



Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (Hz)	Verdict	Environment
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	14.3	PASS	NV
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	18.2	PASS	LV
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	12.7	PASS	HV
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	11	PASS	-30°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	19.2	PASS	-20°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	15.1	PASS	-10°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	15.4	PASS	0°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	15.7	PASS	10°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	14.3	PASS	20°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	13.3	PASS	30°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	10.7	PASS	40°C
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	12.8	PASS	50°C

|MAX(Δf)| = 19.2 Hz

Frequency Stability	Frequency (MHz)	Limit Line	Result
fL - MAX(Δ f)	663.5693808	≧ 663 MHz	PASS
fH + MAX(Δ f)	696.3916192	≦ 698 MHz	



Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
71	15	20	136100	680.5	DFT-s-OFDM PI/2 BPSK	100@0	4.79	13	PASS
71	15	20	136100	680.5	DFT-s-OFDM QPSK	100@0	6.02	13	PASS

N71(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



N71(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



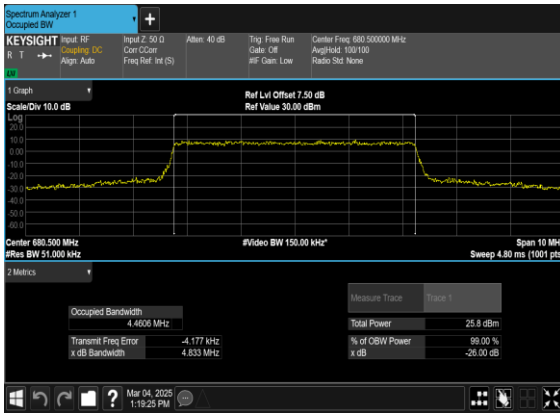


Occupied Bandwidth

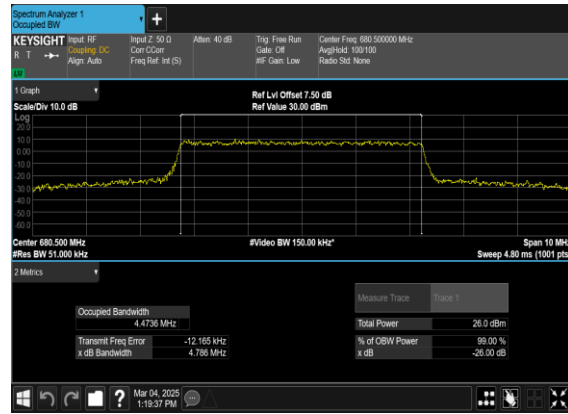
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
71	15	5	136100	680.5	CP-OFDM QPSK	25@0	4.4606	4.833
71	15	5	136100	680.5	CP-OFDM 16 QAM	25@0	4.4736	4.786
71	15	5	136100	680.5	CP-OFDM 64 QAM	25@0	4.4672	4.817
71	15	5	136100	680.5	CP-OFDM 256 QAM	25@0	4.4668	4.773
71	15	10	136100	680.5	CP-OFDM QPSK	52@0	9.2571	9.671
71	15	10	136100	680.5	CP-OFDM 16 QAM	52@0	9.2655	9.724
71	15	10	136100	680.5	CP-OFDM 64 QAM	52@0	9.2834	9.658
71	15	10	136100	680.5	CP-OFDM 256 QAM	52@0	9.255	9.724
71	15	15	136100	680.5	CP-OFDM QPSK	79@0	14.102	14.67
71	15	15	136100	680.5	CP-OFDM 16 QAM	79@0	14.096	14.65
71	15	15	136100	680.5	CP-OFDM 64 QAM	79@0	14.123	14.7
71	15	15	136100	680.5	CP-OFDM 256 QAM	79@0	14.123	14.7
71	15	20	136100	680.5	CP-OFDM QPSK	106@0	18.881	19.68
71	15	20	136100	680.5	CP-OFDM 16 QAM	106@0	18.869	19.73
71	15	20	136100	680.5	CP-OFDM 64 QAM	106@0	18.938	19.63
71	15	20	136100	680.5	CP-OFDM 256 QAM	106@0	18.841	19.68



N71(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



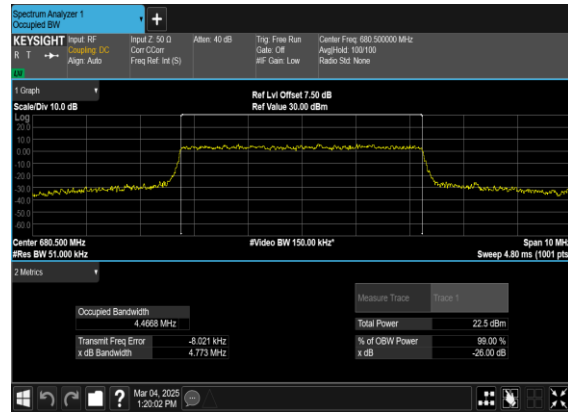
N71(5M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N71(5M)_CP-OFDM_64QAM_Outer_Full_Mid_CH



