Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.20	GSM850	V	136	118	28.23	1.25	**27.33**	**0.541**	38.45	-11.12	**29.48**	**0.887**	40.61	-11.13
836.60	GSM850	V	139	121	27.44	1.31	26.60	0.457	38.45	-11.85	28.75	0.750	40.61	-11.86
848.80	GSM850	V	135	123	25.96	1.37	25.18	0.330	38.45	-13.27	27.33	0.541	40.61	-13.28
824.20	GSM850	H	119	76	27.34	1.25	26.44	0.441	38.45	-12.01	28.59	0.723	40.61	-12.02
824.20	EDGE850	V	136	118	20.36	1.25	**19.46**	0.088	38.45	-18.99	**21.61**	**0.145**	40.61	-19.00
824.20	GSM850 (WCP)	V	140	109	26.74	1.25	25.84	0.384	38.45	-12.61	27.99	0.630	40.61	-12.62

Table 7-11. ERP Data (GPRS Cell – Ant A)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.20	GSM850	H	112	76	25.07	1.25	**24.17**	**0.261**	38.45	-14.28	**26.32**	**0.429**	40.61	-14.29
836.60	GSM850	H	112	67	24.64	1.31	23.80	0.240	38.45	-14.65	25.95	0.394	40.61	-14.66
848.80	GSM850	H	121	69	23.69	1.37	22.91	0.195	38.45	-15.54	25.06	0.321	40.61	-15.55
824.20	GSM850	H	155	118	20.65	1.25	19.75	0.094	38.45	-18.70	21.90	0.155	40.61	-18.71
824.20	EDGE850	V	112	76	22.57	1.25	**21.67**	0.147	38.45	-16.78	**23.82**	**0.241**	40.61	-16.79
824.20	GSM850 (WCP)	H	112	76	24.63	1.25	23.73	0.236	38.45	-14.72	25.88	0.387	40.61	-14.73

Table 7-12. ERP Data (GPRS Cell – Ant E)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	V	142	106	20.40	1.26	**19.51**	**0.089**	38.45	-18.94	**21.66**	**0.147**	40.61	-18.95
836.60	WCDMA850	V	144	108	19.44	1.31	18.60	0.072	38.45	-19.85	20.75	0.119	40.61	-19.86
846.60	WCDMA850	V	146	104	18.65	1.36	17.86	0.061	38.45	-20.59	20.01	0.100	40.61	-20.60
826.40	WCDMA850	H	110	78	19.76	1.26	18.87	0.077	38.45	-19.58	21.02	0.127	40.61	-19.59
826.40	WCDMA850 (WCP)	V	141	102	19.04	1.26	18.15	0.065	38.45	-20.30	20.30	0.107	40.61	-20.31

Table 7-13. ERP Data (WCDMA Cell – Ant A)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	H	117	68	17.24	1.26	**16.35**	**0.043**	38.45	-22.10	**18.50**	**0.071**	40.61	-22.11
836.60	WCDMA850	H	113	71	17.11	1.31	16.27	0.042	38.45	-22.18	18.42	0.070	40.61	-22.19
846.60	WCDMA850	H	119	65	16.51	1.36	15.72	0.037	38.45	-22.73	17.87	0.061	40.61	-22.74
826.40	WCDMA850	V	152	98	17.07	1.26	16.18	0.042	38.45	-22.27	18.33	0.068	40.61	-22.28
826.40	WCDMA850 (WCP)	H	116	67	16.64	1.26	15.75	0.038	38.45	-22.70	17.90	0.062	40.61	-22.71

