



	2	9 kHz to 150 kHz	-45.51	-45.98	-46.22	-45.42	-39.02	-6.40
		150 kHz to 30 MHz	-34.70	-34.18	-33.86	-34.45	-29.02	-4.84
		30 MHz to 600 MHz	-39.60	-39.84	-39.47	-39.77	-19.02	-20.45
		600 MHz to 616.9 GHz	-37.49	-37.76	-38.07	-38.17	-19.02	-18.47
		652.1 MHz to 700 MHz	-37.84	-37.41	-37.69	-37.41	-19.02	-18.39
		700 MHz to 1 GHz	-38.17	-38.67	-38.04	-38.62	-19.02	-19.02
		1 GHz to 3 GHz	-24.09	-23.89	-24.01	-24.33	-19.02	-4.87
	3 GHz to 8 GHz	-26.96	-26.99	-27.12	-26.69	-19.02	-7.67	
	3	9 kHz to 150 kHz	-46.69	-46.00	-45.52	-47.15	-39.02	-6.50
		150 kHz to 30 MHz	-34.14	-32.10	-33.85	-35.70	-29.02	-3.08
		30 MHz to 600 MHz	-40.13	-39.99	-40.05	-39.99	-19.02	-20.97
		600 MHz to 616.9 GHz	-37.49	-37.57	-37.84	-37.27	-19.02	-18.25
		652.1 MHz to 700 MHz	-37.63	-37.68	-37.62	-37.54	-19.02	-18.52
		700 MHz to 1 GHz	-38.54	-38.35	-38.47	-38.37	-19.02	-19.33
1 GHz to 3 GHz		-24.28	-24.06	-24.10	-24.03	-19.02	-5.01	
3 GHz to 8 GHz	-27.23	-27.01	-27.25	-27.11	-19.02	-7.99		
High	0	9 kHz to 150 kHz	-45.99	-46.39	-45.53	-47.62	-39.02	-6.51
		150 kHz to 30 MHz	-32.74	-33.02	-33.30	-34.52	-29.02	-3.72
		30 MHz to 600 MHz	-39.29	-39.48	-39.65	-39.13	-19.02	-20.11
		600 MHz to 616.9 GHz	-37.59	-37.85	-37.87	-38.05	-19.02	-18.57
		652.1 MHz to 700 MHz	-26.02	-26.50	-24.91	-26.16	-19.02	-5.89
		700 MHz to 1 GHz	-38.53	-38.54	-38.53	-38.30	-19.02	-19.28
		1 GHz to 3 GHz	-24.73	-25.14	-25.11	-24.20	-19.02	-5.18
	3 GHz to 8 GHz	-28.96	-28.82	-29.05	-28.19	-19.02	-9.17	
	1	9 kHz to 150 kHz	-45.33	-46.63	-46.64	-47.89	-39.02	-6.31
		150 kHz to 30 MHz	-33.44	-33.40	-33.87	-35.06	-29.02	-4.38
		30 MHz to 600 MHz	-39.49	-39.43	-39.24	-38.84	-19.02	-19.82
		600 MHz to 616.9 GHz	-37.36	-37.10	-36.96	-37.48	-19.02	-17.94
		652.1 MHz to 700 MHz	-25.25	-26.18	-26.87	-24.66	-19.02	-5.64
		700 MHz to 1 GHz	-38.13	-38.08	-38.05	-37.99	-19.02	-18.97
		1 GHz to 3 GHz	-25.01	-25.08	-25.02	-24.09	-19.02	-5.07
	3 GHz to 8 GHz	-28.53	-28.40	-28.61	-28.49	-19.02	-9.38	
	2	9 kHz to 150 kHz	-46.69	-45.94	-46.75	-46.66	-39.02	-6.92
		150 kHz to 30 MHz	-33.57	-33.64	-34.72	-34.56	-29.02	-4.55
		30 MHz to 600 MHz	-39.87	-39.87	-39.78	-39.35	-19.02	-20.33
		600 MHz to 616.9 GHz	-38.04	-37.49	-38.05	-37.53	-19.02	-18.47
		652.1 MHz to 700 MHz	-26.41	-24.72	-25.92	-24.67	-19.02	-5.65
		700 MHz to 1 GHz	-38.43	-38.42	-38.45	-37.95	-19.02	-18.93
		1 GHz to 3 GHz	-24.15	-24.20	-24.13	-23.42	-19.02	-4.40
	3 GHz to 8 GHz	-27.13	-26.81	-27.28	-26.72	-19.02	-7.70	
	3	9 kHz to 150 kHz	-47.18	-46.38	-46.56	-47.64	-39.02	-7.36
		150 kHz to 30 MHz	-34.58	-34.62	-33.94	-34.71	-29.02	-4.92
		30 MHz to 600 MHz	-40.04	-40.00	-40.04	-39.54	-19.02	-20.52
		600 MHz to 616.9 GHz	-38.02	-38.08	-38.03	-38.27	-19.02	-19.00
652.1 MHz to 700 MHz		-26.22	-25.63	-24.86	-25.32	-19.02	-5.84	
700 MHz to 1 GHz		-38.46	-38.49	-38.43	-38.08	-19.02	-19.06	
1 GHz to 3 GHz		-24.07	-24.14	-24.42	-23.15	-19.02	-4.13	
3 GHz to 8 GHz	-27.36	-27.23	-27.07	-26.59	-19.02	-7.57		

Table 8-29. Conducted Spurious Emission Summary Data (n71_1C_5M)


FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 46 of 78

Channel	Port	Measurement Range	Level (dBm)				Limit (dBm)	Margin (dB)
			QPSK	16QAM	64QAM	256QAM		
Low	0	9 kHz to 150 kHz	-46.32	-46.67	-46.26	-46.62	-39.02	-7.24
		150 kHz to 30 MHz	-34.51	-33.83	-33.20	-34.31	-29.02	-4.18
		30 MHz to 600 MHz	-39.12	-39.27	-39.50	-39.58	-19.02	-20.10
		600 MHz to 616.9 GHz	-28.90	-25.74	-27.93	-26.72	-19.02	-6.72
		652.1 MHz to 700 MHz	-36.02	-37.19	-36.75	-36.59	-19.02	-17.00
		700 MHz to 1 GHz	-38.31	-38.03	-38.53	-38.17	-19.02	-19.01
		1 GHz to 3 GHz	-25.05	-24.92	-25.06	-24.96	-19.02	-5.90
		3 GHz to 8 GHz	-28.93	-28.83	-28.91	-29.15	-19.02	-9.81
	1	9 kHz to 150 kHz	-45.55	-46.57	-45.85	-45.93	-39.02	-6.53
		150 kHz to 30 MHz	-33.89	-34.92	-32.85	-33.03	-29.02	-3.83
		30 MHz to 600 MHz	-38.95	-39.07	-39.16	-38.94	-19.02	-19.92
		600 MHz to 616.9 GHz	-28.11	-27.06	-27.48	-27.07	-19.02	-8.04
		652.1 MHz to 700 MHz	-36.48	-36.69	-35.99	-36.59	-19.02	-16.97
		700 MHz to 1 GHz	-38.30	-37.94	-37.61	-37.56	-19.02	-18.54
		1 GHz to 3 GHz	-24.75	-24.93	-24.99	-25.00	-19.02	-5.73
		3 GHz to 8 GHz	-28.68	-28.54	-28.66	-28.46	-19.02	-9.44
	2	9 kHz to 150 kHz	-46.35	-46.29	-46.18	-46.17	-39.02	-7.15
		150 kHz to 30 MHz	-33.10	-33.19	-33.35	-32.46	-29.02	-3.44
		30 MHz to 600 MHz	-39.40	-39.59	-39.65	-39.56	-19.02	-20.38
		600 MHz to 616.9 GHz	-28.05	-26.98	-27.55	-28.63	-19.02	-7.96
		652.1 MHz to 700 MHz	-36.62	-36.90	-36.44	-37.30	-19.02	-17.42
		700 MHz to 1 GHz	-38.24	-38.12	-38.08	-38.54	-19.02	-19.06
		1 GHz to 3 GHz	-23.96	-24.17	-24.11	-24.13	-19.02	-4.94
		3 GHz to 8 GHz	-27.00	-27.06	-27.11	-27.10	-19.02	-7.98
	3	9 kHz to 150 kHz	-47.36	-46.96	-46.26	-46.90	-39.02	-7.24
		150 kHz to 30 MHz	-33.72	-33.52	-34.84	-34.98	-29.02	-4.50
		30 MHz to 600 MHz	-39.73	-39.98	-39.99	-39.97	-19.02	-20.71
		600 MHz to 616.9 GHz	-28.03	-28.96	-27.51	-29.12	-19.02	-8.49
652.1 MHz to 700 MHz		-36.44	-37.02	-36.59	-37.13	-19.02	-17.42	
700 MHz to 1 GHz		-38.41	-38.29	-38.38	-38.36	-19.02	-19.27	
1 GHz to 3 GHz		-24.13	-24.19	-24.28	-24.17	-19.02	-5.11	
3 GHz to 8 GHz		-27.27	-27.28	-27.26	-27.31	-19.02	-8.24	
Middle	0	9 kHz to 150 kHz	-46.58	-45.92	-46.42	-46.45	-39.02	-6.90
		150 kHz to 30 MHz	-32.50	-33.22	-33.42	-34.97	-29.02	-3.48
		30 MHz to 600 MHz	-39.55	-39.56	-39.40	-39.43	-19.02	-20.38
		600 MHz to 616.9 GHz	-35.63	-36.30	-35.82	-35.77	-19.02	-16.61
		652.1 MHz to 700 MHz	-35.75	-36.09	-36.18	-35.78	-19.02	-16.73
		700 MHz to 1 GHz	-38.13	-37.99	-37.99	-38.41	-19.02	-18.97
		1 GHz to 3 GHz	-25.03	-25.08	-25.04	-25.06	-19.02	-6.01
		3 GHz to 8 GHz	-28.88	-28.48	-29.18	-28.92	-19.02	-9.46
	1	9 kHz to 150 kHz	-45.94	-46.96	-46.39	-46.22	-39.02	-6.92
		150 kHz to 30 MHz	-34.26	-34.50	-33.24	-35.18	-29.02	-4.22
		30 MHz to 600 MHz	-39.14	-39.18	-38.84	-39.08	-19.02	-19.82
		600 MHz to 616.9 GHz	-35.43	-35.77	-35.19	-35.63	-19.02	-16.17
		652.1 MHz to 700 MHz	-35.73	-35.80	-35.90	-35.25	-19.02	-16.23
		700 MHz to 1 GHz	-38.13	-37.97	-38.01	-38.11	-19.02	-18.95
		1 GHz to 3 GHz	-24.86	-24.58	-24.77	-25.04	-19.02	-5.56
		3 GHz to 8 GHz	-28.45	-28.54	-28.55	-28.60	-19.02	-9.43


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	2	9 kHz to 150 kHz	-47.07	-46.37	-45.94	-46.07	-39.02	-6.92
		150 kHz to 30 MHz	-33.14	-33.20	-34.15	-32.76	-29.02	-3.74
		30 MHz to 600 MHz	-39.27	-39.60	-39.47	-39.32	-19.02	-20.25
		600 MHz to 616.9 GHz	-34.93	-35.39	-35.10	-35.30	-19.02	-15.91
		652.1 MHz to 700 MHz	-35.28	-35.43	-35.23	-35.52	-19.02	-16.21
		700 MHz to 1 GHz	-38.72	-38.44	-38.34	-38.48	-19.02	-19.32
		1 GHz to 3 GHz	-23.96	-24.31	-23.56	-24.11	-19.02	-4.54
	3 GHz to 8 GHz	-27.07	-27.14	-27.11	-26.93	-19.02	-7.91	
	3	9 kHz to 150 kHz	-45.85	-46.31	-46.71	-46.79	-39.02	-6.83
		150 kHz to 30 MHz	-33.75	-33.94	-36.29	-33.14	-29.02	-4.12
		30 MHz to 600 MHz	-39.85	-40.00	-39.91	-40.02	-19.02	-20.83
		600 MHz to 616.9 GHz	-35.77	-35.87	-35.89	-35.72	-19.02	-16.70
		652.1 MHz to 700 MHz	-35.71	-35.86	-35.68	-35.52	-19.02	-16.50
		700 MHz to 1 GHz	-38.34	-38.14	-38.34	-38.15	-19.02	-19.12
1 GHz to 3 GHz		-23.79	-24.10	-24.08	-24.19	-19.02	-4.77	
3 GHz to 8 GHz	-27.32	-27.32	-27.32	-27.35	-19.02	-8.30		
High	0	9 kHz to 150 kHz	-46.30	-46.22	-45.80	-45.38	-39.02	-6.36
		150 kHz to 30 MHz	-33.81	-33.85	-33.15	-33.96	-29.02	-4.13
		30 MHz to 600 MHz	-39.53	-39.40	-39.57	-39.47	-19.02	-20.38
		600 MHz to 616.9 GHz	-36.23	-37.08	-36.56	-37.16	-19.02	-17.21
		652.1 MHz to 700 MHz	-25.22	-26.92	-27.30	-26.29	-19.02	-6.20
		700 MHz to 1 GHz	-38.47	-38.56	-38.41	-38.54	-19.02	-19.39
		1 GHz to 3 GHz	-24.75	-24.91	-25.09	-24.70	-19.02	-5.68
	3 GHz to 8 GHz	-28.87	-28.98	-28.80	-28.87	-19.02	-9.78	
	1	9 kHz to 150 kHz	-46.65	-46.39	-46.53	-46.27	-39.02	-7.25
		150 kHz to 30 MHz	-32.94	-34.44	-33.98	-34.64	-29.02	-3.92
		30 MHz to 600 MHz	-39.31	-39.20	-39.12	-39.30	-19.02	-20.10
		600 MHz to 616.9 GHz	-36.41	-36.92	-36.57	-36.75	-19.02	-17.39
		652.1 MHz to 700 MHz	-26.85	-27.87	-26.05	-25.84	-19.02	-6.82
		700 MHz to 1 GHz	-37.97	-38.16	-38.01	-37.83	-19.02	-18.81
		1 GHz to 3 GHz	-24.87	-24.85	-24.73	-25.02	-19.02	-5.71
	3 GHz to 8 GHz	-28.51	-28.61	-28.34	-28.80	-19.02	-9.32	
	2	9 kHz to 150 kHz	-46.21	-45.84	-46.22	-46.04	-39.02	-6.82
		150 kHz to 30 MHz	-35.11	-34.62	-33.66	-35.37	-29.02	-4.64
		30 MHz to 600 MHz	-39.60	-39.39	-39.64	-39.22	-19.02	-20.20
		600 MHz to 616.9 GHz	-36.50	-37.21	-37.43	-37.42	-19.02	-17.48
		652.1 MHz to 700 MHz	-26.05	-27.64	-27.93	-25.69	-19.02	-6.67
		700 MHz to 1 GHz	-38.45	-38.50	-38.37	-38.17	-19.02	-19.15
		1 GHz to 3 GHz	-24.14	-24.09	-24.09	-24.33	-19.02	-5.07
	3 GHz to 8 GHz	-27.13	-26.96	-27.20	-26.79	-19.02	-7.77	
	3	9 kHz to 150 kHz	-46.12	-46.42	-47.13	-46.68	-39.02	-7.10
		150 kHz to 30 MHz	-33.00	-34.89	-35.04	-35.33	-29.02	-3.98
		30 MHz to 600 MHz	-39.98	-39.85	-39.59	-40.05	-19.02	-20.57
		600 MHz to 616.9 GHz	-36.66	-36.76	-37.32	-37.09	-19.02	-17.64
652.1 MHz to 700 MHz		-27.37	-29.36	-26.25	-27.81	-19.02	-7.23	
700 MHz to 1 GHz		-38.55	-38.66	-38.28	-38.50	-19.02	-19.26	
1 GHz to 3 GHz		-24.25	-24.18	-24.17	-24.29	-19.02	-5.15	
3 GHz to 8 GHz	-27.30	-27.30	-27.19	-27.20	-19.02	-8.17		

