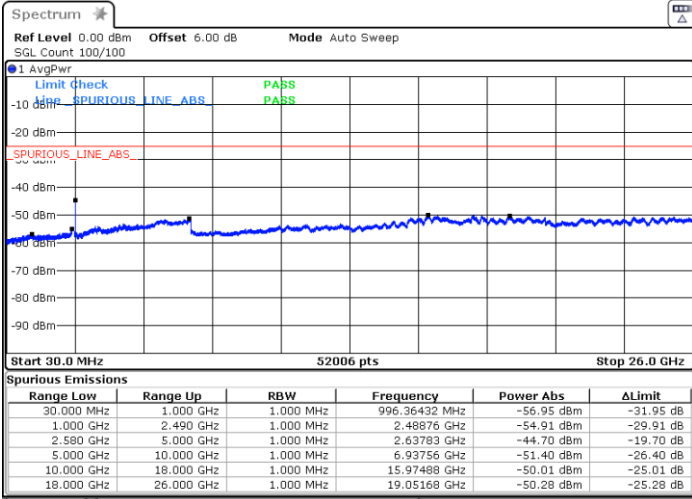




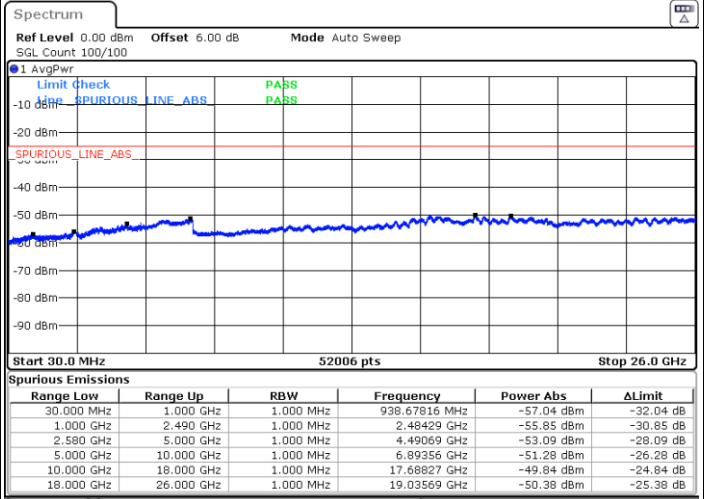
FR1 n7 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

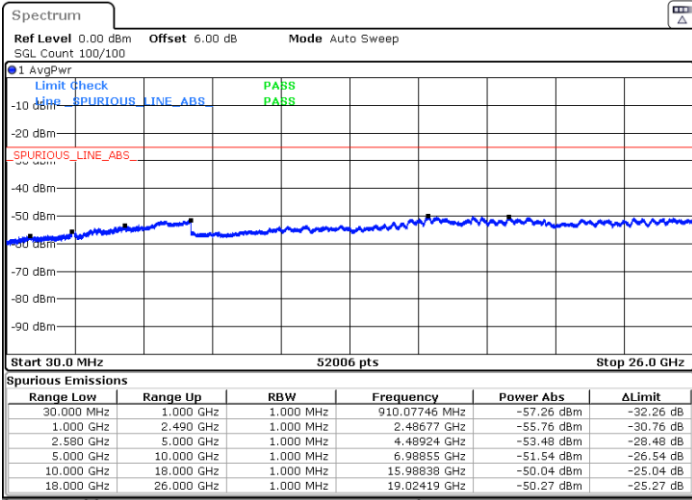


Date: 19.OCT.2022 15:53:36



Date: 19.OCT.2022 20:15:19

Highest Channel / 1RB1



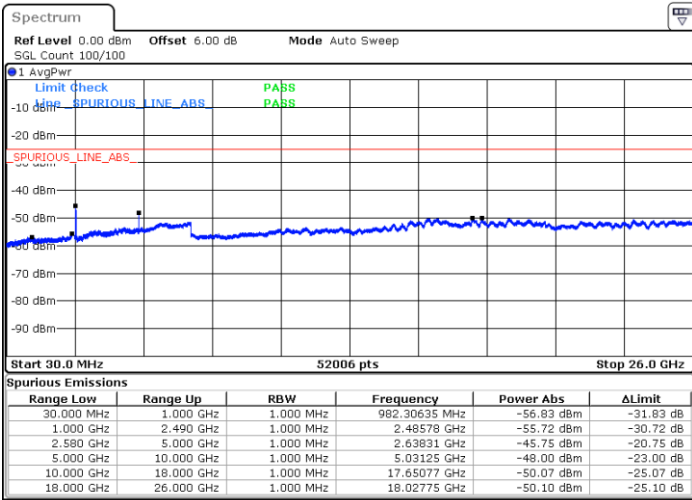
Date: 19.OCT.2022 20:16:29



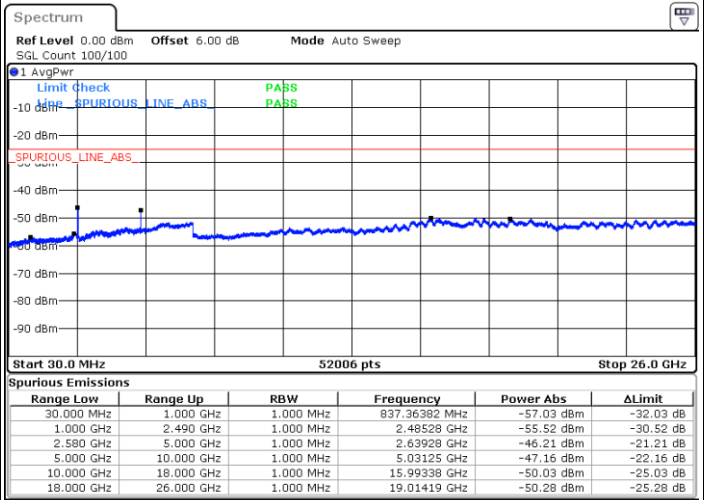
FR1 n7 / 40MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

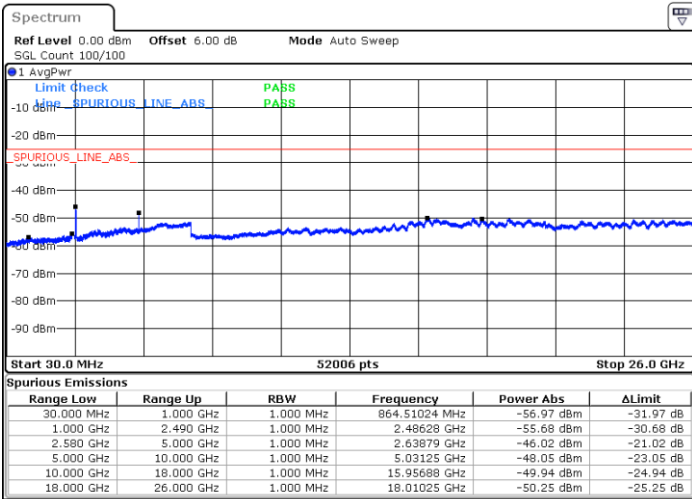


Date: 20.OCT.2022 16:40:03



Date: 20.OCT.2022 16:35:59

Highest Channel / 1RB1



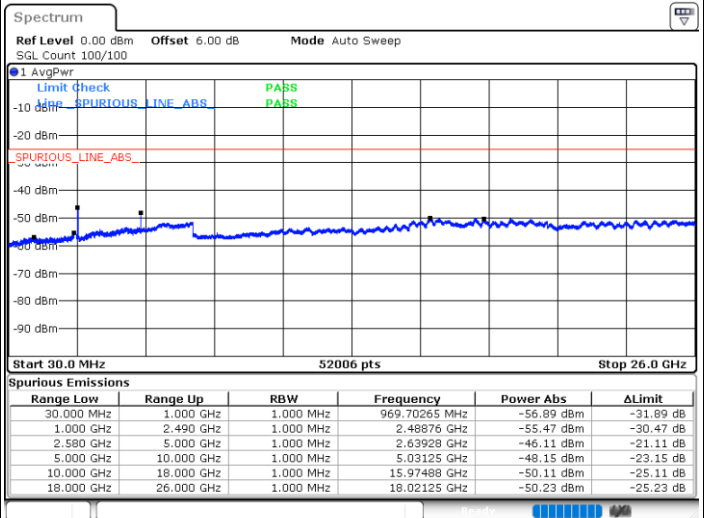
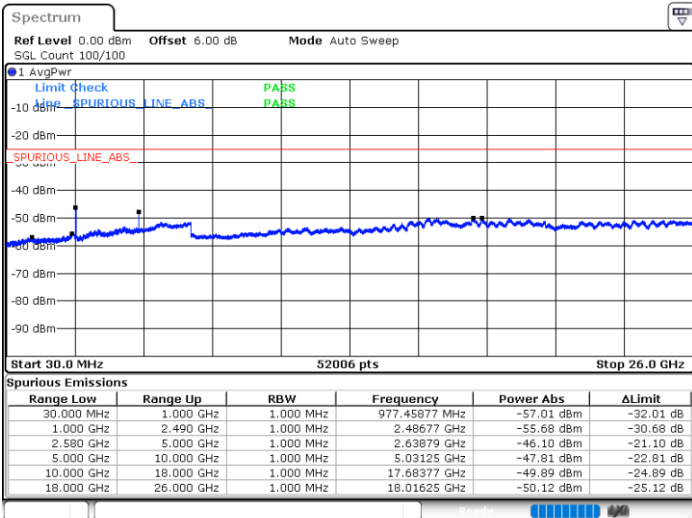
Date: 20.OCT.2022 16:34:57



FR1 n7 / 40MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

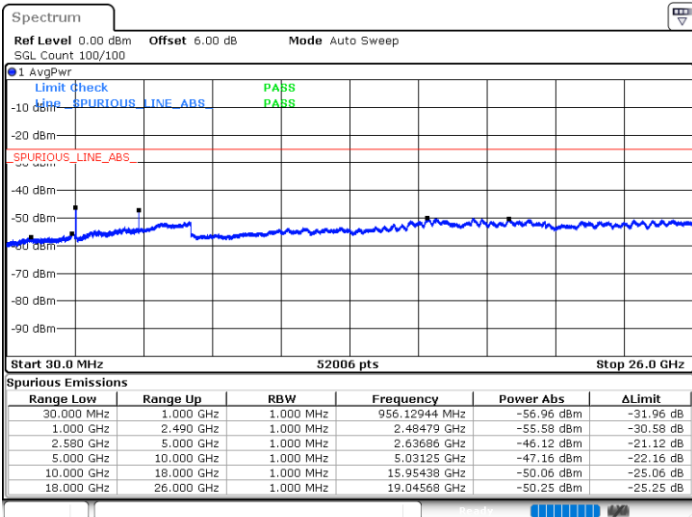
Middle Channel / 1RB1



Date: 20.OCT.2022 16:39:11

Date: 20.OCT.2022 16:36:52

Highest Channel / 1RB1



Date: 20.OCT.2022 16:34:06



Frequency Stability

Test Conditions		FR1 n7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0022	PASS
40	Normal Voltage	0.0029	
30	Normal Voltage	0.0015	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0025	
0	Normal Voltage	0.0002	
-10	Normal Voltage	0.0008	
-20	Normal Voltage	0.0011	
-30	Normal Voltage	0.0026	
20	Maximum Voltage	0.0030	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0025	

Note:

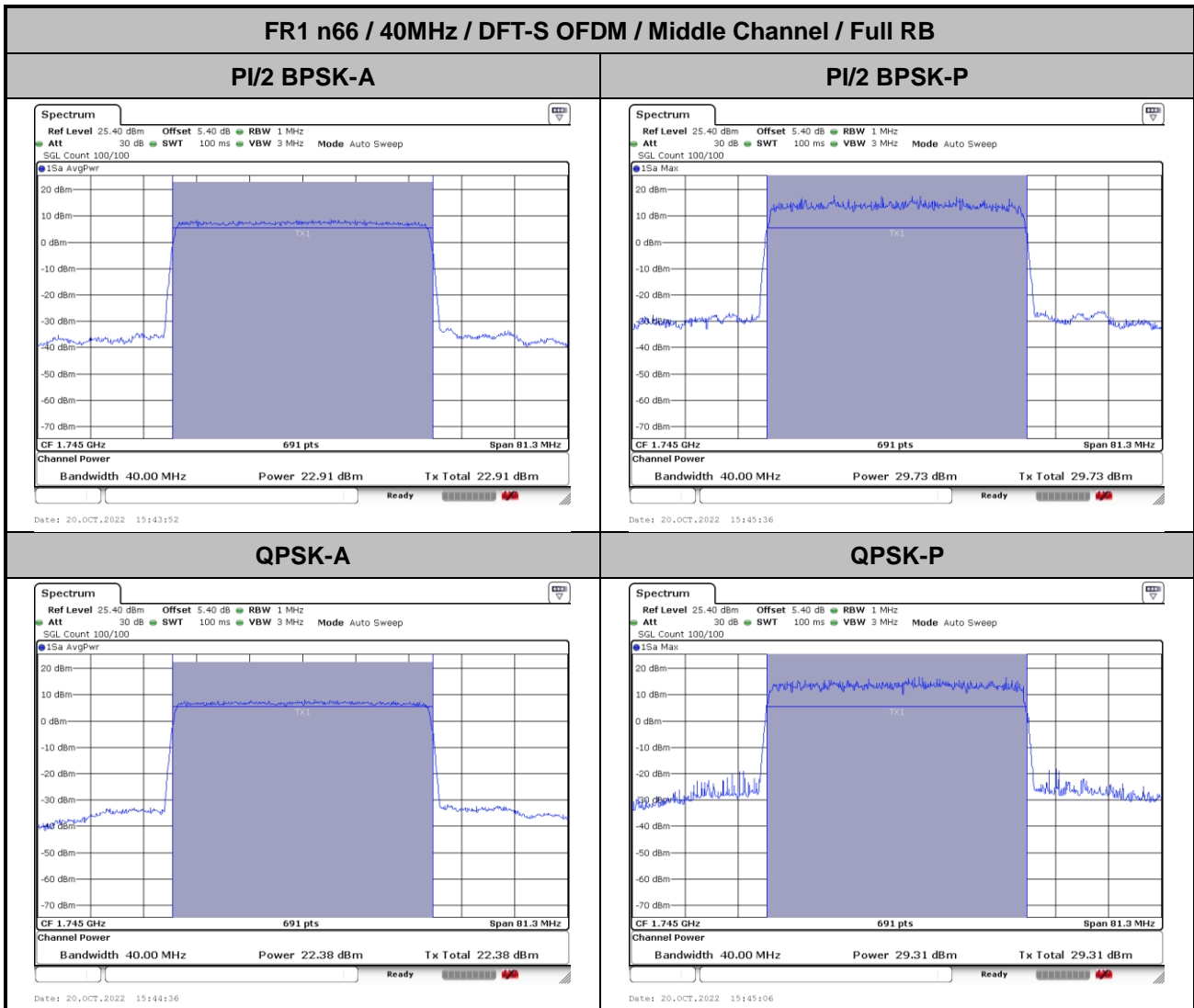
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