Table 7-14. ERP Data (WCDMA Cell – Ant E)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
10 MHz	QPSK	829.00	V	Z	137	123	1.27	1 / 25	21.18	20.30	0.107	38.45	-18.15	22.45	0.176	40.61	-18.16
	QPSK	836.50	V	Z	138	122	1.31	1 / 25	21.16	**20.32**	0.108	38.45	-18.13	**22.47**	0.177	40.61	-18.14
	QPSK	844.00	V	Z	136	121	1.35	1 / 49	20.94	20.14	0.103	38.45	-18.31	22.29	0.169	40.61	-18.32
	16-QAM	844.00	V	Z	136	121	1.35	1 / 49	20.46	19.66	0.092	38.45	-18.79	21.81	0.152	40.61	-18.80
5 MHz	QPSK	826.50	V	Z	137	123	1.26	1 / 0	21.23	**20.34**	0.108	38.45	-18.11	**22.49**	0.177	40.61	-18.12
	QPSK	836.50	V	Z	138	122	1.31	1 / 24	21.15	20.31	0.107	38.45	-18.14	22.46	0.176	40.61	-18.14
	QPSK	846.50	V	Z	136	121	1.36	1 / 12	21.00	20.21	0.105	38.45	-18.24	22.36	0.172	40.61	-18.25
	16-QAM	826.50	V	Z	137	123	1.26	1 / 0	20.42	19.53	0.090	38.45	-18.92	21.68	0.147	40.61	-18.92
3 MHz	QPSK	825.50	V	Z	137	123	1.26	1 / 0	21.27	**20.38**	0.109	38.45	-18.07	**22.53**	0.179	40.61	-18.08
	QPSK	836.50	V	Z	138	122	1.31	1 / 7	21.09	20.25	0.106	38.45	-18.20	22.40	0.174	40.61	-18.21
	QPSK	847.50	V	Z	136	121	1.36	1 / 14	20.95	20.17	0.104	38.45	-18.29	22.32	0.170	40.61	-18.29
	16-QAM	825.50	V	Z	137	123	1.26	1 / 0	20.43	19.54	0.090	38.45	-18.91	21.69	0.147	40.61	-18.92
1.4 MHz	QPSK	824.70	V	Z	137	123	1.25	1 / 3	21.17	**20.27**	0.106	38.45	-18.18	**22.42**	0.175	40.61	-18.19
	QPSK	836.50	V	Z	138	122	1.31	1 / 3	21.08	20.24	0.106	38.45	-18.21	22.39	0.173	40.61	-18.22
	QPSK	848.30	V	Z	136	121	1.37	1 / 0	20.95	20.17	0.104	38.45	-18.29	22.32	0.170	40.61	-18.29
	16-QAM	848.30	V	Z	136	121	1.37	1 / 0	20.45	19.66	0.093	38.45	-18.79	21.81	0.152	40.61	-18.79