Table 8-30. Conducted Spurious Emission Summary Data (n71_1C_10M)



FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 48 of 78

Channel	Port	Measurement Range	Level (dBm)				Limit (dBm)	Margin (dB)
			QPSK	16QAM	64QAM	256QAM		
Low	0	9 kHz to 150 kHz	-46.28	-46.08	-45.81	-46.44	-39.02	-6.79
		150 kHz to 30 MHz	-33.12	-33.91	-33.60	-33.10	-29.02	-4.08
		30 MHz to 600 MHz	-39.13	-38.92	-39.29	-39.17	-19.02	-19.90
		600 MHz to 616.9 GHz	-25.07	-25.73	-28.05	-27.41	-19.02	-6.05
		652.1 MHz to 700 MHz	-33.56	-34.11	-33.55	-34.25	-19.02	-14.53
		700 MHz to 1 GHz	-35.57	-36.67	-36.30	-36.28	-19.02	-16.55
		1 GHz to 3 GHz	-24.99	-24.63	-24.99	-24.63	-19.02	-5.61
		3 GHz to 8 GHz	-29.06	-28.88	-28.69	-28.83	-19.02	-9.67
	1	9 kHz to 150 kHz	-45.97	-46.55	-46.41	-45.96	-39.02	-6.94
		150 kHz to 30 MHz	-33.04	-34.66	-34.41	-32.90	-29.02	-3.88
		30 MHz to 600 MHz	-38.79	-39.05	-38.95	-38.78	-19.02	-19.76
		600 MHz to 616.9 GHz	-26.93	-25.62	-28.61	-27.51	-19.02	-6.60
		652.1 MHz to 700 MHz	-33.73	-34.08	-33.03	-33.80	-19.02	-14.01
		700 MHz to 1 GHz	-36.66	-37.14	-37.23	-37.68	-19.02	-17.64
		1 GHz to 3 GHz	-24.63	-24.77	-24.64	-24.79	-19.02	-5.61
		3 GHz to 8 GHz	-28.54	-28.64	-28.65	-28.73	-19.02	-9.52
	2	9 kHz to 150 kHz	-46.15	-46.46	-45.60	-45.99	-39.02	-6.58
		150 kHz to 30 MHz	-32.48	-34.02	-33.93	-33.10	-29.02	-3.46
		30 MHz to 600 MHz	-39.29	-39.09	-39.17	-39.14	-19.02	-20.07
		600 MHz to 616.9 GHz	-28.02	-26.39	-27.45	-26.63	-19.02	-7.37
		652.1 MHz to 700 MHz	-32.91	-32.12	-32.47	-32.03	-19.02	-13.01
		700 MHz to 1 GHz	-37.64	-37.65	-37.25	-37.74	-19.02	-18.23
		1 GHz to 3 GHz	-23.76	-23.88	-23.60	-23.59	-19.02	-4.57
		3 GHz to 8 GHz	-26.83	-27.10	-26.81	-26.72	-19.02	-7.70
	3	9 kHz to 150 kHz	-46.63	-46.50	-46.86	-47.51	-39.02	-7.48
		150 kHz to 30 MHz	-33.93	-33.88	-34.58	-34.45	-29.02	-4.86
		30 MHz to 600 MHz	-39.86	-39.69	-39.59	-39.79	-19.02	-20.57
		600 MHz to 616.9 GHz	-26.24	-26.73	-24.97	-27.64	-19.02	-5.95
652.1 MHz to 700 MHz		-32.17	-33.17	-32.88	-33.07	-19.02	-13.15	
700 MHz to 1 GHz		-35.40	-37.14	-37.30	-37.45	-19.02	-16.38	
1 GHz to 3 GHz		-23.96	-23.96	-23.99	-23.93	-19.02	-4.91	
3 GHz to 8 GHz		-27.20	-27.12	-27.03	-27.26	-19.02	-8.01	
Middle	0	9 kHz to 150 kHz	-46.31	-45.65	-46.04	-45.92	-39.02	-6.63
		150 kHz to 30 MHz	-33.07	-34.27	-34.26	-33.41	-29.02	-4.05
		30 MHz to 600 MHz	-39.20	-38.94	-39.21	-39.19	-19.02	-19.92
		600 MHz to 616.9 GHz	-32.14	-31.58	-31.88	-32.07	-19.02	-12.56
		652.1 MHz to 700 MHz	-30.64	-31.29	-31.19	-31.02	-19.02	-11.62
		700 MHz to 1 GHz	-37.96	-37.86	-37.75	-37.76	-19.02	-18.73
		1 GHz to 3 GHz	-24.80	-24.72	-24.90	-24.90	-19.02	-5.70
		3 GHz to 8 GHz	-28.99	-28.91	-29.02	-28.87	-19.02	-9.85
	1	9 kHz to 150 kHz	-46.29	-46.18	-46.20	-46.12	-39.02	-7.10
		150 kHz to 30 MHz	-32.91	-34.01	-32.87	-34.63	-29.02	-3.85
		30 MHz to 600 MHz	-38.75	-38.76	-38.79	-38.91	-19.02	-19.73
		600 MHz to 616.9 GHz	-31.21	-32.15	-31.28	-31.78	-19.02	-12.19
		652.1 MHz to 700 MHz	-30.31	-30.95	-30.08	-30.24	-19.02	-11.06
		700 MHz to 1 GHz	-37.33	-37.49	-37.70	-37.54	-19.02	-18.31
		1 GHz to 3 GHz	-24.78	-24.83	-24.41	-24.86	-19.02	-5.39
		3 GHz to 8 GHz	-28.55	-28.43	-28.50	-28.48	-19.02	-9.41

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	2	9 kHz to 150 kHz	-46.60	-46.06	-46.55	-46.01	-39.02	-6.99	
		150 kHz to 30 MHz	-33.71	-35.74	-35.24	-33.60	-29.02	-4.58	
		30 MHz to 600 MHz	-39.20	-39.11	-39.16	-39.18	-19.02	-20.09	
		600 MHz to 616.9 GHz	-30.26	-30.07	-30.61	-31.06	-19.02	-11.05	
		652.1 MHz to 700 MHz	-28.83	-30.02	-29.49	-30.38	-19.02	-9.81	
		700 MHz to 1 GHz	-36.76	-37.53	-37.48	-37.78	-19.02	-17.74	
		1 GHz to 3 GHz	-23.64	-23.95	-23.85	-24.01	-19.02	-4.62	
	3	3 GHz to 8 GHz	-27.08	-26.75	-26.95	-26.87	-19.02	-7.73	
		9 kHz to 150 kHz	-47.26	-46.43	-46.89	-46.41	-39.02	-7.39	
		150 kHz to 30 MHz	-34.06	-33.89	-33.93	-33.42	-29.02	-4.40	
		30 MHz to 600 MHz	-39.75	-39.83	-39.75	-39.80	-19.02	-20.73	
		600 MHz to 616.9 GHz	-31.11	-30.04	-30.70	-30.99	-19.02	-11.02	
		652.1 MHz to 700 MHz	-30.31	-30.64	-30.40	-30.53	-19.02	-11.29	
		700 MHz to 1 GHz	-37.08	-37.64	-37.29	-37.63	-19.02	-18.06	
High	0	1 GHz to 3 GHz	-24.10	-24.14	-23.99	-23.71	-19.02	-4.69	
		3 GHz to 8 GHz	-27.22	-26.96	-27.22	-27.21	-19.02	-7.94	
		1	9 kHz to 150 kHz	-45.74	-45.97	-46.15	-45.65	-39.02	-6.63
			150 kHz to 30 MHz	-32.74	-32.84	-35.60	-34.04	-29.02	-3.72
			30 MHz to 600 MHz	-39.85	-39.79	-39.63	-39.24	-19.02	-20.22
			600 MHz to 616.9 GHz	-31.02	-30.83	-31.68	-31.95	-19.02	-11.81
			652.1 MHz to 700 MHz	-25.17	-25.42	-26.31	-25.43	-19.02	-6.15
	700 MHz to 1 GHz		-36.96	-37.37	-37.28	-37.29	-19.02	-17.94	
	1 GHz to 3 GHz		-24.71	-24.54	-24.74	-24.78	-19.02	-5.52	
	2	3 GHz to 8 GHz	-28.93	-28.80	-28.89	-28.84	-19.02	-9.78	
		9 kHz to 150 kHz	-46.27	-45.36	-46.46	-46.08	-39.02	-6.34	
		150 kHz to 30 MHz	-33.66	-33.61	-32.57	-33.77	-29.02	-3.55	
		30 MHz to 600 MHz	-39.54	-39.57	-39.63	-39.56	-19.02	-20.52	
		600 MHz to 616.9 GHz	-31.75	-31.51	-31.86	-31.34	-19.02	-12.32	
		652.1 MHz to 700 MHz	-24.08	-25.05	-24.78	-24.68	-19.02	-5.06	
		700 MHz to 1 GHz	-37.24	-37.25	-37.48	-37.11	-19.02	-18.09	
	3	1 GHz to 3 GHz	-24.88	-24.30	-24.55	-24.49	-19.02	-5.28	
		3 GHz to 8 GHz	-28.48	-28.45	-28.66	-28.45	-19.02	-9.43	
		9 kHz to 150 kHz	-46.22	-46.30	-46.04	-45.47	-39.02	-6.45	
		150 kHz to 30 MHz	-34.11	-33.48	-32.24	-33.14	-29.02	-3.22	
		30 MHz to 600 MHz	-39.82	-40.08	-40.04	-39.94	-19.02	-20.80	
		600 MHz to 616.9 GHz	-30.41	-30.46	-30.55	-30.84	-19.02	-11.39	
		652.1 MHz to 700 MHz	-25.80	-25.25	-24.60	-26.26	-19.02	-5.58	
		3	700 MHz to 1 GHz	-37.16	-37.23	-37.27	-37.22	-19.02	-18.14
			1 GHz to 3 GHz	-23.94	-23.96	-23.98	-23.88	-19.02	-4.86
			3 GHz to 8 GHz	-26.99	-26.80	-26.78	-26.97	-19.02	-7.76
			9 kHz to 150 kHz	-46.54	-46.37	-46.66	-46.70	-39.02	-7.35
			150 kHz to 30 MHz	-32.68	-33.07	-33.49	-34.22	-29.02	-3.66
30 MHz to 600 MHz			-40.51	-40.28	-40.20	-40.53	-19.02	-21.18	
600 MHz to 616.9 GHz			-30.60	-30.29	-31.24	-30.37	-19.02	-11.27	
652.1 MHz to 700 MHz	-24.67	-23.87	-24.74	-24.55	-19.02	-4.85			
700 MHz to 1 GHz	-37.16	-37.11	-36.80	-37.07	-19.02	-17.78			
1 GHz to 3 GHz	-23.90	-24.11	-23.83	-23.86	-19.02	-4.81			
3 GHz to 8 GHz	-27.33	-27.06	-27.09	-27.29	-19.02	-8.04			

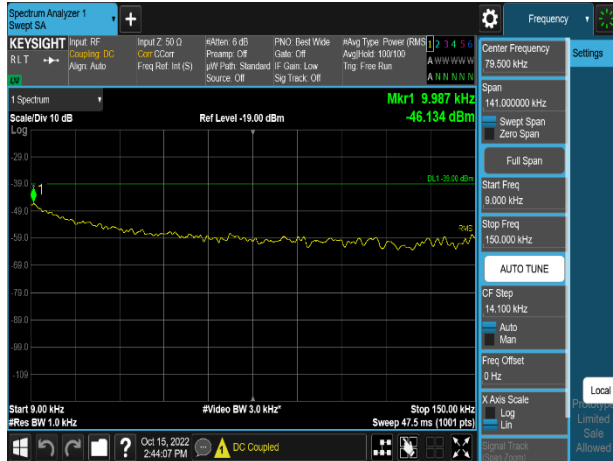
Table 8-31. Conducted Spurious Emission Summary Data (n71_1C_20M)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 50 of 78	

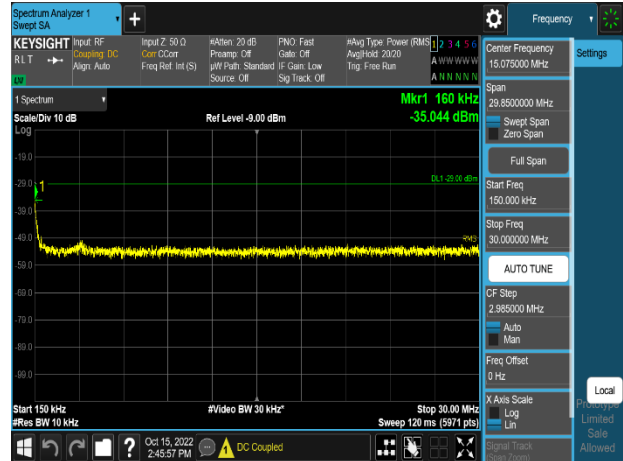
Channel	Port	Measurement Range	Level (dBm)				Limit (dBm)	Margin (dB)
			QPSK	16QAM	64QAM	256QAM		
Middle	0	9 kHz to 150 kHz	-72.62	-72.18	-72.33	-72.61	-39.02	-33.16
		150 kHz to 30 MHz	-50.49	-50.02	-50.97	-50.23	-29.02	-21.00
		30 MHz to 863.8625 MHz	-30.54	-28.87	-28.92	-29.71	-19.02	-9.85
		869.1375 MHz to 1 GHz	-31.89	-31.60	-31.34	-31.22	-19.02	-12.20
		1 GHz to 3 GHz	-28.26	-28.36	-28.22	-28.23	-19.02	-9.20
		3 GHz to 9 GHz	-31.25	-31.61	-31.62	-31.69	-19.02	-12.23
	1	9 kHz to 150 kHz	-71.76	-72.67	-72.64	-72.46	-39.02	-32.74
		150 kHz to 30 MHz	-50.84	-50.93	-50.64	-50.57	-29.02	-21.55
		30 MHz to 863.8625 MHz	-30.65	-29.36	-28.90	-29.52	-19.02	-9.88
		869.1375 MHz to 1 GHz	-33.28	-33.01	-32.53	-32.49	-19.02	-13.47
		1 GHz to 3 GHz	-28.66	-28.82	-28.37	-28.68	-19.02	-9.35
		3 GHz to 9 GHz	-32.76	-32.67	-32.96	-32.79	-19.02	-13.65
	2	9 kHz to 150 kHz	-72.25	-73.06	-71.12	-72.52	-39.02	-32.10
		150 kHz to 30 MHz	-50.75	-50.37	-51.06	-50.42	-29.02	-21.35
		30 MHz to 863.8625 MHz	-27.52	-28.28	-28.56	-28.86	-19.02	-8.50
		869.1375 MHz to 1 GHz	-31.87	-32.06	-30.69	-31.64	-19.02	-11.67
		1 GHz to 3 GHz	-28.77	-28.81	-28.54	-28.55	-19.02	-9.52
		3 GHz to 9 GHz	-33.12	-33.09	-32.88	-33.19	-19.02	-13.86
	3	9 kHz to 150 kHz	-71.89	-71.28	-71.93	-71.79	-39.02	-32.26
		150 kHz to 30 MHz	-51.21	-50.59	-50.71	-51.02	-29.02	-21.57
		30 MHz to 863.8625 MHz	-28.75	-29.60	-30.46	-29.57	-19.02	-9.73
		869.1375 MHz to 1 GHz	-31.17	-32.16	-31.18	-31.52	-19.02	-12.15
		1 GHz to 3 GHz	-28.98	-28.92	-28.95	-28.85	-19.02	-9.83
		3 GHz to 9 GHz	-33.25	-33.77	-33.67	-33.20	-19.02	-14.18