N71(5M)_CP-OFDM_256QAM_Outer_Full_Mid_CH

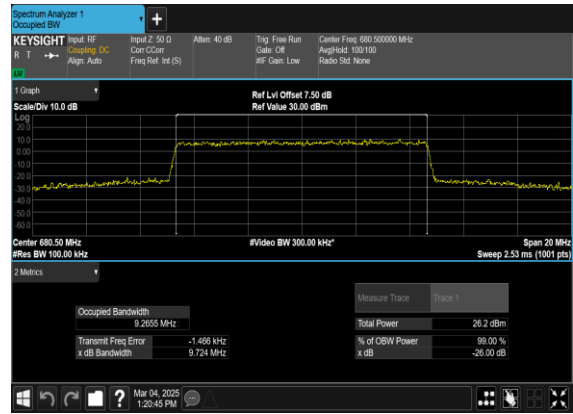




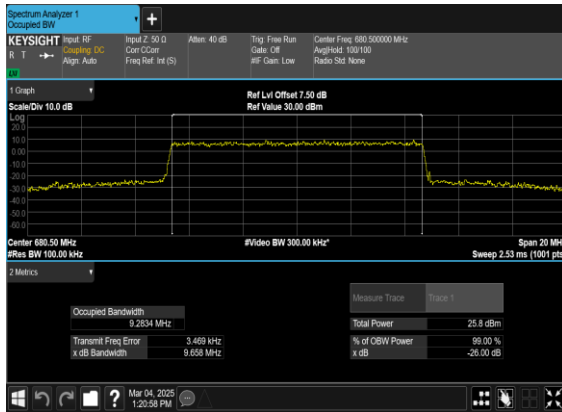
N71(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N71(10M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N71(10M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

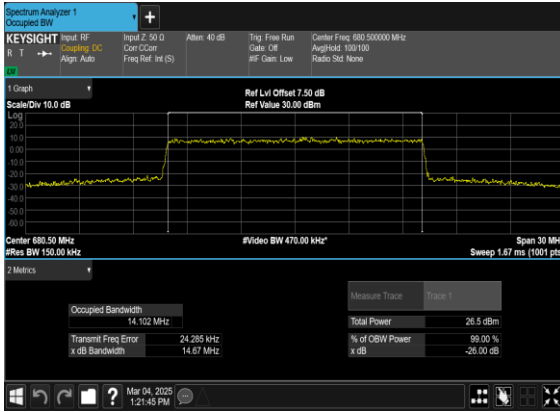


N71(10M)_CP-OFDM_256QAM_Outer_Full_Mid_CH





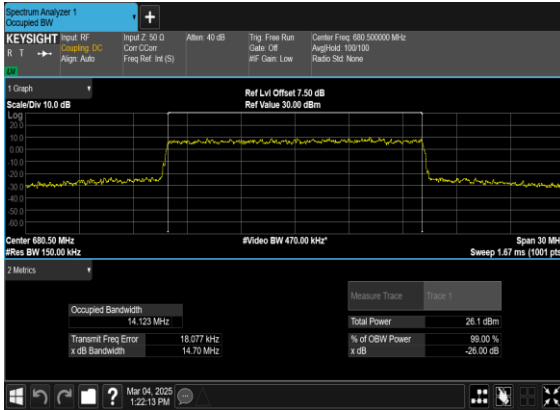
N71(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



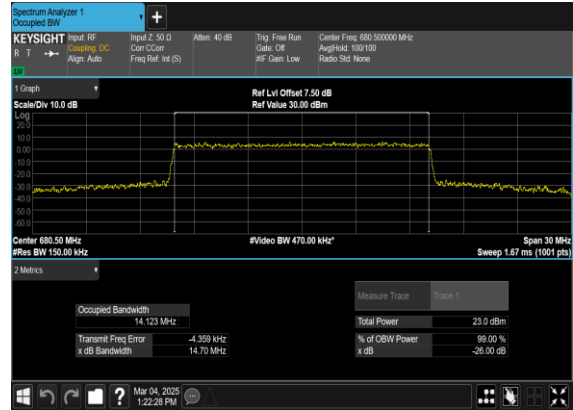
N71(15M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N71(15M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