Table 7-15. ERP Data (LTE Band 5 – Ant A)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
10 MHz	QPSK	829.00	H	X	112	230	1.27	1 / 49	20.62	19.74	0.094	38.45	-18.71	21.89	0.155	40.61	-18.71
	QPSK	836.50	H	X	113	232	1.31	1 / 0	20.80	19.96	0.099	38.45	-18.50	22.11	0.162	40.61	-18.50
	QPSK	844.00	H	X	112	239	1.35	1 / 49	20.82	**20.02**	0.100	38.45	-18.43	**22.17**	0.165	40.61	-18.44
	16-QAM	844.00	H	X	112	239	1.35	1 / 49	19.93	19.12	0.082	38.45	-19.33	21.27	0.134	40.61	-19.34
5 MHz	QPSK	826.50	H	X	112	230	1.26	1 / 12	20.48	19.59	0.091	38.45	-18.86	21.74	0.149	40.61	-18.86
	QPSK	836.50	H	X	113	232	1.31	1 / 24	20.71	19.87	0.097	38.45	-18.58	22.02	0.159	40.61	-18.58
	QPSK	846.50	H	X	112	239	1.36	1 / 12	20.89	**20.10**	0.102	38.45	-18.35	**22.25**	0.168	40.61	-18.36
	16-QAM	846.50	H	X	112	239	1.36	1 / 12	19.87	19.08	0.081	38.45	-19.37	21.23	0.133	40.61	-19.38
3 MHz	QPSK	825.50	H	X	112	230	1.26	1 / 0	20.59	19.69	0.093	38.45	-18.76	21.84	0.153	40.61	-18.76
	QPSK	836.50	H	X	113	232	1.31	1 / 14	20.97	**20.13**	0.103	38.45	-18.32	**22.28**	0.169	40.61	-18.32
	QPSK	847.50	H	X	112	239	1.36	1 / 14	20.75	19.96	0.099	38.45	-18.49	22.11	0.162	40.61	-18.50
	16-QAM	836.50	H	X	113	232	1.31	1 / 14	19.76	18.92	0.078	38.45	-19.53	21.07	0.128	40.61	-19.53
1.4 MHz	QPSK	824.70	H	X	112	230	1.25	1 / 3	20.48	19.58	0.091	38.45	-18.87	21.73	0.149	40.61	-18.87
	QPSK	836.50	H	X	113	232	1.31	1 / 3	20.67	19.83	0.096	38.45	-18.62	21.98	0.158	40.61	-18.63
	QPSK	848.30	H	X	112	239	1.37	1 / 0	20.66	**19.88**	0.097	38.45	-18.58	**22.03**	0.159	40.61	-18.58
	16-QAM	848.30	H	X	112	239	1.37	1 / 0	19.74	18.96	0.079	38.45	-19.49	21.11	0.129	40.61	-19.50