FR1 2A_n66A

Peak-to-Average Ratio

Mode	FR1 n66 / 40MHz / DFT-S OFDM		
Mod.	PI/2 BPSK	QPSK	Limit: 13dB
RB Size	Full RB	Full RB	Result
Middle CH	6.82	6.93	PASS





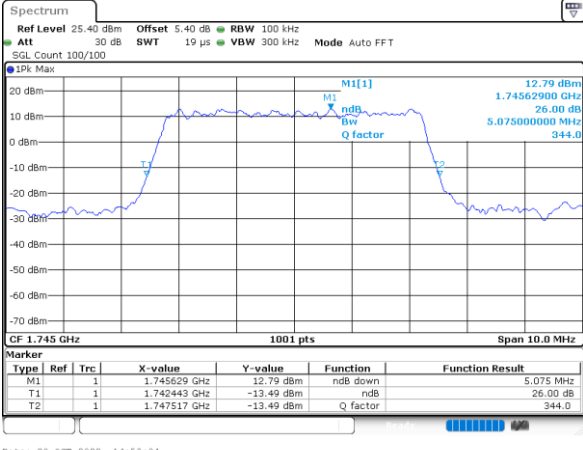
26dB Bandwidth

Mode	FR1 n66 : 26dBW (MHz) / CP OFDM			
BW	5M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	5.08	4.97	5.02	5.00
BW	10M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	10.09	10.07	10.05	10.09
BW	15M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	14.87	14.96	14.87	15.02
BW	20M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	21.22	21.14	21.22	21.1
BW	30M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	29.65	29.61	29.53	29.65
BW	40M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	40.92	40.92	40.92	40.92