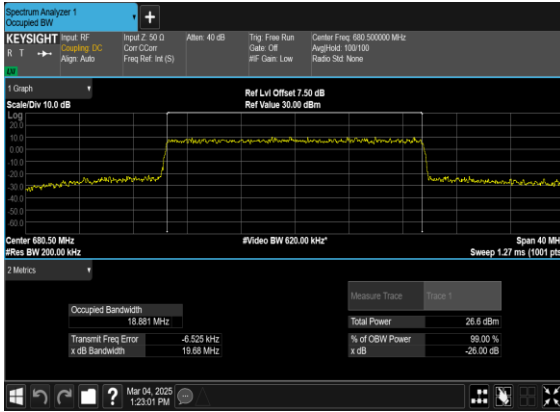


N71(15M)_CP-OFDM_256QAM_Outer_Full_Mid_CH

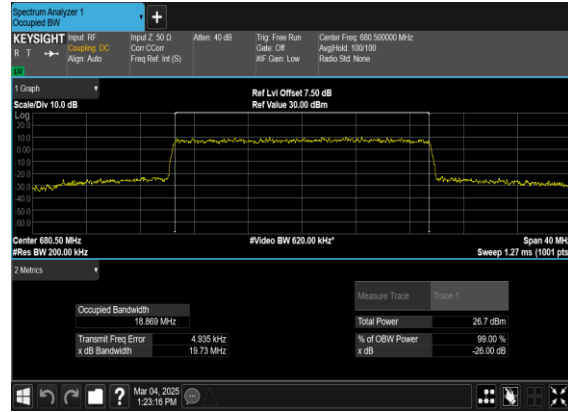




N71(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



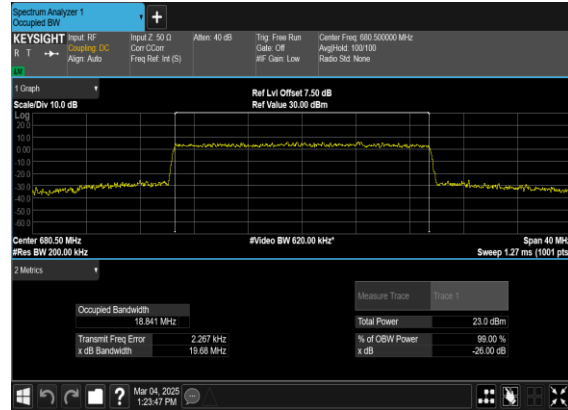
N71(20M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N71(20M)_CP-OFDM_64QAM_Outer_Full_Mid_CH



N71(20M)_CP-OFDM_256QAM_Outer_Full_Mid_CH





Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
71	15	5	133100	665.5	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	5	133100	665.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	5	133100	665.5	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	5	133100	665.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	5	136100	680.5	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	5	136100	680.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	5	136100	680.5	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	5	136100	680.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	5	139100	695.5	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	5	139100	695.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	5	139100	695.5	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	5	139100	695.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	10	133600	668.0	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	10	133600	668.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	10	133600	668.0	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	10	133600	668.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	10	136100	680.5	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	10	136100	680.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	10	136100	680.5	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	10	136100	680.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	10	138600	693.0	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	10	138600	693.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	10	138600	693.0	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	10	138600	693.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	20	134600	673.0	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	20	134600	673.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	20	134600	673.0	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	20	134600	673.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	20	136100	680.5	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	20	136100	680.5	DFT-s-OFDM BPSK	1@0	see graph	PASS



71	15	20	136100	680.5	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	20	136100	680.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	20	137600	688.0	DFT-s-OFDM BPSK	1@0	see graph	---
71	15	20	137600	688.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	20	137600	688.0	DFT-s-OFDM QPSK	1@0	see graph	---
71	15	20	137600	688.0	DFT-s-OFDM QPSK	1@0	see graph	PASS



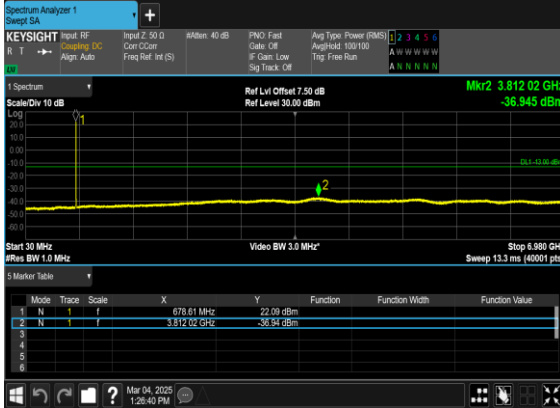
N71(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



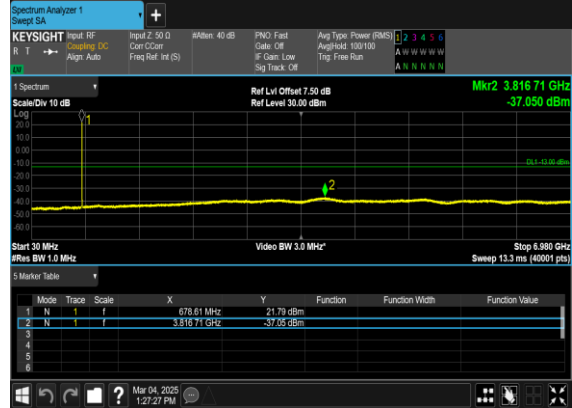
N71(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N71(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