Table 7-16. ERP Data (LTE Band 5 – Ant E)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	834.00	V	144	123	1.30	1 / 1	19.66	18.81	0.076	38.45	-19.64	20.96	0.125	40.61	-19.65
	π/2 BPSK	836.50	V	144	124	1.31	1 / 1	19.76	**18.92**	0.078	38.45	-19.53	**21.07**	0.128	40.61	-19.54
	π/2 BPSK	839.00	V	145	112	1.32	1 / 1	19.62	18.79	0.076	38.45	-19.66	20.94	0.124	40.61	-19.67
	QPSK	834.00	V	144	123	1.30	1 / 1	19.50	18.65	0.073	38.45	-19.80	20.80	0.120	40.61	-19.81
	QPSK	836.50	V	144	124	1.31	1 / 1	19.54	18.70	0.074	38.45	-19.75	20.85	0.122	40.61	-19.76
	QPSK	839.00	V	145	112	1.32	1 / 1	19.52	18.69	0.074	38.45	-19.76	20.84	0.121	40.61	-19.77
	16-QAM	836.50	V	144	124	1.31	1 / 1	18.43	17.59	0.057	38.45	-20.86	19.74	0.094	40.61	-20.87
15 MHz	π/2 BPSK	831.50	V	144	123	1.30	1 / 77	19.59	18.74	0.075	38.45	-19.71	20.89	0.123	40.61	-19.72
	π/2 BPSK	836.50	V	144	124	1.31	1 / 77	19.68	18.84	0.077	38.45	-19.61	20.99	0.126	40.61	-19.62
	π/2 BPSK	841.50	V	145	112	1.32	1 / 1	19.77	**18.94**	0.078	38.45	-19.51	**21.09**	0.129	40.61	-19.52
	QPSK	831.50	V	144	123	1.30	1 / 77	19.47	18.62	0.073	38.45	-19.83	20.77	0.119	40.61	-19.84
	QPSK	836.50	V	144	124	1.31	1 / 1	19.43	18.59	0.072	38.45	-19.86	20.74	0.119	40.61	-19.87
	QPSK	841.50	V	145	112	1.32	1 / 77	19.53	18.70	0.074	38.45	-19.75	20.85	0.122	40.61	-19.76
	16-QAM	841.50	V	144	124	1.32	1 / 1	18.20	17.37	0.055	38.45	-21.08	19.52	0.090	40.61	-21.09
10 MHz	π/2 BPSK	829.00	V	144	123	1.30	1 / 1	19.70	18.85	0.077	38.45	-19.61	21.00	0.126	40.61	-19.61
	π/2 BPSK	836.50	V	144	124	1.31	1 / 26	19.77	18.93	0.078	38.45	-19.52	21.08	0.128	40.61	-19.53
	π/2 BPSK	844.00	V	145	112	1.32	1 / 1	19.76	**18.93**	0.078	38.45	-19.52	**21.08**	0.128	40.61	-19.52
	QPSK	829.00	V	144	123	1.30	1 / 26	19.58	18.73	0.075	38.45	-19.72	20.88	0.122	40.61	-19.73
	QPSK	836.50	V	144	124	1.31	1 / 26	19.48	18.64	0.073	38.45	-19.81	20.79	0.120	40.61	-19.82
	QPSK	844.00	V	145	112	1.32	1 / 1	19.46	18.63	0.073	38.45	-19.82	20.78	0.120	40.61	-19.83
	16-QAM	844.00	V	144	124	1.32	1 / 1	17.86	17.03	0.050	38.45	-21.43	19.18	0.083	40.61	-21.43
5 MHz	π/2 BPSK	829.00	V	144	123	1.30	1 / 1	19.72	18.87	0.077	38.45	-19.58	21.02	0.127	40.61	-19.58
	π/2 BPSK	836.50	V	144	124	1.31	1 / 1	19.74	18.90	0.078	38.45	-19.55	21.05	0.127	40.61	-19.55
	π/2 BPSK	844.00	V	145	112	1.32	1 / 12	19.87	**19.04**	0.080	38.45	-19.42	**21.19**	0.131	40.61	-19.42
	QPSK	829.00	V	144	123	1.30	1 / 1	19.78	18.93	0.078	38.45	-19.52	21.08	0.128	40.61	-19.53
	QPSK	836.50	V	144	124	1.31	1 / 1	19.54	18.70	0.074	38.45	-19.75	20.85	0.122	40.61	-19.76
	QPSK	844.00	V	145	112	1.32	1 / 1	19.76	18.93	0.078	38.45	-19.52	21.08	0.128	40.61	-19.52
	16-QAM	844.00	V	144	124	1.32	1 / 1	18.14	17.31	0.054	38.45	-21.14	19.46	0.088	40.61	-21.15
20 MHz	QPSK (CP-OFDM)	836.50	V	145	116	1.31	1 / 1	17.40	**16.56**	0.045	38.45	-21.89	18.71	0.074	40.61	-21.90
	QPSK (Opposite Pol.)	836.50	H	114	86	1.31	1 / 1	13.83	12.99	0.020	38.45	-25.46	15.14	0.033	40.61	-25.47
	QPSK (WCP)	836.50	V	145	118	1.31	1 / 1	17.17	16.33	0.043	38.45	-22.12	18.48	0.070	40.61	-22.13