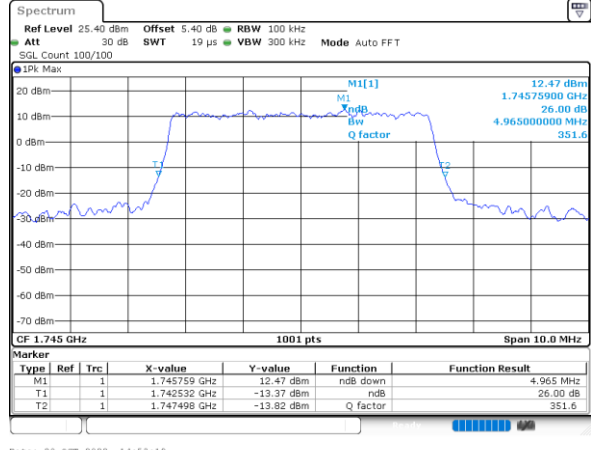
FR1 n66 / 5MHz / CP OFDM

QPSK



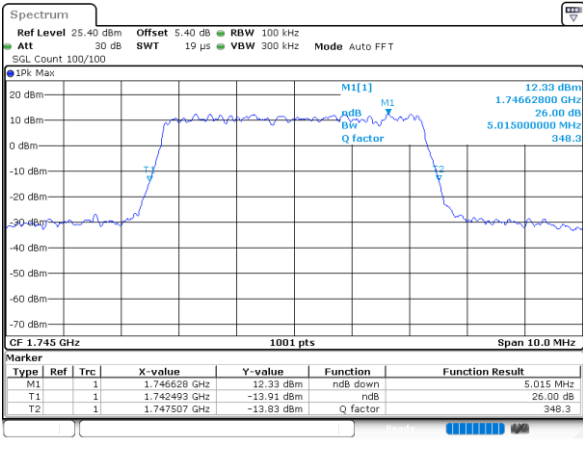
Date: 20.OCT.2022 14:53:04

16QAM



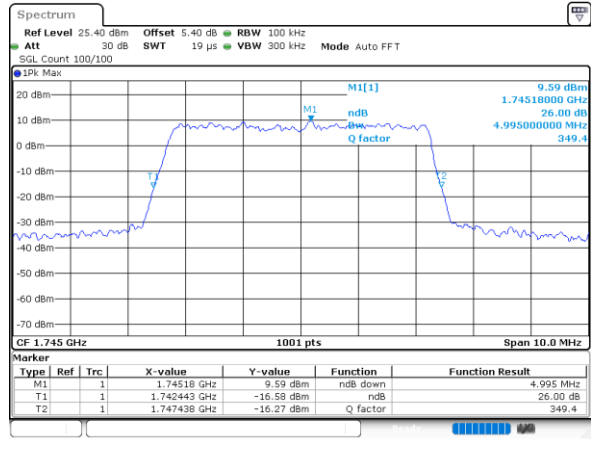
Date: 20.OCT.2022 14:53:19

64QAM



Date: 20.OCT.2022 14:53:33

256QAM



Date: 20.OCT.2022 14:53:51



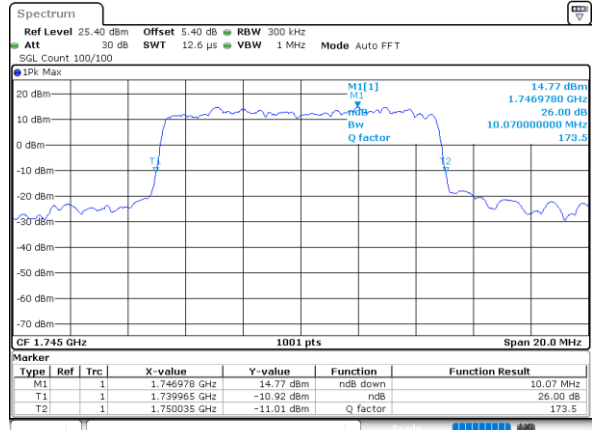
FR1 n66 / 10MHz / CP OFDM

QPSK



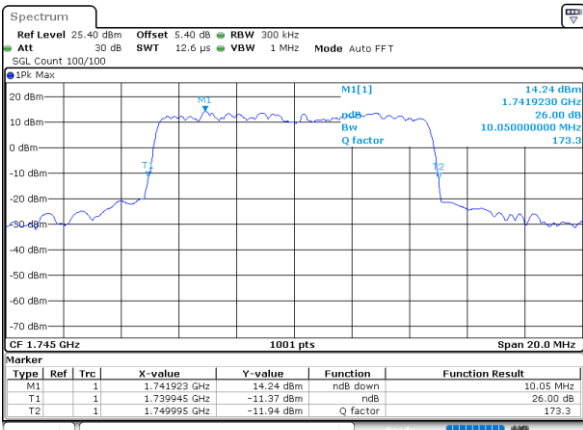
Date: 20.OCT.2022 15:03:50

16QAM



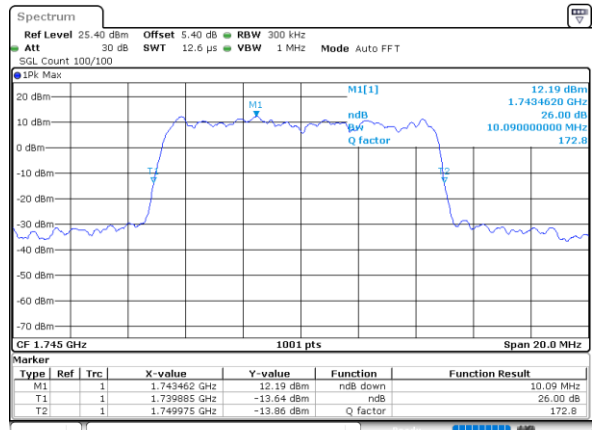
Date: 20.OCT.2022 15:04:08

64QAM



Date: 20.OCT.2022 15:04:27

256QAM

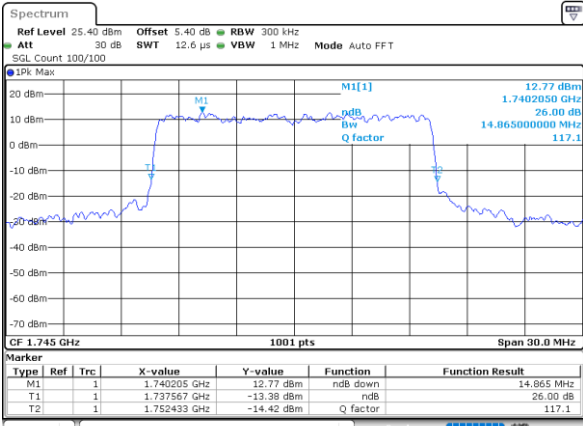


Date: 20.OCT.2022 15:05:03



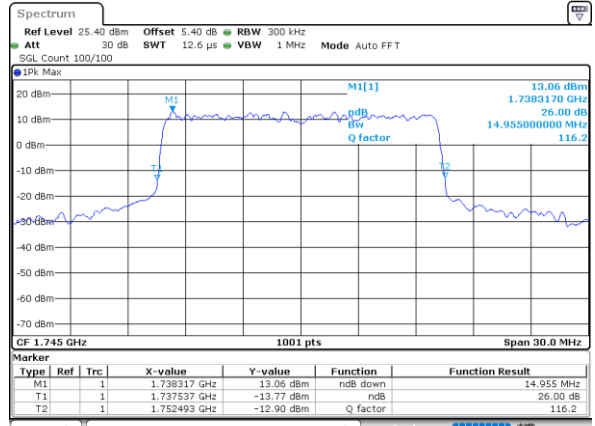
FR1 n66 / 15MHz / CP OFDM

QPSK



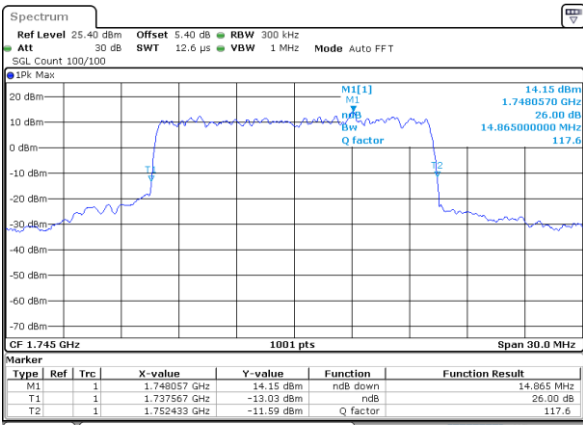
Date: 20.OCT.2022 15:07:19

16QAM



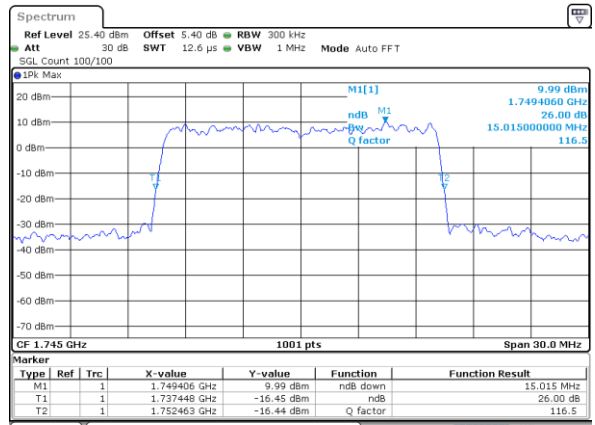
Date: 20.OCT.2022 15:06:57

64QAM



Date: 20.OCT.2022 15:06:08

256QAM

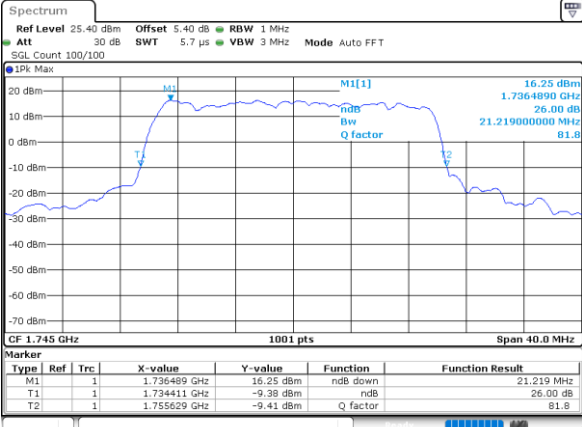


Date: 20.OCT.2022 15:05:57



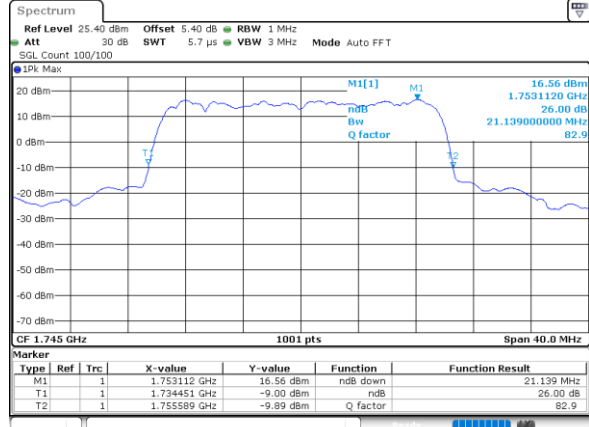
FR1 n66 / 20MHz / CP OFDM

QPSK



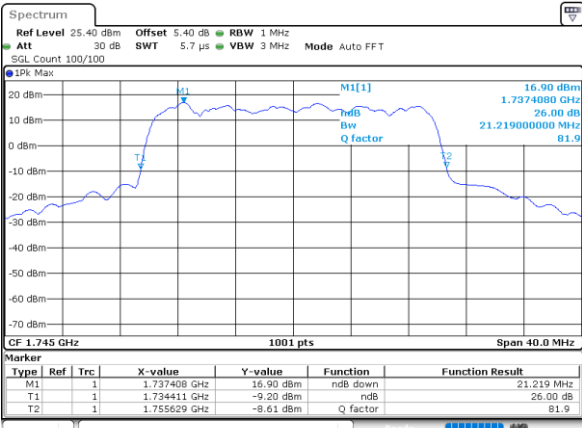
Date: 20.OCT.2022 15:09:44

16QAM



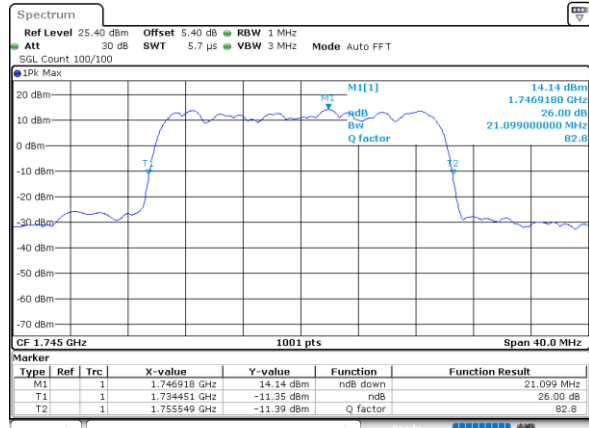
Date: 20.OCT.2022 15:10:05

64QAM



Date: 20.OCT.2022 15:10:46

256QAM

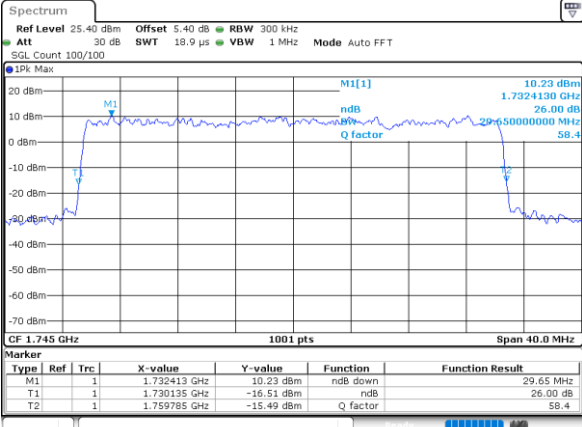


Date: 20.OCT.2022 15:11:29

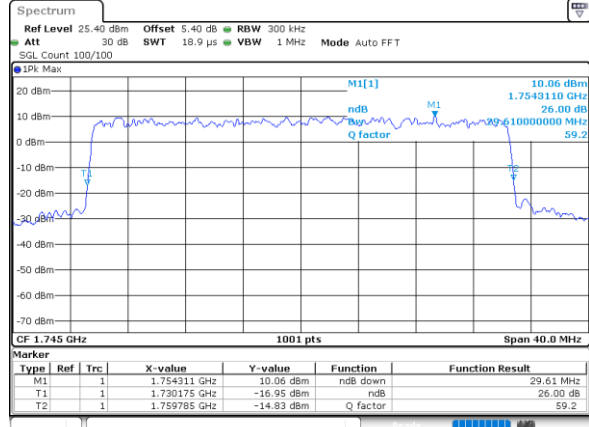


FR1 n66 / 30MHz / CP OFDM

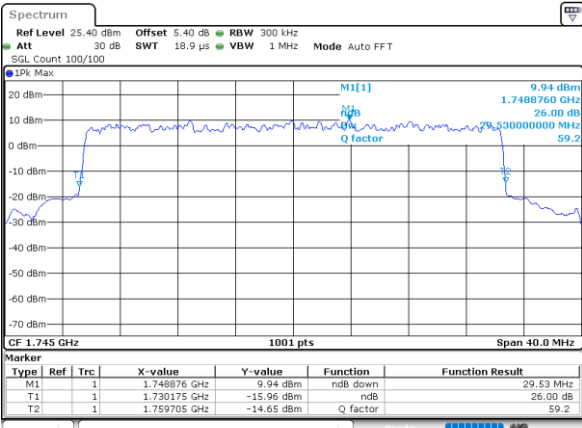
QPSK



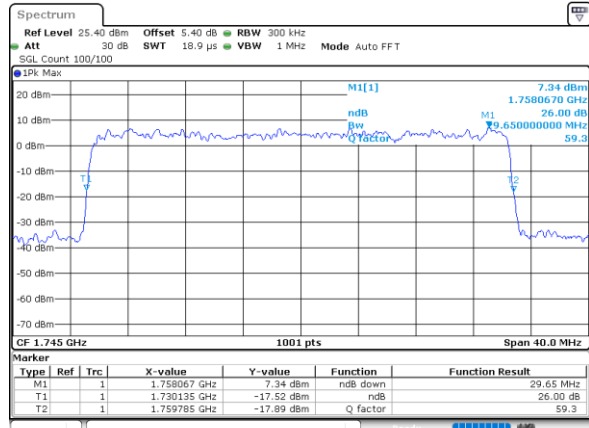
16QAM



64QAM



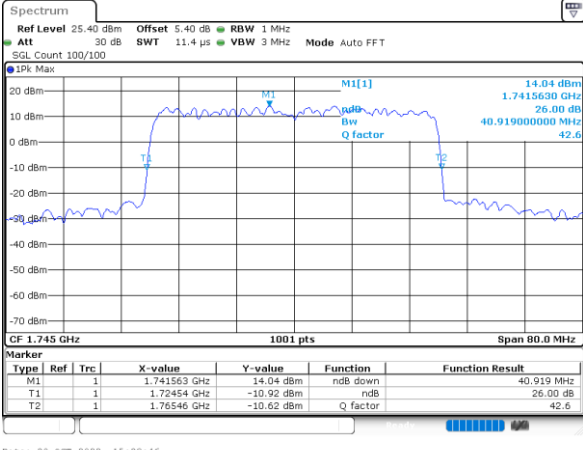
256QAM





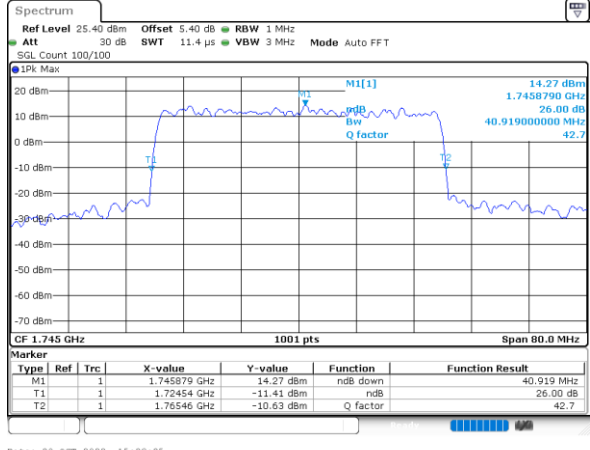
FR1 n66 / 40MHz / CP OFDM

QPSK



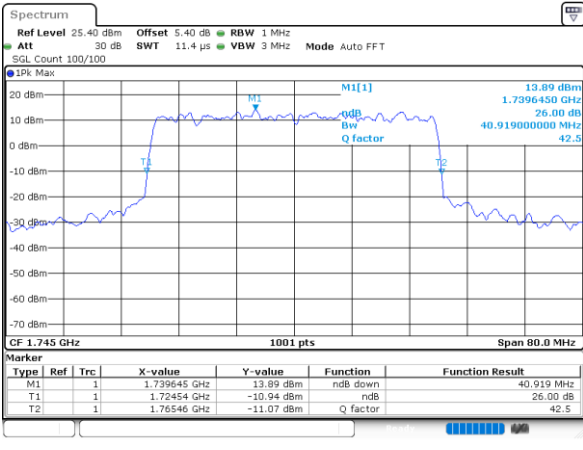
Date: 20.OCT.2022 15:28:46

16QAM



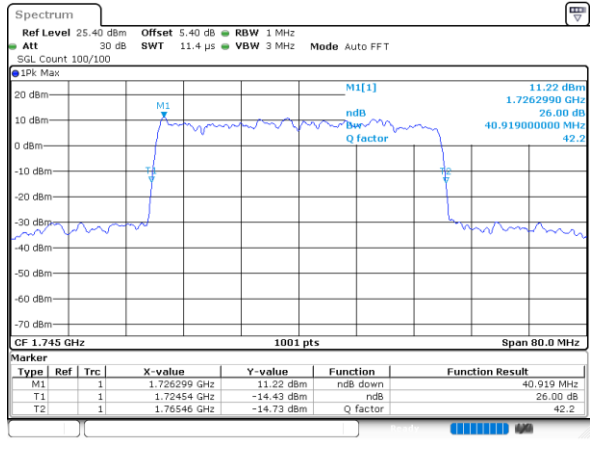
Date: 20.OCT.2022 15:28:25

64QAM



Date: 20.OCT.2022 15:28:09

256QAM



Date: 20.OCT.2022 15:27:32



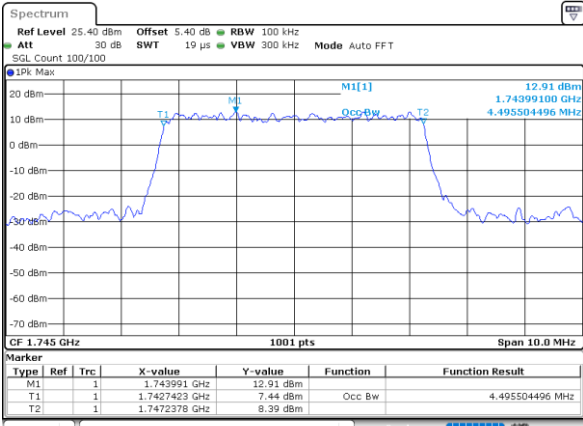
Occupied Bandwidth

Mode	FR1 n66 : 99%OBW (MHz) / CP OFDM			
BW	5M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	4.50	4.49	4.50	4.47
BW	10M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	9.31	9.41	9.37	9.35
BW	15M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	14.18	14.12	14.15	14.06
BW	20M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	19.30	19.46	19.46	19.58
BW	30M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	28.57	28.57	28.45	28.61
BW	40M			
Mod.	QPSK	16QAM	64QAM	256QAM
Middle CH	38.92	38.76	38.84	38.76



