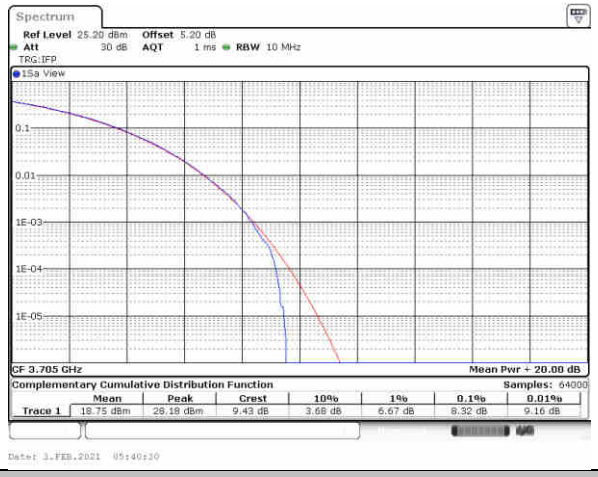
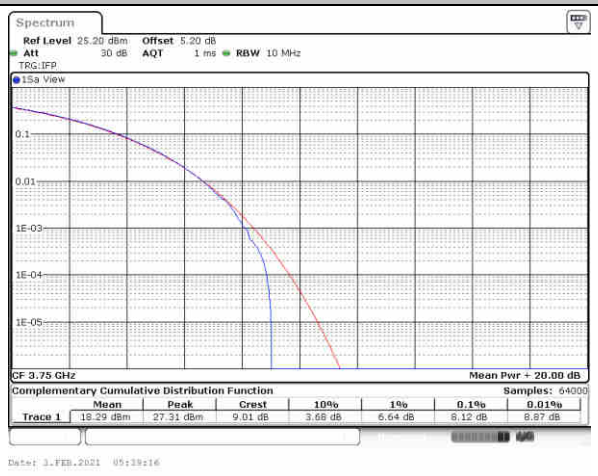
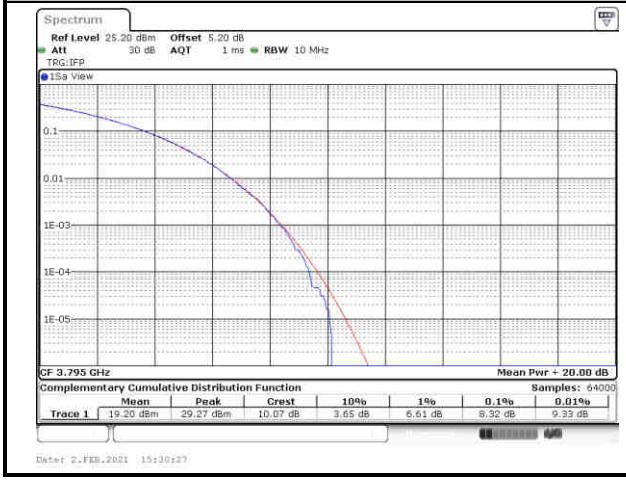
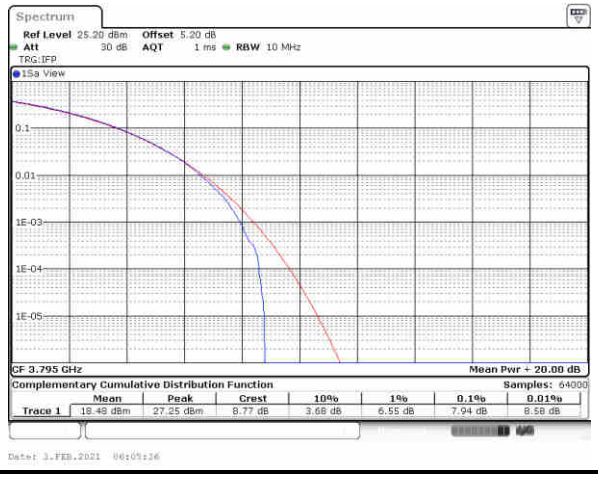
5G NR n78 UL_MIMO HPUE -SCS 30K