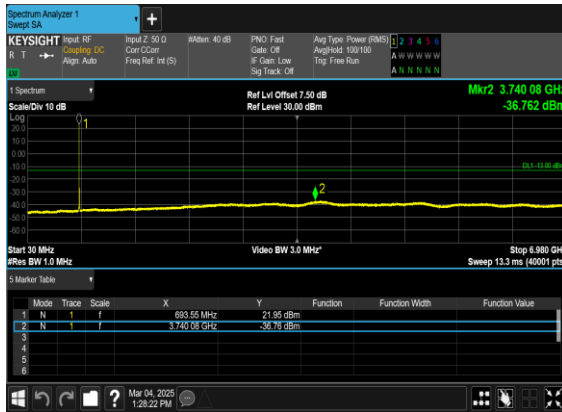


N71(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

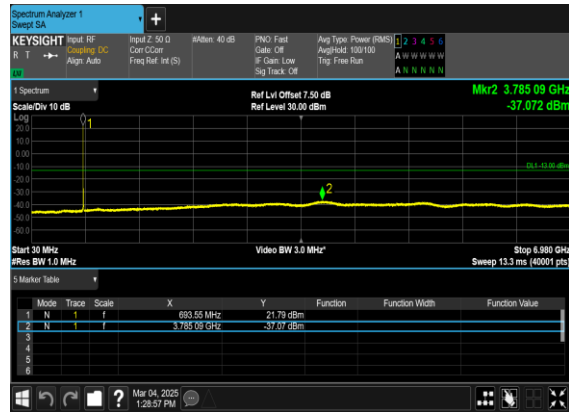




N71(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N71(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N71(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

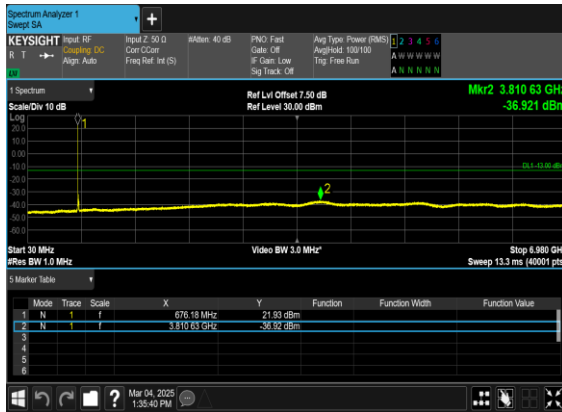


N71(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

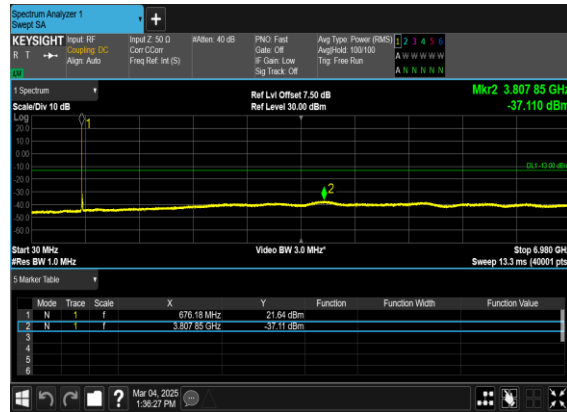




N71(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



N71(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N71(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

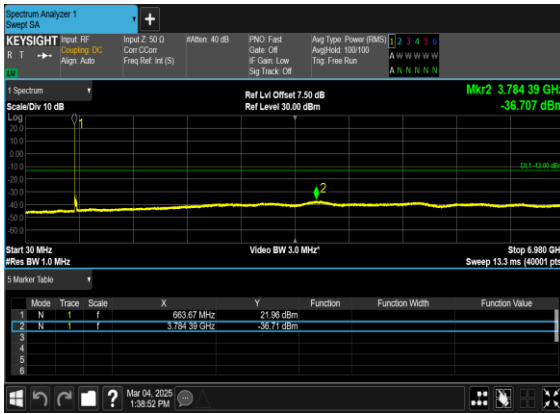


N71(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH





N71(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



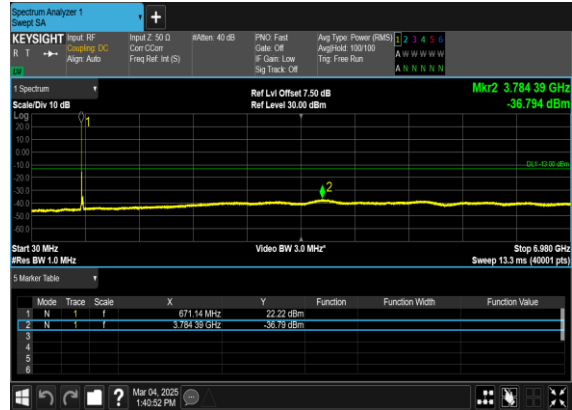
N71(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N71(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