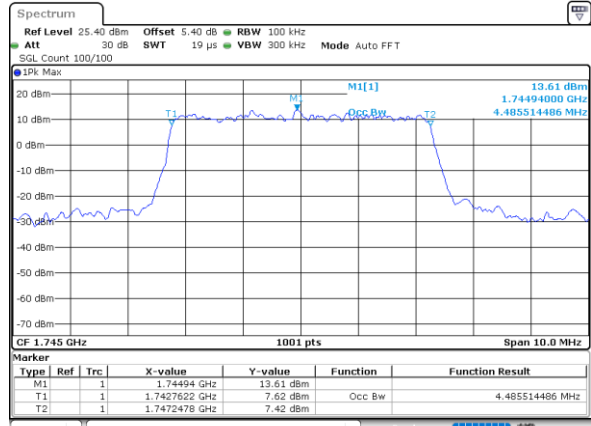
FR1 n66 / 5MHz / CP OFDM

QPSK



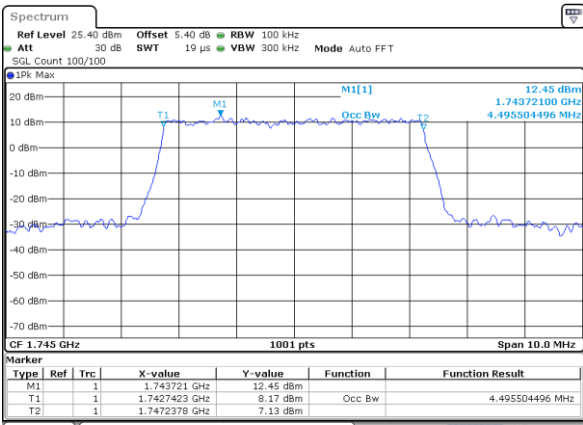
Date: 20.OCT.2022 14:52:58

16QAM



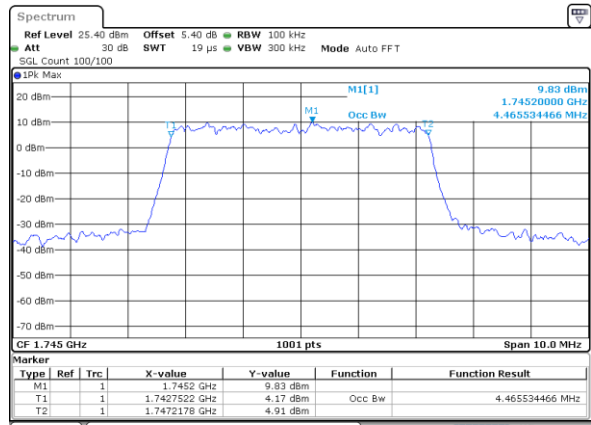
Date: 20.OCT.2022 14:53:13

64QAM



Date: 20.OCT.2022 14:53:28

256QAM

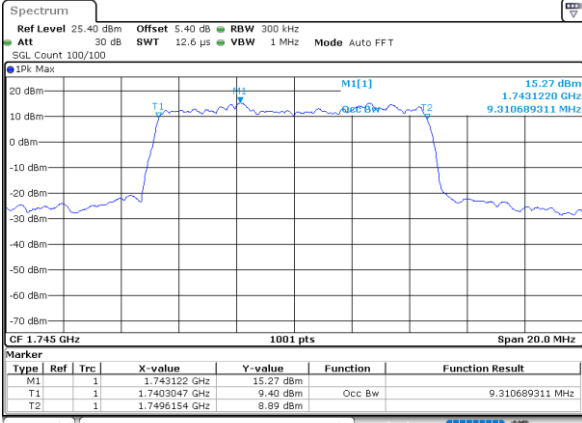


Date: 20.OCT.2022 14:53:56



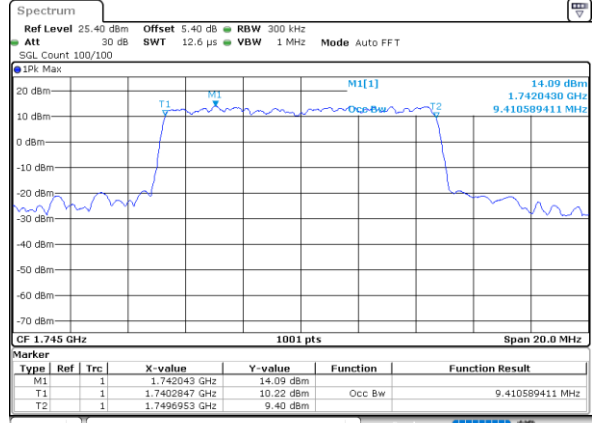
FR1 n66 / 10MHz / CP OFDM

QPSK



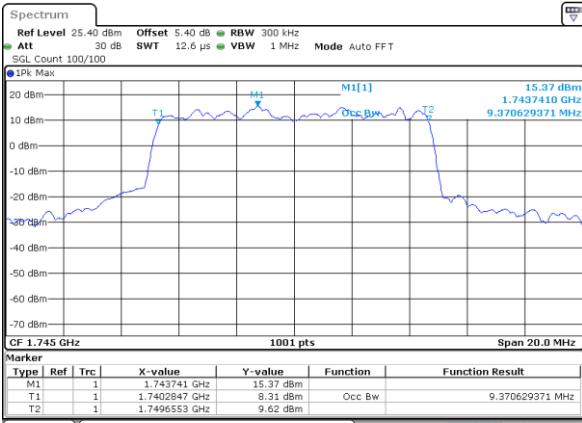
Date: 20.OCT.2022 15:03:45

16QAM



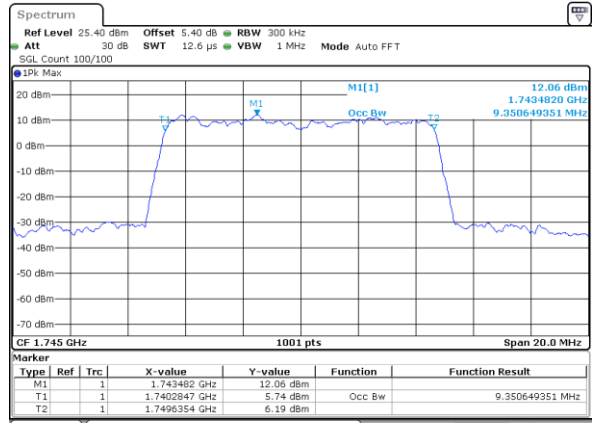
Date: 20.OCT.2022 15:04:00

64QAM



Date: 20.OCT.2022 15:04:20

256QAM

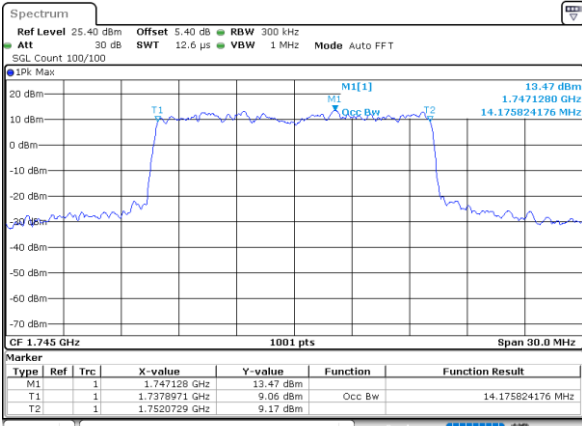


Date: 20.OCT.2022 15:04:42

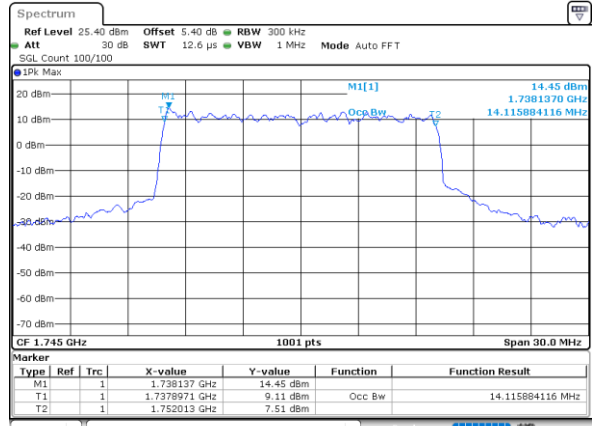


FR1 n66 / 15MHz / CP OFDM

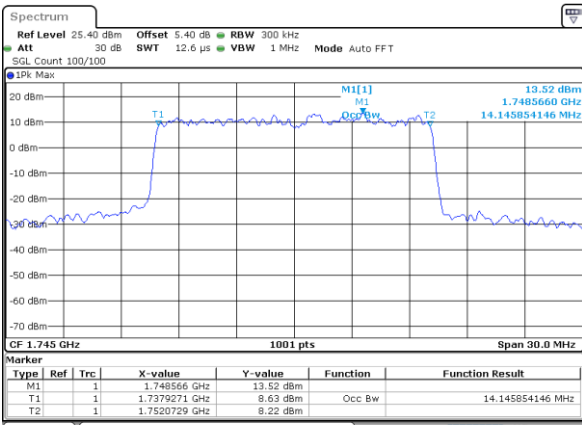
QPSK



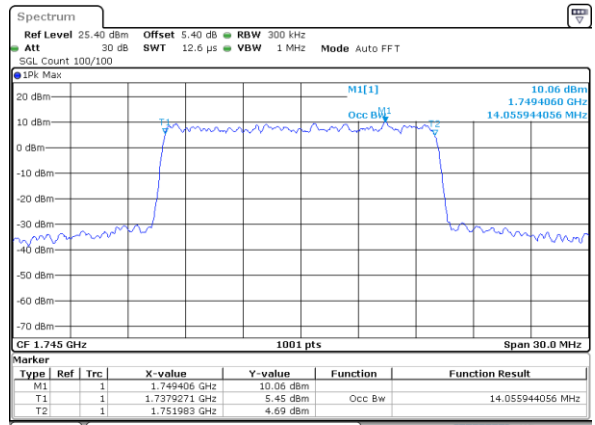
16QAM



64QAM



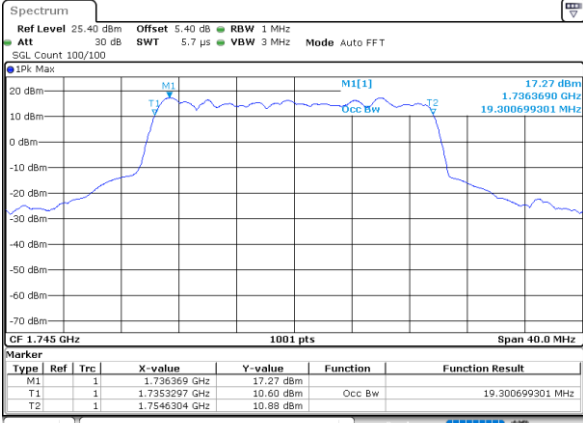
256QAM





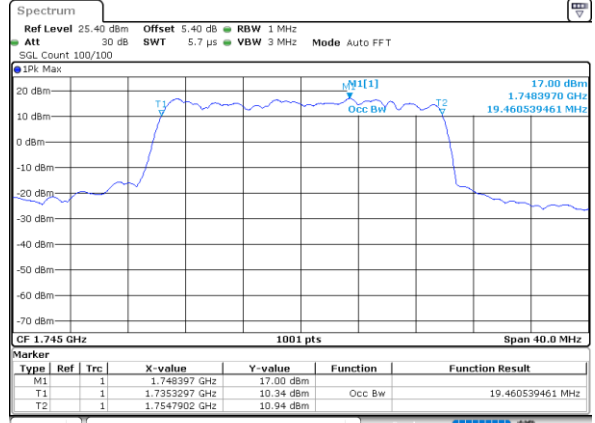
FR1 n66 / 20MHz / CP OFDM

QPSK



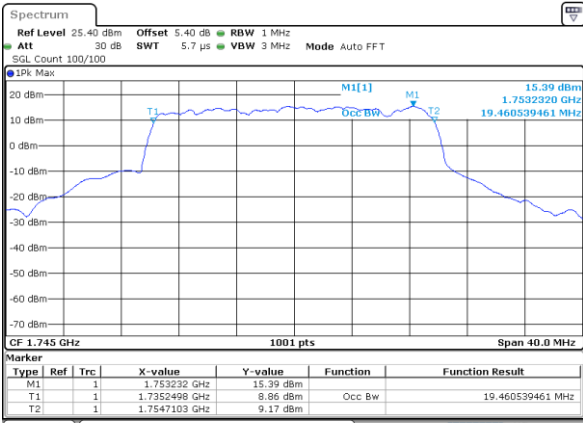
Date: 20.OCT.2022 15:09:13

16QAM



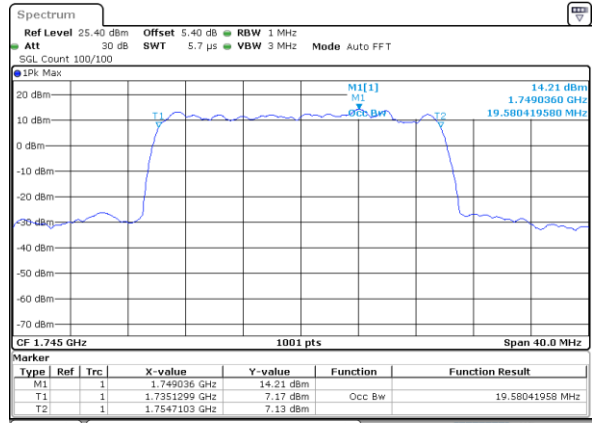
Date: 20.OCT.2022 15:10:14

64QAM



Date: 20.OCT.2022 15:10:28

256QAM

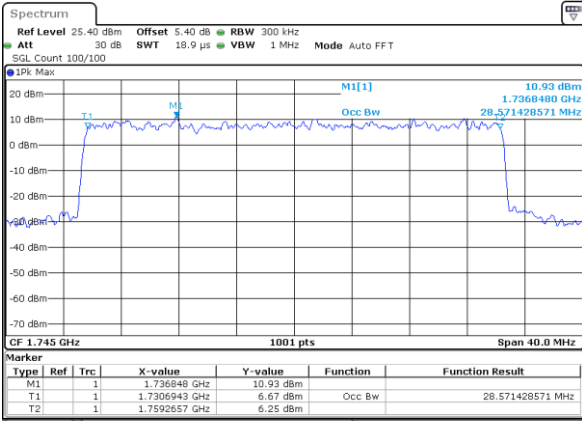


Date: 20.OCT.2022 15:11:02



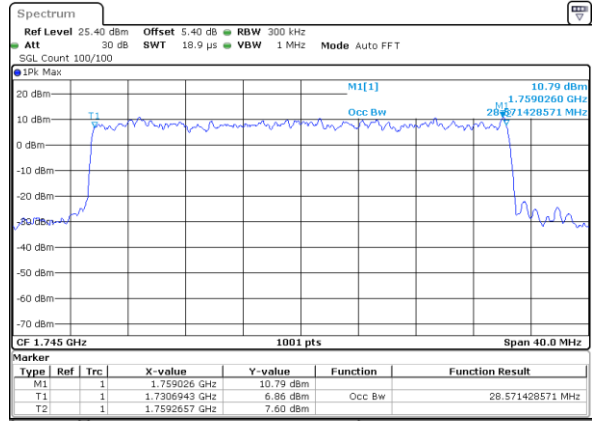
FR1 n66 / 30MHz / CP OFDM

QPSK



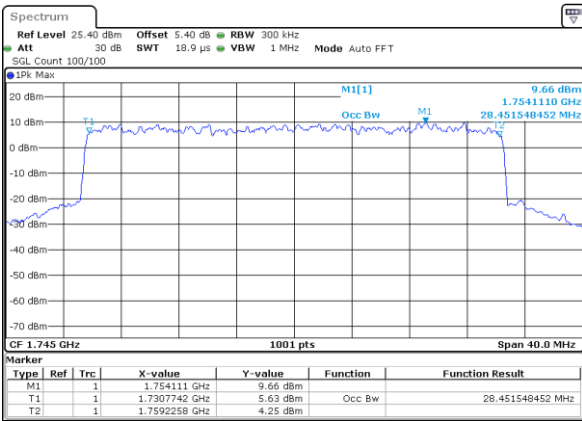
Date: 20.OCT.2022 15:26:03

16QAM



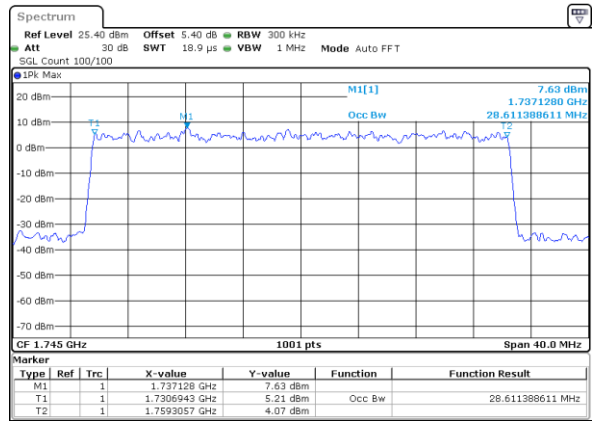
Date: 20.OCT.2022 15:26:121

64QAM



Date: 20.OCT.2022 15:26:33

256QAM

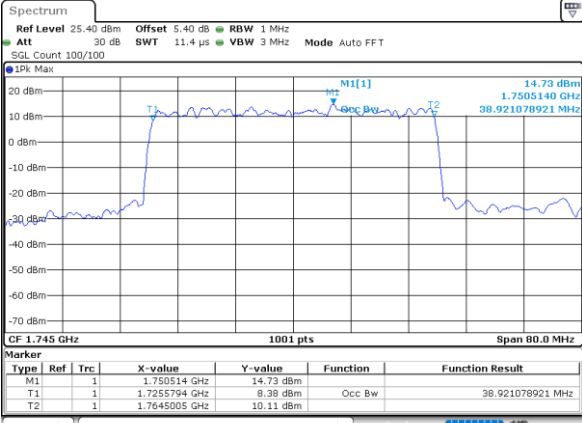


Date: 20.OCT.2022 15:26:53



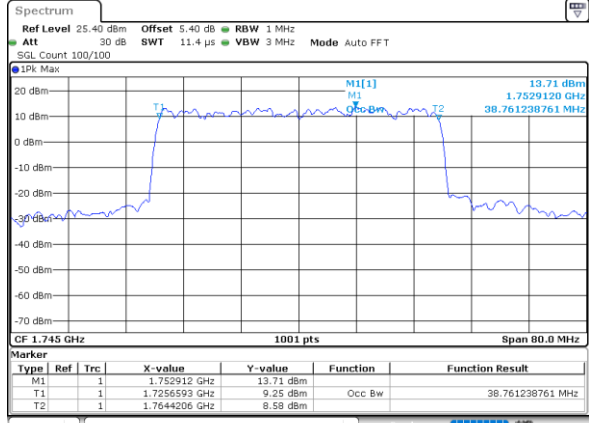
FR1 n66 / 40MHz / CP OFDM

QPSK



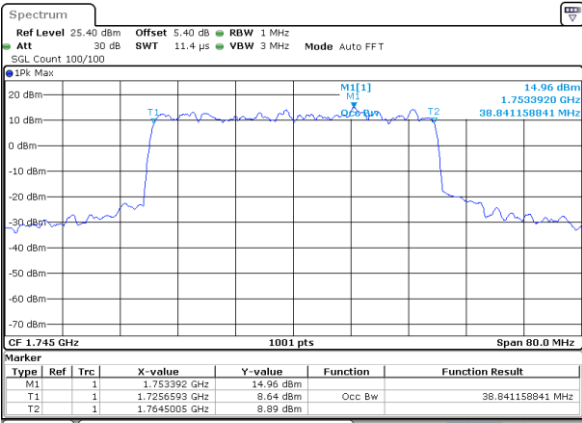
Date: 20.OCT.2022 15:28:35

16QAM



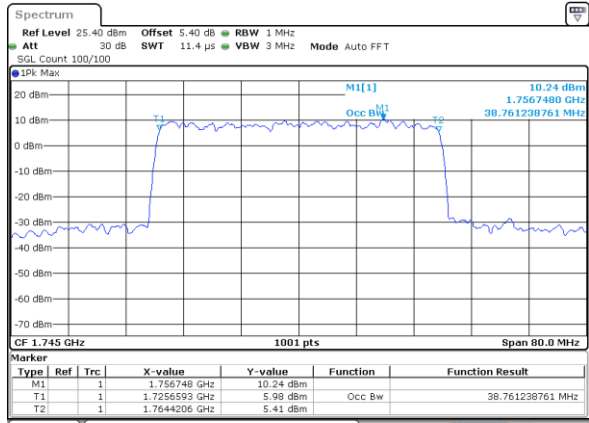
Date: 20.OCT.2022 15:28:19

64QAM



Date: 20.OCT.2022 15:27:43

256QAM



Date: 20.OCT.2022 15:27:27

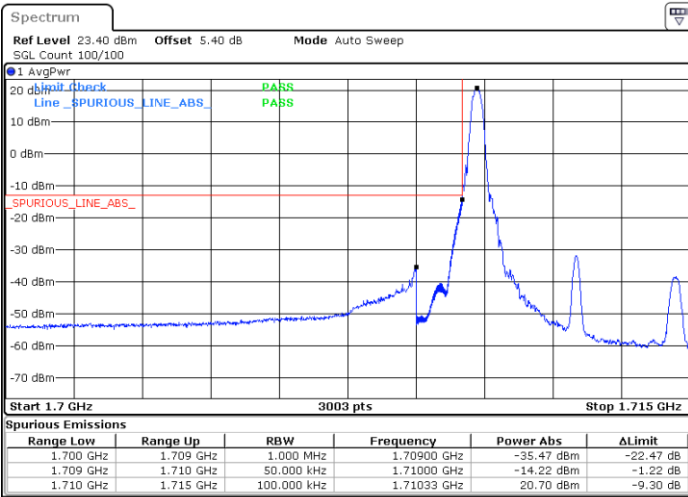


Conducted Band Edge

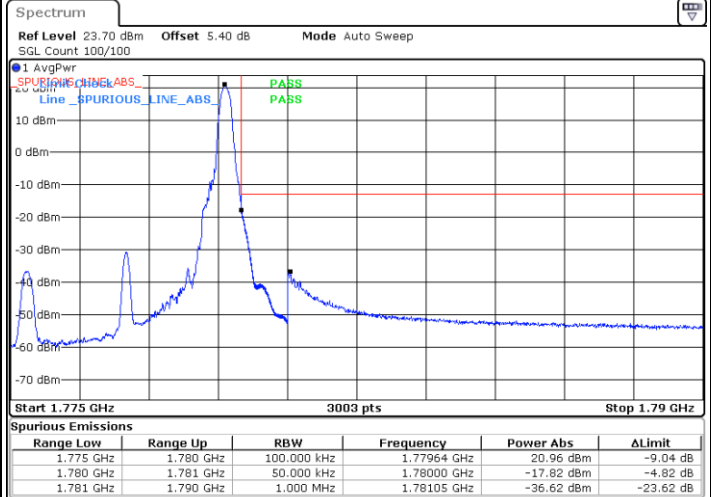
FR1 n66 / 5MHz / DFT-S OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