Peak-to-Average Ratio

Mode	FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M2)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	7.86	8.17			PASS
Middle CH	8.49	8.52			
Highest CH	7.94	8.32			

Mode	FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	7.65	8.32			PASS
Middle CH	7.57	8.12			
Highest CH	7.45	7.94			

FR1 UL-MIMO n78 / 20MHz / CP-OFDM	
QPSK(M2)	**QPSK(M)**
Lowest Channel / 1RB	**Lowest Channel / 1RB**
	
Middle Channel / 1 RB	**Middle Channel / 1 RB**
	
Highest Channel / 1 RB	**Highest Channel / 1 RB**
	

FR1 UL-MIMO n78 / 20MHz / CP-OFDM	
QPSK(M2)	**QPSK(M)**
Lowest Channel / Full RB	**Lowest Channel / Full RB**
	
Middle Channel / Full RB	**Middle Channel / Full RB**
	
Highest Channel / Full RB	**Highest Channel / Full RB**
	

26dB Bandwidth

Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz	10MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	8.97	9.07	9.15	9.15	9.25	8.97	9.19	9.27

Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz	15MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	14.29	14.32	14.32	14.32	14.38	14.41	14.44	14.29

Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	19.18	19.14	19.10	18.98	19.34	19.26	19.06	18.94

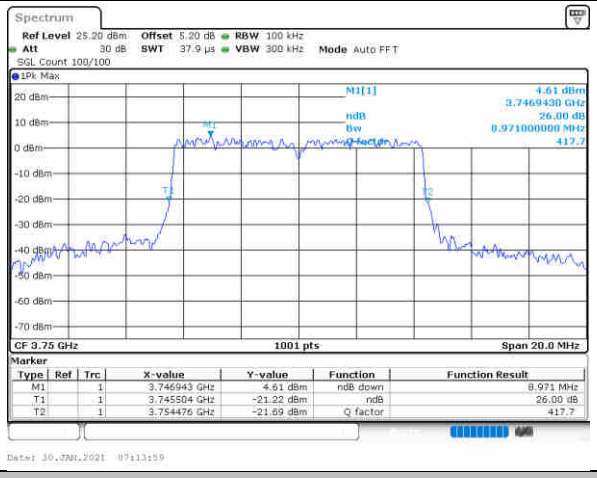
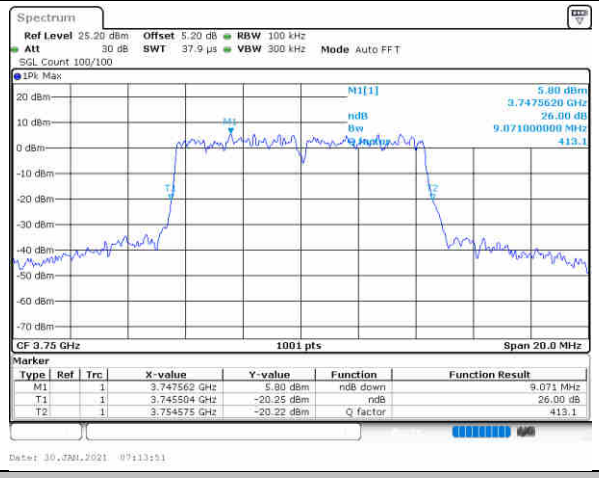
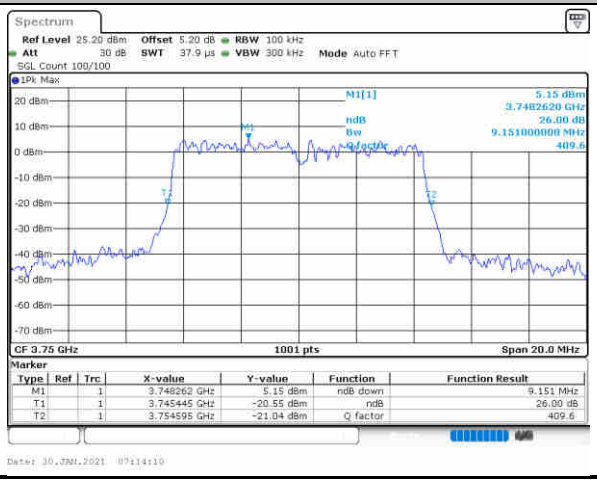
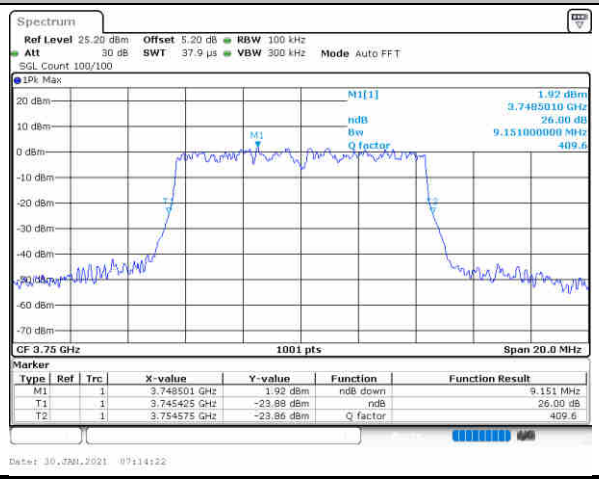
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	40.2	40.36	40.44	40.28	40.2	40.519	40.36	40.59