Table 8-32. Conducted Spurious Emission Summary Data (n26_1C_5M)

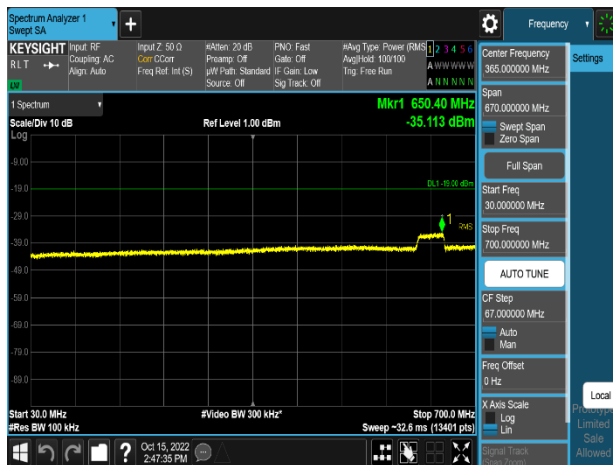
FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 51 of 78	



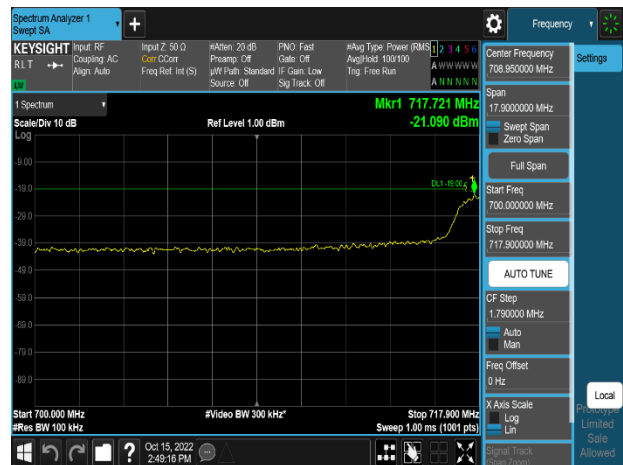
Plot 8-45. Conducted Spurious Emission Plot
9 kHz to 150 kHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)



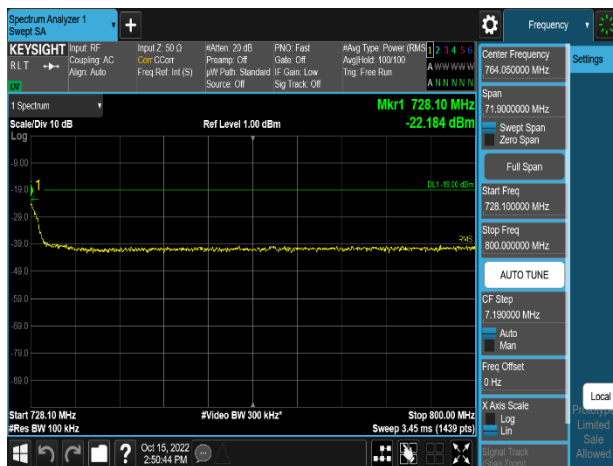
Plot 8-46. Conducted Spurious Emission Plot
150 kHz to 30 MHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)



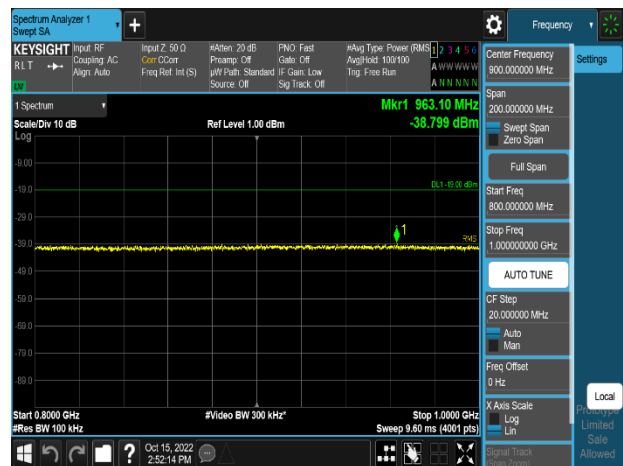
Plot 8-47. Conducted Spurious Emission Plot
30 MHz to 700 MHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)



Plot 8-48. Conducted Spurious Emission Plot
700 MHz to 717.9 MHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)

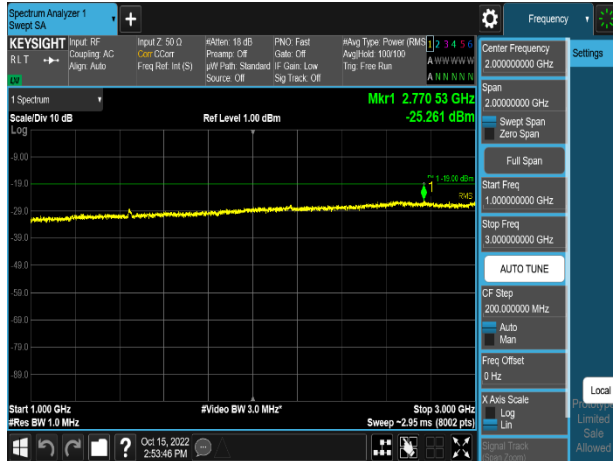


Plot 8-49. Conducted Spurious Emission Plot
728.1 MHz to 800 MHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)

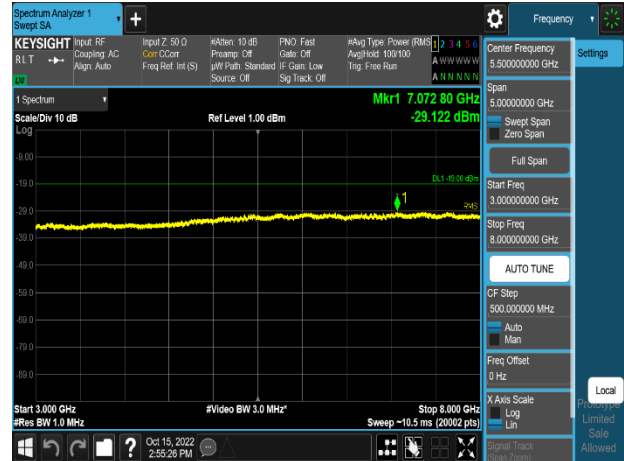


Plot 8-50. Conducted Spurious Emission Plot
800 MHz to 1 GHz
(n29_1C_5M_256QAM - High Channel, Port 0)

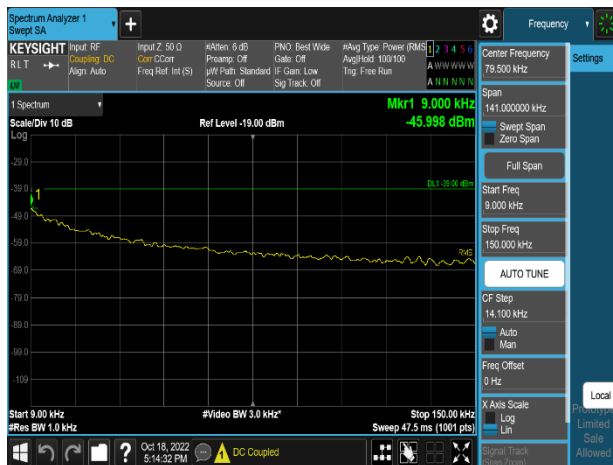
FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 52 of 78



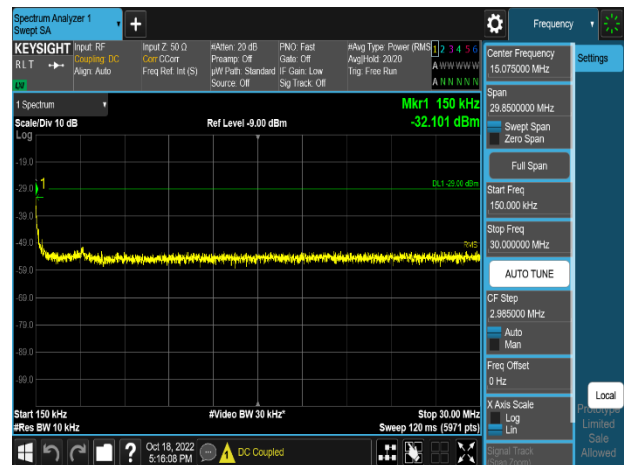
Plot 8-51. Conducted Spurious Emission Plot
1 GHz to 3 GHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)



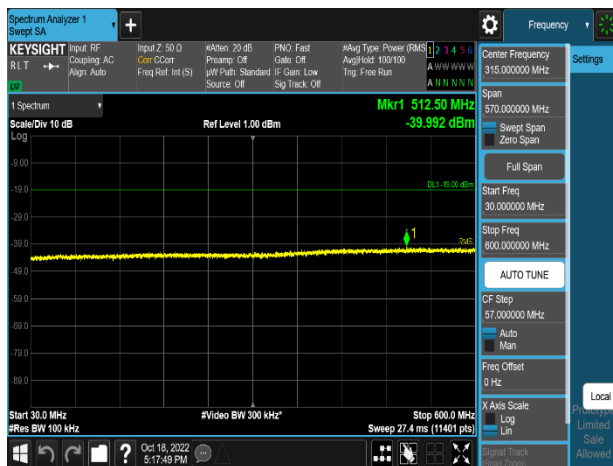
Plot 8-52. Conducted Spurious Emission Plot
3 GHz to 8 GHz
(n29_2C_5M+5M_256QAM - Mid Channel, Port 0)



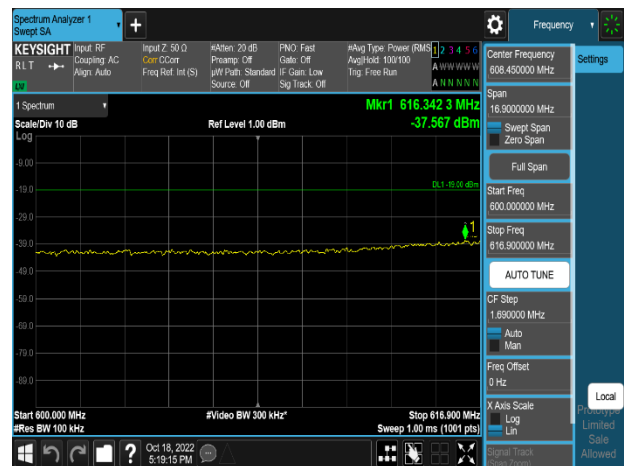
Plot 8-53. Conducted Spurious Emission Plot
9 kHz to 150 kHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)



Plot 8-54. Conducted Spurious Emission Plot
150 kHz to 30 MHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)

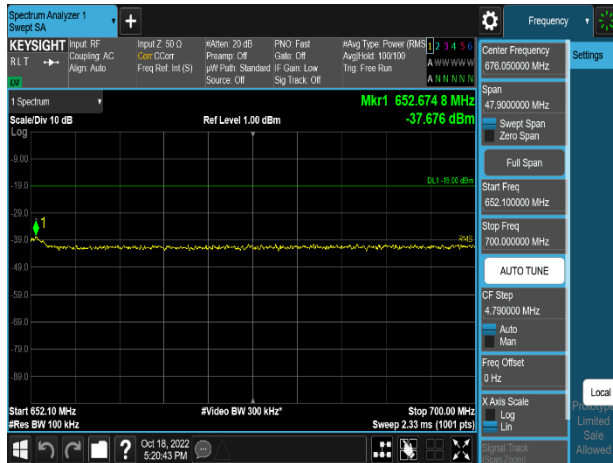


Plot 8-55. Conducted Spurious Emission Plot
30 MHz to 600 MHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)

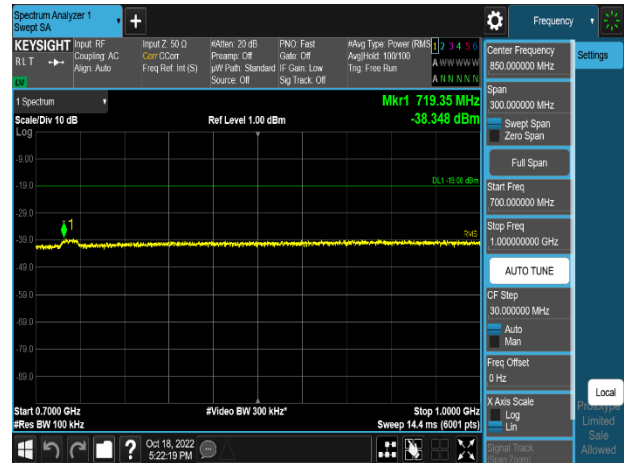


Plot 8-56. Conducted Spurious Emission Plot
600 MHz to 616.9 MHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)

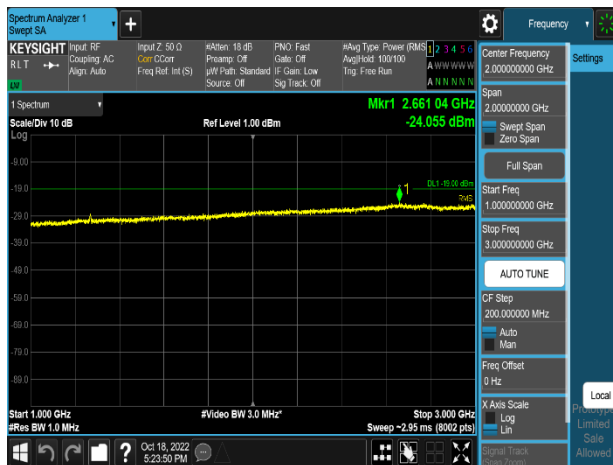
FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 53 of 78