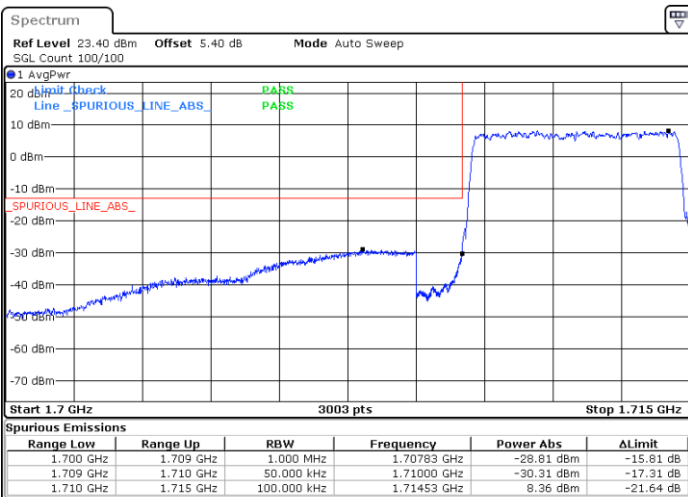
Date: 20.OCT.2022 14:46:23



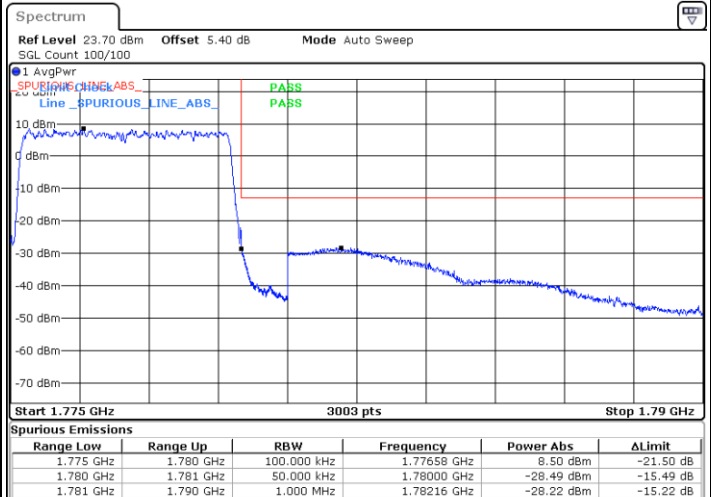
Date: 20.OCT.2022 14:58:37

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2022 14:51:50



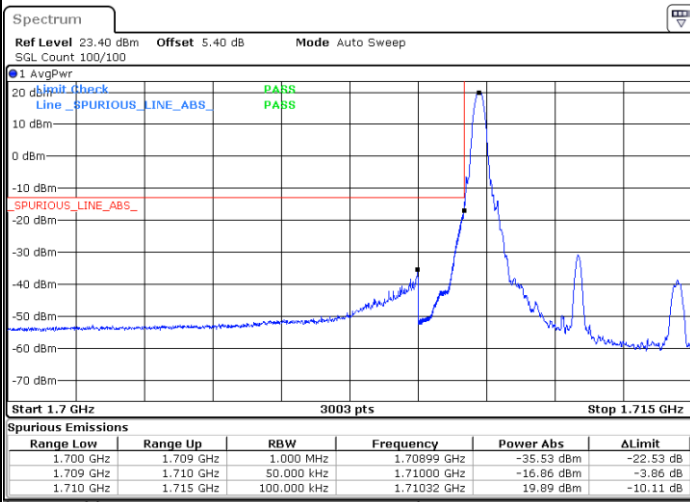
Date: 20.OCT.2022 14:57:37



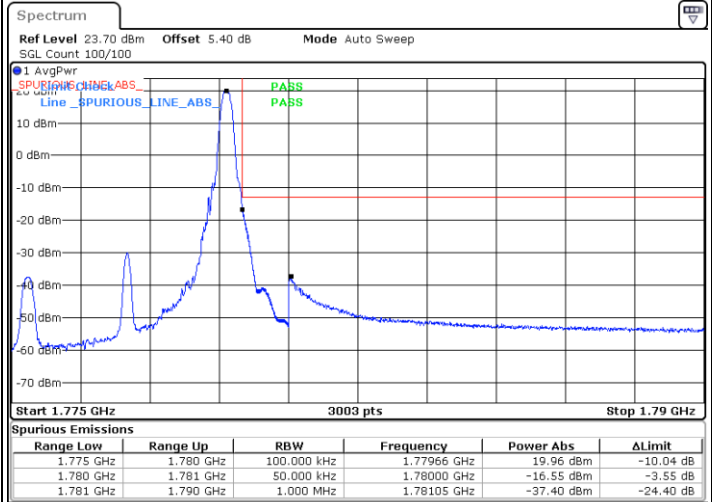
FR1 n66 / 5MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



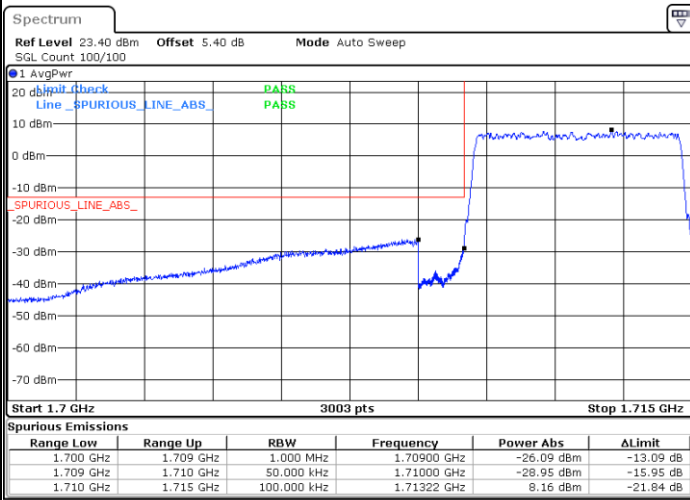
Date: 20.OCT.2022 14:47:26



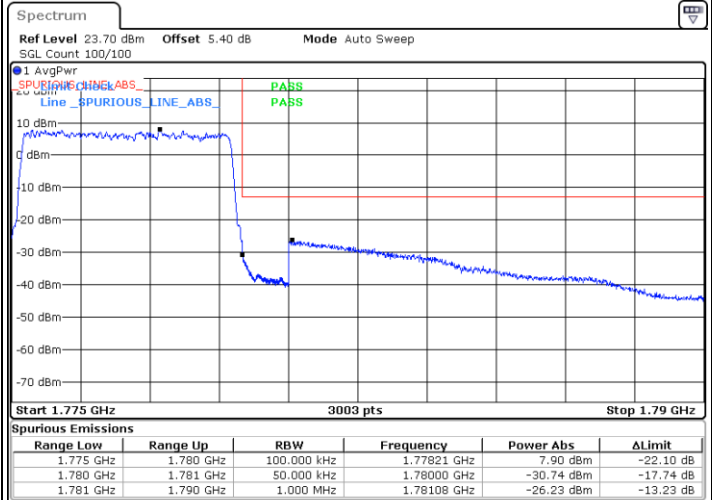
Date: 20.OCT.2022 14:59:08

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2022 14:52:13



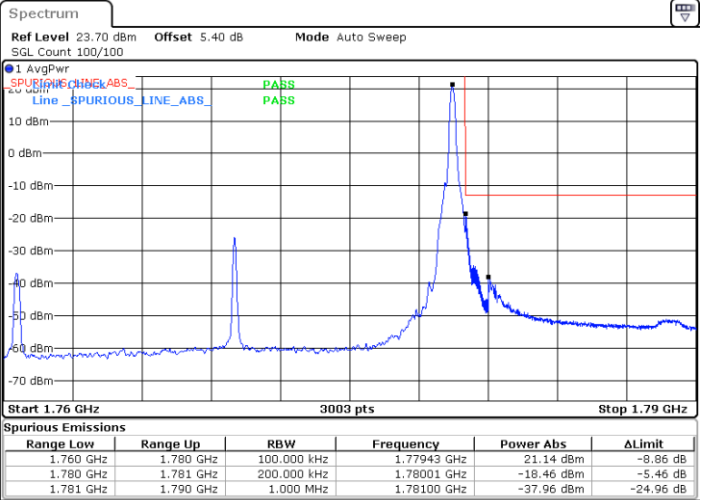
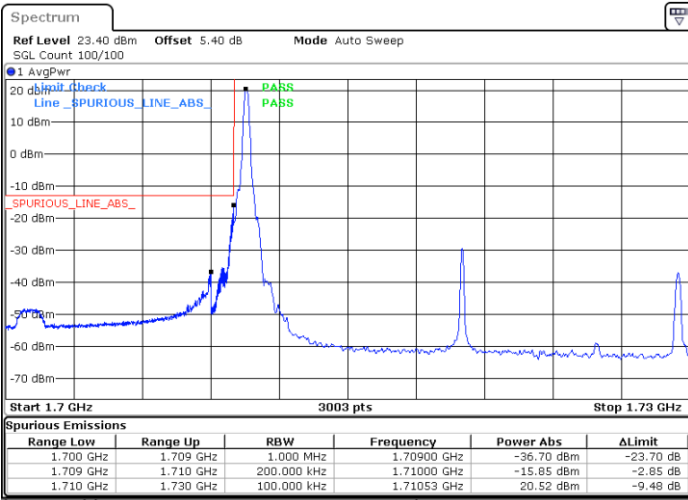
Date: 20.OCT.2022 14:56:52



FR1 n66 / 20MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

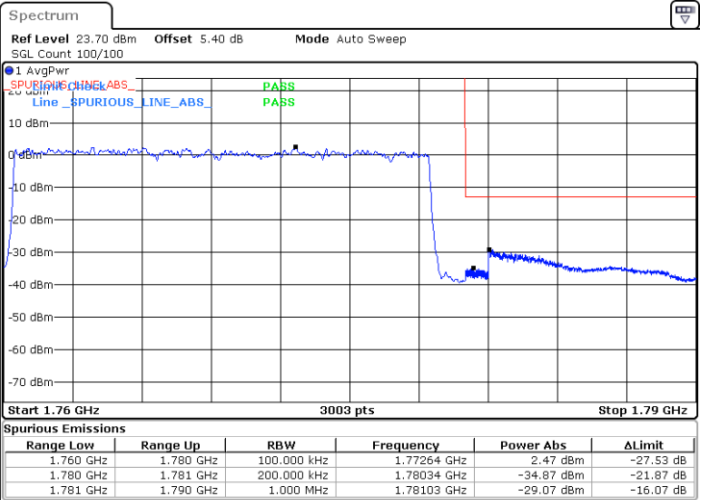
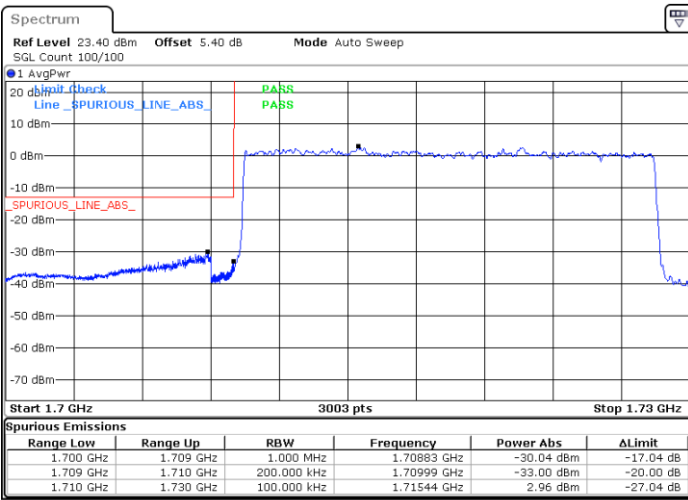