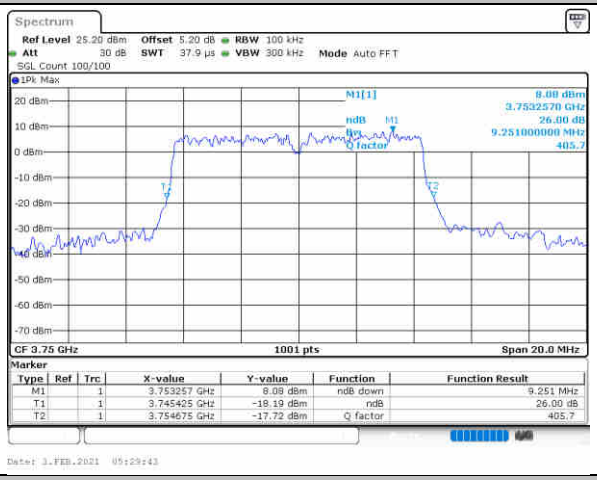
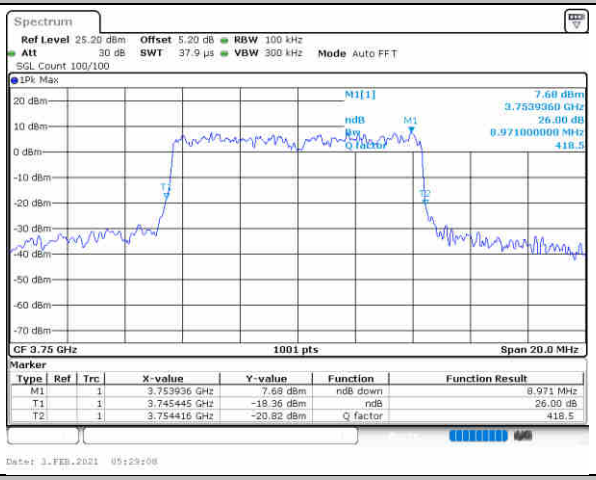
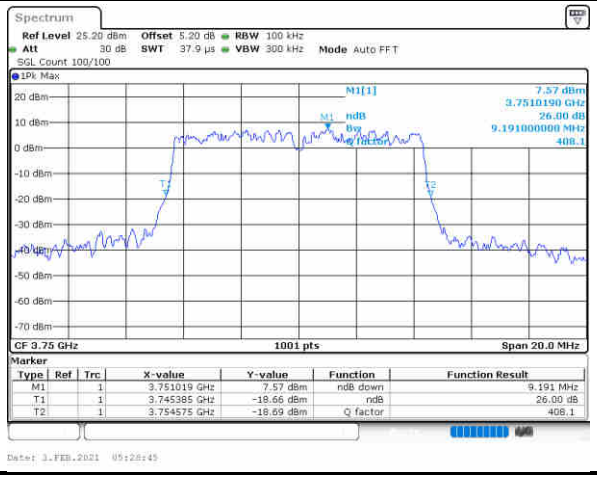
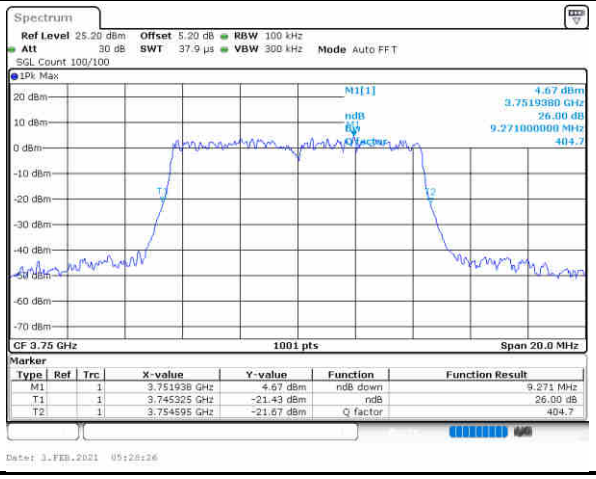
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	49.75	49.65	49.75	49.75	49.75	49.75	49.55	49.75