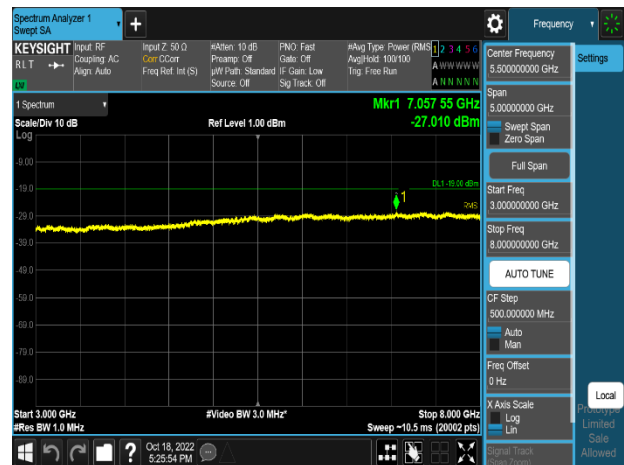
Plot 8-57. Conducted Spurious Emission Plot
652.1 MHz to 700 MHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)



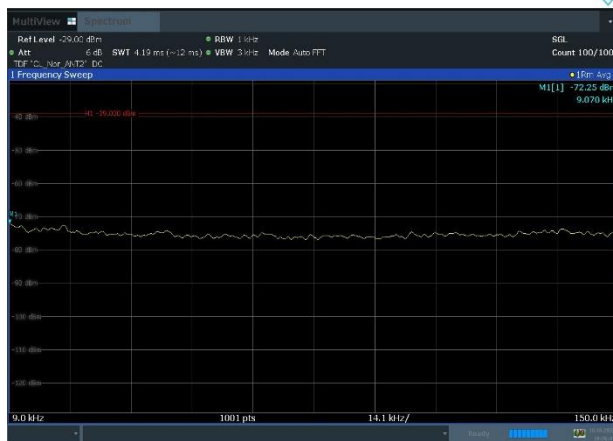
Plot 8-58. Conducted Spurious Emission Plot
700 MHz to 1 GHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)



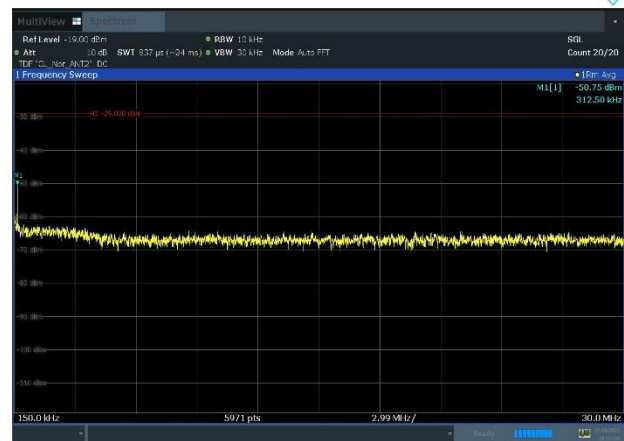
Plot 8-59. Conducted Spurious Emission Plot
1 GHz to 3 GHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)



Plot 8-60. Conducted Spurious Emission Plot
3 GHz to 8 GHz
(n71_1C_5M_16QAM - Mid Channel, Port 3)

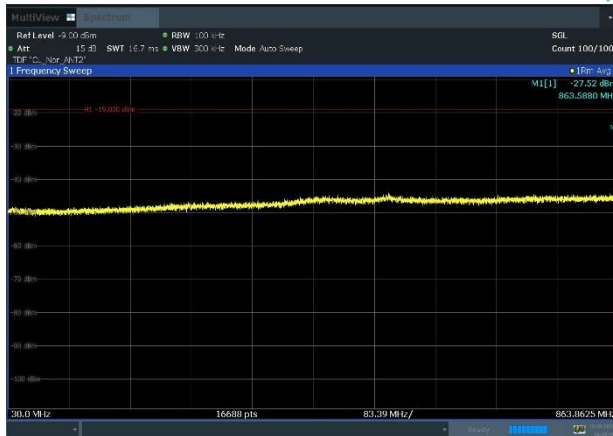


Plot 8-61. Conducted Spurious Emission Plot
9 kHz to 150 kHz
(n26_1C_5M_QPSK - Mid Channel, Port 2)

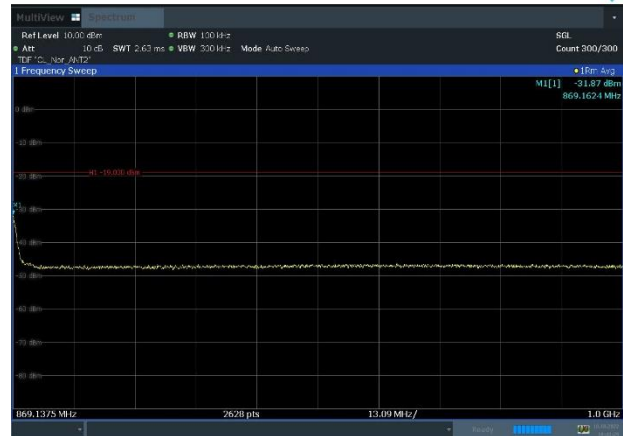


Plot 8-62. Conducted Spurious Emission Plot
150 kHz to 30 MHz
(n26_1C_5M_QPSK - Mid Channel, Port 2)

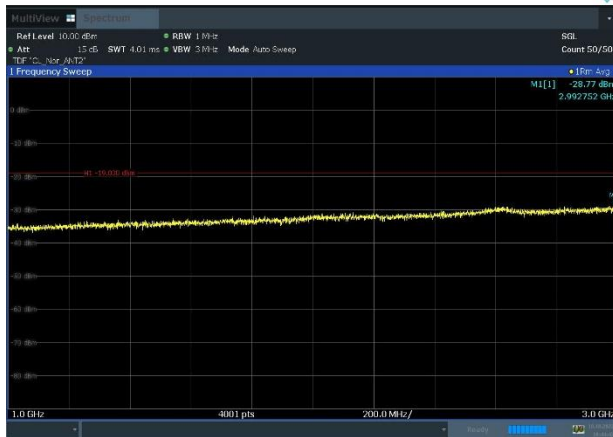
FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 54 of 78



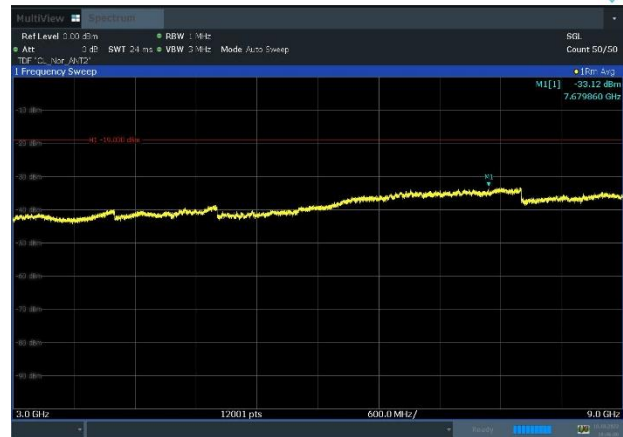
Plot 8-63. Conducted Spurious Emission Plot
30 MHz to 863.8625 MHz
(n26_1C_5M_QPSK - Mid Channel, Port 2)





Plot 8-64. Conducted Spurious Emission Plot
869.1375 MHz to 1 GHz
(n26_1C_5M_QPSK - Mid Channel, Port 2)



Plot 8-65. Conducted Spurious Emission Plot
1 GHz to 3 GHz
(n26_1C_5M_QPSK - Mid Channel, Port 2)



Plot 8-66. Conducted Spurious Emission Plot
3 GHz to 9 GHz
(n26_1C_5M_QPSK - Mid Channel, Port 2)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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8.7 Frequency Stability

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of KDB 971168 D01 v03r01. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for DC powered equipment.

Test Description

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.

Frequency measurements are made -30°C to +50°C in 10°C increments. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Limit

NR n29 and n71 operation under Part 27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

NR n26 operation under Part 90.213(a),

The frequency stability of the transmitter shall be maintained within ± 1.5 ppm ($\pm 0.00015\%$) of center frequency.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

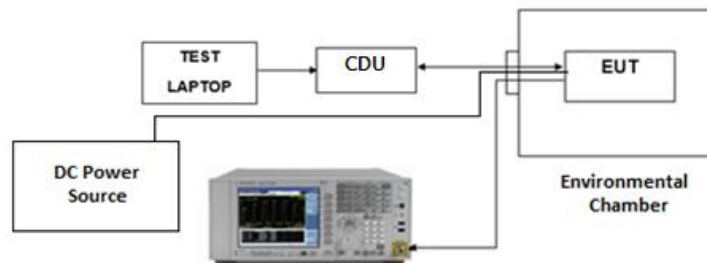




Figure 8-6. Test Instrument & Measurement Setup

Test Notes

None.

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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OPERATING FREQUENCY: 725,500,000 Hz
 REFERENCE VOLTAGE: -48.00 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	-48.00	+ 20 (Ref)	720,500,052	0	0.0000000
100 %		- 30	720,500,052	0	0.0000000
100 %		- 20	720,500,052	0	0.0000000
100 %		- 10	720,500,052	0	0.0000000
100 %		0	720,500,052	0	0.0000000
100 %		+ 10	720,500,052	0	0.0000000
100 %		+ 30	720,500,052	0	0.0000000
100 %		+ 40	720,500,054	2	0.0000003
100 %		+ 50	720,500,054	2	0.0000003
85 %	-40.80	+ 20	720,500,053	1	0.0000001
115 %	-55.20	+ 20	720,500,052	0	0.0000000

Table 8-33. Frequency Stability Summary Data (NR_n29_1C_5M)

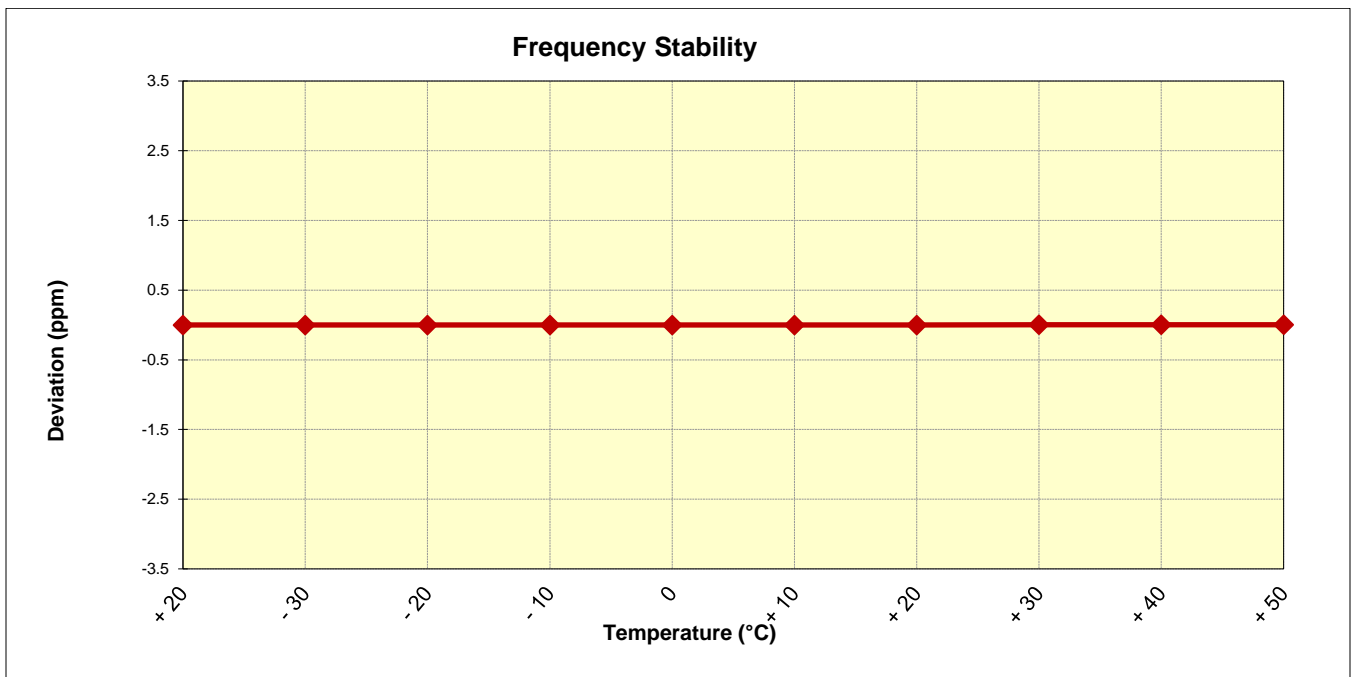


Figure 8-7. Frequency Stability Graph (NR_n29_1C_5M)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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OPERATING FREQUENCY: 619,500,000 Hz
 REFERENCE VOLTAGE: -48.00 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	-48.00	+ 20 (Ref)	619,500,045	0	0.0000000
100 %		- 30	619,500,045	0	0.0000000
100 %		- 20	619,500,045	0	0.0000000
100 %		- 10	619,500,045	0	0.0000000
100 %		0	619,500,045	0	0.0000000
100 %		+ 10	619,500,045	0	0.0000000
100 %		+ 30	619,500,045	0	0.0000000
100 %		+ 40	619,500,045	0	0.0000000
100 %		+ 50	619,500,047	2	0.0000003
85 %	-40.80	+ 20	619,500,046	1	0.0000002
115 %	-55.20	+ 20	619,500,045	0	0.0000000

Table 8-34. Frequency Stability Summary Data (NR_n71_1C_5M)