Date: 20.OCT.2022 15:17:05

Date: 20.OCT.2022 15:23:36

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2022 15:22:24

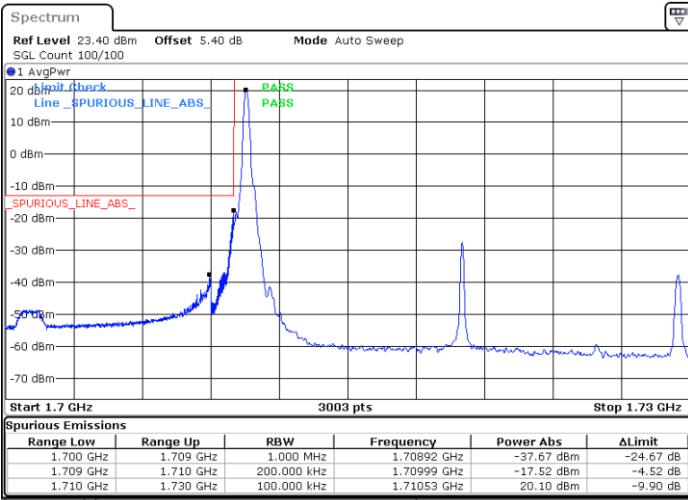
Date: 20.OCT.2022 15:22:44



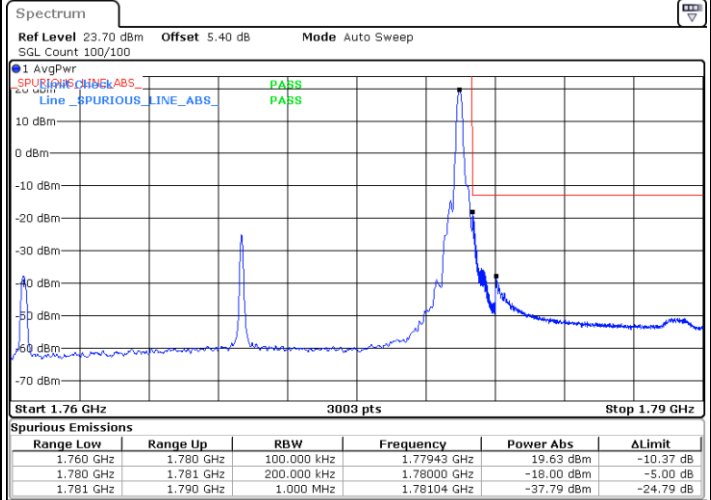
FR1 n66 / 20MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



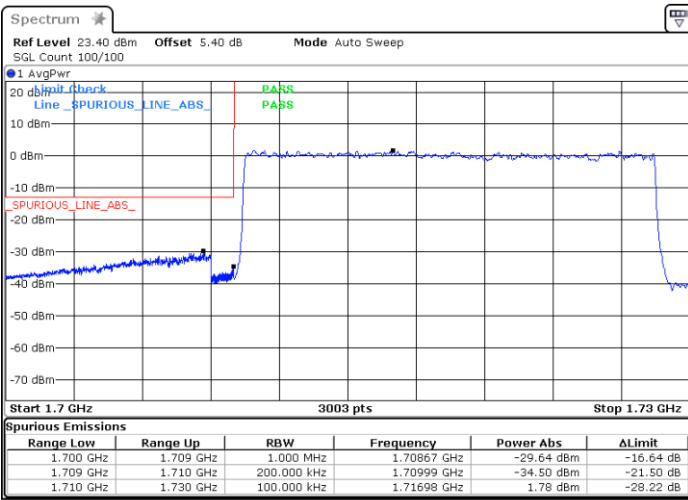
Date: 20.OCT.2022 15:17:49



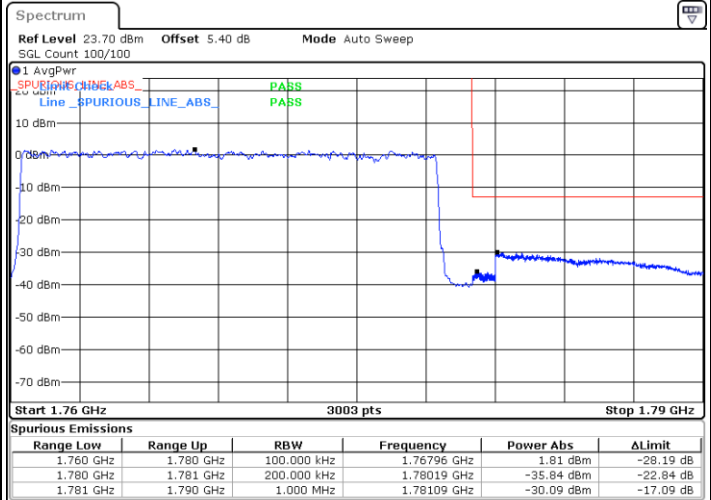
Date: 20.OCT.2022 15:23:18

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2022 15:22:07



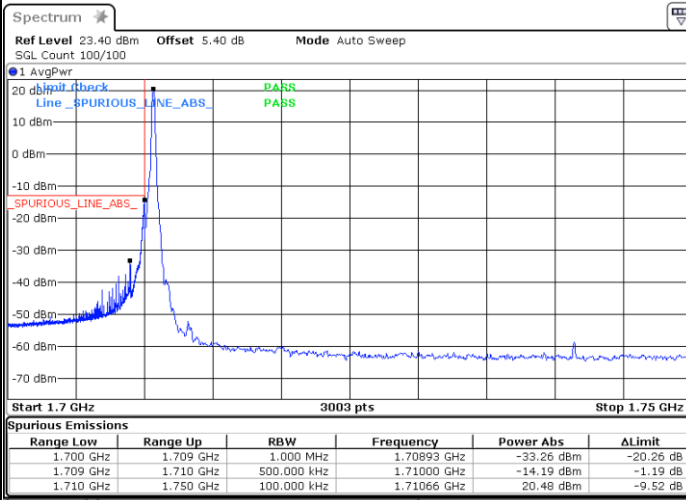
Date: 20.OCT.2022 15:23:00



FR1 n66 / 40MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

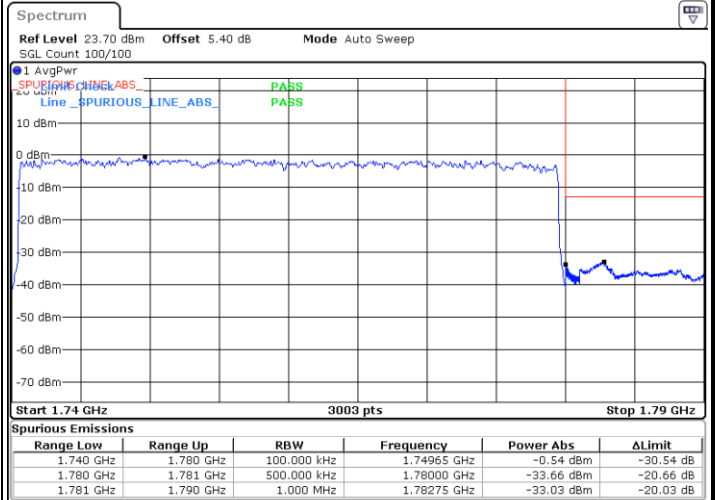
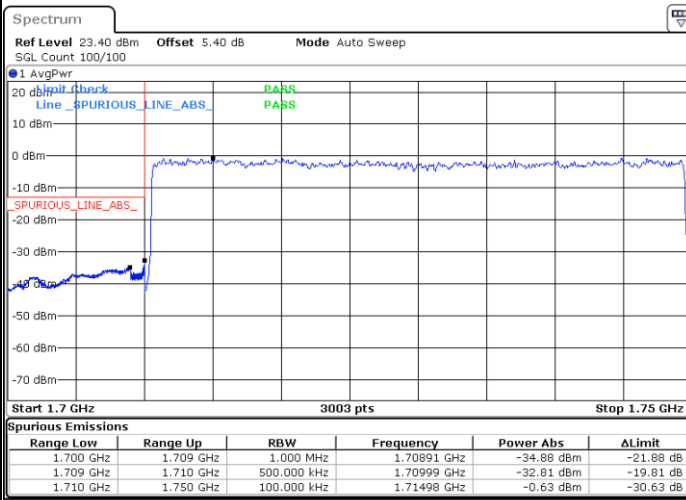


Date: 20.OCT.2022 15:32:10

Date: 20.OCT.2022 15:36:38

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2022 15:33:29

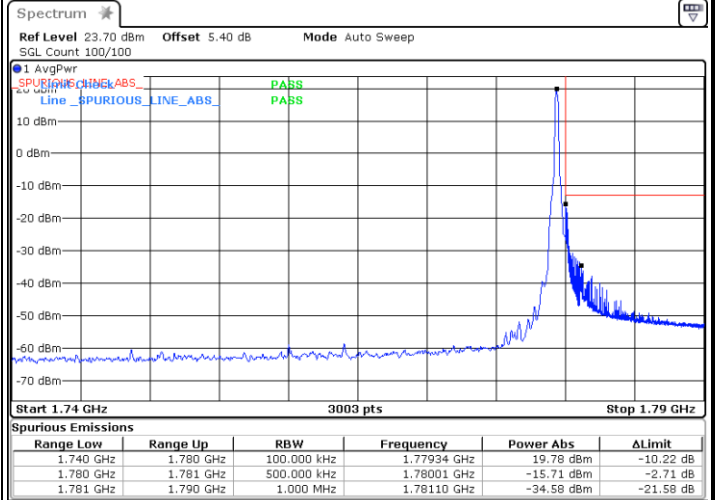
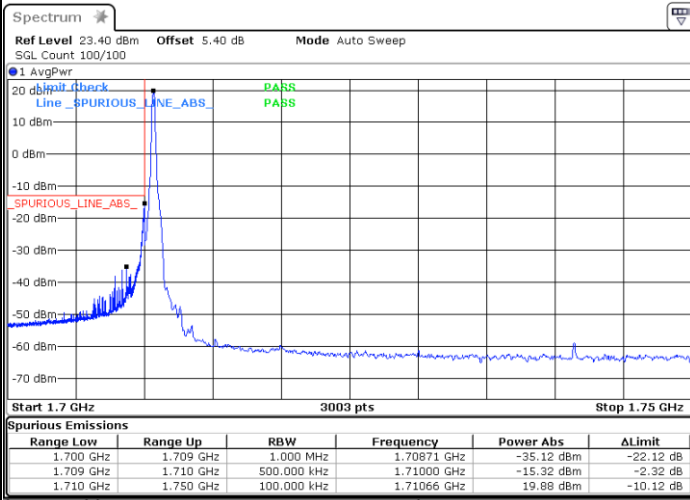
Date: 20.OCT.2022 15:36:13



FR1 n66 / 40MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax

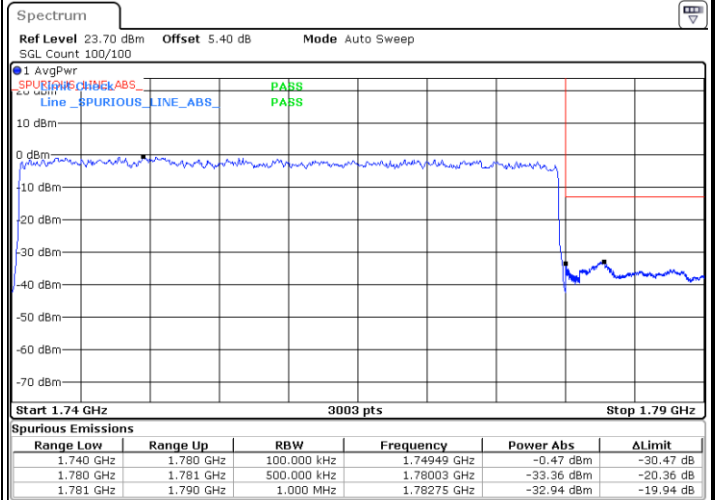
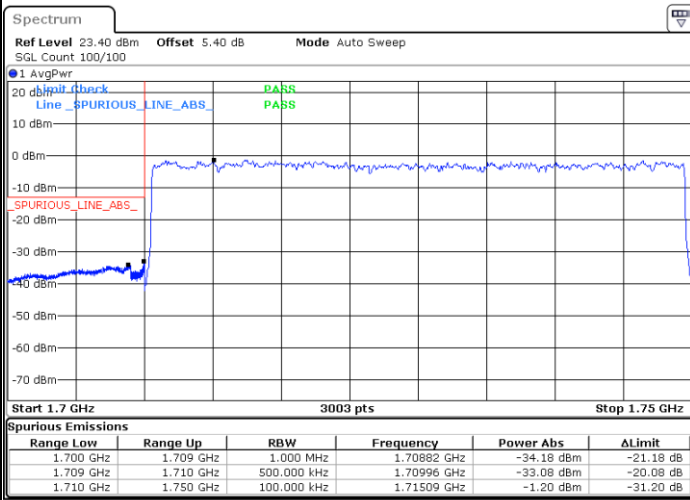


Date: 20.OCT.2022 15:32:48

Date: 20.OCT.2022 15:36:58

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2022 15:33:10

Date: 20.OCT.2022 15:35:59

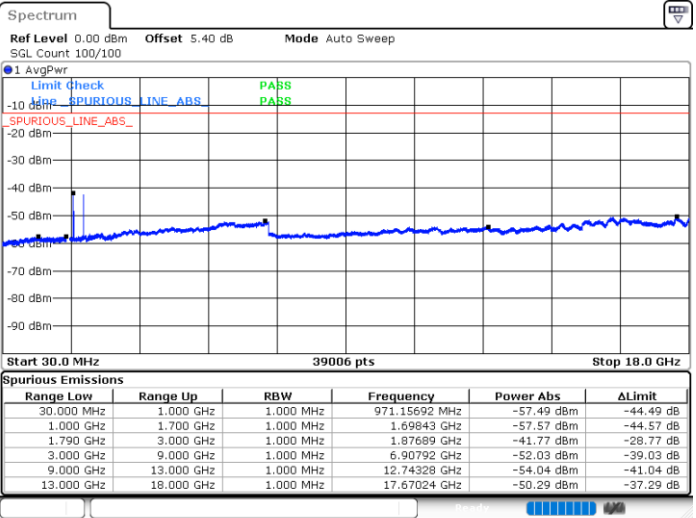
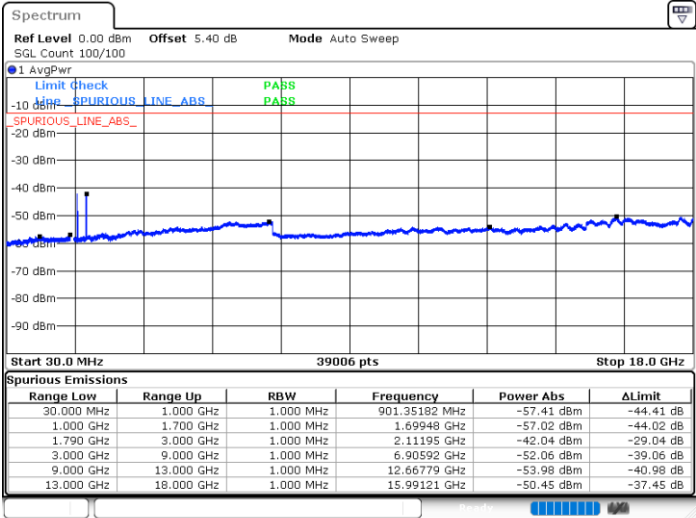


