

Appendix-A NTN Band 23

Effective (Isotropic) Radiated Power Output Data

Test Result

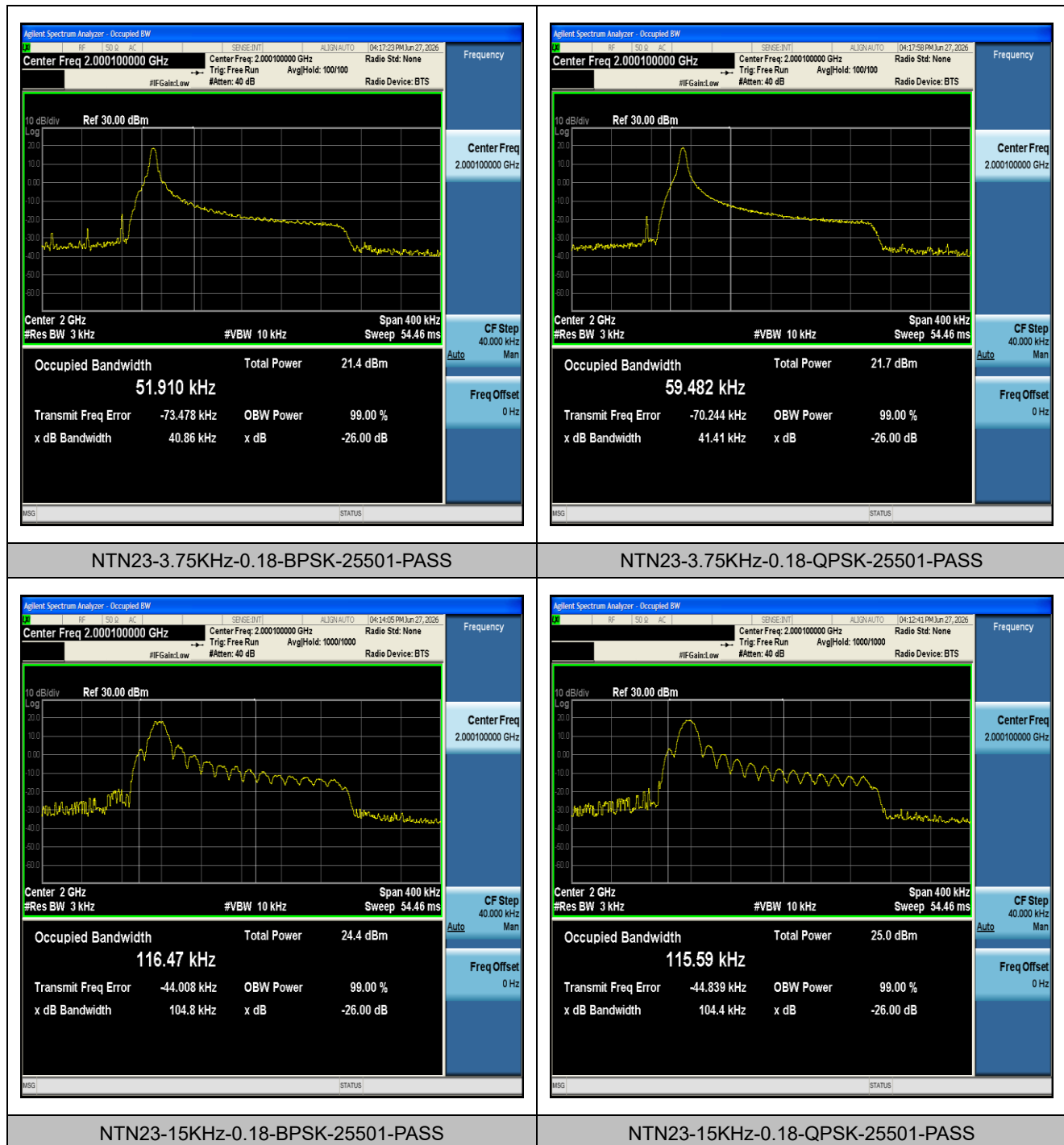
Band	OpMode	SCS	BW	Modulation	Channel	Tones	Power (dBm)	EIRP (dBm)
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25501	1@0	22.59	25.89
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25501	1@0	22.67	25.97
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25501	1@47	22.51	25.81
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25501	1@47	22.53	25.83
NTN23	Stand-Alone	15kHz	0.18	BPSK	25501	1@0	22.57	25.87
NTN23	Stand-Alone	15kHz	0.18	QPSK	25501	1@0	22.45	25.75
NTN23	Stand-Alone	15kHz	0.18	BPSK	25501	1@11	22.52	25.82
NTN23	Stand-Alone	15kHz	0.18	QPSK	25501	1@11	22.56	25.86
NTN23	Stand-Alone	15kHz	0.18	QPSK	25501	3@3	22.54	25.84
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25600	1@0	22.57	25.87
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	22.49	25.79
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25600	1@47	22.33	25.63
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@47	22.36	25.66
NTN23	Stand-Alone	15kHz	0.18	BPSK	25600	1@0	22.29	25.59
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	22.28	25.58
NTN23	Stand-Alone	15kHz	0.18	BPSK	25600	1@11	22.18	25.48
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@11	22.31	25.61
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	3@3	22.42	25.72
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25699	1@0	22.40	25.7
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25699	1@0	22.49	25.79
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25699	1@47	22.41	25.71
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25699	1@47	22.40	25.7
NTN23	Stand-Alone	15kHz	0.18	BPSK	25699	1@0	22.03	25.33
NTN23	Stand-Alone	15kHz	0.18	QPSK	25699	1@0	22.47	25.77
NTN23	Stand-Alone	15kHz	0.18	BPSK	25699	1@11	22.40	25.7
NTN23	Stand-Alone	15kHz	0.18	QPSK	25699	1@11	22.01	25.31
NTN23	Stand-Alone	15kHz	0.18	QPSK	25699	3@3	22.47	25.77