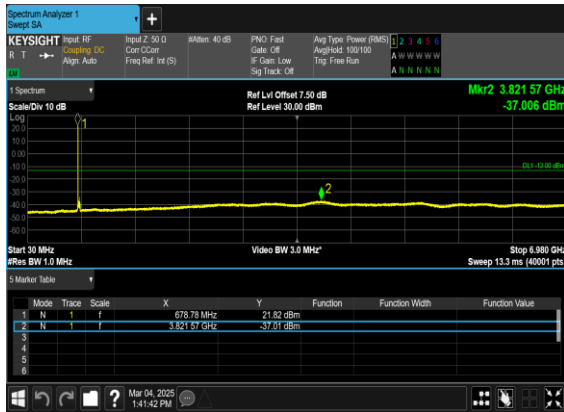


N71(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

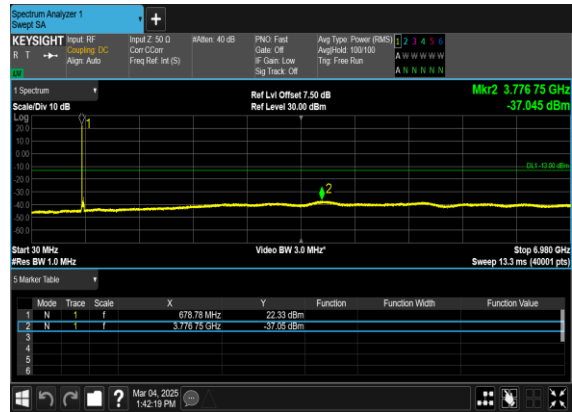




N71(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N71(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



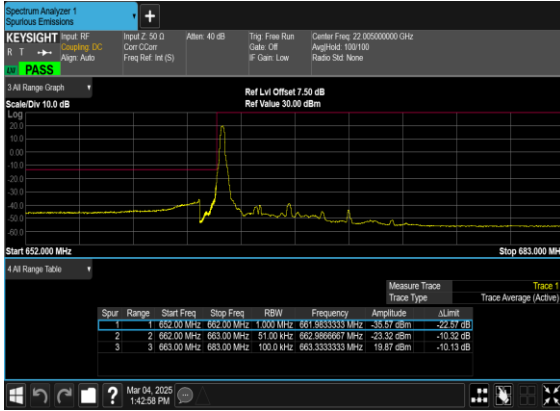


Conducted Band Edge

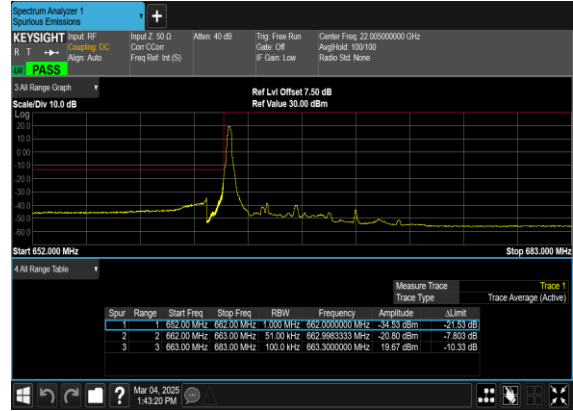
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
71	15	5	133100	665.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	5	133100	665.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	5	133100	665.5	DFT-s-OFDM BPSK	25@0	see graph	PASS
71	15	5	133100	665.5	DFT-s-OFDM QPSK	25@0	see graph	PASS
71	15	5	139100	695.5	DFT-s-OFDM BPSK	1@24	see graph	PASS
71	15	5	139100	695.5	DFT-s-OFDM QPSK	1@24	see graph	PASS
71	15	5	139100	695.5	DFT-s-OFDM BPSK	25@0	see graph	PASS
71	15	5	139100	695.5	DFT-s-OFDM QPSK	25@0	see graph	PASS
71	15	10	133600	668.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	10	133600	668.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	10	133600	668.0	DFT-s-OFDM BPSK	50@0	see graph	PASS
71	15	10	133600	668.0	DFT-s-OFDM QPSK	50@0	see graph	PASS
71	15	10	138600	693.0	DFT-s-OFDM BPSK	1@51	see graph	PASS
71	15	10	138600	693.0	DFT-s-OFDM QPSK	1@51	see graph	PASS
71	15	10	138600	693.0	DFT-s-OFDM BPSK	50@0	see graph	PASS
71	15	10	138600	693.0	DFT-s-OFDM QPSK	50@0	see graph	PASS
71	15	20	134600	673.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
71	15	20	134600	673.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
71	15	20	134600	673.0	DFT-s-OFDM BPSK	100@0	see graph	PASS
71	15	20	134600	673.0	DFT-s-OFDM QPSK	100@0	see graph	PASS
71	15	20	137600	688.0	DFT-s-OFDM BPSK	1@105	see graph	PASS
71	15	20	137600	688.0	DFT-s-OFDM QPSK	1@105	see graph	PASS
71	15	20	137600	688.0	DFT-s-OFDM BPSK	100@0	see graph	PASS
71	15	20	137600	688.0	DFT-s-OFDM QPSK	100@0	see graph	PASS



N71(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



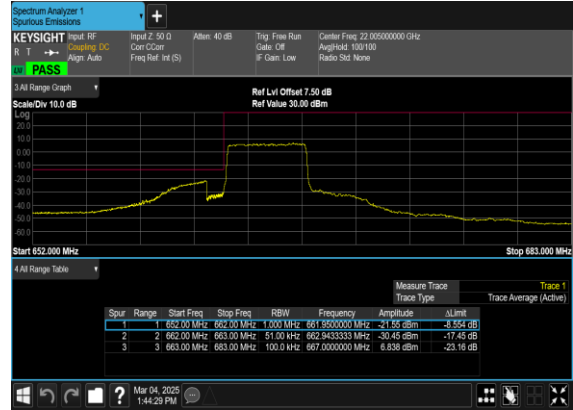
N71(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N71(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