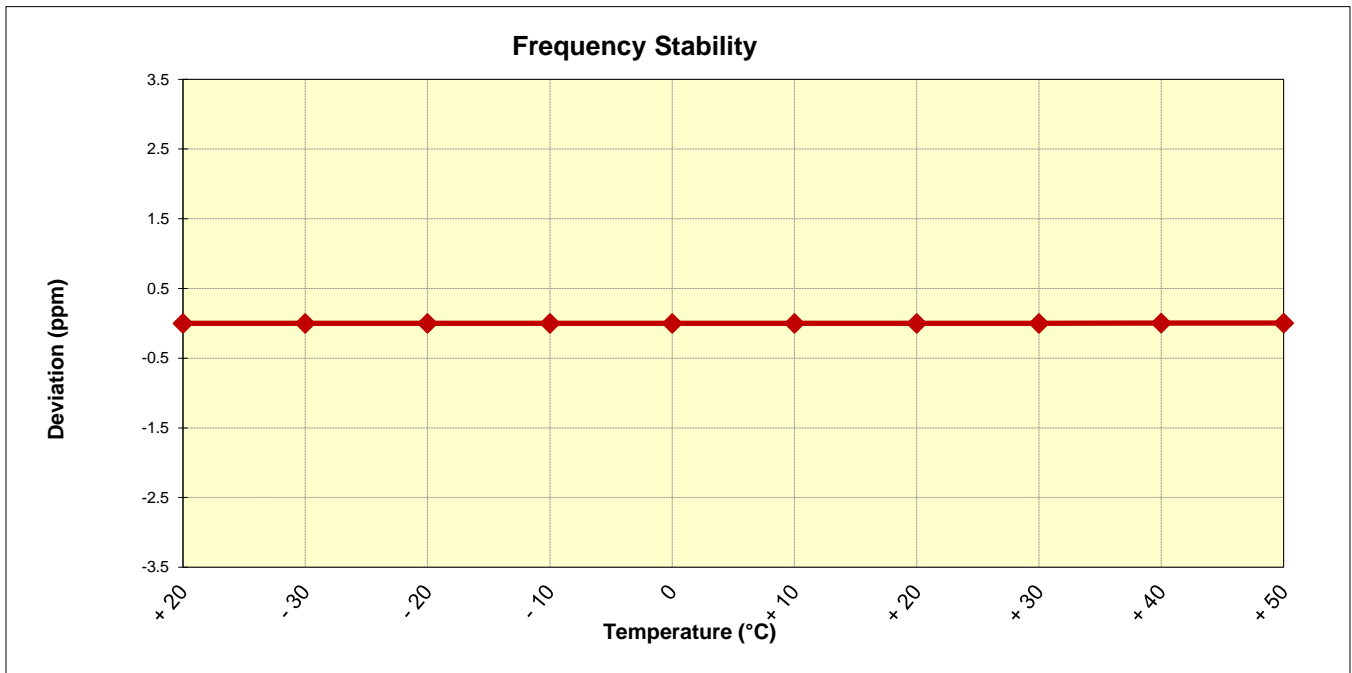


Figure 8-8. Frequency Stability Graph (NR_n71_1C_5M)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 58 of 78	

OPERATING FREQUENCY: 866,500,000 Hz
 REFERENCE VOLTAGE: -48.00 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	-48.00	+ 20 (Ref)	866,500,053	0	0.0000000
100 %		- 30	866,500,053	0	0.0000000
100 %		- 20	866,500,053	0	0.0000000
100 %		- 10	866,500,053	0	0.0000000
100 %		0	866,500,053	0	0.0000000
100 %		+ 10	866,500,053	0	0.0000000
100 %		+ 30	866,500,053	0	0.0000000
100 %		+ 40	866,500,054	1	0.0000001
100 %		+ 50	866,500,054	1	0.0000001
85 %	-40.80	+ 20	866,500,053	0	0.0000000
115 %	-55.20	+ 20	866,500,053	0	0.0000000

Table 8-35. Frequency Stability Summary Data (NR_n26_1C_5M)

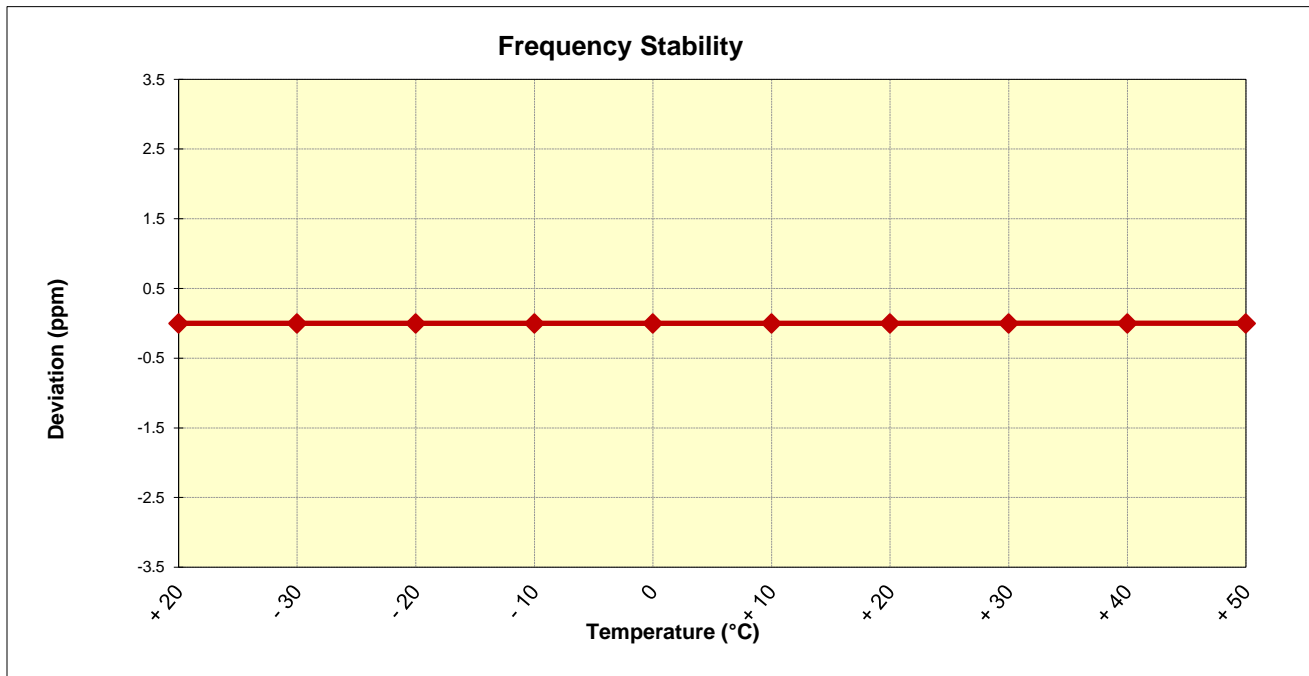




Figure 8-9. Frequency Stability Graph (NR_n26_1C_5M)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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8.8 Radiated spurious emission

Test Overview

Radiated spurious emissions measurements are performed using the field strength method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized broadband tri-log antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedure Used

ANSI C63.26 - Section 5.5.3.2

Test Setting

1. Start frequency was set to 30 MHz and stop frequency was set to at least 10 * the fundamental frequency
2. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1GHz
3. VBW $\geq 3 \times$ RBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = Peak for the pre-scan, (In cases where the level is within 2 dB of the limit, the final measurement is taken using RMS detector.)
6. Trace mode = Max Hold (In cases where the level is within 2 dB of the limit, the final measurement is taken using triggering/gating and trace averaging.)
7. The trace was allowed to stabilize.

Limit



NR n29 and n71 operation under Part 27.53

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P_{\text{[Watts]}})$, where P is the transmitter power in Watts.

NR n26 operation under Part 90.691

For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \text{ Log}_{10}(f/6.1)$ decibels or $50 + 10 \text{ Log}_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \text{ Log}_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

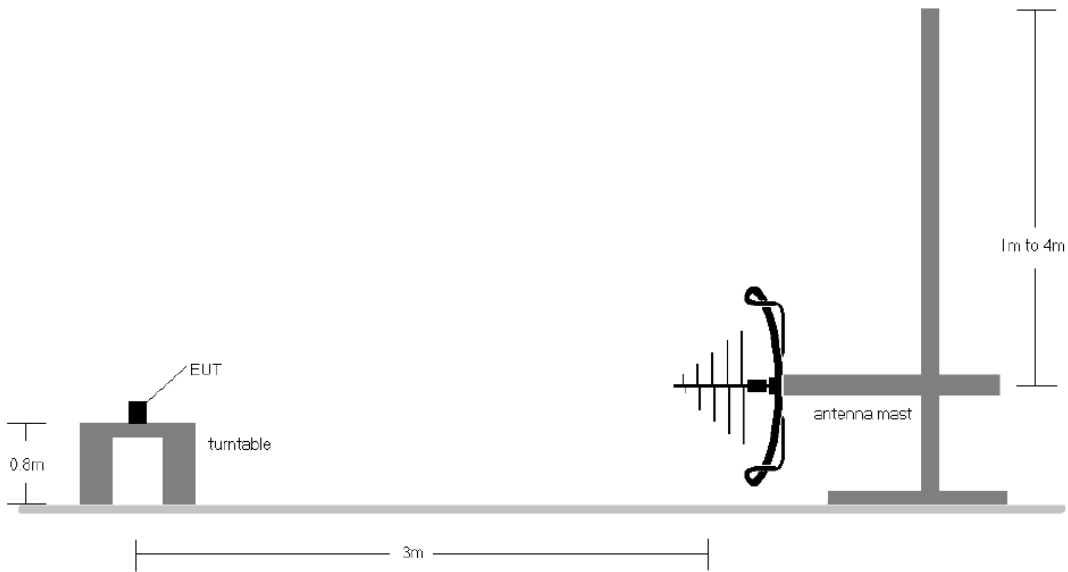


Figure 8-10. Test Instrument & Measurement Setup < 1 GHz

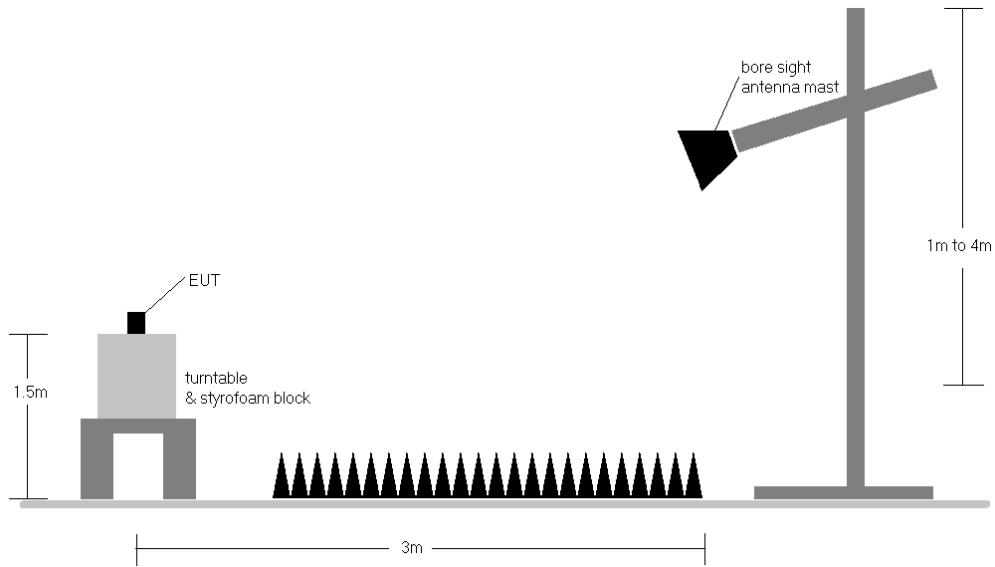


Figure 8-11. Test Instrument & Measurement Setup > 1 GHz

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 61 of 78

Test Notes

1. Per Part 90.691, the frequency block by up to and including 37.5 kHz range complies with 50 + 10 Log10(P) decibels and frequency block greater than 37.5 kHz range complies with 43 + 10Log10(P) decibels limit.
2. The average EIRP reported below is calculated per 5.2.7 of ANSI C63.26-2015 which states:

The measured e.i.r.p is converted to E-field in V/m. Then the distance correction is applied before converted back to calculated e.i.r.p.as explained in KDB 971168 D01 D01 v03r01.

Effective Isotropic Radiated Power Sample Calculation

Field Strength [dBμV/m] = Measured Value [dBm] + 107 + AFCL [dB/m]
 = -76.32 [dBm] + 107 + 20.27 [dB/m] = 50.95 dBμV/m



e.i.r.p. [dBm] = E[dB μV/m] + 20 log₁₀(d[m]) - 104.8
 = 50.95 dB[μV/m] + (20*log (3)) - 104.8
 = -44.31 dBm

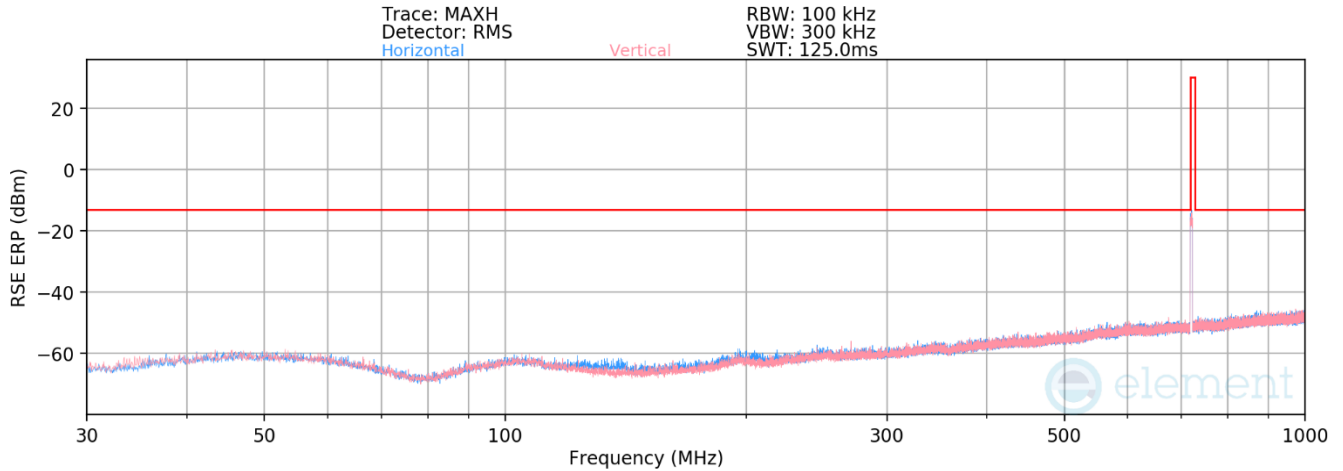
*AFCL (dB/m) contains measurement antenna factor(dB/m) and cable loss(dB) as below:

Frequency [MHz]	Antenna Factor (dB/m)	Chamber measurement cable loss + amplifier [dB]	AFCL (dB/m)
981.33	23.26	2.68	25.94
8002.12	37.00	-16.73	20.27

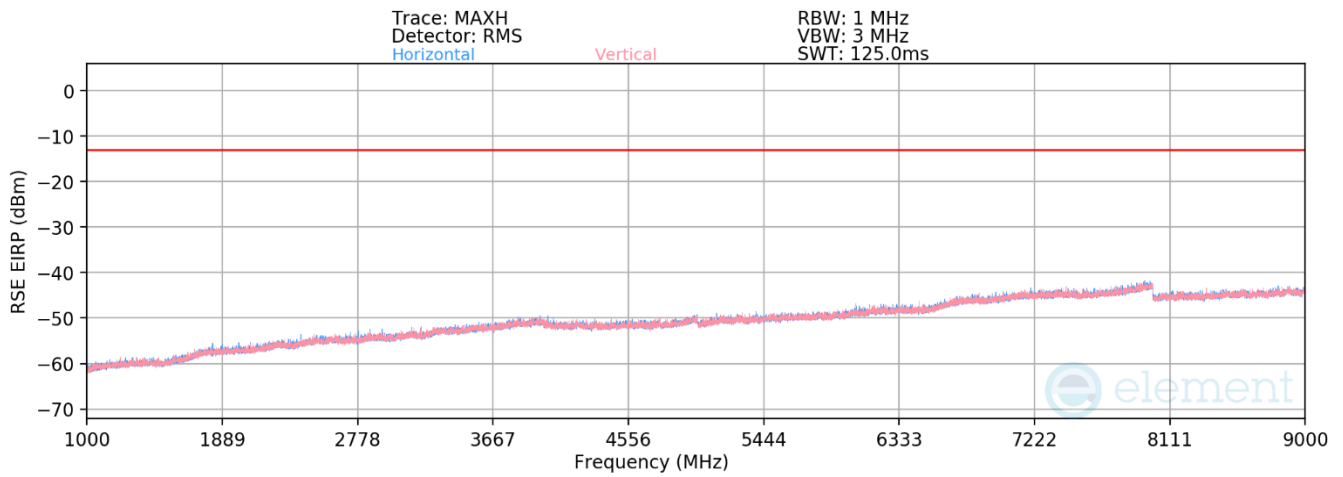
Table 8-36. Adopted AFCL value in the calculation

3. The EUT was tested in both horizontal and vertical antenna polarizations and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, channel bandwidth configurations shown in the tables below.
4. The spectrum is measured from 30 MHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
5. All emissions were measured at a 3-meter test distance.
6. Spurious emissions were measured with all EUT antennas transmitting simultaneously and all antenna ports terminated.
7. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
8. All modes of operation were investigated and the worst case configuration results are reported in this section.