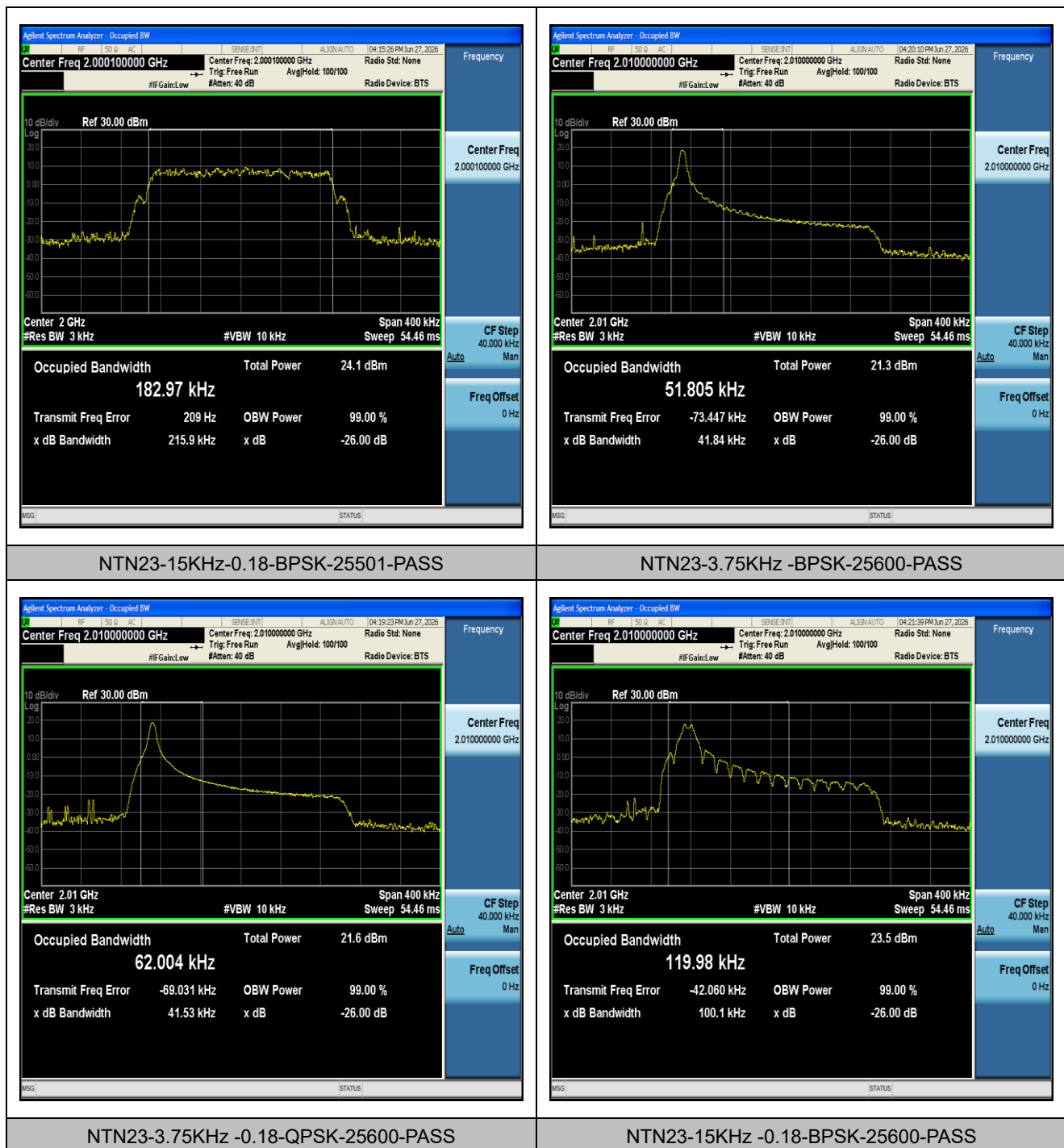
Emission Bandwidth

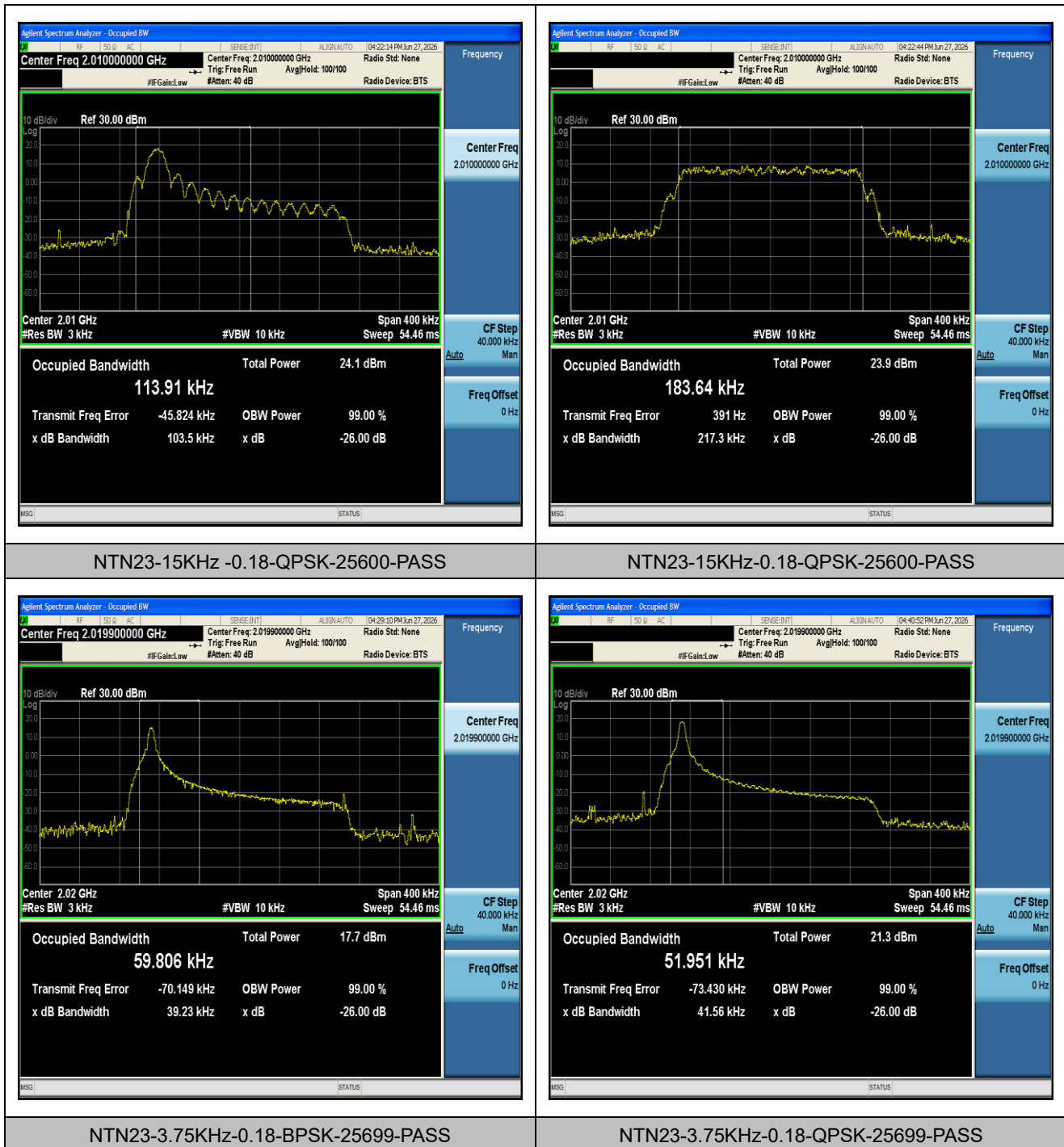
Test Result

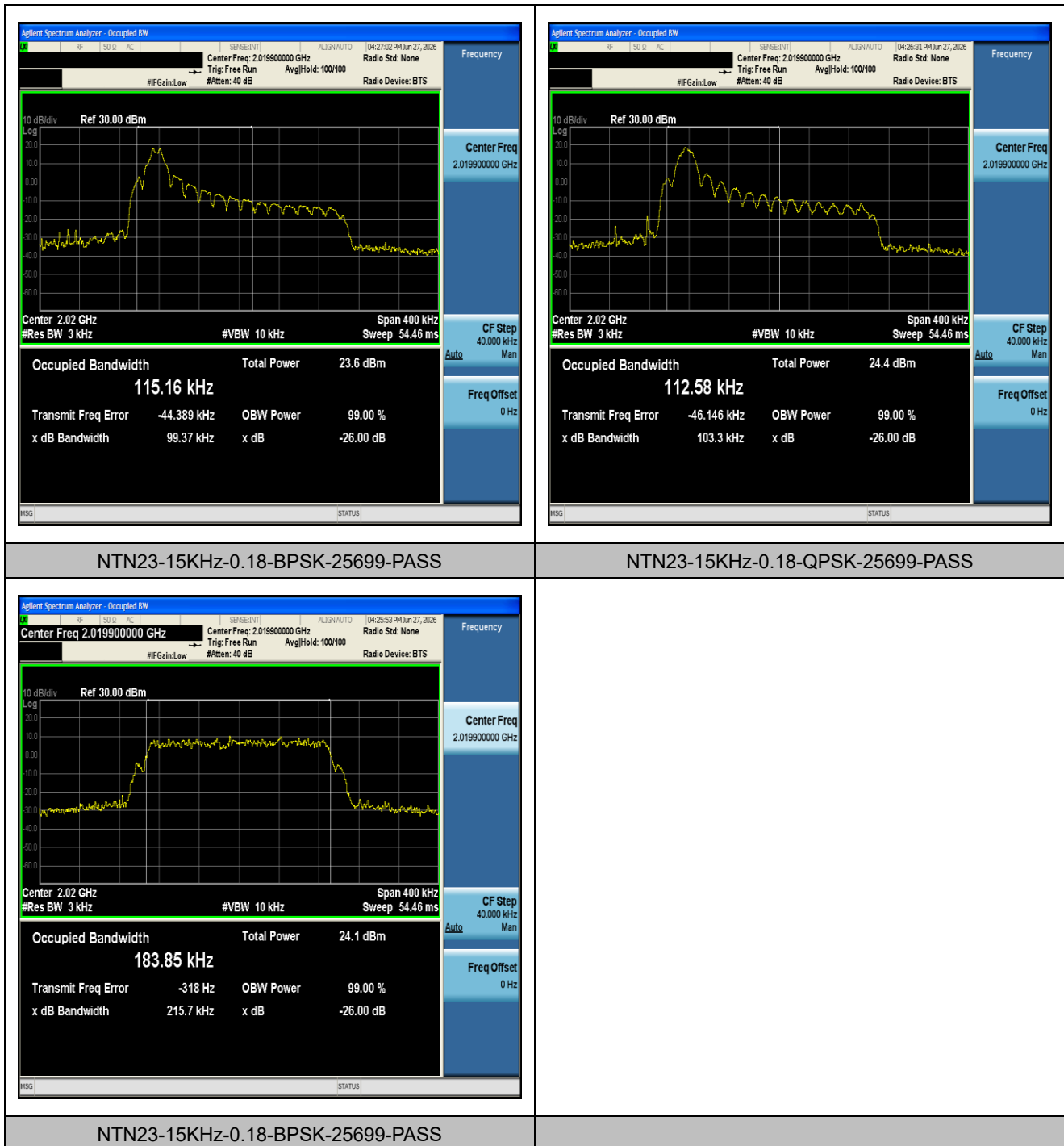
Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25501	1@0	0.51910	0.4086	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25501	1@0	0.59482	0.4141	PASS
NTN23	Stand-Alone	15kHz	0.18	BPSK	25501	1@0	0.11647	0.1048	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25501	1@0	0.11559	0.1044	PASS
NTN23	Stand-Alone	15kHz	0.18	BPSK	25501	12@0	0.18297	0.2159	PASS
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25600	1@0	0.51805	0.4184	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	0.62004	0.4153	PASS
NTN23	Stand-Alone	15kHz	0.18	BPSK	25600	1@0	0.11998	0.1001	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	0.11391	0.1035	PASS
NTN23	Stand-Alone	15kHz	0.18	BPSK	25600	12@0	0.18364	0.2173	PASS
NTN23	Stand-Alone	3.75kHz	0.18	BPSK	25699	1@0	0.59806	0.3923	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25699	1@0	0.51951	0.4156	PASS
NTN23	Stand-Alone	15kHz	0.18	BPSK	25699	1@0	0.11516	0.9937	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25699	1@0	0.11258	0.1033	PASS
NTN23	Stand-Alone	15kHz	0.18	BPSK	25699	12@0	0.18385	0.2157	PASS