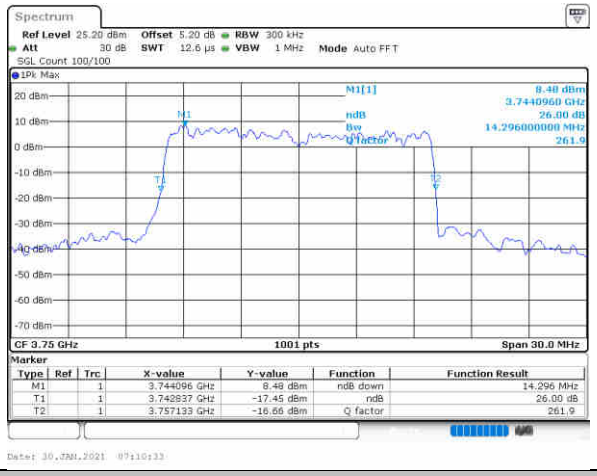
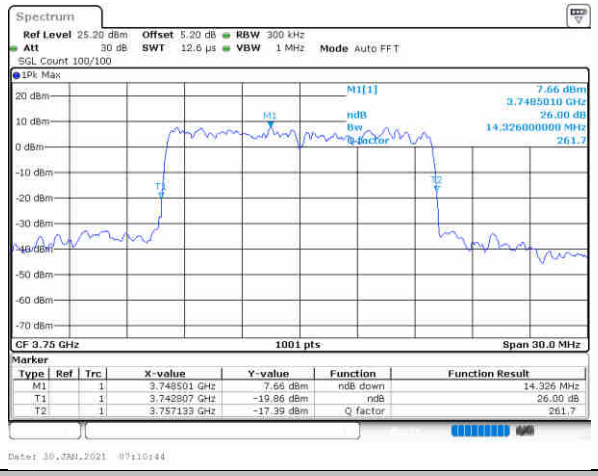
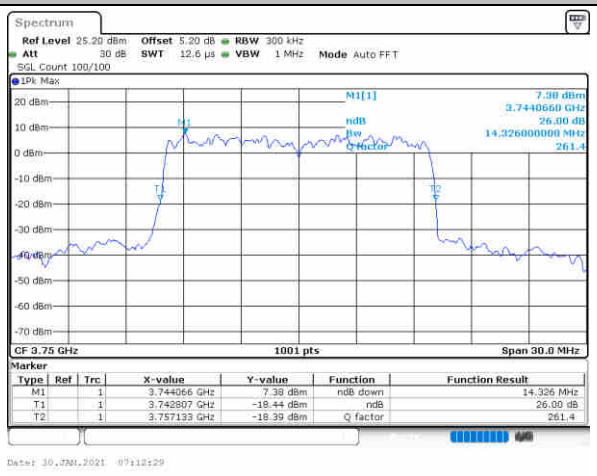
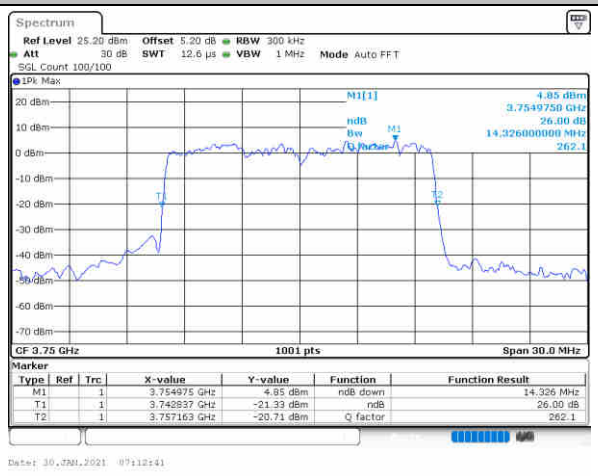
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	60.18	60.54	60.3	60.42	60.54	60.42	60.42	60.42