Table 7-17. ERP Data (NR Band n5 – Ant A)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	834.00	H	113	239	1.30	1 / 53	20.91	**20.06**	0.101	38.45	-18.39	**22.21**	0.166	40.61	-18.40
	π/2 BPSK	836.50	H	112	238	1.31	1 / 53	20.80	19.96	0.099	38.45	-18.49	22.11	0.163	40.61	-18.50
	π/2 BPSK	839.00	H	115	235	1.32	1 / 53	20.47	19.64	0.092	38.45	-18.81	21.79	0.151	40.61	-18.82
	QPSK	834.00	H	113	239	1.30	1 / 53	20.66	19.81	0.096	38.45	-18.64	21.96	0.157	40.61	-18.65
	QPSK	836.50	H	112	238	1.31	1 / 53	20.62	19.78	0.095	38.45	-18.67	21.93	0.156	40.61	-18.68
	QPSK	839.00	H	115	235	1.32	1 / 53	20.25	19.42	0.087	38.45	-19.03	21.57	0.144	40.61	-19.04
	16-QAM	834.00	H	113	239	1.30	1 / 53	19.90	19.05	0.080	38.45	-19.40	21.20	0.132	40.61	-19.41
15 MHz	π/2 BPSK	831.50	H	113	239	1.30	1 / 77	20.93	**20.08**	0.102	38.45	-18.37	**22.23**	0.167	40.61	-18.38
	π/2 BPSK	836.50	H	112	238	1.31	1 / 1	20.68	19.84	0.096	38.45	-18.61	21.99	0.158	40.61	-18.62
	π/2 BPSK	841.50	H	115	235	1.32	1 / 1	20.40	19.57	0.091	38.45	-18.88	21.72	0.149	40.61	-18.89
	QPSK	831.50	H	113	239	1.30	1 / 1	20.65	19.80	0.095	38.45	-18.66	21.95	0.157	40.61	-18.66
	QPSK	836.50	H	112	238	1.31	1 / 1	20.61	19.77	0.095	38.45	-18.69	21.92	0.155	40.61	-18.69
	QPSK	841.50	H	115	235	1.32	1 / 77	20.04	19.21	0.083	38.45	-19.24	21.36	0.137	40.61	-19.25
	16-QAM	831.50	H	113	239	1.30	1 / 77	20.11	19.26	0.084	38.45	-19.20	21.41	0.138	40.61	-19.20
10 MHz	π/2 BPSK	829.00	H	113	239	1.30	1 / 50	21.09	**20.24**	0.106	38.45	-18.22	**22.39**	0.173	40.61	-18.22
	π/2 BPSK	836.50	H	112	238	1.31	1 / 50	20.68	19.84	0.096	38.45	-18.61	21.99	0.158	40.61	-18.62
	π/2 BPSK	844.00	H	115	235	1.32	1 / 50	20.61	19.78	0.095	38.45	-18.67	21.93	0.156	40.61	-18.68
	QPSK	829.00	H	113	239	1.30	1 / 50	20.79	19.94	0.099	38.45	-18.51	22.09	0.162	40.61	-18.51
	QPSK	836.50	H	112	238	1.31	1 / 1	20.65	19.81	0.096	38.45	-18.64	21.96	0.157	40.61	-18.65
	QPSK	844.00	H	115	235	1.32	1 / 50	20.23	19.40	0.087	38.45	-19.05	21.55	0.143	40.61	-19.06
	16-QAM	829.00	H	113	239	1.30	1 / 50	20.09	19.24	0.084	38.45	-19.21	21.39	0.138	40.61	-19.22
5 MHz	π/2 BPSK	829.00	H	113	239	1.30	1 / 1	21.10	**20.25**	0.106	38.45	-18.20	**22.40**	0.174	40.61	-18.21
	π/2 BPSK	836.50	H	112	238	1.31	1 / 23	20.78	19.94	0.099	38.45	-18.51	22.09	0.162	40.61	-18.51
	π/2 BPSK	844.00	H	115	235	1.32	1 / 1	20.72	19.89	0.097	38.45	-18.56	22.04	0.160	40.61	-18.57
	QPSK	829.00	H	113	239	1.30	1 / 12	20.79	19.94	0.099	38.45	-18.51	22.09	0.162	40.61	-18.51
	QPSK	836.50	H	112	238	1.31	1 / 23	20.80	19.96	0.099	38.45	-18.49	22.11	0.163	40.61	-18.50
	QPSK	844.00	H	115	235	1.32	1 / 23	20.19	19.36	0.086	38.45	-19.10	21.51	0.141	40.61	-19.10
	16-QAM	829.00	H	113	239	1.30	1 / 1	19.90	19.05	0.080	38.45	-19.40	21.20	0.132	40.61	-19.41
20 MHz	QPSK (CP-OFDM)	834.00	H	113	239	1.30	1 / 53	19.08	**18.23**	0.067	38.45	-20.22	20.38	0.109	40.61	-20.23
	QPSK (Opposite Pol.)	834.00	V	137	304	1.30	1 / 53	20.67	19.82	0.096	38.45	-18.63	21.97	0.157	40.61	-18.64
	QPSK (WCP)	834.00	H	121	243	1.30	1 / 53	20.07	19.22	0.084	38.45	-19.23	21.37	0.137	40.61	-19.24