Test Graphs



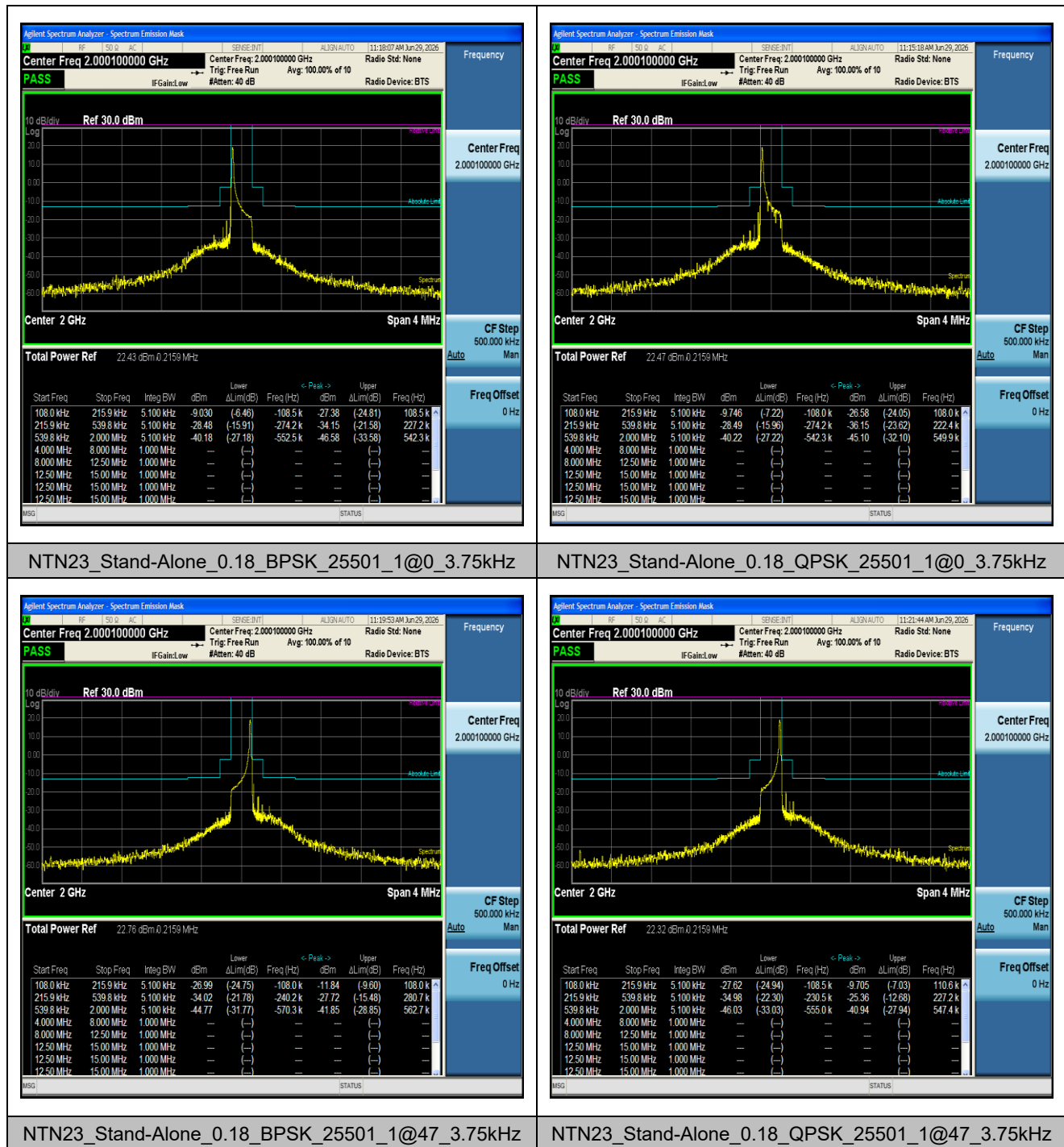


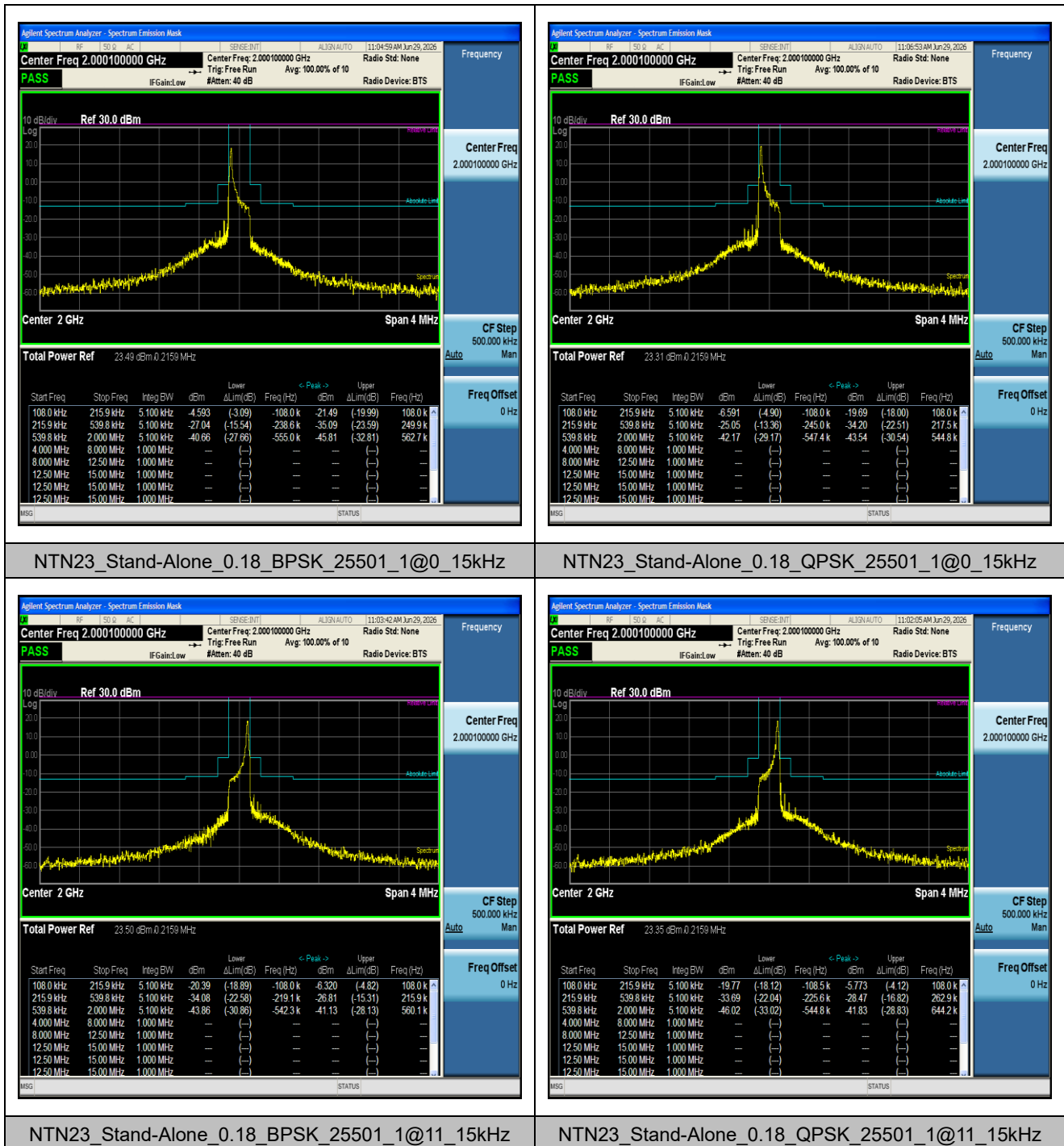


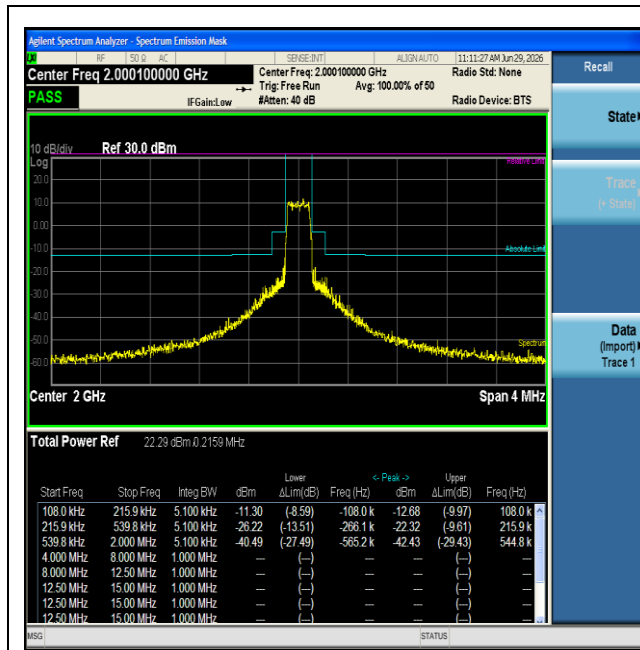


Emissions Mask Within Authorized Bandwidth

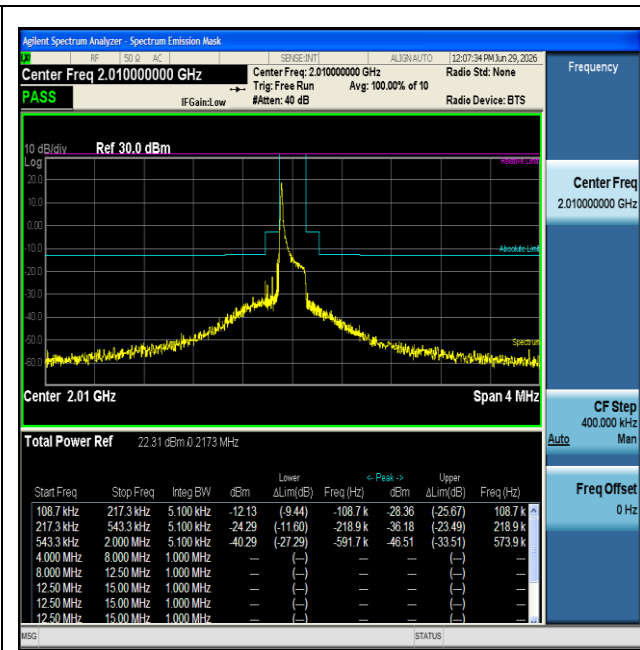
Test Graphs



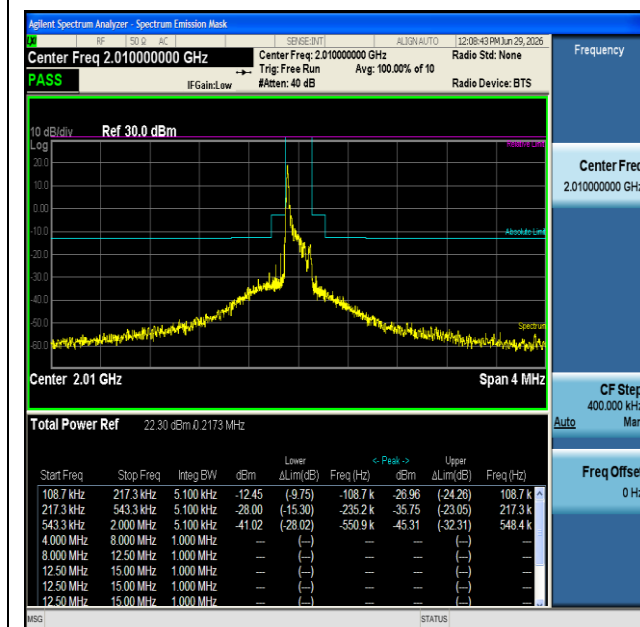




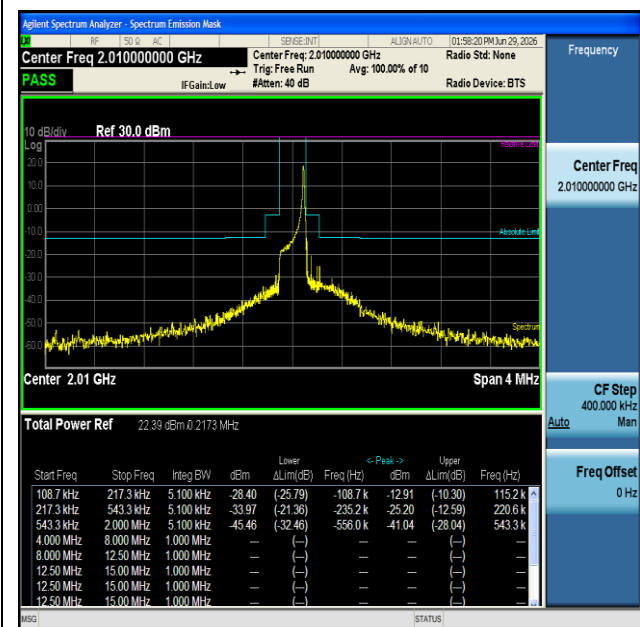
NTN23_Stand-Alone_0.18_QPSK_25501_12@0_15kHz



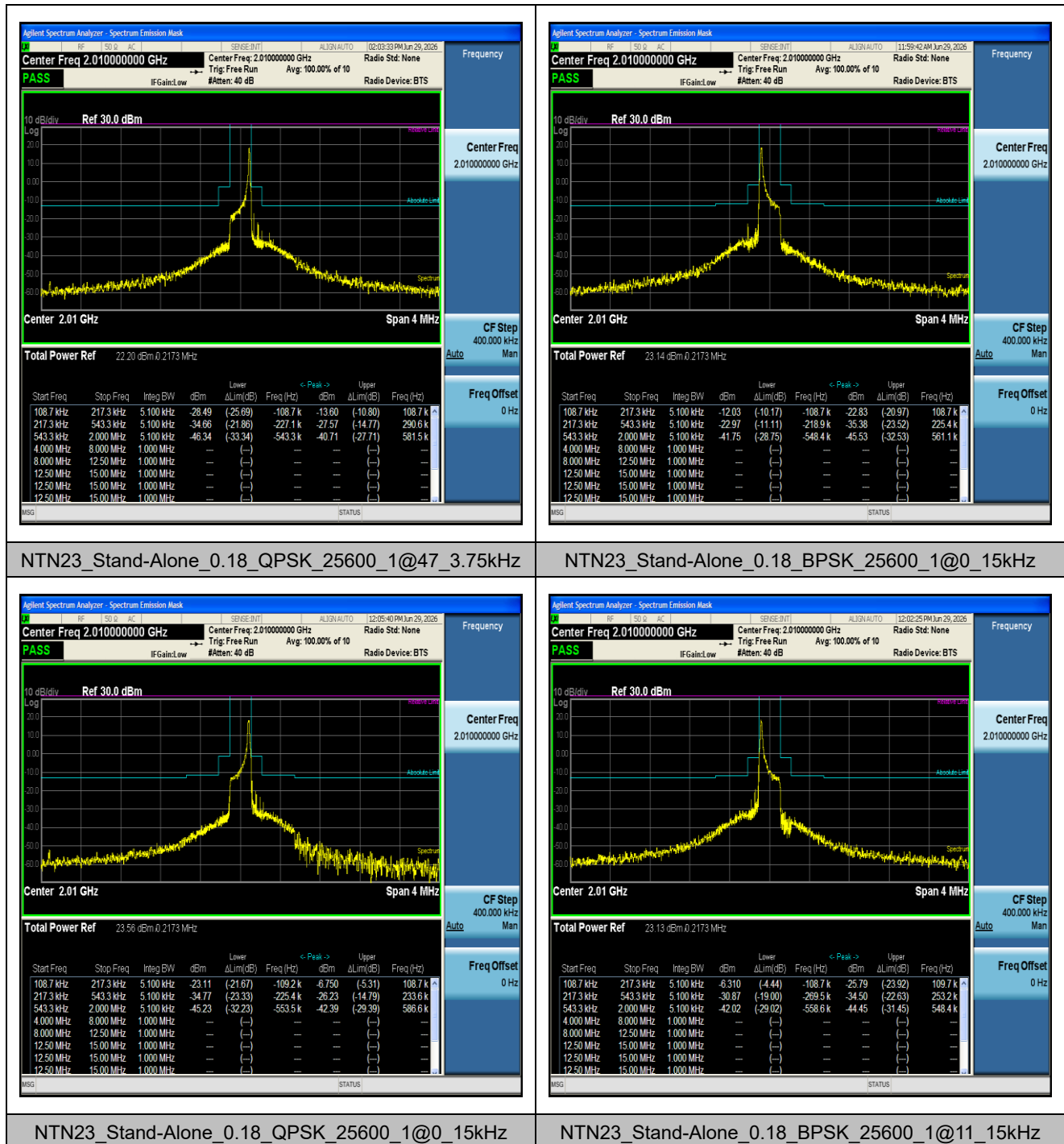
NTN23_Stand-Alone_0.18_BPSK_25600_1@0_3.75kHz