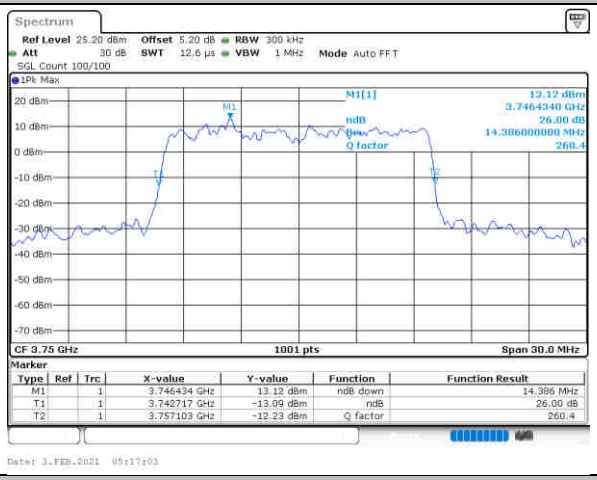
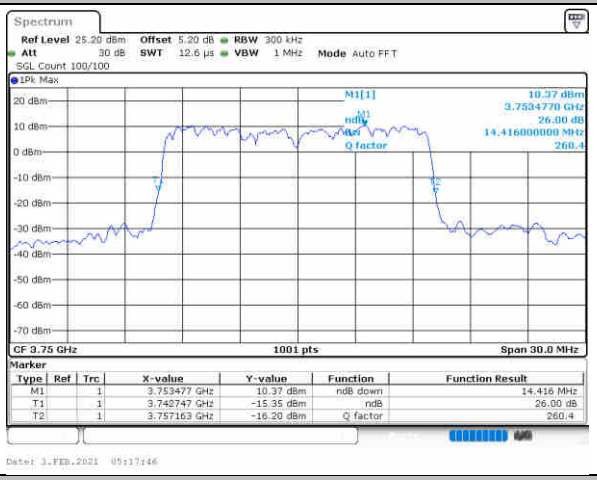
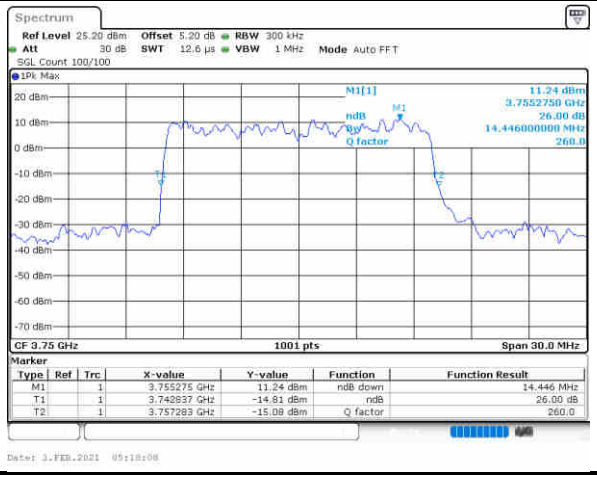
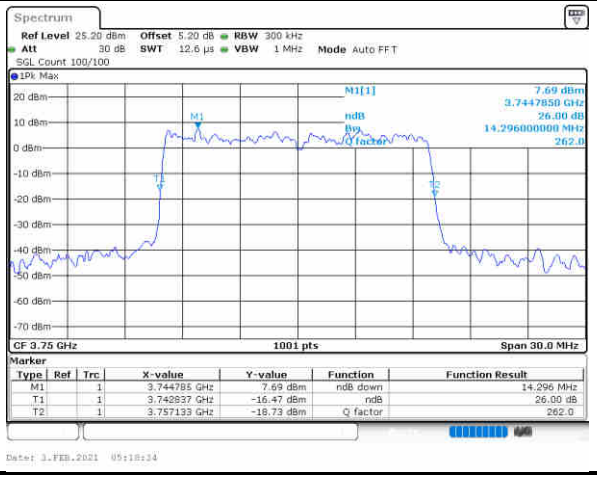
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	79.92	79.92	79.92	79.76	79.92	79.92	79.92	79.92