Conducted Spurious Emission

FR1 n66 / 5MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

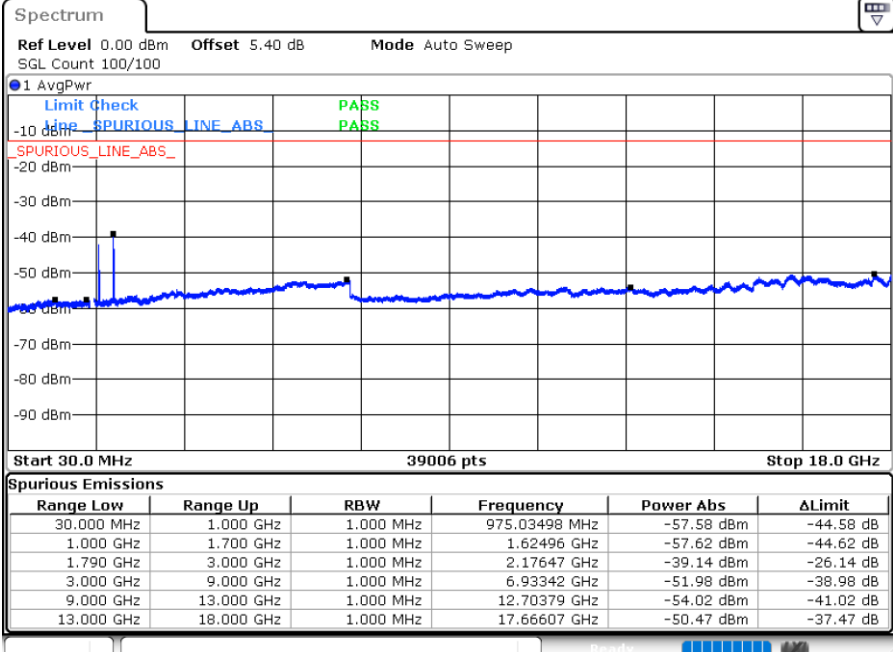
Middle Channel / 1RB1



Date: 20.OCT.2022 14:51:23

Date: 20.OCT.2022 14:55:03

Highest Channel / 1RB1



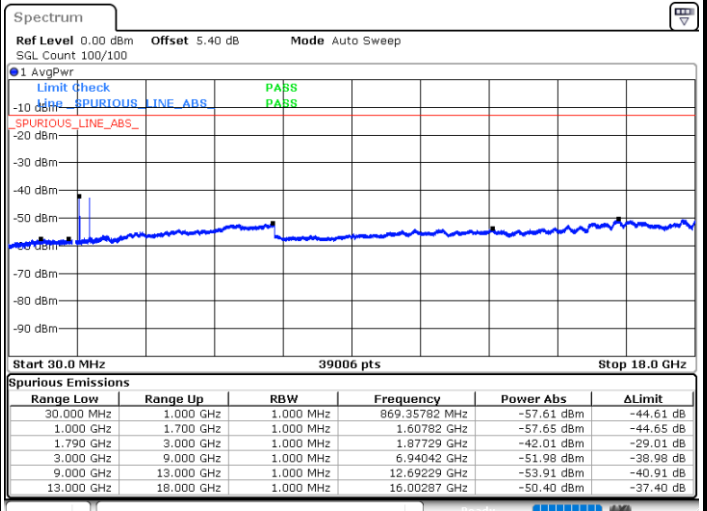
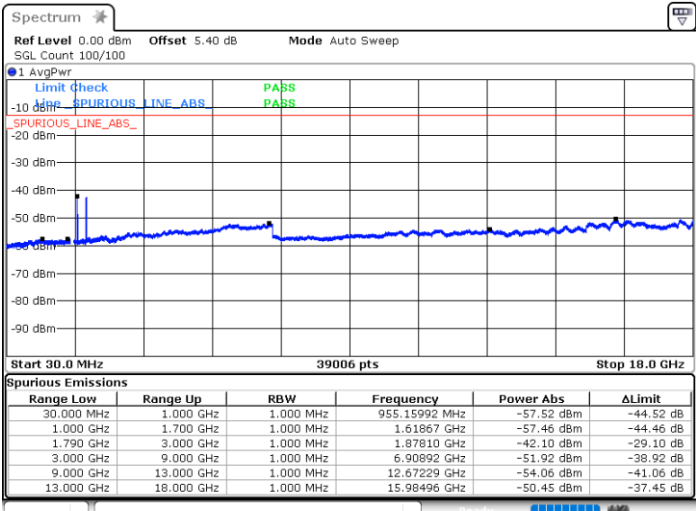
Date: 20.OCT.2022 15:00:55



FR1 n66 / 5MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

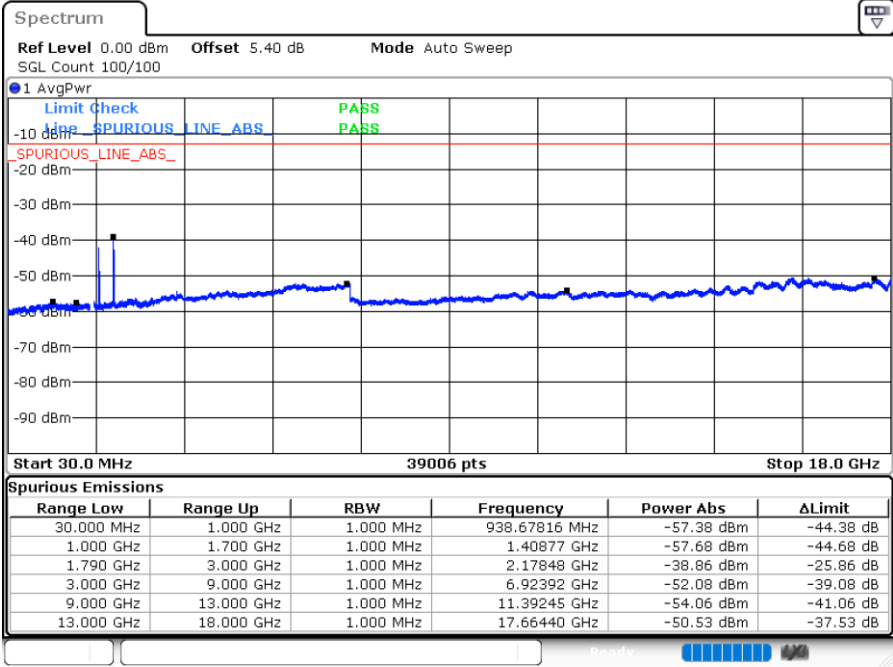
Middle Channel / 1RB1



Date: 20.OCT.2022 14:50:29

Date: 20.OCT.2022 14:56:14

Highest Channel / 1RB1



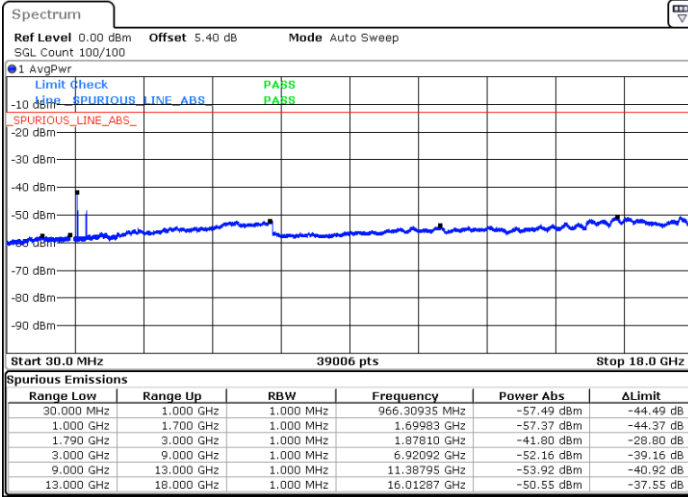
Date: 20.OCT.2022 15:00:03



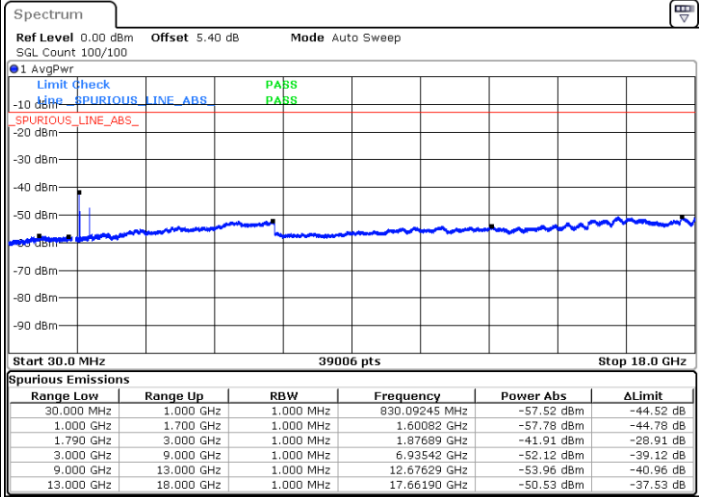
FR1 n66 / 20MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

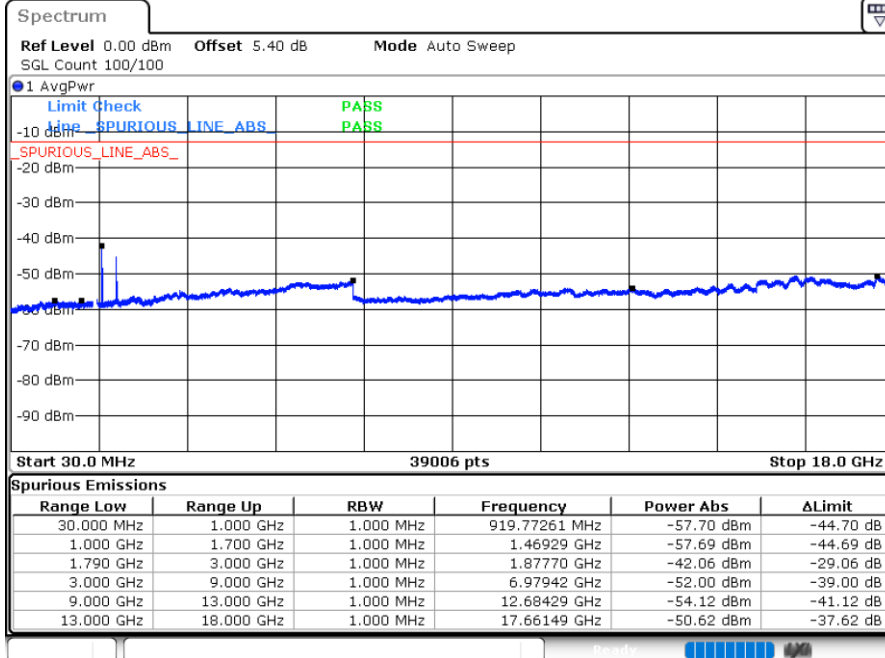


Date: 20.OCT.2022 15:19:14



Date: 20.OCT.2022 15:12:58

Highest Channel / 1RB1



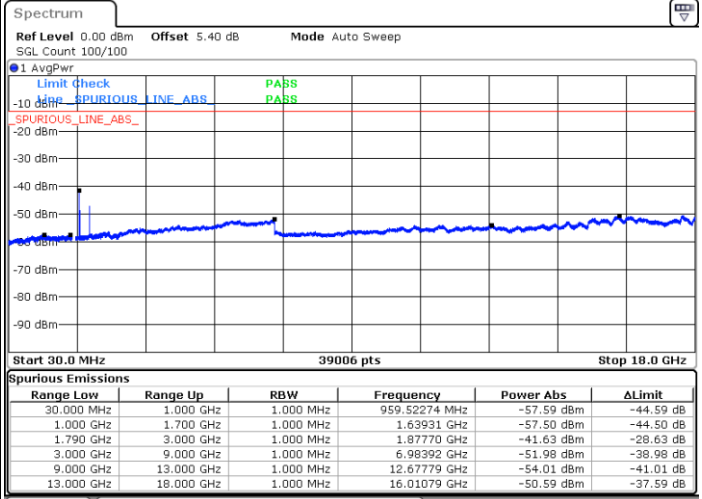
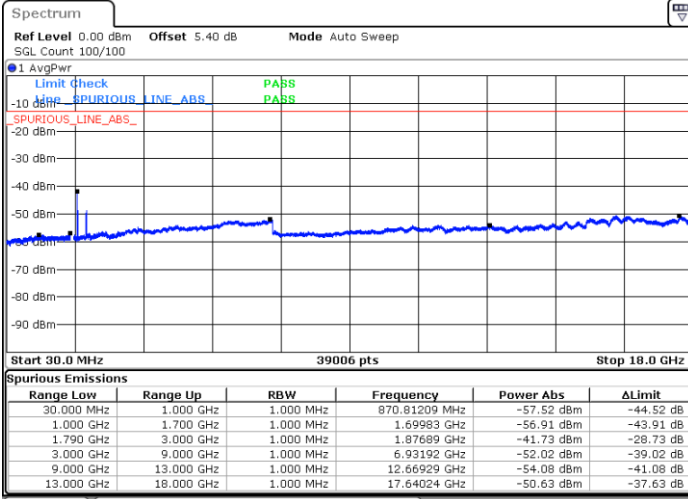
Date: 20.OCT.2022 15:24:21



FR1 n66 / 20MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

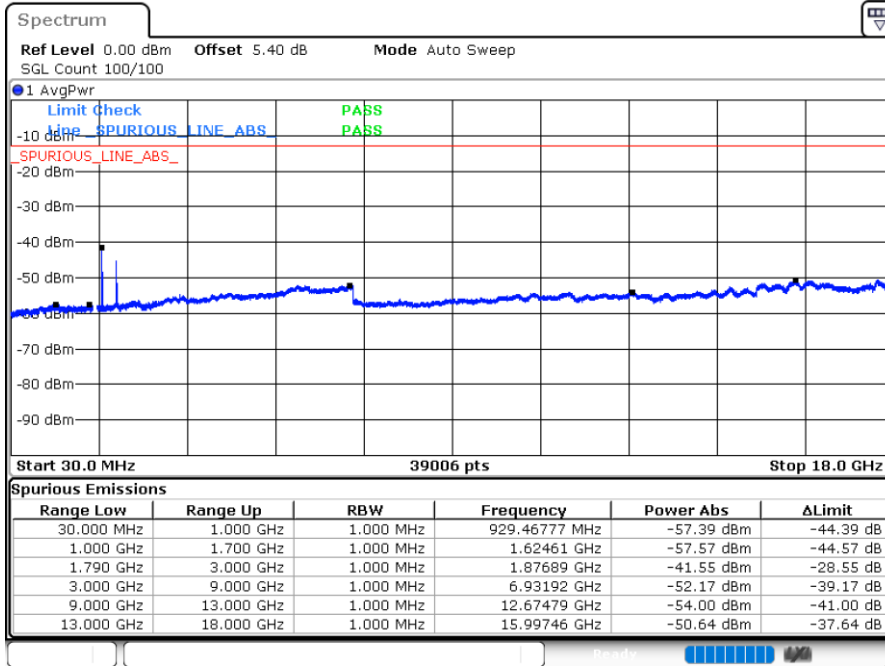
Middle Channel / 1RB1



Date: 20.OCT.2022 15:18:25

Date: 20.OCT.2022 15:16:21

Highest Channel / 1RB1



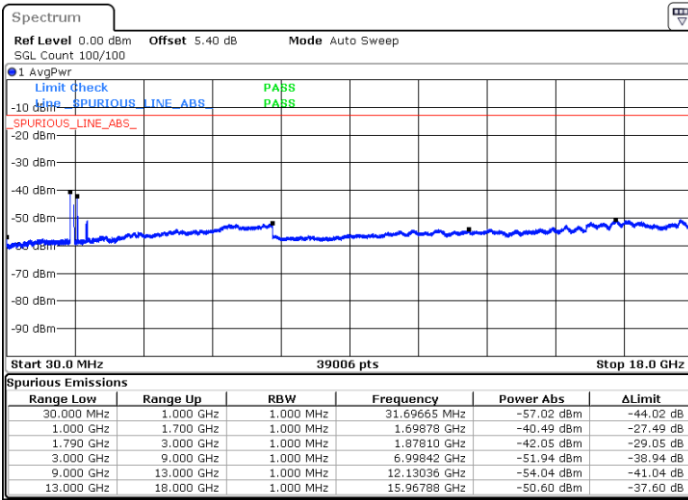
Date: 20.OCT.2022 15:25:00



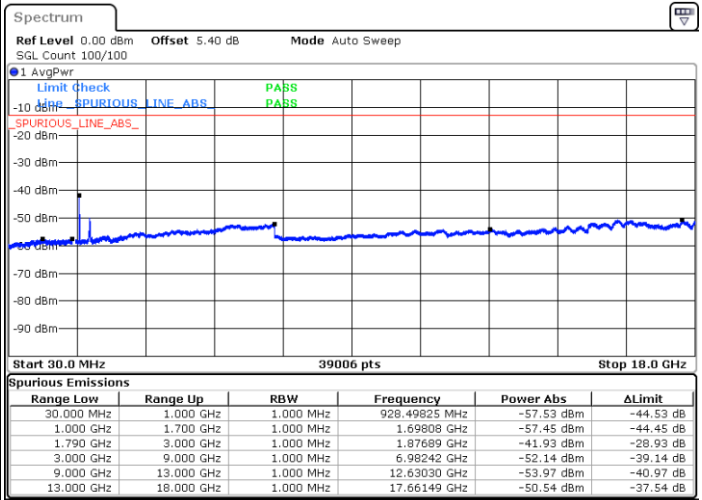
FR1 n66 / 40MHz / DFT-S OFDM / BPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