Table 7-18. ERP Data (NR Band n5 – Ant E)

7.6 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

Test Setup

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

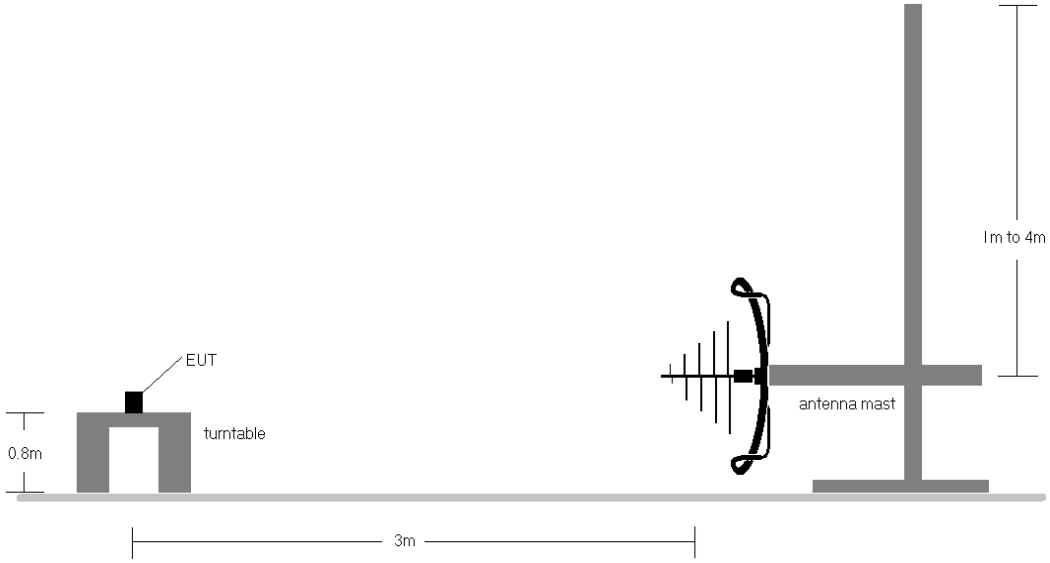


Figure 7-6. Test Instrument & Measurement Setup < 1GHz

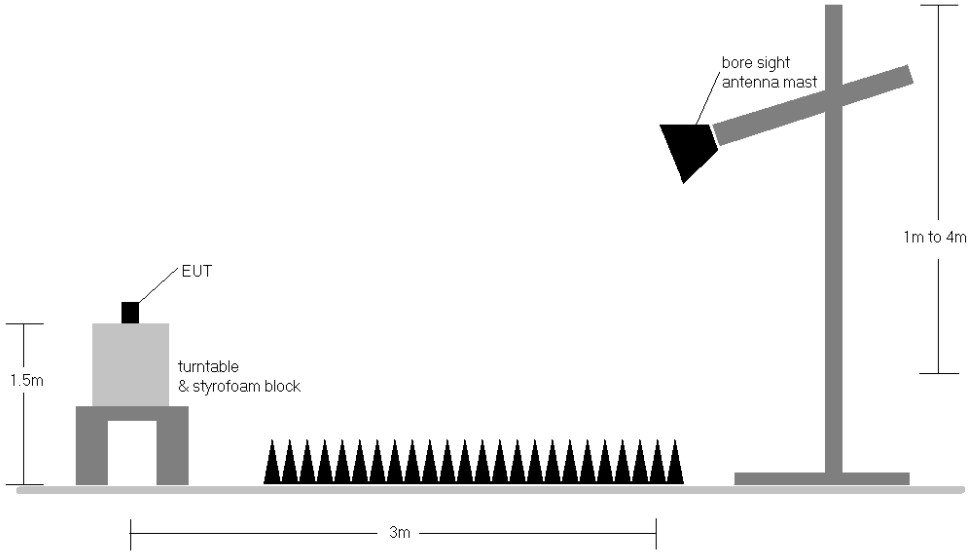


Figure 7-7. Test Instrument & Measurement Setup > 1GHz

Test Notes

1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
   a) E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
   b) EIRP (dBm) = E(dBµV/m) + 20logD – 104.8; where D is the measurement distance in meters.

2) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers are reported in GPRS mode while transmitting with one slot active.

3) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to “1”.

4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

5) This unit was tested with its standard battery.

6) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

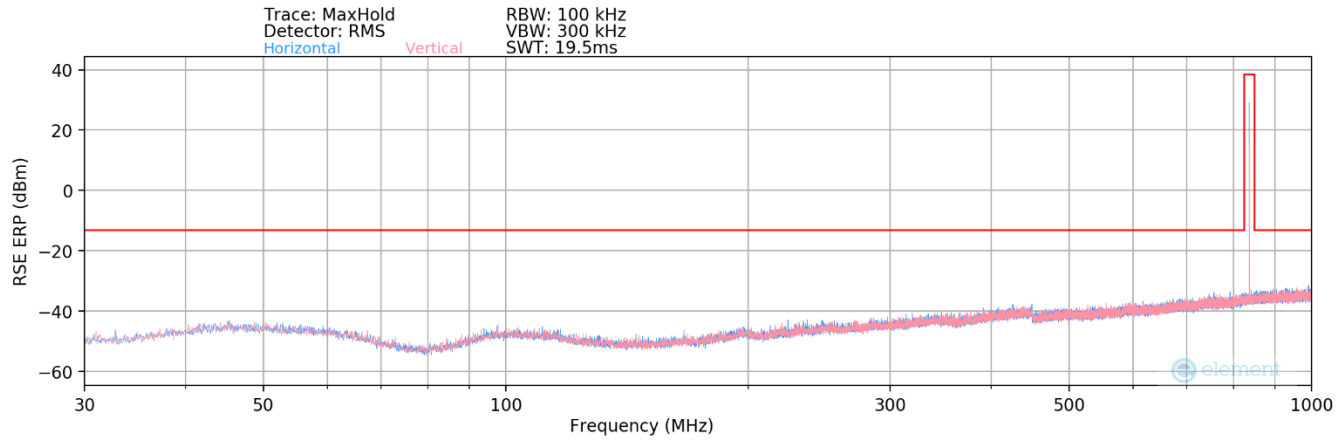
7) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.

8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

9) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

10) Spurious emissions shown in this section are measured while operating in EN-DC mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor). Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

GSM/GPRS Cell – Ant A

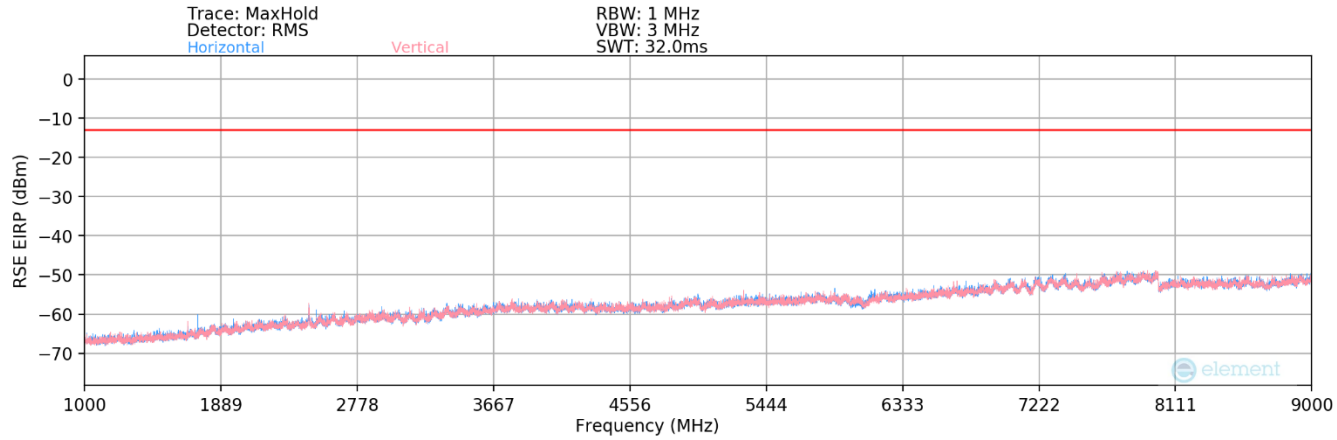


Plot 7-87. Radiated Spurious Plot Below 1GHz (GPRS Cell – Ant A)

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
933.07	H	-	-	-81.85	30.58	55.73	-41.67	-13.00	-28.67

Table 7-19. Radiated Spurious Data Below 1GHz (GPRS Cell – Ant A)



Plot 7-88. Radiated Spurious Plot Above 1GHz (GPRS Cell – Ant A)

Mode:	GPRS 1 Tx Slot
Channel:	128
Frequency (MHz):	824.2

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1648.40	H	182	149	-69.23	-9.05	28.72	-66.54	-13.00	-53.54
2472.60	H	174	150	-64.16	-5.69	37.15	-58.11	-13.00	-45.11
3296.80	H	-	-	-70.50	-2.58	33.92	-61.34	-13.00	-48.34
4121.00	H	-	-	-70.53	-0.18	36.29	-58.97	-13.00	-45.97
4945.20	H	-	-	-71.86	1.04	36.18	-59.07	-13.00	-46.07
5769.40	H	-	-	-71.24	3.05	38.81	-56.45	-13.00	-43.45
6593.60	H	-	-	-72.00	4.29	39.29	-55.97	-13.00	-42.97