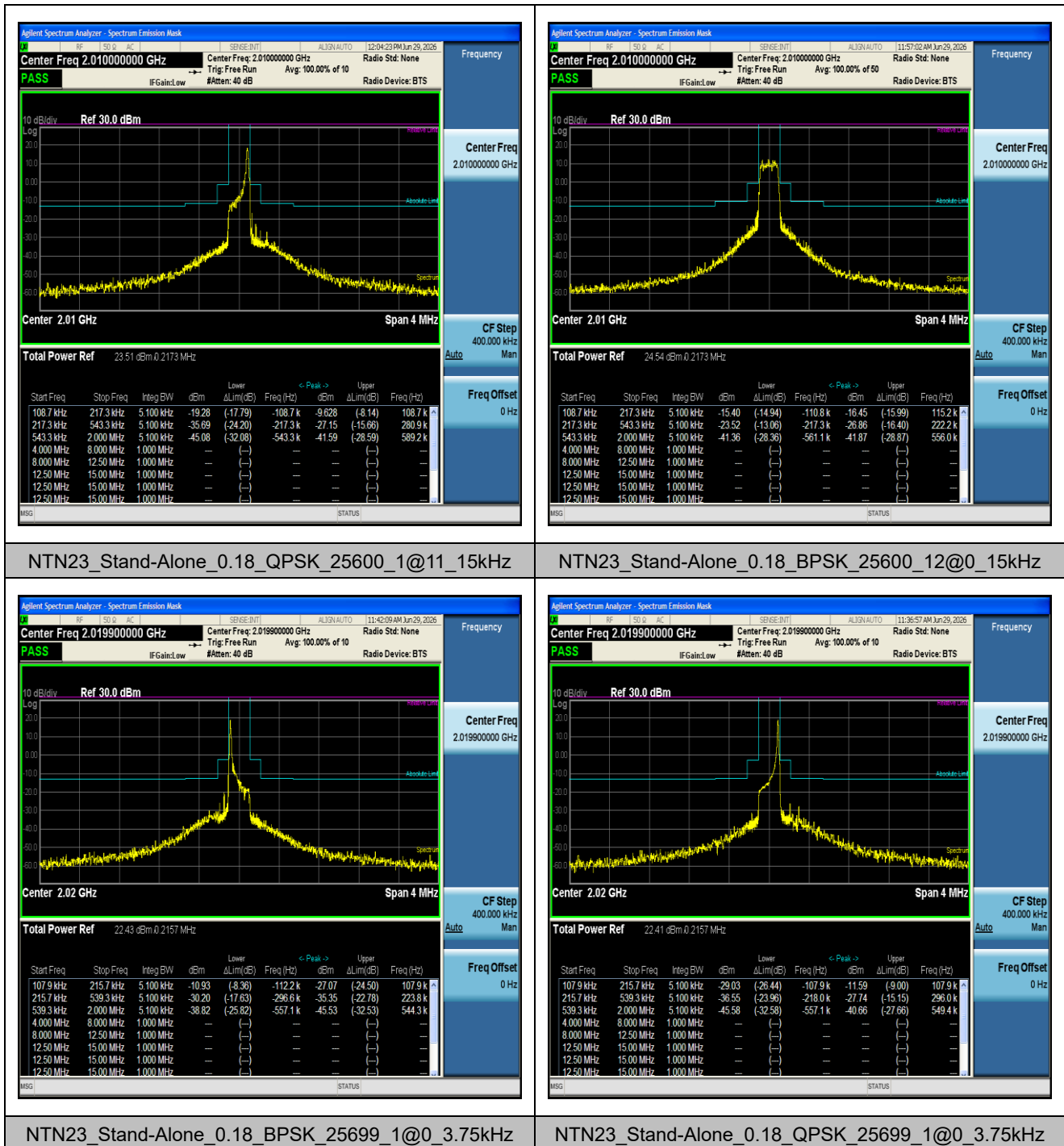


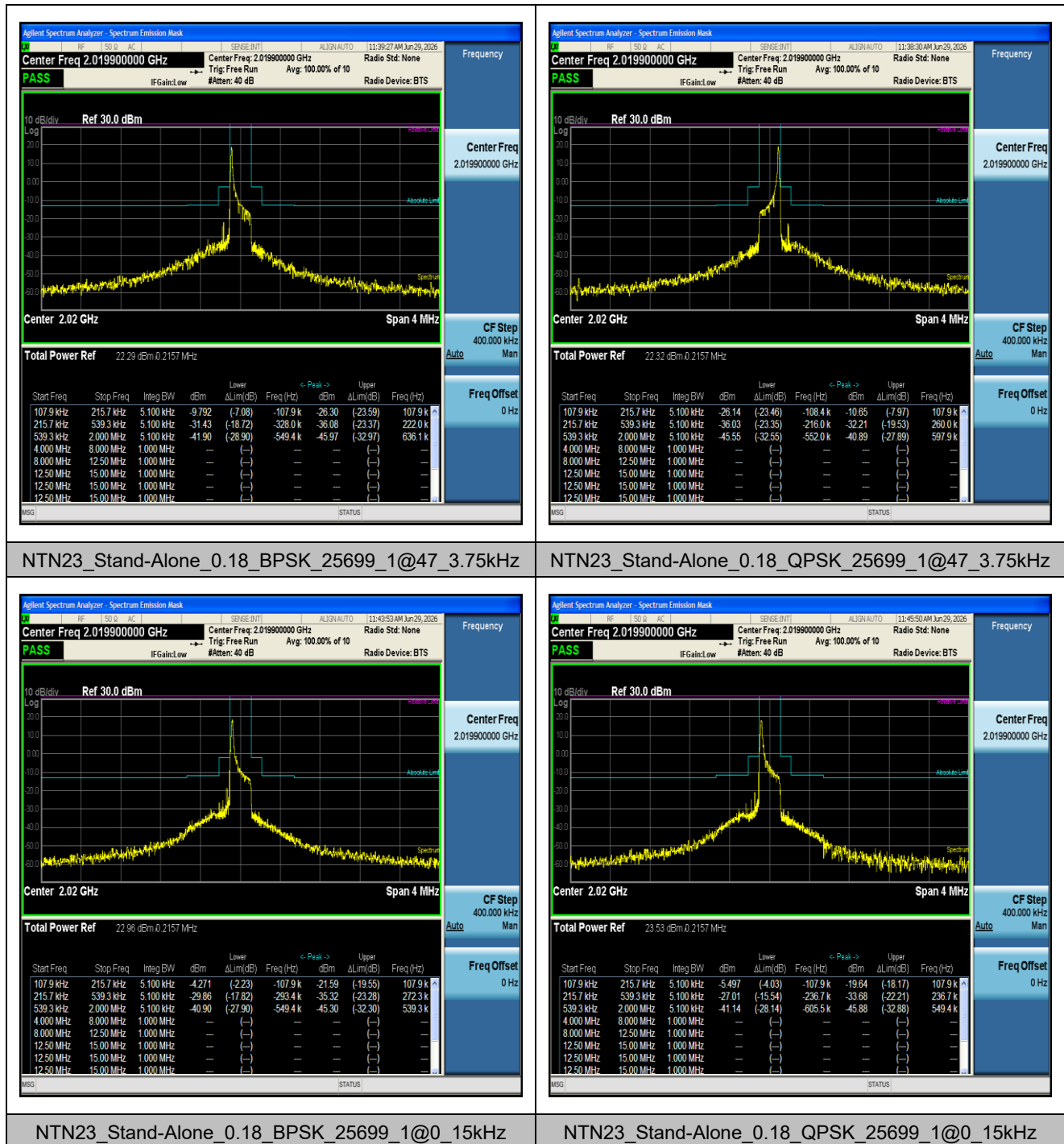
NTN23_Stand-Alone_0.18_QPSK_25600_1@0_3.75kHz