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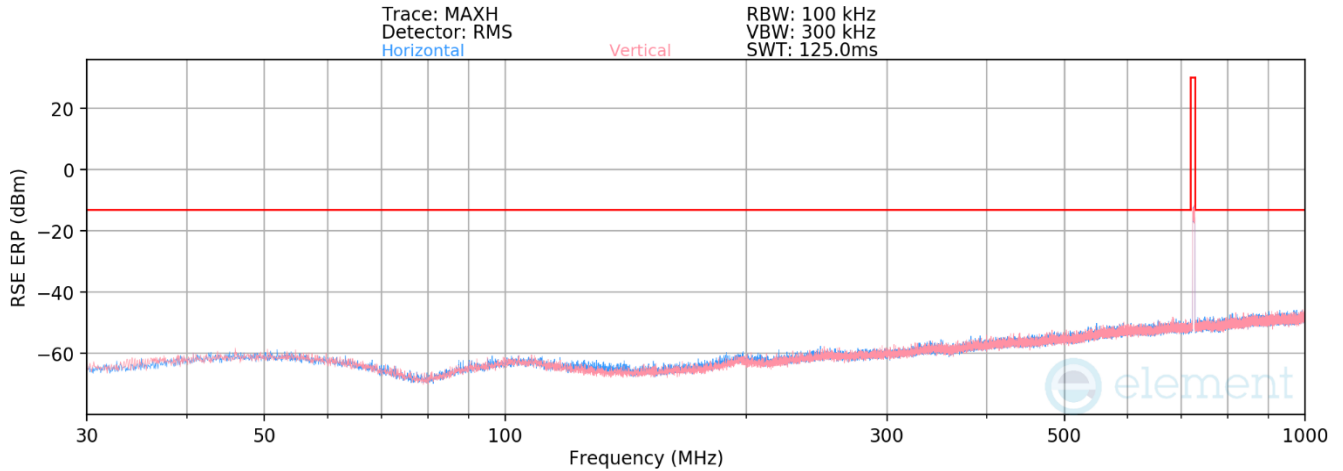


**Plot 8-67. Radiated spurious emission_30 MHz to 1000 MHz
(n29_1C_5M_Low Channel)**

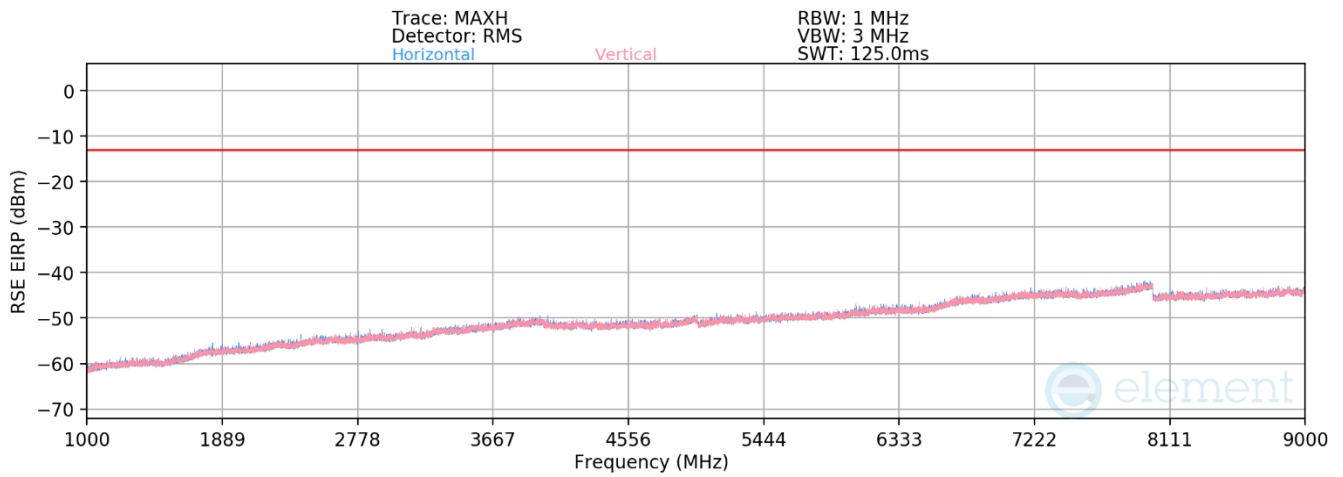


**Plot 8-68. Radiated spurious emission_1 GHz to 9 GHz
(n29_1C_5M_Low Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 63 of 78	

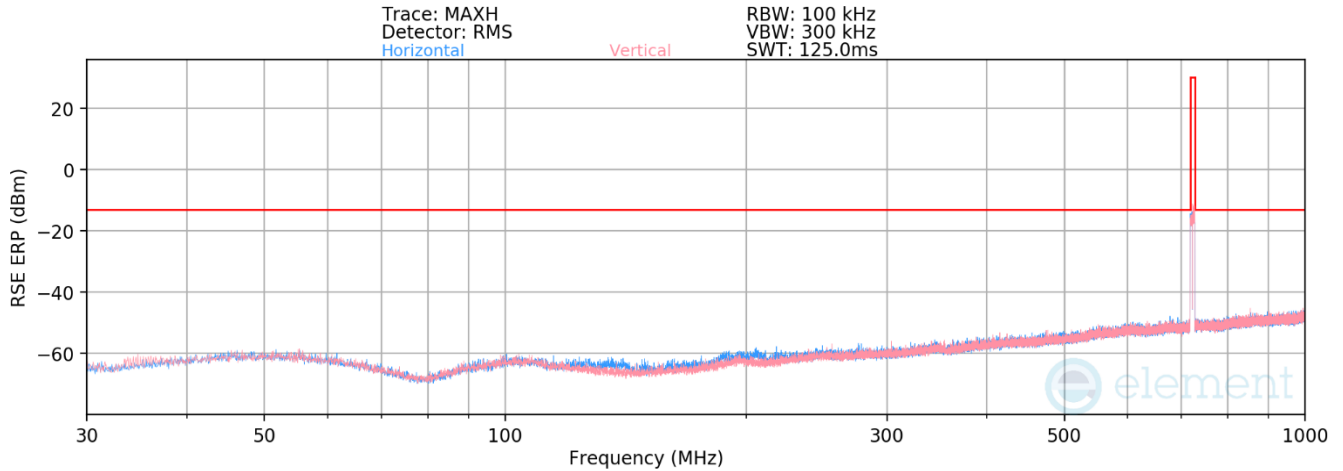


**Plot 8-69. Radiated spurious emission_30 MHz to 1000 MHz
(n29_1C_5M_High Channel)**

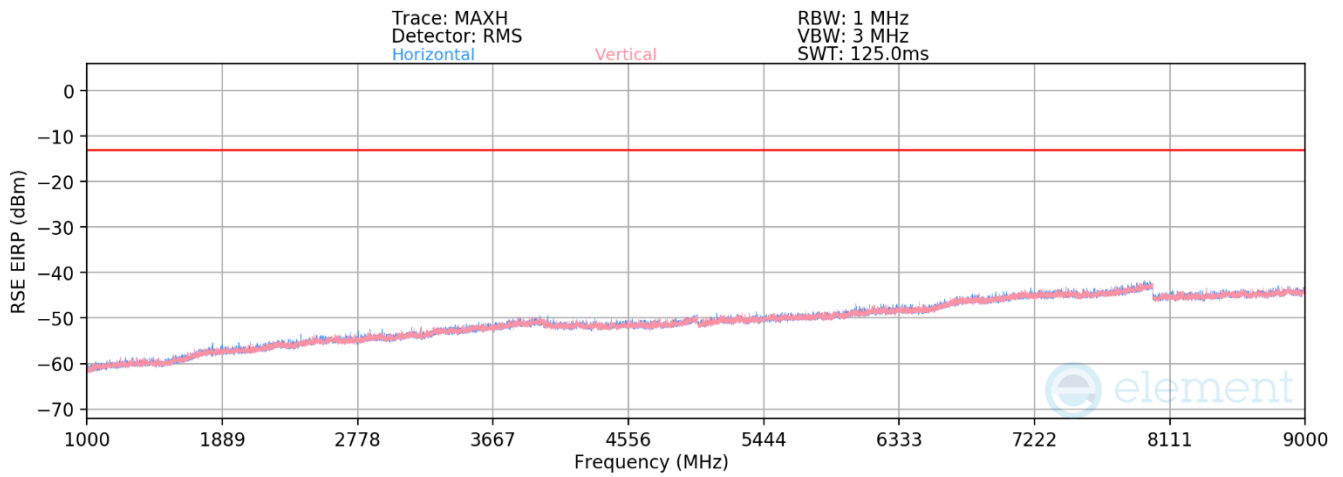


**Plot 8-70. Radiated spurious emission_1 GHz to 9 GHz
(n29_1C_5M_High Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 64 of 78

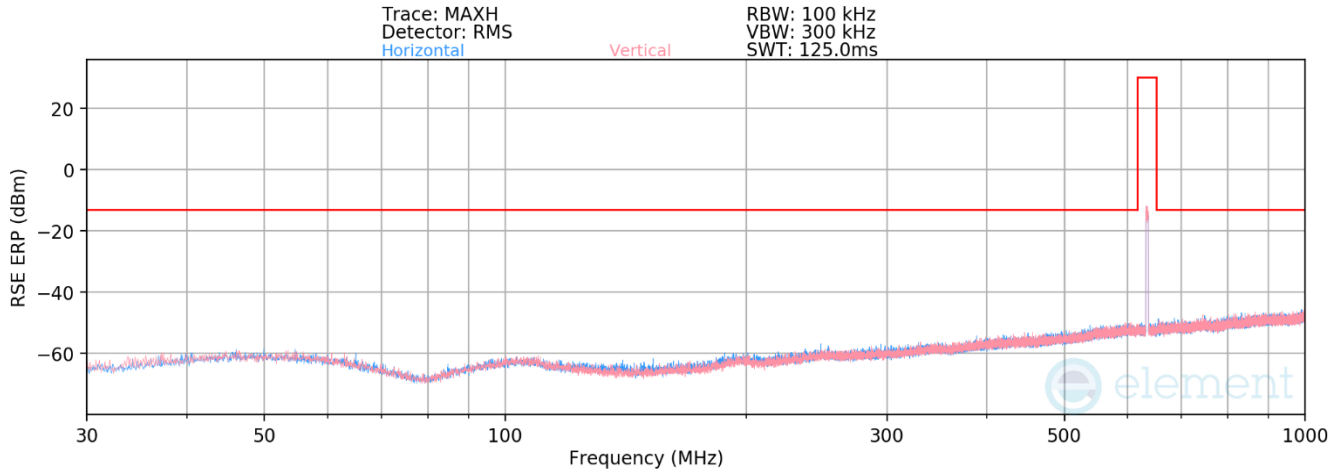


**Plot 8-71. Radiated spurious emission_30 MHz to 1000 MHz
(n29_2C_5M+5M_Mid Channel)**

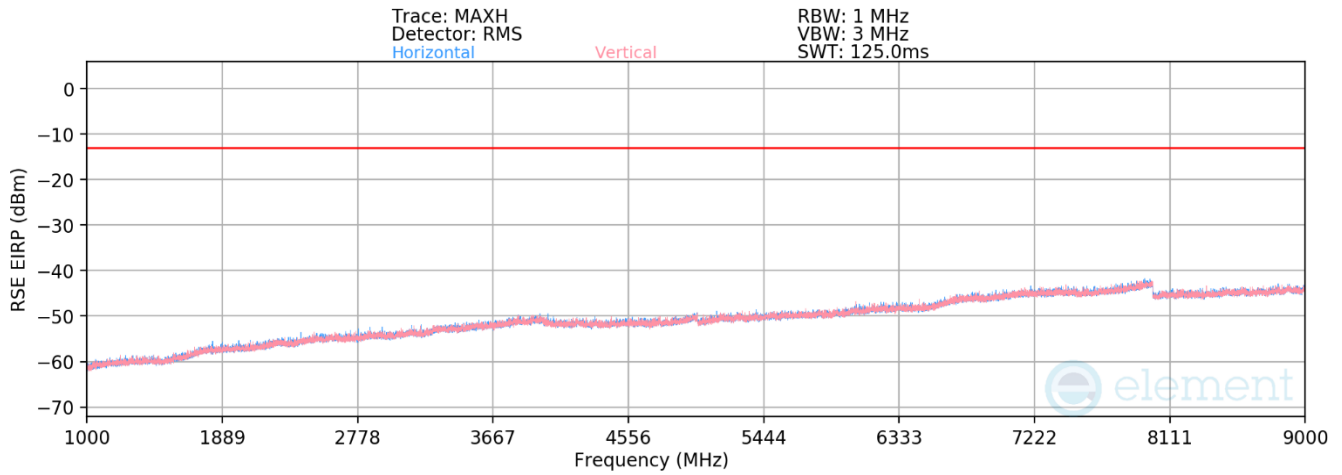


**Plot 8-72. Radiated spurious emission Plot_1 GHz to 9 GHz
(n29_2C_5M+5M_Mid Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 65 of 78