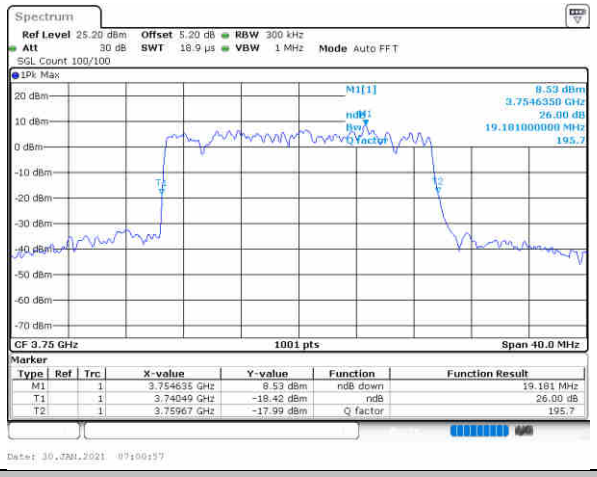
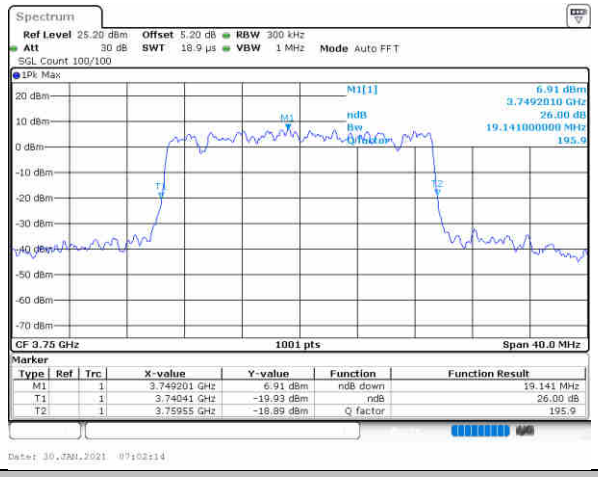
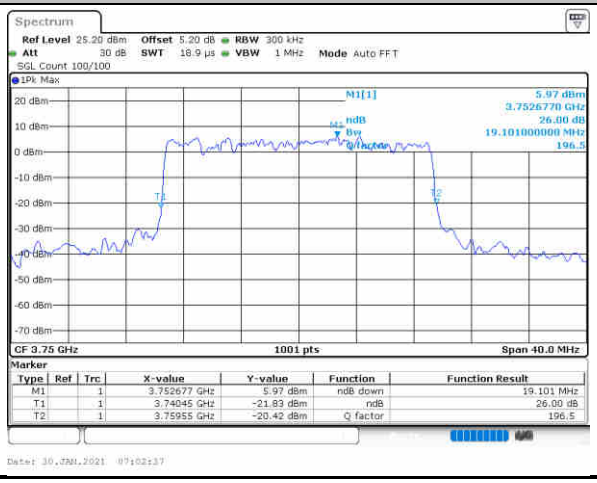
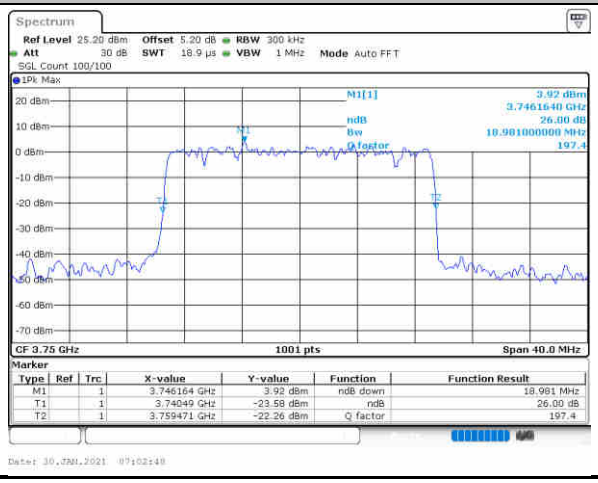
Mode	FR1 UL-MIMO n78 : 26dB BW(MHz) / CP-OFDM							
	M2				M			
BW	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	100.3	100.5	100.3	100.5	100.9	100.3	100.5	100.3