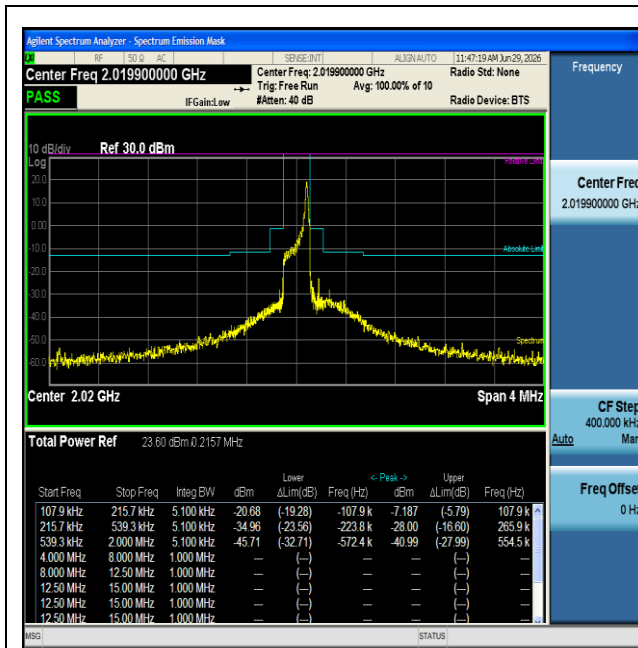


NTN23_Stand-Alone_0.18_BPSK_25600_1@47_3.75kHz

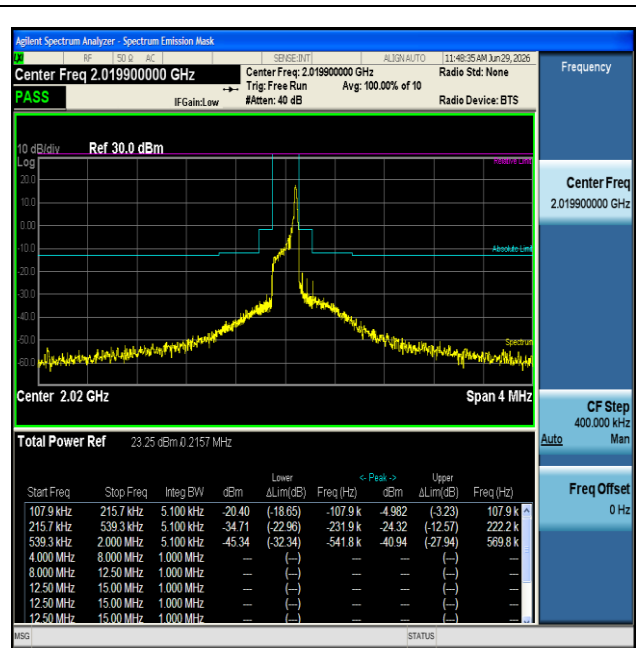




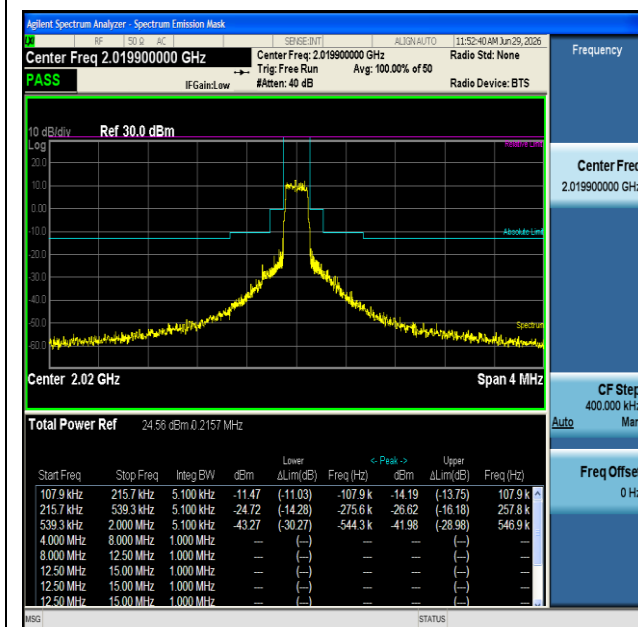




NTN23_Stand-Alone_0.18_BPSK_25699_1@11_15kHz



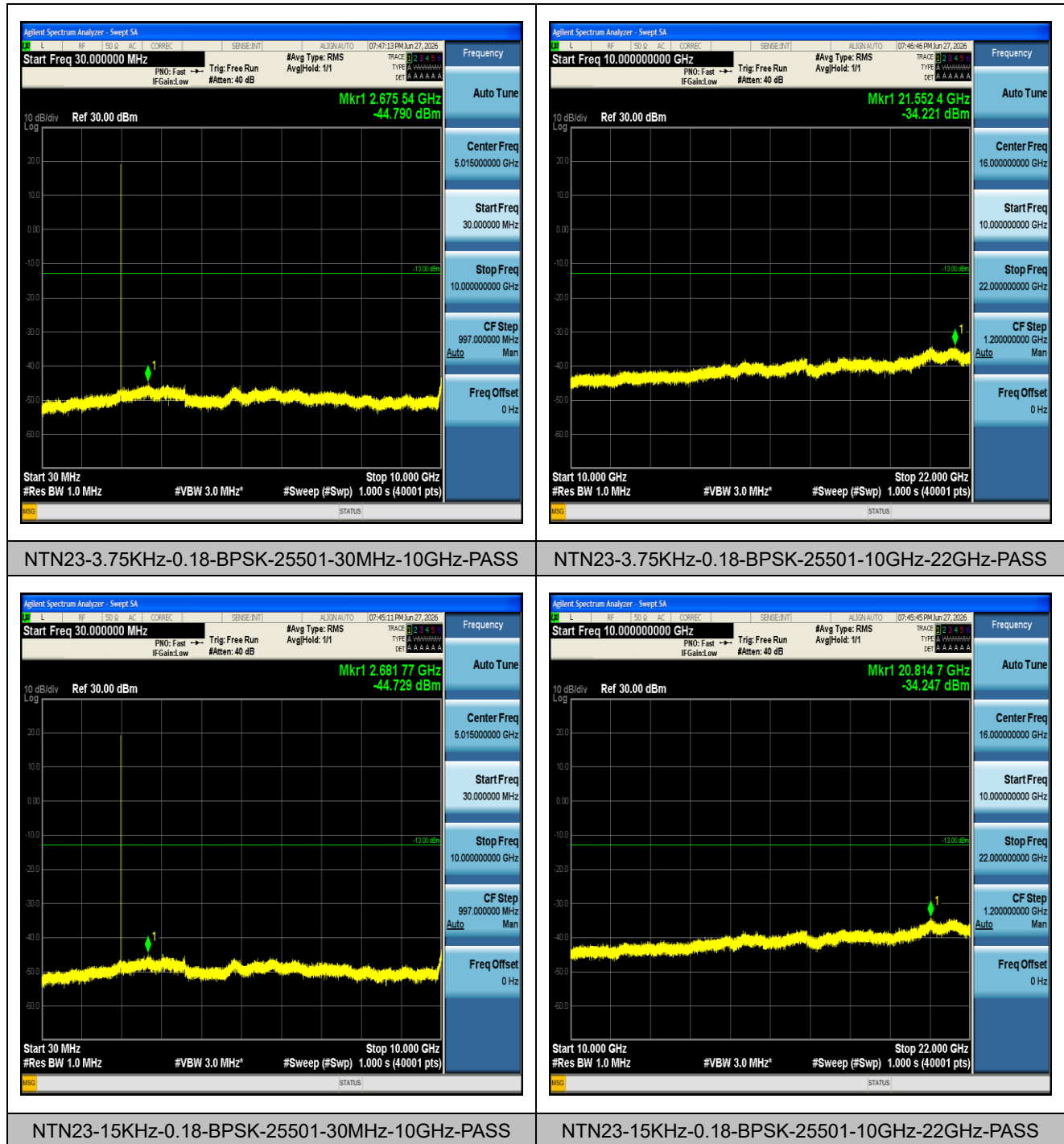
NTN23_Stand-Alone_0.18_QPSK_25699_1@11_15kHz

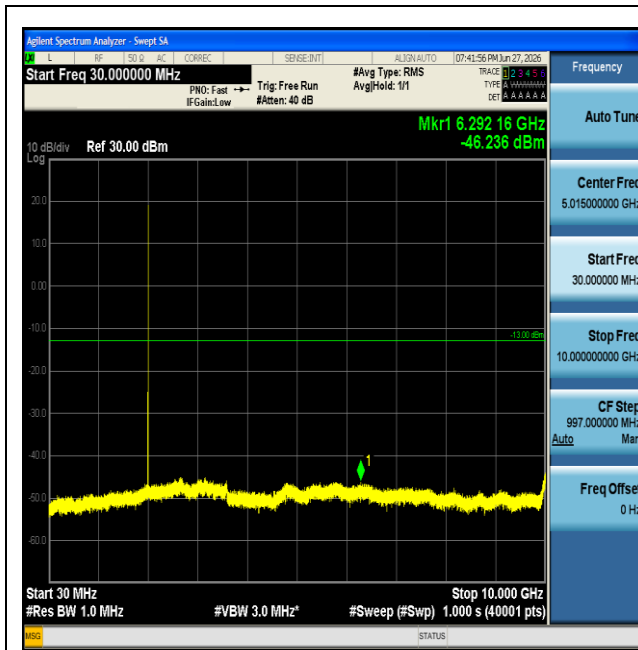


NTN23_Stand-Alone_0.18_QPSK_25699_12@0_15kHz

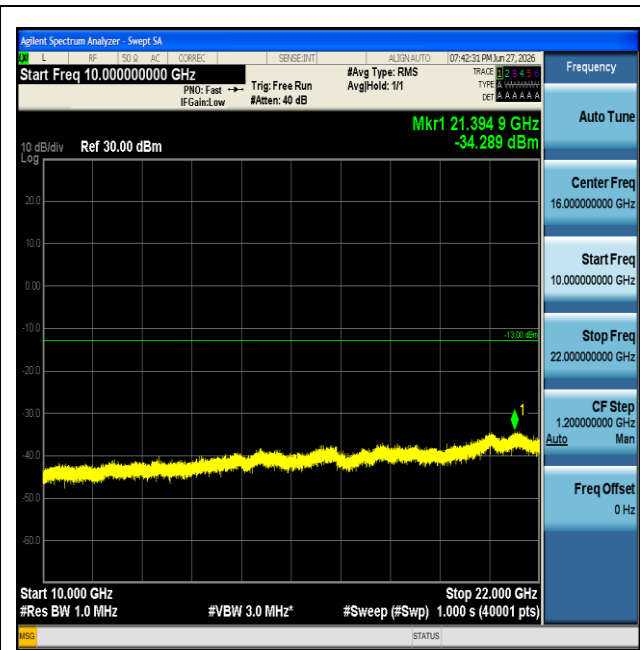
Conducted Spurious Emission

Test Graphs

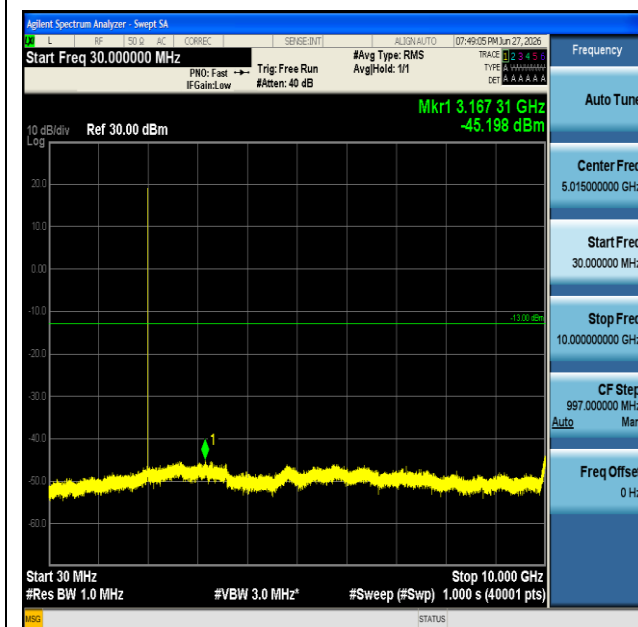




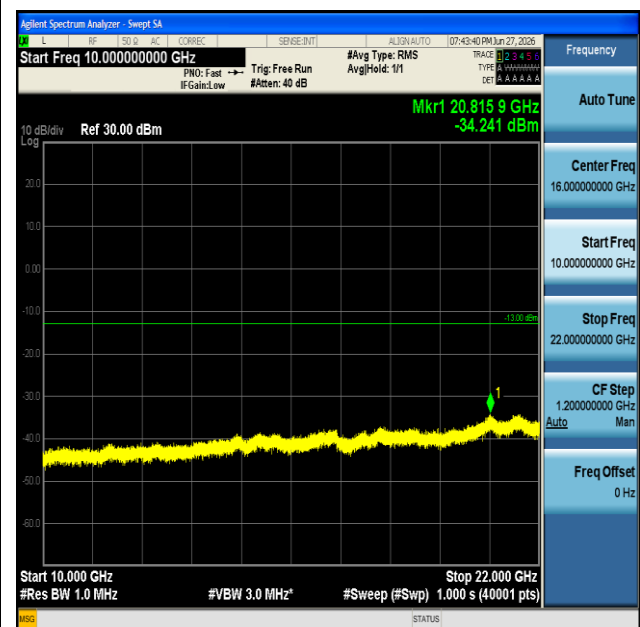
NTN23-3.75KHz 0.18-BPSK-25600-30MHz-10GHz-PASS