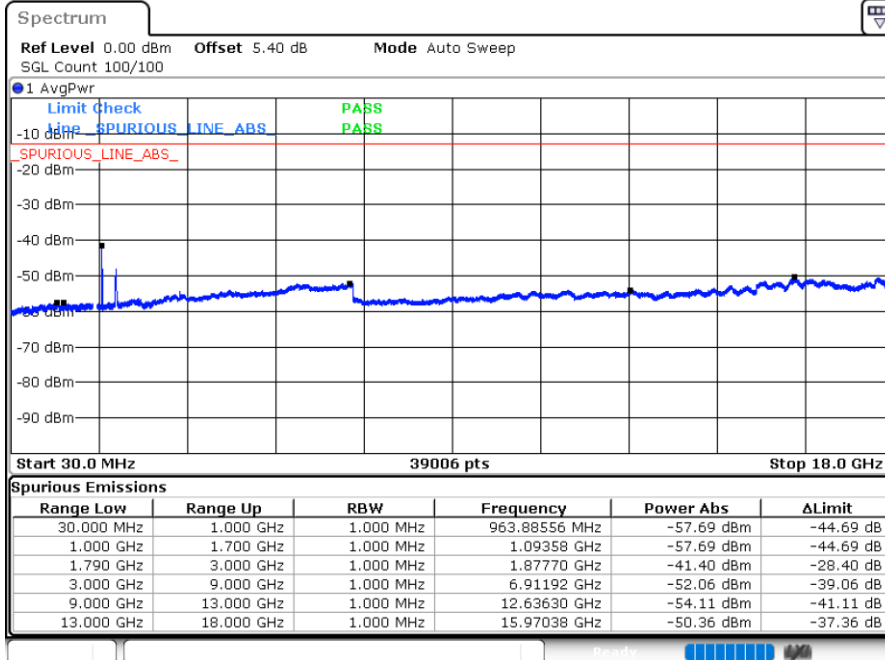


Date: 20.OCT.2022 15:34:23



Date: 20.OCT.2022 15:31:03

Highest Channel / 1RB1



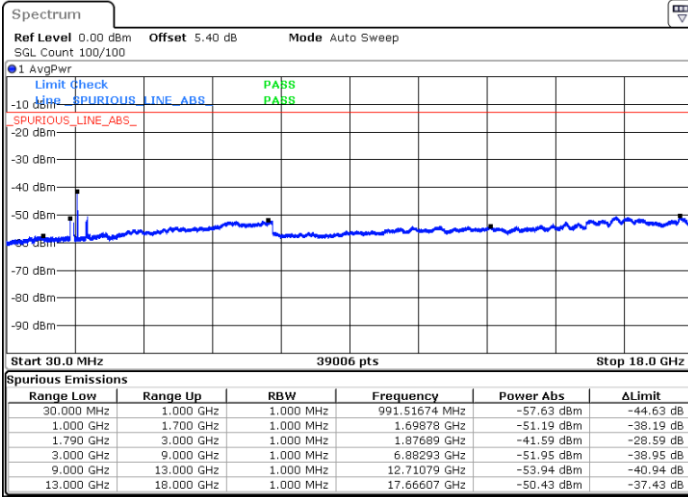
Date: 20.OCT.2022 15:41:24



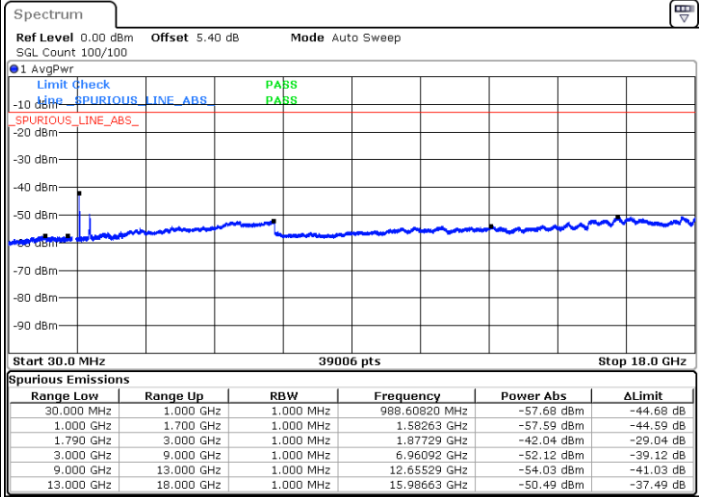
FR1 n66 / 40MHz / DFT-S OFDM / QPSK

Lowest Channel / 1RB1

Middle Channel / 1RB1

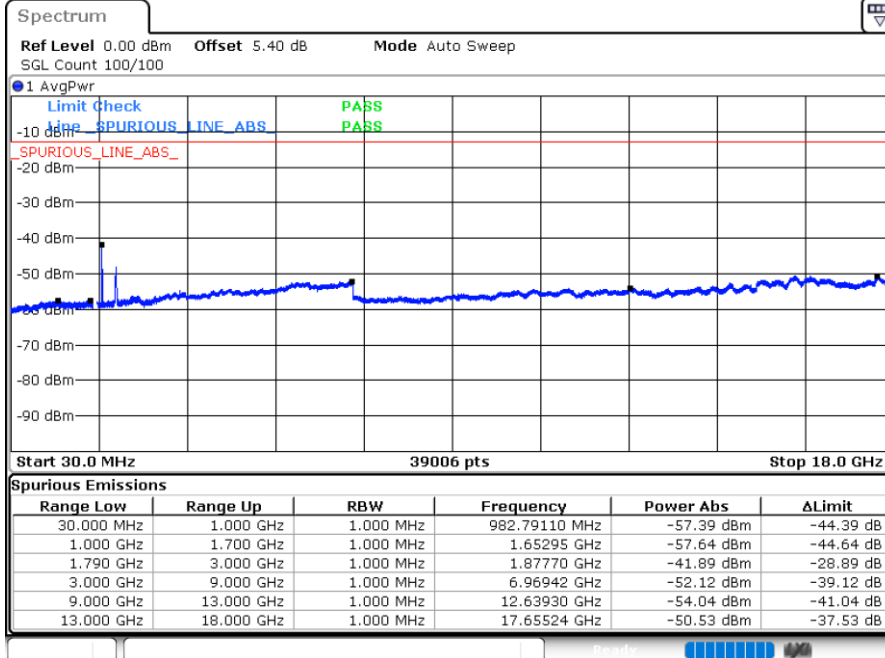


Date: 20.OCT.2022 15:35:13



Date: 20.OCT.2022 15:29:54

Highest Channel / 1RB1



Date: 20.OCT.2022 15:37:44



Frequency Stability

Test Conditions		FR1 n66 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0021	PASS
40	Normal Voltage	0.0004	
30	Normal Voltage	0.0009	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0015	
0	Normal Voltage	0.0001	
-10	Normal Voltage	0.0034	
-20	Normal Voltage	0.0002	
-30	Normal Voltage	0.0006	
20	Maximum Voltage	0.0023	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0006	

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Note: Pre-scanned harmonic for the different antenna combinations, we choose the worst antenna mode to perform final test.

EN-DC_66A_n2A / LTE 20MHz + NR 20MHz / QPSK / ANT1(LTE) & ANT0(NR)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n2 Middle	3741.5	-61.63	-13	-48.63	-76.06	-68.38	5.85	12.60	H
	5612.25	-61.50	-13	-48.50	-78.34	-67.30	7.30	13.10	H
	7483	-56.34	-13	-43.34	-78.72	-59.49	8.35	11.50	H
	3741.5	-61.81	-13	-48.81	-76.45	-68.56	5.85	12.60	V
	5612.25	-61.83	-13	-48.83	-78.58	-67.63	7.30	13.10	V
	7483	-56.25	-13	-43.25	-78.57	-59.40	8.35	11.50	V
LTE Band66 Middle	3481	-63.86	-13	-50.86	-76.58	-70.71	5.65	12.50	H
	5221.5	-62.04	-13	-49.04	-78.97	-67.71	7.13	12.80	H
	6962	-58.36	-13	-45.36	-79.05	-61.76	8.40	11.80	H
	3481	-62.64	-13	-49.64	-75.9	-69.49	5.65	12.50	V
	5221.5	-62.13	-13	-49.13	-79.01	-67.80	7.13	12.80	V
	6962	-58.42	-13	-45.42	-79.21	-61.82	8.40	11.80	V

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

SA n7 / NR 40MHz / QPSK / ANT5(NR)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5030.00	-61.66	-25	-36.66	-79.11	-67.22	7.14	12.70	H
	7545.00	-56.73	-25	-31.73	-78.97	-60.03	8.30	11.60	H
	10060.00	-53.18	-25	-28.18	-80.09	-54.70	10.48	12.00	H
	5030.00	-61.94	-25	-36.94	-79.31	-67.50	7.14	12.70	V
	7545.00	-56.61	-25	-31.61	-78.69	-59.91	8.30	11.60	V
	10060.00	-53.93	-25	-28.93	-80.29	-55.45	10.48	12.00	V

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



EN-DC_66A_n7A / LTE 20MHz + NR 40MHz / QPSK / ANT0(LTE) & ANT1(NR)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n7 Middle	5030.00	-63.03	-25	-38.03	-80.48	-68.59	7.14	12.70	H
	7545.00	-56.43	-25	-31.43	-78.67	-59.73	8.30	11.60	H
	10060.00	-53.38	-25	-28.38	-80.29	-54.90	10.48	12.00	H
	5030.00	-63.41	-25	-38.41	-80.78	-68.97	7.14	12.70	V
	7545.00	-56.68	-25	-31.68	-78.76	-59.98	8.30	11.60	V
	10060.00	-54.10	-25	-29.10	-80.46	-55.62	10.48	12.00	V
LTE Band66 Middle	3481	-63.66	-13	-50.66	-76.38	-70.51	5.65	12.50	H
	5221.5	-62.63	-13	-49.63	-79.56	-68.30	7.13	12.80	H
	6962	-58.68	-13	-45.68	-79.37	-62.08	8.40	11.80	H
	3481	-63.13	-13	-50.13	-76.39	-69.98	5.65	12.50	V
	5221.5	-62.78	-13	-49.78	-79.66	-68.45	7.13	12.80	V
	6962	-58.93	-13	-45.93	-79.72	-62.33	8.40	11.80	V

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

EN-DC_2A_n66A / LTE 20MHz + NR 40MHz / QPSK / ANT0(LTE) & ANT1(NR)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n66 Middle	3452	-62.44	-13	-49.44	-74.83	-69.29	5.65	12.50	H
	5178	-52.45	-13	-39.45	-69.73	-58.12	7.13	12.80	H
	6904	-59.24	-13	-46.24	-79.65	-62.64	8.40	11.80	H
	3452	-62.58	-13	-49.58	-75.52	-69.43	5.65	12.50	V
	5178	-59.87	-13	-46.87	-77.09	-65.54	7.13	12.80	V
	6904	-58.94	-13	-45.94	-79.28	-62.34	8.40	11.80	V
LTE Band2 Middle	3751.18	-61.00	-13	-48.00	-75.44	-67.75	5.85	12.60	H
	5626.77	-61.48	-13	-48.48	-78.33	-67.28	7.30	13.10	H
	7502	-56.27	-13	-43.27	-78.60	-59.42	8.35	11.50	H
	3751.18	-61.40	-13	-48.40	-76.04	-68.15	5.85	12.60	V
	5626.77	-61.67	-13	-48.67	-78.43	-67.47	7.30	13.10	V
	7502	-56.56	-13	-43.56	-78.8	-59.71	8.35	11.50	V

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



EN-DC_7A_n66A / LTE 20MHz + NR 40MHz / QPSK / ANT5(LTE) & ANT1(NR)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n66 Middle	3452	-62.06	-13	-49.06	-74.45	-68.91	5.65	12.50	H
	5178	-52.15	-13	-39.15	-69.43	-57.82	7.13	12.80	H
	6906	-58.71	-13	-45.71	-79.13	-62.11	8.40	11.80	H
	3452	-62.35	-13	-49.35	-75.29	-69.20	5.65	12.50	V
	5178	-60.10	-13	-47.10	-77.32	-65.77	7.13	12.80	V
	6904	-59.40	-13	-46.40	-79.74	-62.80	8.40	11.80	V
LTE Band7 Middle	5061.18	-62.10	-25	-37.10	-79.52	-67.66	7.14	12.70	H
	7591.77	-56.37	-25	-31.37	-78.50	-59.67	8.30	11.60	H
	10122.36	-51.60	-25	-26.60	-78.48	-53.12	10.48	12.00	H
	5061.18	-62.14	-25	-37.14	-79.49	-67.70	7.14	12.70	V
	7591.77	-56.86	-25	-31.86	-78.77	-60.16	8.30	11.60	V
	10122.36	-52.46	-25	-27.46	-78.87	-53.98	10.48	12.00	V

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