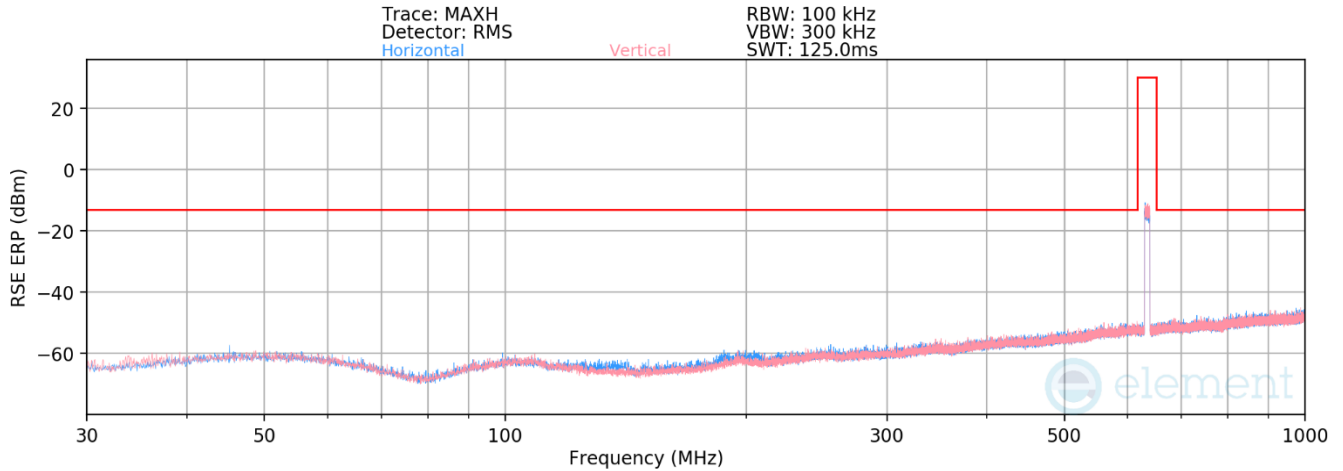


**Plot 8-73. Radiated spurious emission_30 MHz to 1000 MHz
(n71_1C_5M_Mid Channel)**

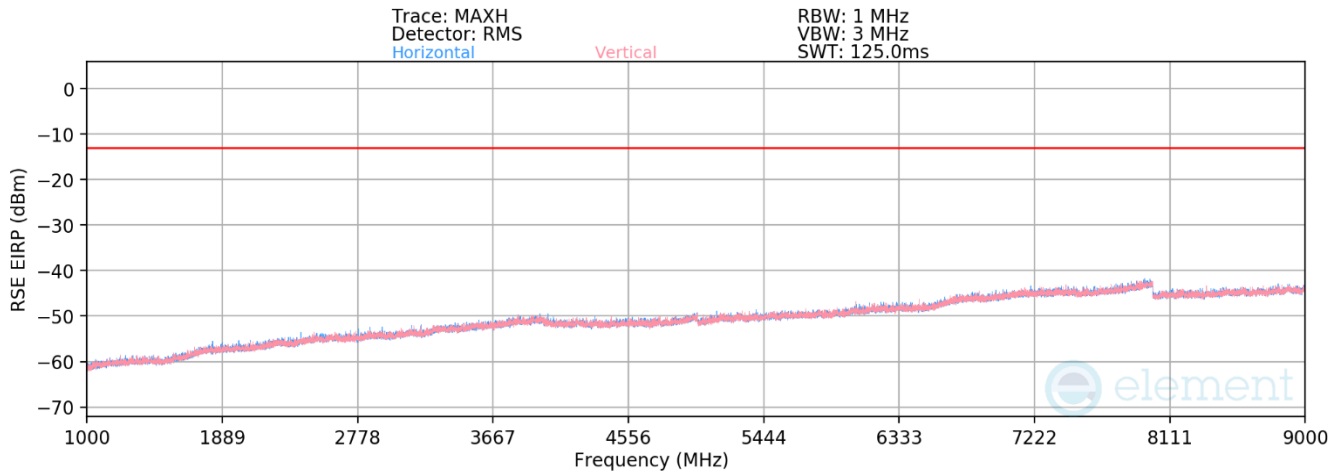


**Plot 8-74. Radiated spurious emission Plot_1 GHz to 9 GHz
(n71_1C_5M_Mid Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 66 of 78	

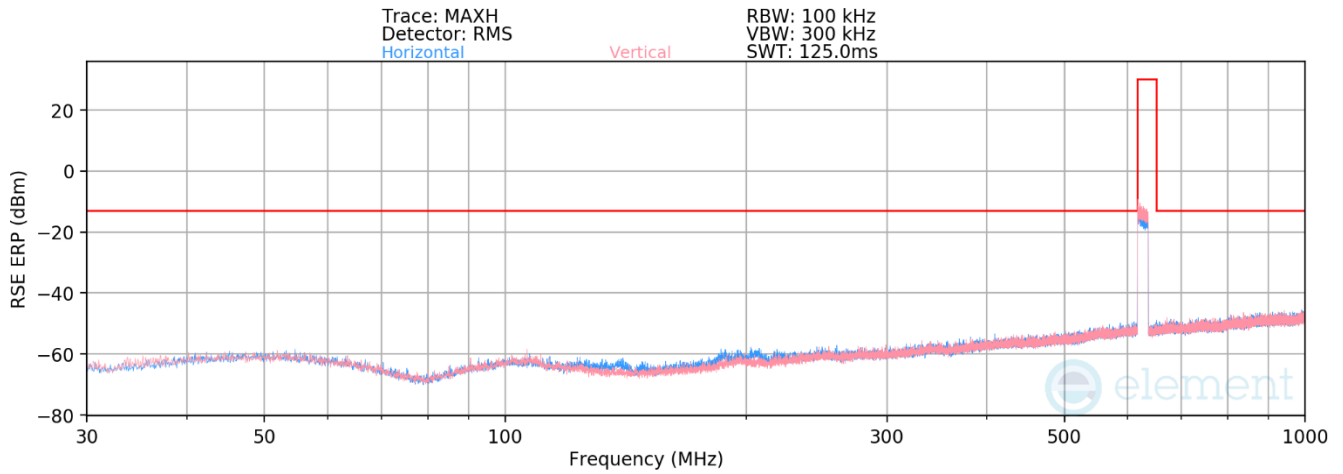


**Plot 8-75. Radiated spurious emission_30 MHz to 1000 MHz
(n71_1C_10M_Mid Channel)**

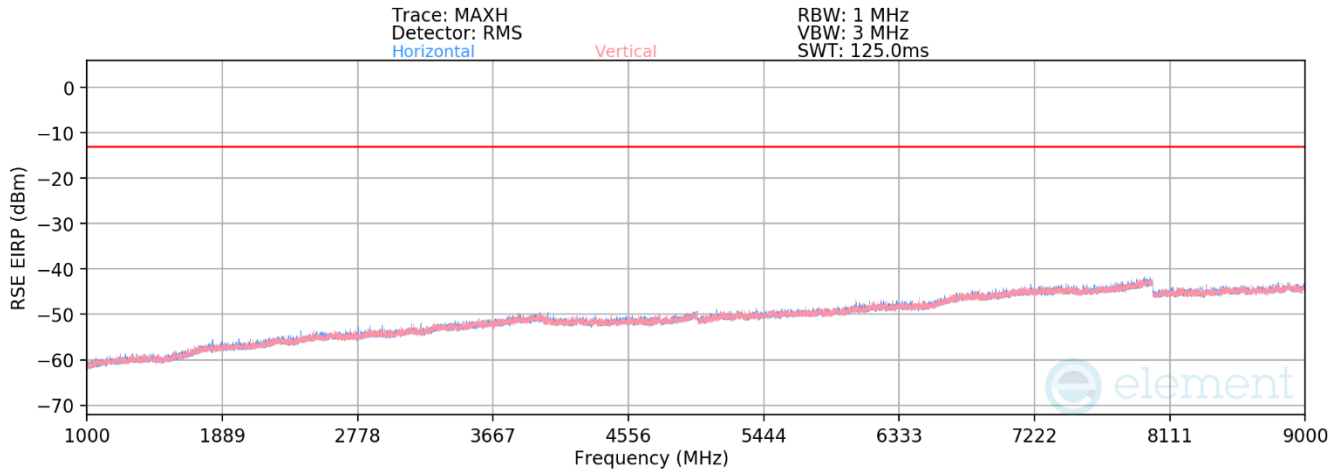


**Plot 8-76. Radiated spurious emission Plot_1 GHz to 9 GHz
(n71_1C_10M_Mid Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 67 of 78

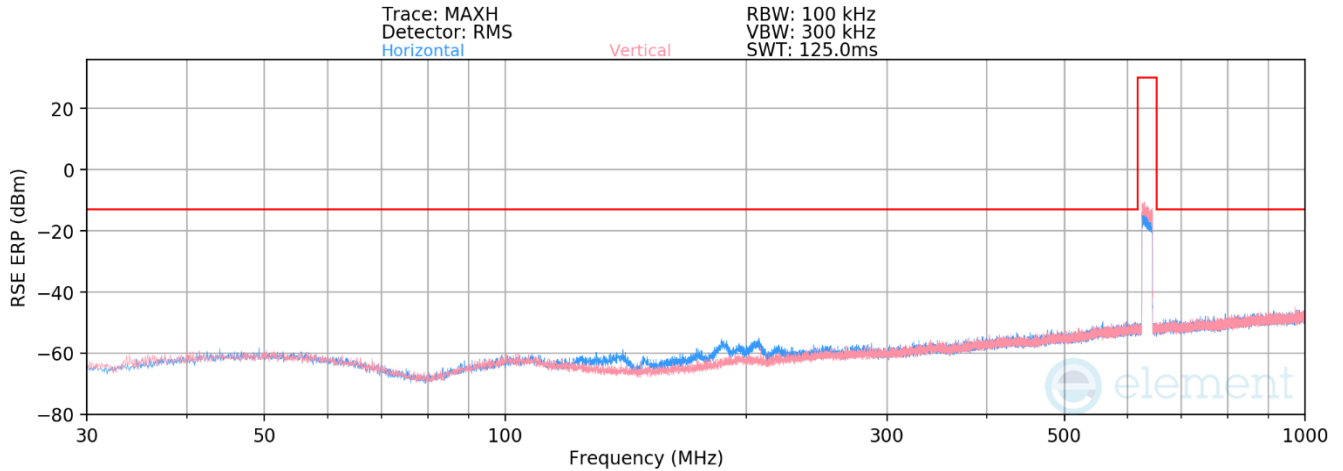


**Plot 8-77. Radiated spurious emission_30 MHz to 1000 MHz
(n71_1C_20M_Low Channel)**

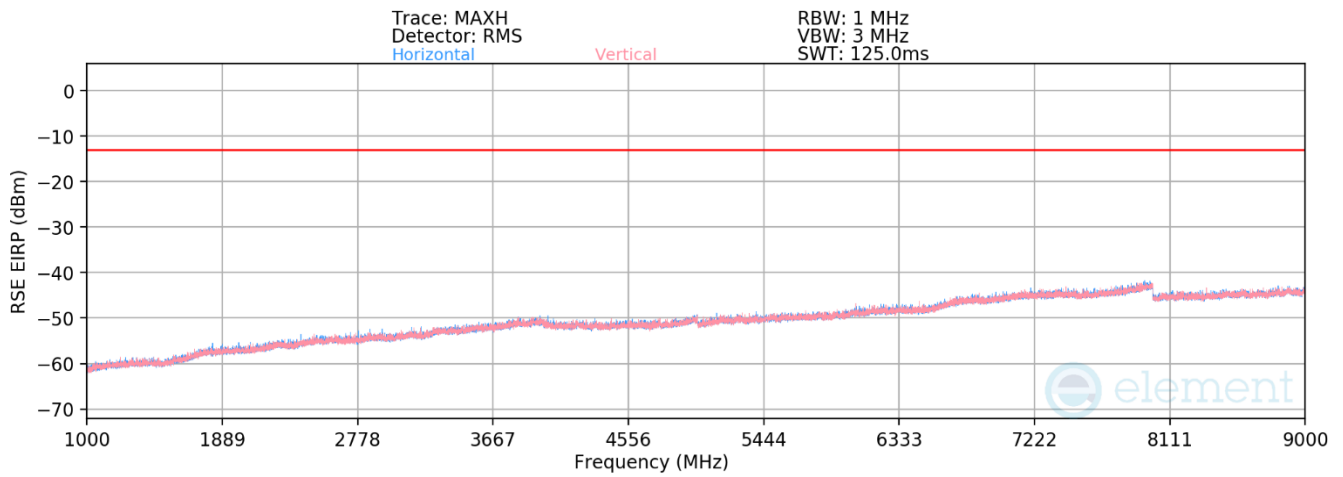


**Plot 8-78. Radiated spurious emission Plot_1 GHz to 9 GHz
(n71_1C_20M_Low Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 68 of 78