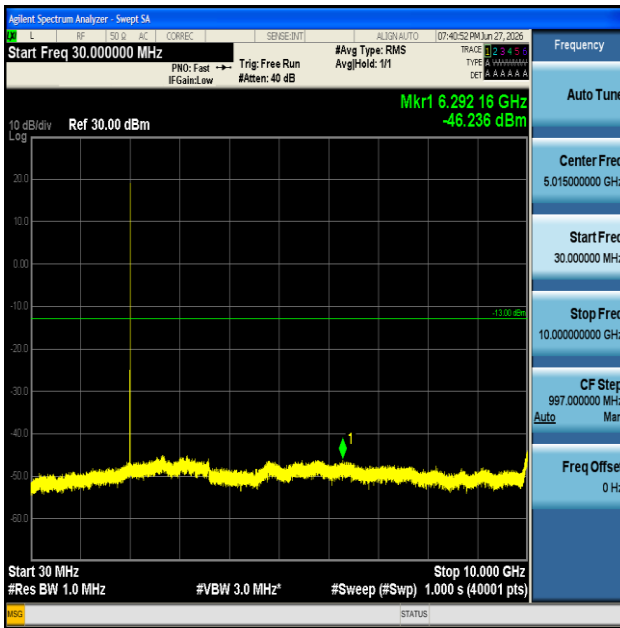
NTN23-3.75KHz 0.18-BPSK-25600-10GHz-22GHz-PASS



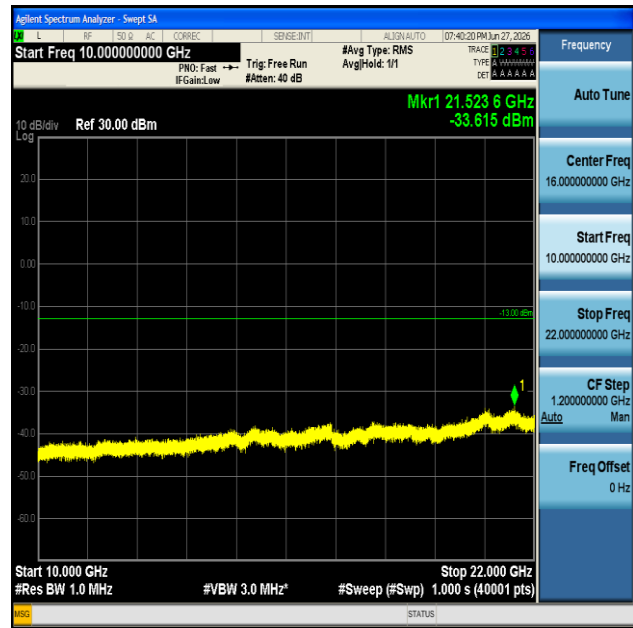
NTN23-15KHz-0.18-BPSK-25600-30MHz-10GHz-PASS



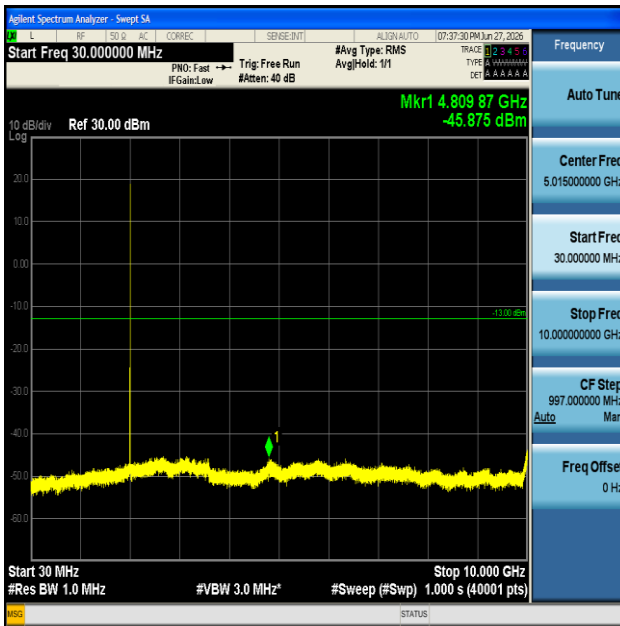
NTN23-15KHz-0.18-BPSK-25600-10GHz-22GHz-PASS



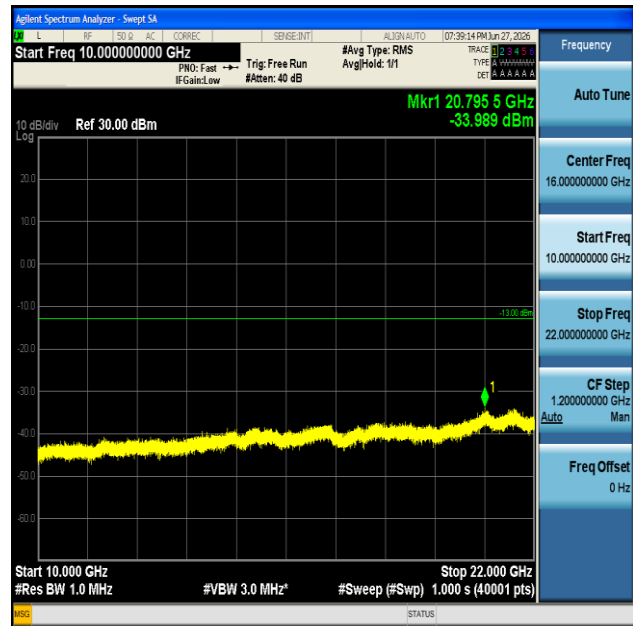
NTN23-3.75KHz-0.18-BPSK-25699-30MHz-10GHz-PASS



NTN23-3.75KHz-0.18-BPSK-25699-10GHz-22GHz-PASS



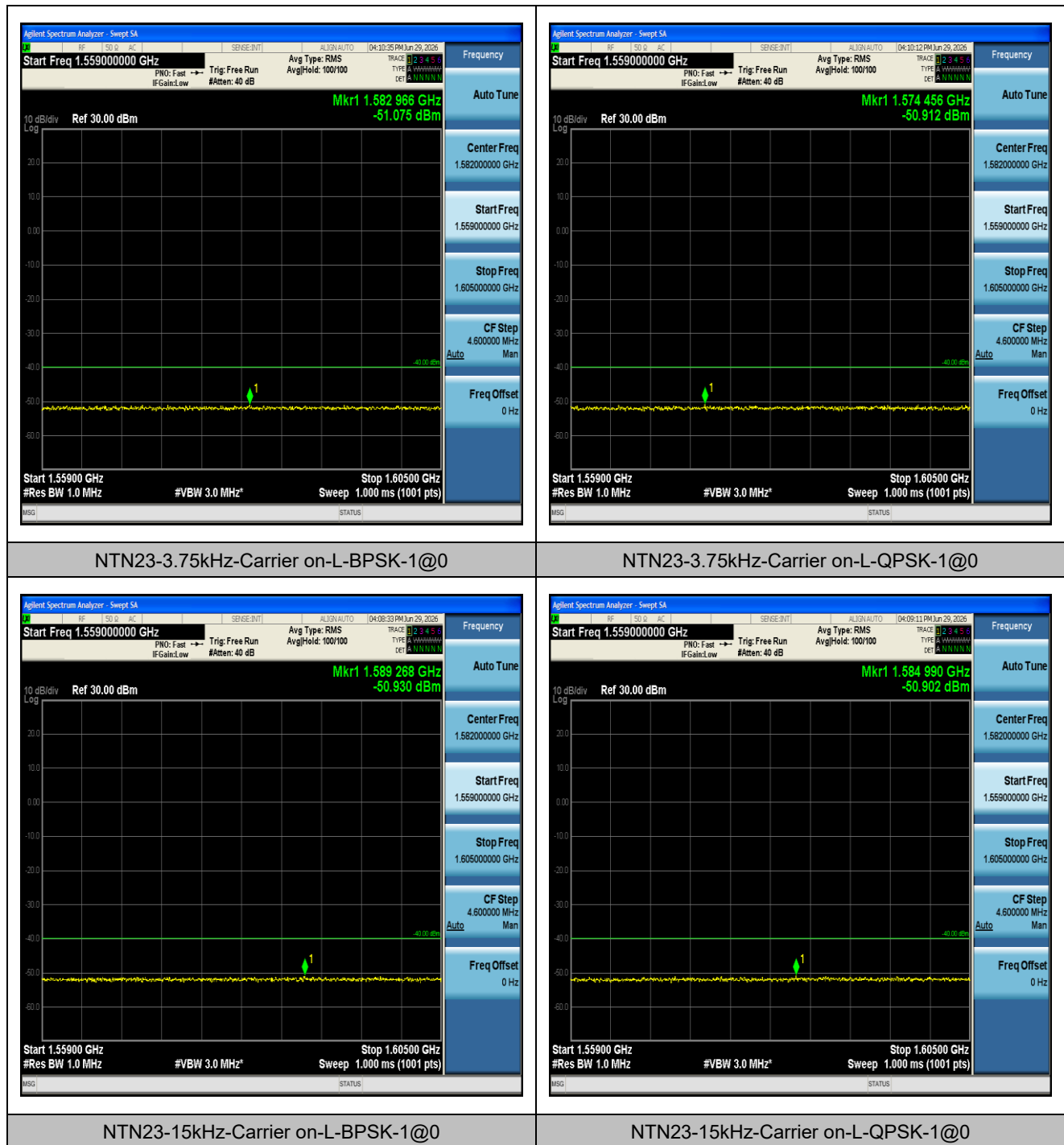
NTN23-15KHz-0.18-BPSK-25699-30MHz-10GHz-PASS