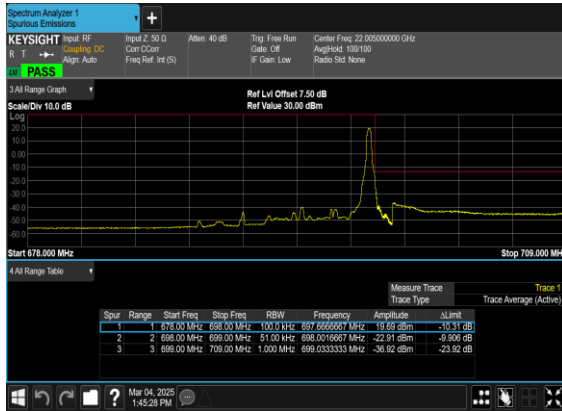


N71(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

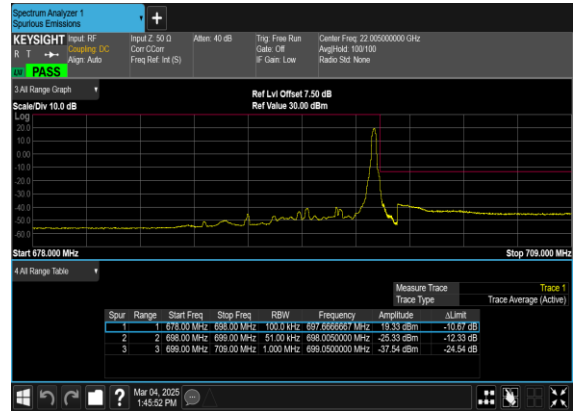




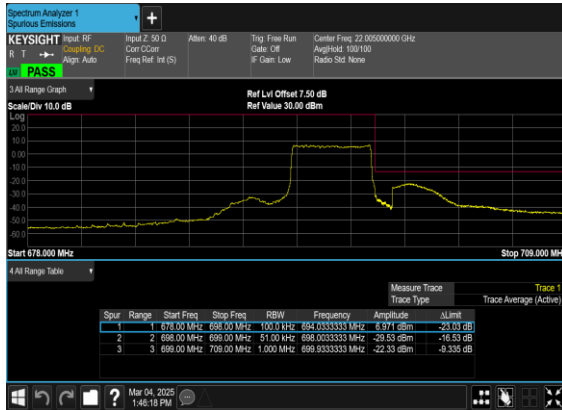
N71(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



N71(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N71(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

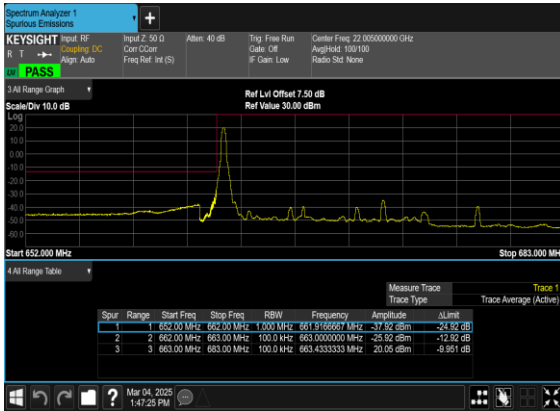


N71(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

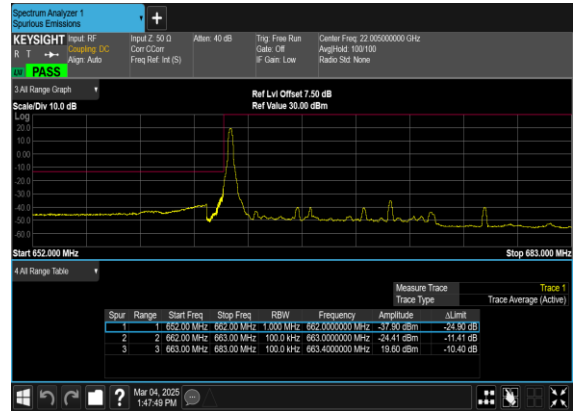




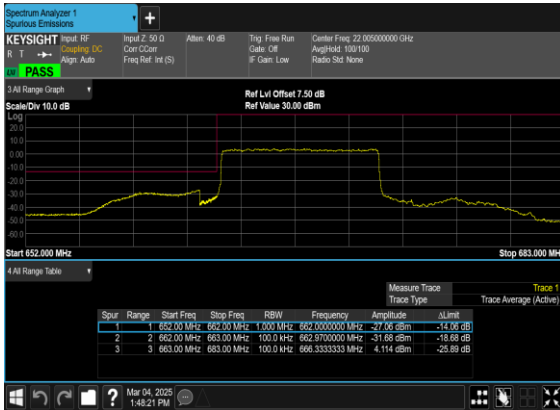
N71(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