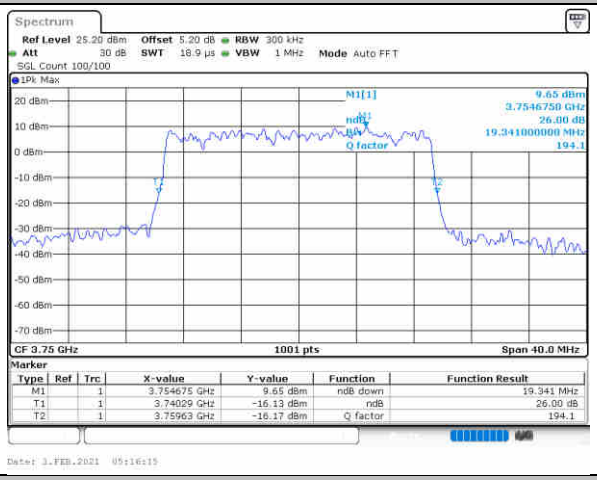
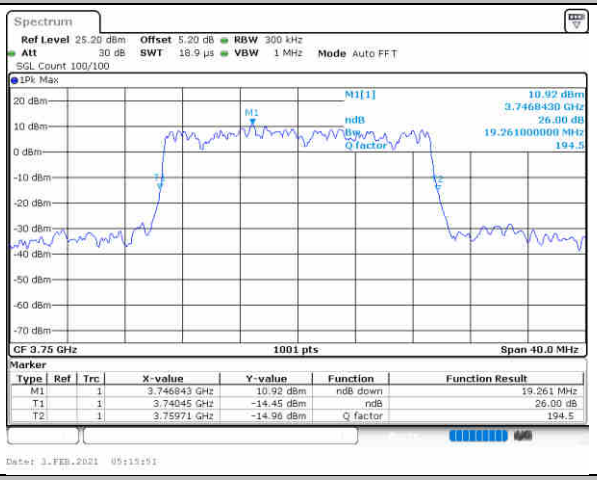
FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 10MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 15MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M2)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n78 / 20MHz / CP-OFDM (M)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**