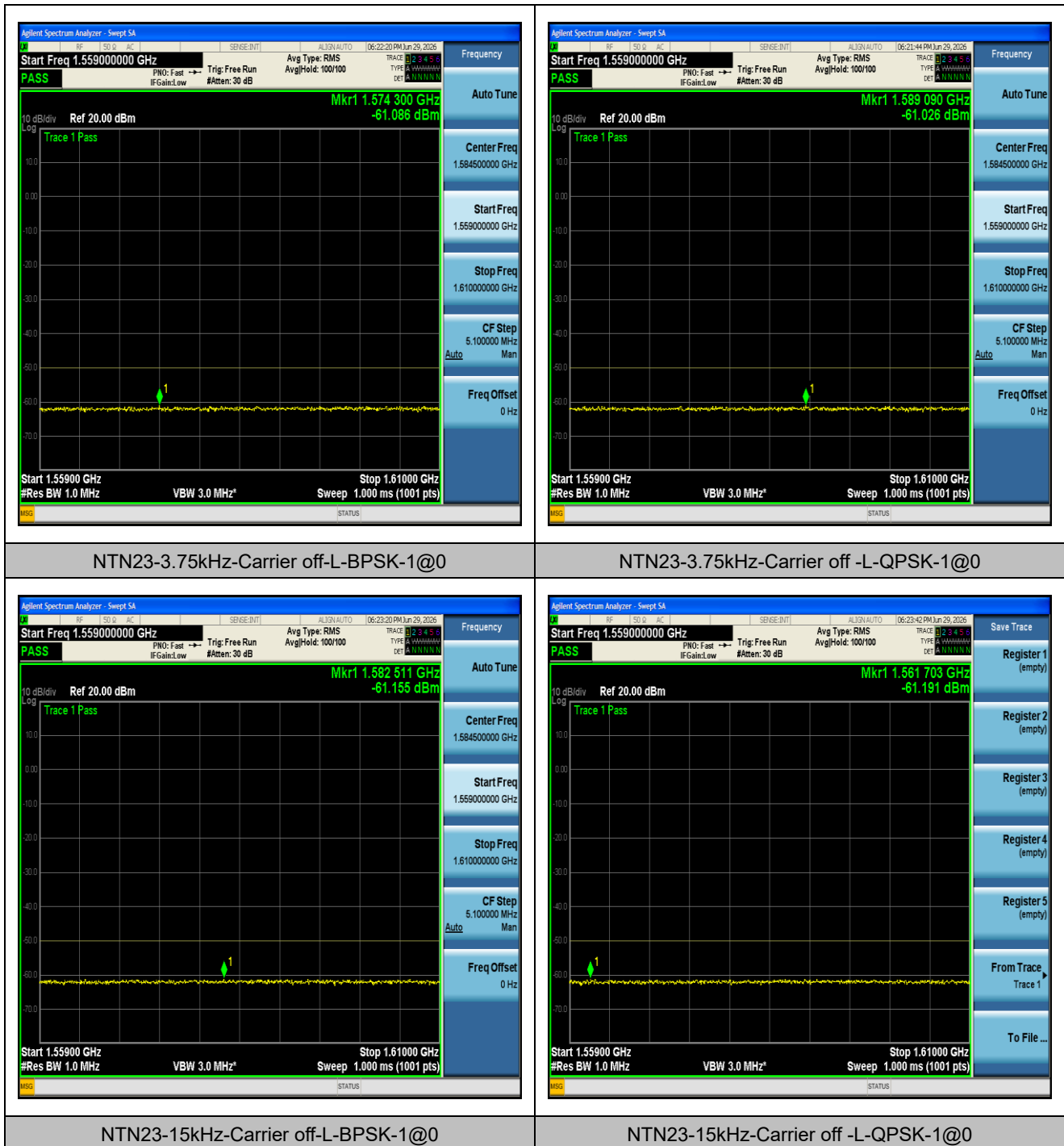


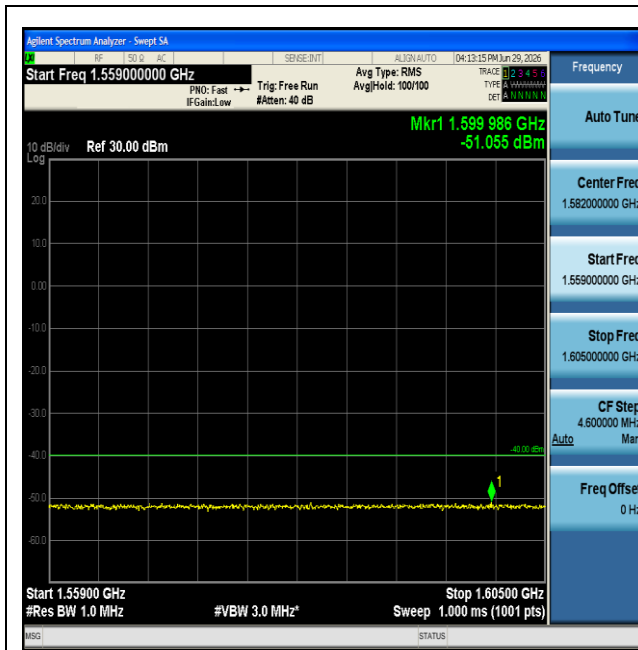
NTN23-15KHz-0.18-BPSK-25699-10GHz-22GHz-PASS