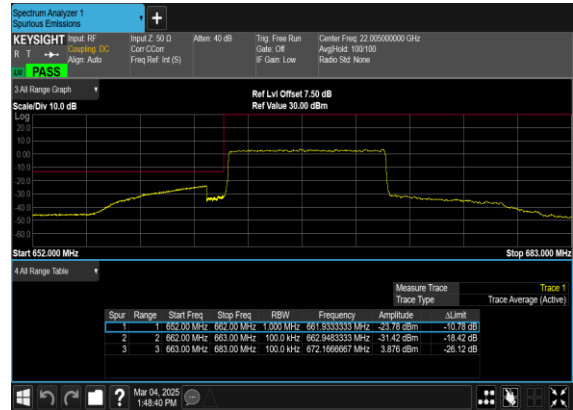
N71(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N71(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



N71(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH





N71(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



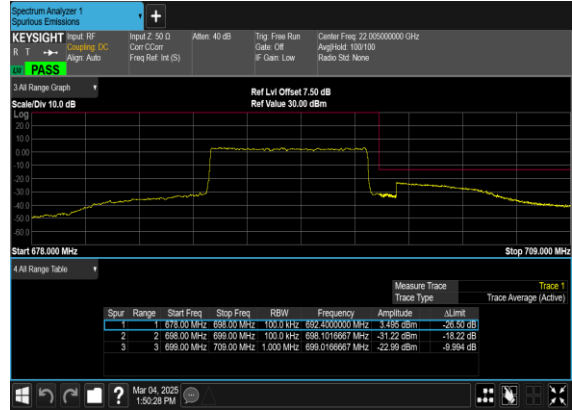
N71(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N71(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

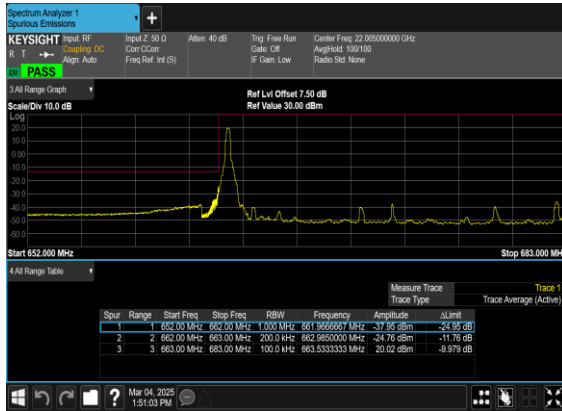


N71(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

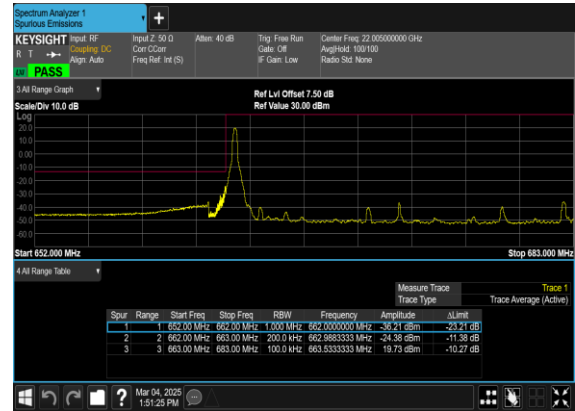




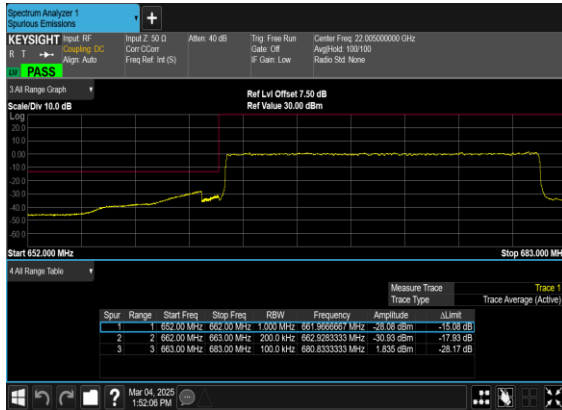
N71(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



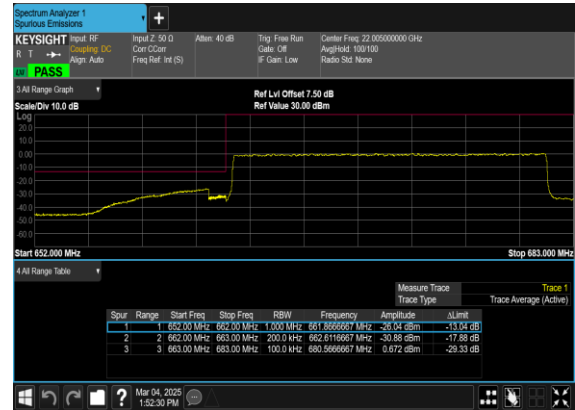
N71(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N71(20M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



N71(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH





N71(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



N71(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N71(20M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



N71(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH





Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	LiangPing Zhou	Temperature :	22~25°C
		Relative Humidity :	48~52%