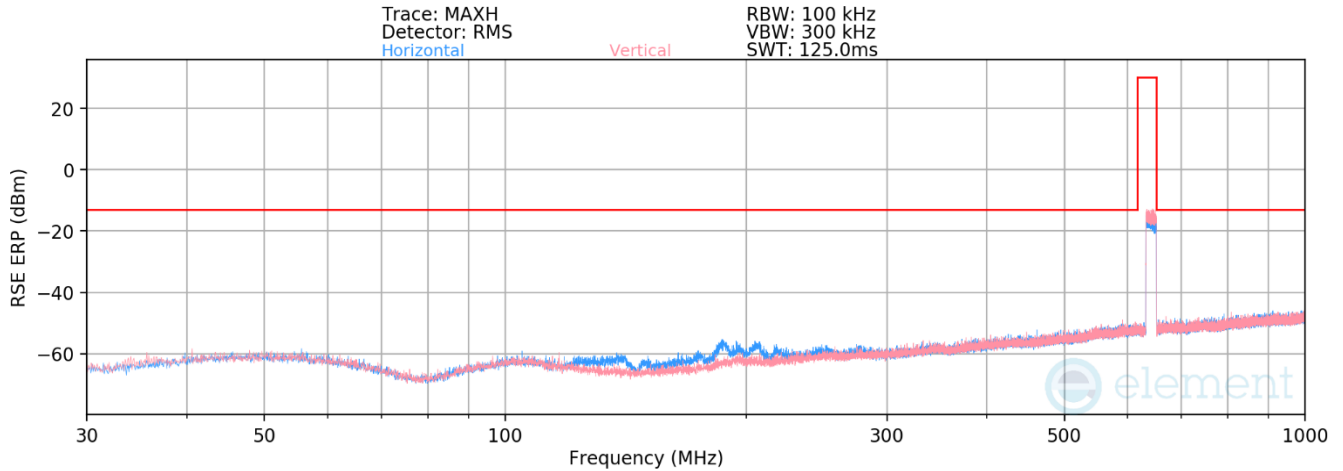


**Plot 8-79. Radiated spurious emission_30 MHz to 1000 MHz
(n71_1C_20M_Mid Channel)**

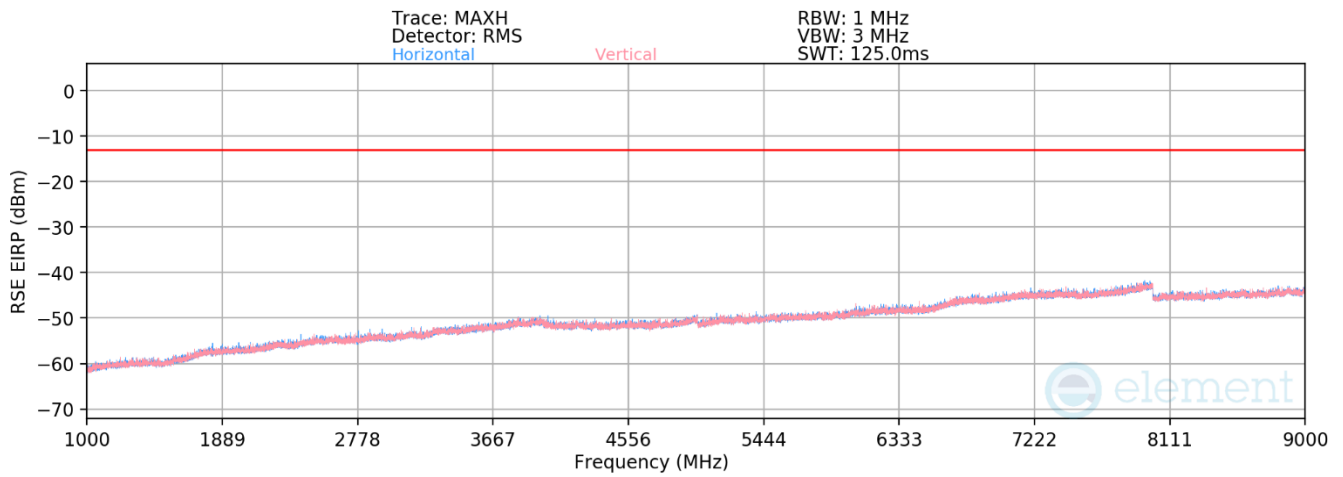


**Plot 8-80. Radiated spurious emission Plot_1 GHz to 9 GHz
(n71_1C_20M_Mid Channel)**



FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 69 of 78

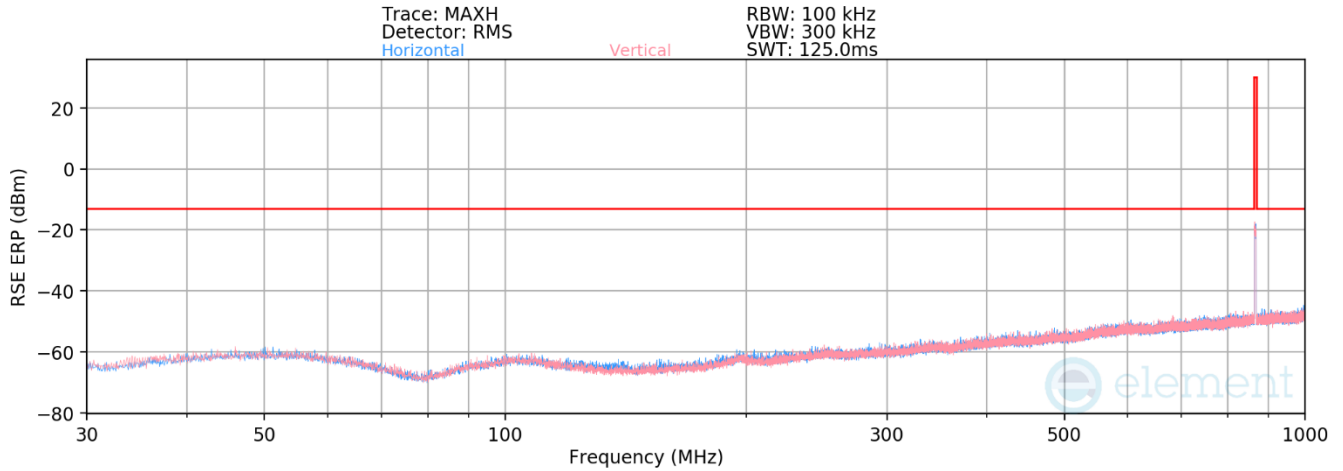


**Plot 8-81. Radiated spurious emission_30 MHz to 1000 MHz
(n71_1C_20M_High Channel)**



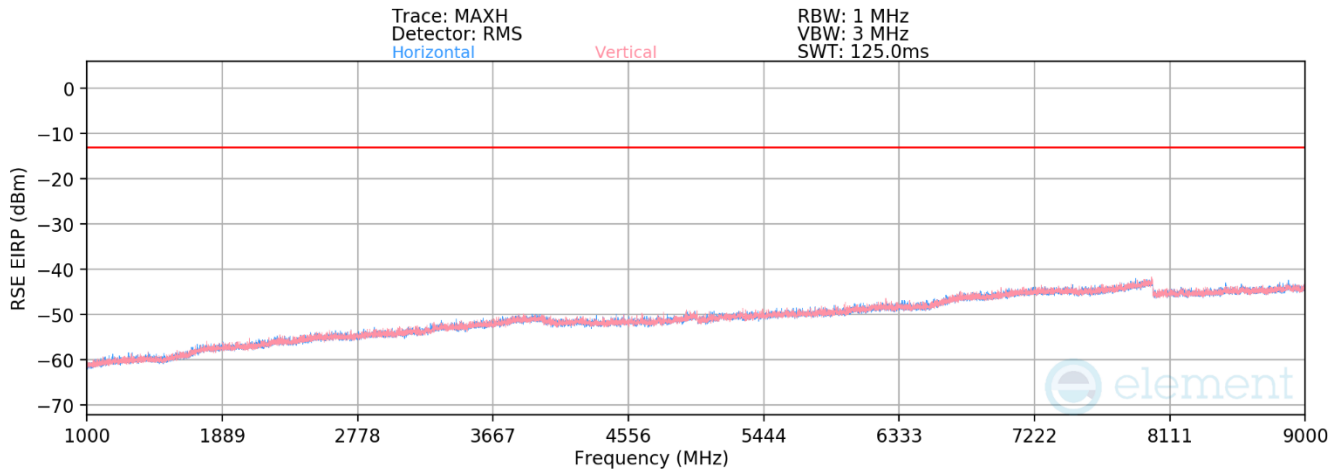
**Plot 8-82. Radiated spurious emission Plot_1 GHz to 9 GHz
(n71_1C_20M_High Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 70 of 78	



Plot 8-83. Radiated spurious emission_30 MHz to 1000 MHz

(n26_1C_5M_Mid Channel)





**Plot 8-84. Radiated spurious emission Plot_1 GHz to 9 GHz
(n26_1C_5M_Mid Channel)**

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 71 of 78	

Bandwidth (MHz)	n71_1C_20 MHz
Center Frequency (MHz)	642 MHz
Modulation Signal	QPSK

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable azimuth [degree]	Analyzer Level [dBm/MHz]	AFCL [dBm]	Field Strength [dBμV/m]	RSE EIRP [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
981.33	H	100	100	-86.38	25.94	46.56	-48.70	-13	-35.70
990.42	V	100	60	-85.64	26.01	47.37	-47.88	-13	-34.88
8001.07	H	150	150	-77.15	20.28	50.13	-45.12	-13	-32.12
8002.12	V	200	800	-76.32	20.27	50.95	-44.31	-13	-31.31

Table 8-37. Radiated spurious emission Worst case Summary Data (n71_1C_20 MHz_Low Channel)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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9.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung RRU(RF4450t) FCC ID: A3LRF4450T-71A** complies with all of the requirements of Part 27, Part 90 FCC Rules.

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)	Page 73 of 78	

10.0 APPENDIX. A

10.1 Conducted Average Output Power

Test Overview

A transmitter port of EUT is connected to the input of a signal analyzer. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Description

KDB 971168 D01 v03r01 – Section 5
 KDB 662911 D01 v02r01 – Section E)1) In-Band Power Measurements
 ANSI C63.26-2015 – Section 5.2.4.4.1

The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The spectrum analyzer settings were as follows:

1. Conducted power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 ~ 5% of the expected OBW
3. VBW \geq 3 x RBW
4. Span = 2 ~ 3 x OBW
5. No. of sweep points \geq 2 x span / RBW
6. Detector = RMS
7. Trigger Settings is set to "RF Power" for signals with non-continuous operation with the sweep times set to "auto". Refer test note 3 for details.
8. Trace mode = Trace-Averaging (RMS) set to average over 100 sweeps
9. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

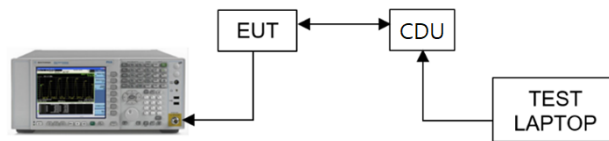




Figure 10-1. Test Instrument & Measurement Setup

Limit



N/A

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Note

1. Conducted Average Output Power test result used to Grant of Authorization power and MPE.
2. MIMO Calculations are done considering output channel power for all ports and respective margins are calculated according to procedures in section 6.4 of ANSI C63.26 and section D of KDB 971168 D01 v03r01.
3. Consider the following factors for MIMO Power:
 Conducted power for each port is measured in dBm.
 Powers are summed up in linear using the measure-and-sum technique defined in KDB 971168 D01 v03r01-Section D.
 Conducted power per port (dBm) is converted to a linear value (mW). A summation of linear powers for all ports gives us the total MIMO conducted power in milliWatts (mW).
4. Sample Calculation:
 Let us assume the following numbers:
 - a) Total MIMO Conducted Power as 74593.26 mW

Factors	Value	Unit
Summed MIMO Conducted Power (linear sum)	74593.26	mW
Summed MIMO Conducted Power (dBm)	$= 10 * \log (74593.26) =$	48.73 dBm



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Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	42.39	42.64	42.49	42.67
	1	42.53	42.82	42.74	42.89
	2	42.32	42.39	42.41	42.47
	3	42.45	42.47	42.52	42.58
	Total Conducted Power (mW)	69884.16	72506.36	71818.01	73720.07
	Total Conducted Power(dBm)	48.44	48.60	48.56	48.68
High	0	42.69	42.60	42.54	42.58
	1	42.86	42.84	42.79	42.78
	2	42.55	42.51	42.50	42.46
	3	42.72	42.68	42.69	42.65
	Total Conducted Power (mW)	74593.26	73787.03	73318.96	73107.94
	Total Conducted Power(dBm)	48.73	48.68	48.65	48.64

Table 10-1. Conducted Average Output Power Table (NR_n29_1C_5M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
Mid	0	45.58	45.64	45.81	45.78
	1	45.70	45.55	45.81	45.80
	2	45.47	45.47	45.42	45.45
	3	45.58	45.54	45.58	45.67
	Total Conducted Power (mW)	144672.58	143582.68	147187.88	147836.15
	Total Conducted Power(dBm)	51.60	51.57	51.68	51.70

Table 10-2. Conducted Average Output Power Table (NR_n29_2C_5M+5M)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	42.63	42.70	42.61	42.64
	1	42.93	42.80	42.80	42.86
	2	42.45	42.49	42.49	42.49
	3	42.50	42.51	42.54	42.52
	Total Conducted Power (mW)	73318.78	73241.16	72982.80	73291.84
	Total Conducted Power(dBm)	48.65	48.65	48.63	48.65
Mid	0	42.63	42.66	42.65	42.53
	1	42.90	42.96	42.91	42.89
	2	42.55	42.53	42.52	42.47
	3	42.52	42.48	42.44	42.43
	Total Conducted Power (mW)	73675.18	73827.00	73354.80	72518.50
	Total Conducted Power(dBm)	48.67	48.68	48.65	48.60
High	0	42.42	42.37	42.33	42.32
	1	42.76	42.71	42.68	42.71
	2	42.24	42.22	42.19	42.18
	3	42.20	42.19	42.15	42.14
	Total Conducted Power (mW)	69683.43	69152.35	68599.07	68612.40
	Total Conducted Power(dBm)	48.43	48.40	48.36	48.36

Table 10-3. Conducted Average Output Power Table (NR_n71_1C_5M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	45.46	45.85	45.69	45.64
	1	45.60	45.94	45.76	45.80
	2	45.30	45.39	45.45	45.46
	3	45.34	45.44	45.47	45.48
	Total Conducted Power (mW)	139546.21	147312.13	145050.73	145137.06
	Total Conducted Power(dBm)	51.45	51.68	51.62	51.62
Mid	0	45.61	45.59	45.58	45.57
	1	45.81	45.83	45.90	45.79
	2	45.51	45.54	45.51	45.51
	3	45.47	45.47	45.49	45.47
	Total Conducted Power (mW)	145298.30	145553.50	146008.37	144789.58
	Total Conducted Power(dBm)	51.62	51.63	51.64	51.61
High	0	45.61	45.42	45.44	45.46
	1	45.81	45.64	45.71	45.63
	2	45.33	45.41	45.34	45.33
	3	45.32	45.34	45.32	45.28
	Total Conducted Power (mW)	142658.20	140429.05	140472.45	139563.55
	Total Conducted Power(dBm)	51.54	51.47	51.48	51.45

Table 10-4. Conducted Average Output Power Table (NR_n71_1C_10M)



FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	47.52	47.49	47.45	47.38
	1	47.54	47.39	47.38	47.38
	2	47.18	47.21	47.28	47.22
	3	47.14	47.22	47.27	47.18
	Total Conducted Power (mW)	217248.46	216257.21	217081.95	214365.80
	Total Conducted Power(dBm)	53.37	53.35	53.37	53.31
Mid	0	47.49	47.46	47.40	47.42
	1	47.34	47.39	47.43	47.44
	2	47.30	47.31	47.31	47.27
	3	47.25	47.26	47.21	47.18
	Total Conducted Power (mW)	217096.51	217584.08	216717.80	216243.42
	Total Conducted Power(dBm)	53.37	53.38	53.36	53.35
High	0	47.37	47.66	47.32	47.33
	1	47.44	47.63	47.50	47.41
	2	47.27	47.30	47.28	47.26
	3	47.21	47.25	47.19	47.19
	Total Conducted Power (mW)	215973.57	223079.00	216001.67	214727.07
	Total Conducted Power(dBm)	53.34	53.48	53.34	53.32

Table 10-5. Conducted Average Output Power Table (NR_n71_1C_20M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
Mid	0	39.36	39.41	39.37	39.43
	1	39.55	39.52	39.58	39.73
	2	39.47	39.55	39.62	39.62
	3	39.45	39.46	39.54	39.63
	Total Conducted Power (mW)	35307.14	35529.87	35885.07	36512.77
	Total Conducted Power(dBm)	45.48	45.51	45.55	45.62

Table 10-6. Conducted Average Output Power Table (NR_n26_1C_5M)

FCC ID: A3LRF4450T-71A		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 8K22101401-00-R1.A3L	Test Dates: 10/14/2022 - 10/18/2022	EUT Type: RRU(RF4450t)		Page 78 of 78	