Emission limits for protection of aeronautical service

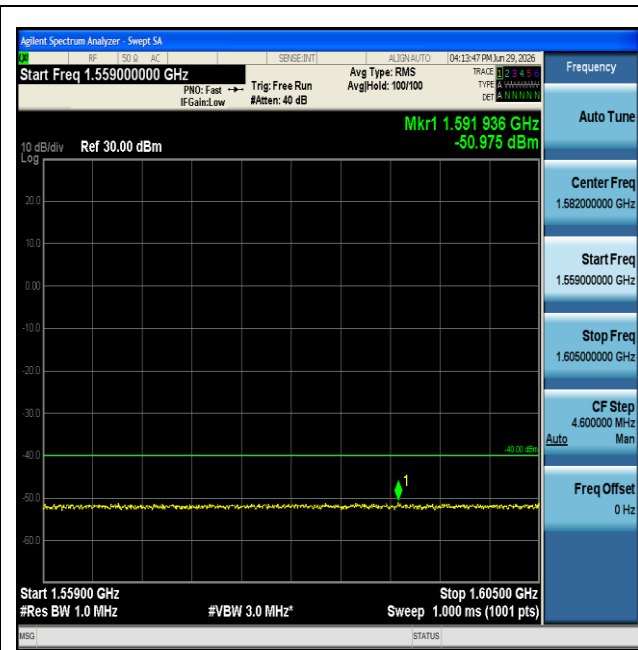
Test Graphs



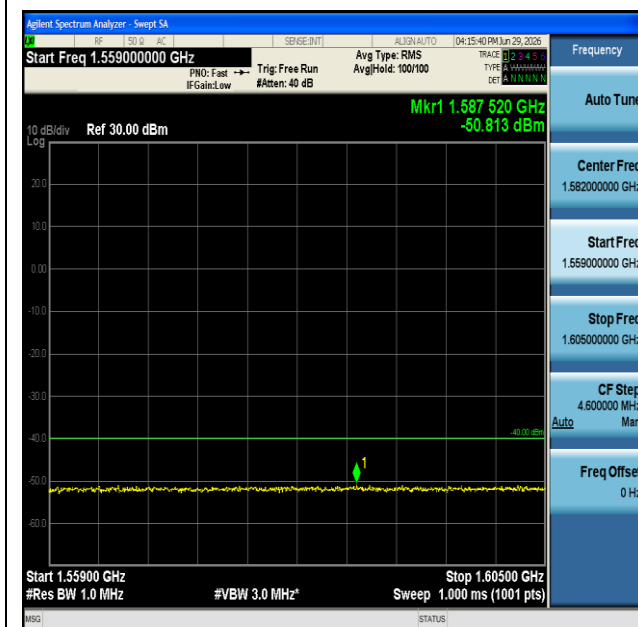




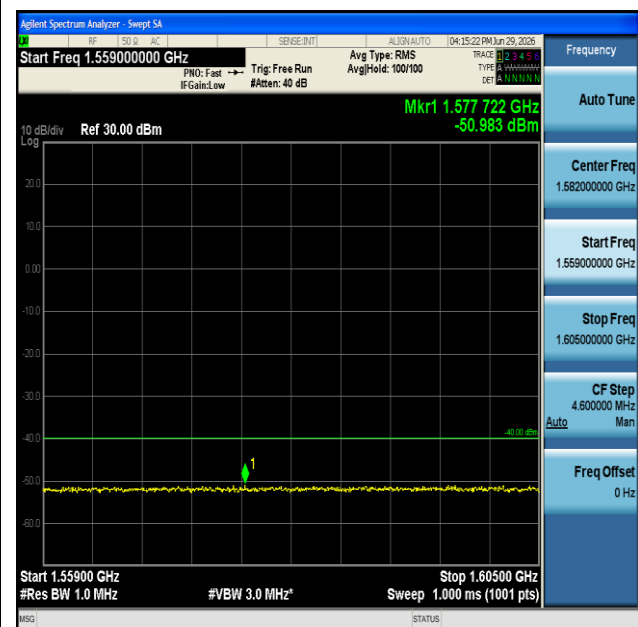
NTN23-3.75kHz-Carrier on-M-BPSK-1@0



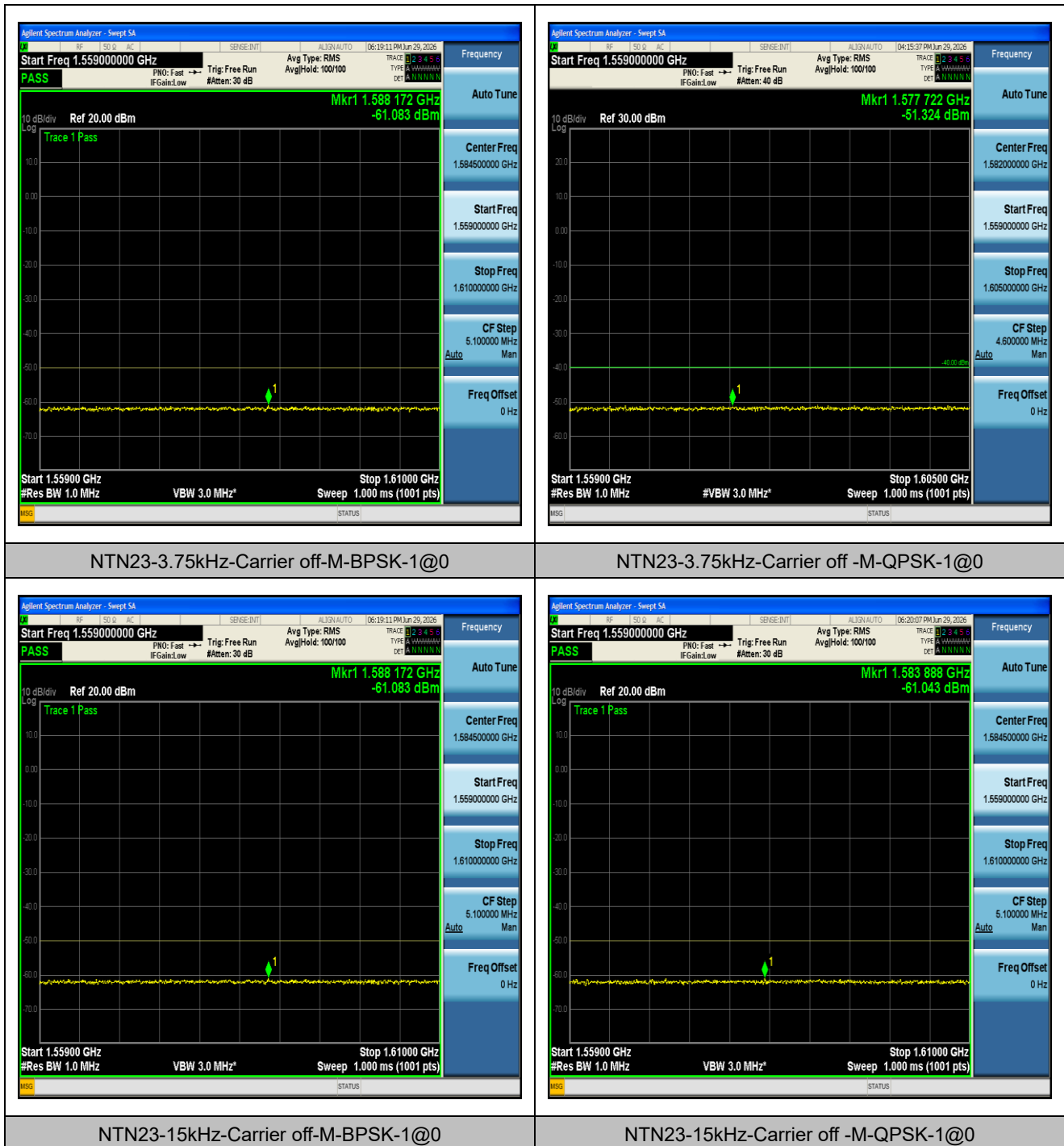
NTN23-3.75kHz-Carrier on-M-QPSK-1@0

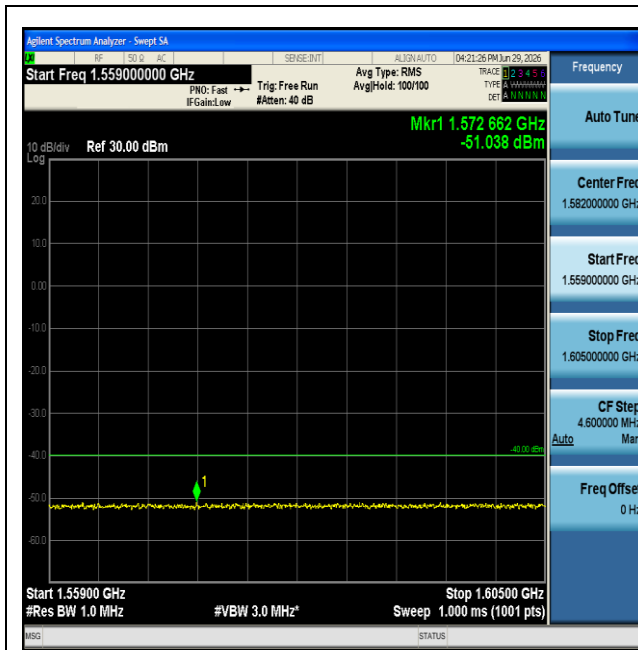


NTN23-15kHz-Carrier on-M-BPSK-1@0

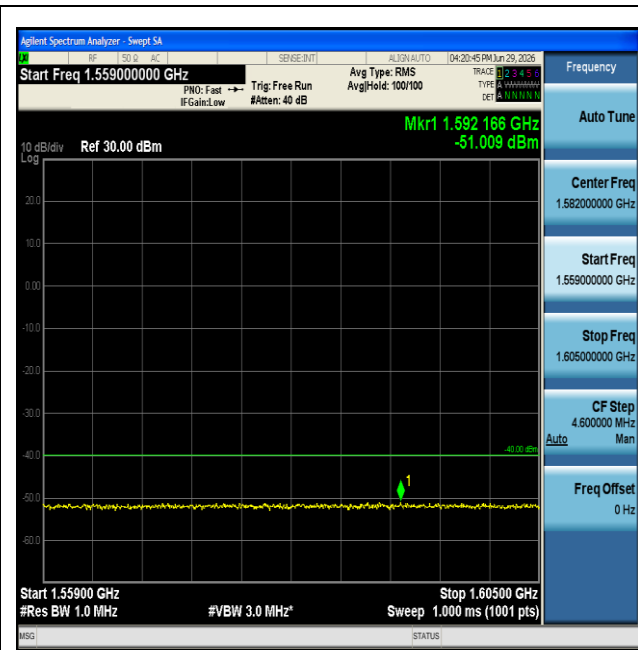


NTN23-15kHz-Carrier on-M-QPSK-1@0

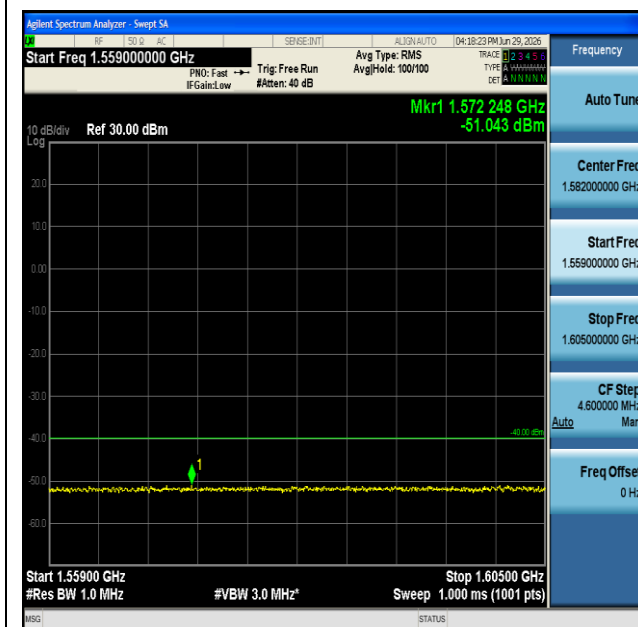




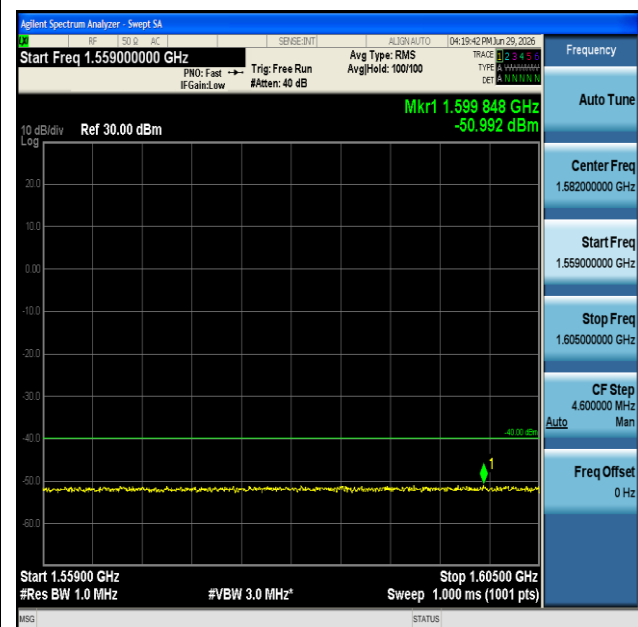
NTN23-3.75kHz-Carrier on-H-BPSK-1@0



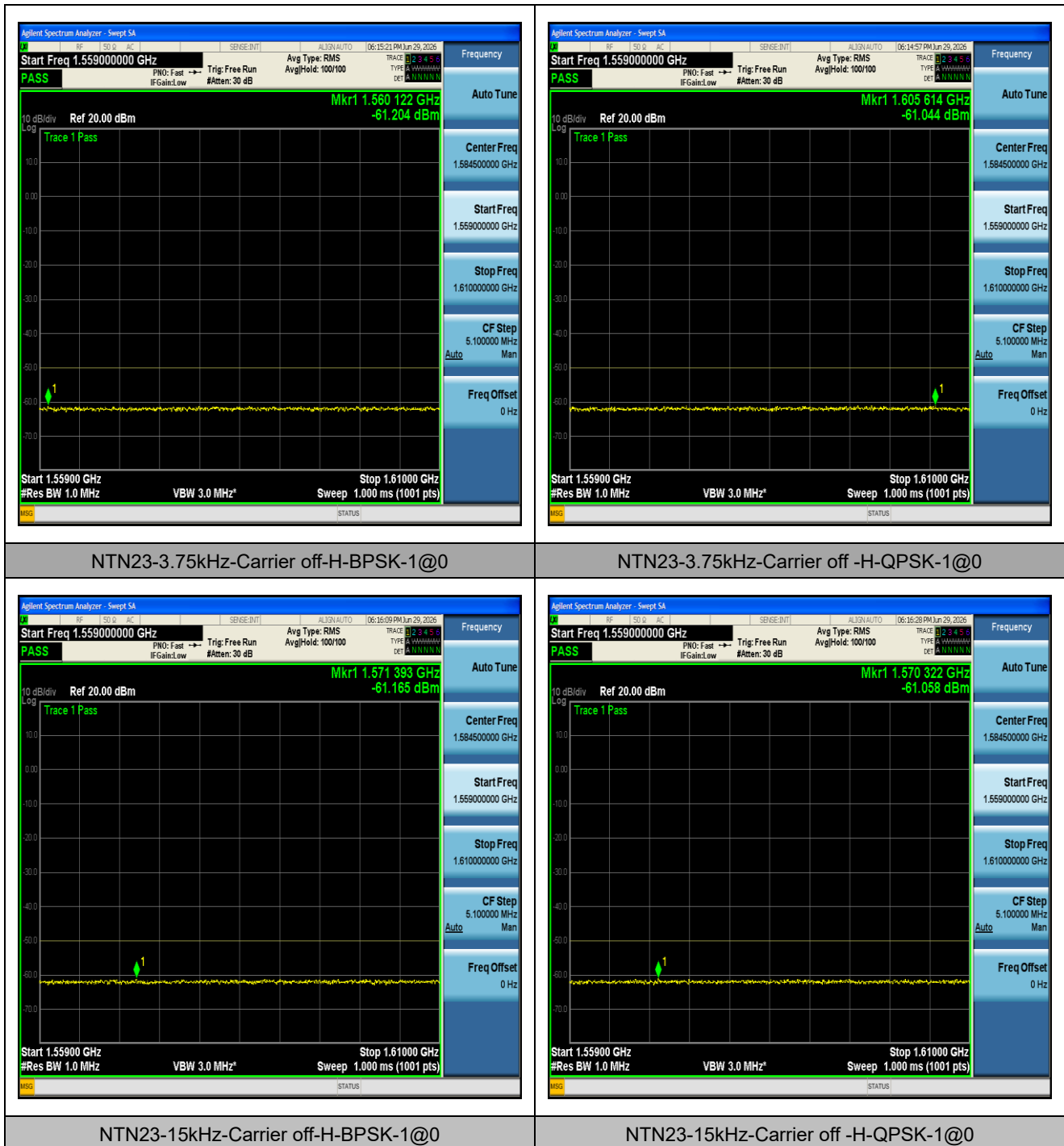
NTN23-3.75kHz-Carrier on-H-QPSK-1@0



NTN23-15kHz-Carrier on-H-BPSK-1@0



NTN23-15kHz-Carrier on-H-QPSK-1@0



Frequency Stability for NB1

Test Result

Voltage											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	VN	NT	-17.30	-0.009214	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	VL	NT	-15.50	-0.008255	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	VH	NT	-10.90	-0.005805	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	VN	NT	-8.60	-0.004580	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	VL	NT	-11.60	-0.006178	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	VH	NT	-12.80	-0.006817	PASS

Temperature											
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	-30	-9.10	-0.004847	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	-20	-8.90	-0.004740	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	-10	-11.60	-0.006178	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	0	-7.80	-0.004154	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	10	-10.60	-0.005646	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	20	-10.60	-0.005646	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	30	-9.70	-0.005166	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	40	-11.20	-0.005965	PASS
NTN23	Stand-Alone	3.75kHz	0.18	QPSK	25600	1@0	NV	50	-9.00	-0.004793	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	-30	-7.60	-0.004048	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	-20	-9.40	-0.005006	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	-10	-5.90	-0.003142	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	0	-7.10	-0.003781	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	10	-10.20	-0.005432	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	20	-7.70	-0.004101	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	30	-9.90	-0.005273	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	40	-9.30	-0.004953	PASS
NTN23	Stand-Alone	15kHz	0.18	QPSK	25600	1@0	NV	50	-8.40	-0.004474	PASS

~The End~