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

For Sample 1:

n7 SA / NR 20MHz / QPSK(ANT4)									
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	5052.00	-59.84	-25	-34.84	-81.85	-65.40	7.14	12.70	H
	7578.00	-54.61	-25	-29.61	-81.26	-57.91	8.30	11.60	H
	10104.00	-49.16	-25	-24.16	-80.57	-50.68	10.48	12.00	H
	5052.00	-58.54	-25	-33.54	-80.67	-64.10	7.14	12.70	V
	7578.00	-54.56	-25	-29.56	-81.17	-57.86	8.30	11.60	V
	10104.00	-51.77	-25	-26.77	-81.78	-53.29	10.48	12.00	V

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

EN-DC_7A_n7A / LTE 10MHz + NR 20MHz / QPSK (ANT7+4)									
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	5052.00	-59.31	-25	-34.31	-81.32	-64.87	7.14	12.70	H
	7578.00	-53.37	-25	-28.37	-80.02	-56.67	8.30	11.60	H
	10104.00	-49.22	-25	-24.22	-80.63	-50.74	10.48	12.00	H
	5052.00	-59.10	-25	-34.10	-81.23	-64.66	7.14	12.70	V
	7578.00	-53.48	-25	-28.48	-80.09	-56.78	8.30	11.60	V
	10104.00	-50.63	-25	-25.63	-80.64	-52.15	10.48	12.00	V
LTE Band7 Middle	5070.00	-59.18	-25	-34.18	-81.17	-64.74	7.14	12.70	H
	7605.00	-53.34	-25	-28.34	-79.98	-56.64	8.30	11.60	H
	10140.00	-49.43	-25	-24.43	-80.79	-50.95	10.48	12.00	H
	5070.00	-58.77	-25	-33.77	-80.9	-64.33	7.14	12.70	V
	7605.00	-53.53	-25	-28.53	-80.11	-56.83	8.30	11.60	V
	10140.00	-50.74	-25	-25.74	-80.77	-52.26	10.48	12.00	V

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



n41 SA / NR 100MHz / QPSK(ANT4)									
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	5052.00	-59.84	-25	-34.84	-81.85	-65.40	7.14	12.70	H
	7578.00	-54.61	-25	-29.61	-81.26	-57.91	8.30	11.60	H
	10104.00	-50.28	-25	-25.28	-81.69	-51.80	10.48	12.00	H
	5052.00	-58.54	-25	-33.54	-80.67	-64.10	7.14	12.70	V
	7578.00	-54.56	-25	-29.56	-81.17	-57.86	8.30	11.60	V
	10104.00	-51.77	-25	-26.77	-81.78	-53.29	10.48	12.00	V

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

EN-DC_41A_n41A / LTE 10MHz + NR 100MHz / QPSK (ANT7+4)									
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 n41 Middle	5090.00	-59.79	-25	-34.79	-81.71	-65.35	7.14	12.70	H
	7635.00	-54.32	-25	-29.32	-80.96	-57.62	8.30	11.60	H
	10180.00	-49.81	-25	-24.81	-81.12	-51.33	10.48	12.00	H
	5090.00	-59.70	-25	-34.70	-81.8	-65.26	7.14	12.70	V
	7635.00	-54.08	-25	-29.08	-80.64	-57.38	8.30	11.60	V
	10180.00	-51.42	-25	-26.42	-81.48	-52.94	10.48	12.00	V
LTE Band41 Middle	5186.00	-60.15	-25	-35.15	-81.95	-65.71	7.14	12.70	H
	7779.00	-54.30	-25	-29.30	-81.13	-57.60	8.30	11.60	H
	10372.00	-50.38	-25	-25.38	-81.46	-51.90	10.48	12.00	H
	5186.00	-59.75	-25	-34.75	-81.84	-65.31	7.14	12.70	V
	7779.00	-54.36	-25	-29.36	-81.02	-57.66	8.30	11.60	V
	10372.00	-51.42	-25	-26.42	-81.67	-52.94	10.48	12.00	V

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

n71 SA / NR 20MHz / QPSK(ANT4)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1343	-60.03	-13	-47.03	-70.09	-63.28	4.00	9.40	H
	2014.5	-45.43	-13	-32.43	-56.79	-49.00	4.88	10.60	H
	2686	-62.17	-13	-49.17	-77.42	-67.10	5.52	12.60	H
	1343	-58.67	-13	-45.67	-68.36	-61.92	4.00	9.40	V
	2014.5	-45.09	-13	-32.09	-56.34	-48.66	4.88	10.60	V
	2686	-62.02	-13	-49.02	-77.29	-66.95	5.52	12.60	V

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



For Sample 2:

n7 SA / NR 20MHz / QPSK(ANT4)									
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	5052.00	-60.45	-25	-35.45	-82.46	-66.01	7.14	12.70	H
	7578.00	-54.73	-25	-29.73	-81.38	-58.03	8.30	11.60	H
	10104.00	-50.28	-25	-25.28	-81.69	-51.80	10.48	12.00	H
	5052.00	-60.22	-25	-35.22	-82.35	-65.78	7.14	12.70	V
	7578.00	-53.76	-25	-28.76	-80.37	-57.06	8.30	11.60	V
	10104.00	-51.88	-25	-26.88	-81.89	-53.40	10.48	12.00	V

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