Table 7-20. Radiated Spurious Data Above 1GHz (GPRS Cell – Low Channel – Ant A)

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	167	143	-69.50	-8.81	28.69	-66.57	-13.00	-53.57
2509.80	H	165	145	-65.66	-5.28	36.06	-59.19	-13.00	-46.19
3346.40	H	-	-	-72.50	-1.96	32.54	-62.72	-13.00	-49.72
4183.00	H	177	148	-69.35	-0.03	37.62	-57.63	-13.00	-44.63
5019.60	H	-	-	-71.73	0.50	35.77	-59.49	-13.00	-46.49
5856.20	H	-	-	-71.85	2.19	37.34	-57.91	-13.00	-44.91
6692.80	H	-	-	-71.84	4.40	39.56	-55.69	-13.00	-42.69

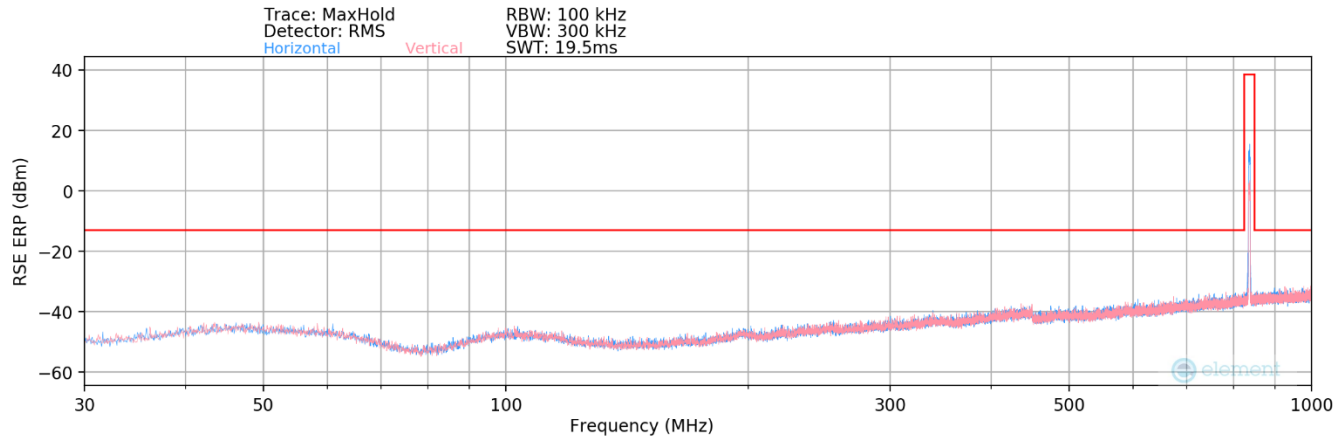
Table 7-21. Radiated Spurious Data Above 1GHz (GPRS Cell – Mid Channel – Ant A)

Mode:	GPRS 1 Tx Slot
Channel:	251
Frequency (MHz):	848.8

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1697.60	H	179	159	-65.88	-8.50	32.62	-62.63	-13.00	-49.63
2546.40	H	194	153	-65.16	-4.96	36.88	-58.38	-13.00	-45.38
3395.20	H	-	-	-71.96	-1.65	33.39	-61.87	-13.00	-48.87
4244.00	H	209	168	-70.77	-0.60	35.63	-59.63	-13.00	-46.63
5092.80	H	-	-	-71.05	1.11	37.06	-58.19	-13.00	-45.19
5941.60	H	-	-	-72.20	2.56	37.36	-57.89	-13.00	-44.89
6790.40	H	-	-	-72.85	4.48	38.63	-56.63	-13.00	-43.63

Table 7-22. Radiated Spurious Data Above 1GHz (GPRS Cell – High Channel – Ant A)

WCDMA Cell – Ant A

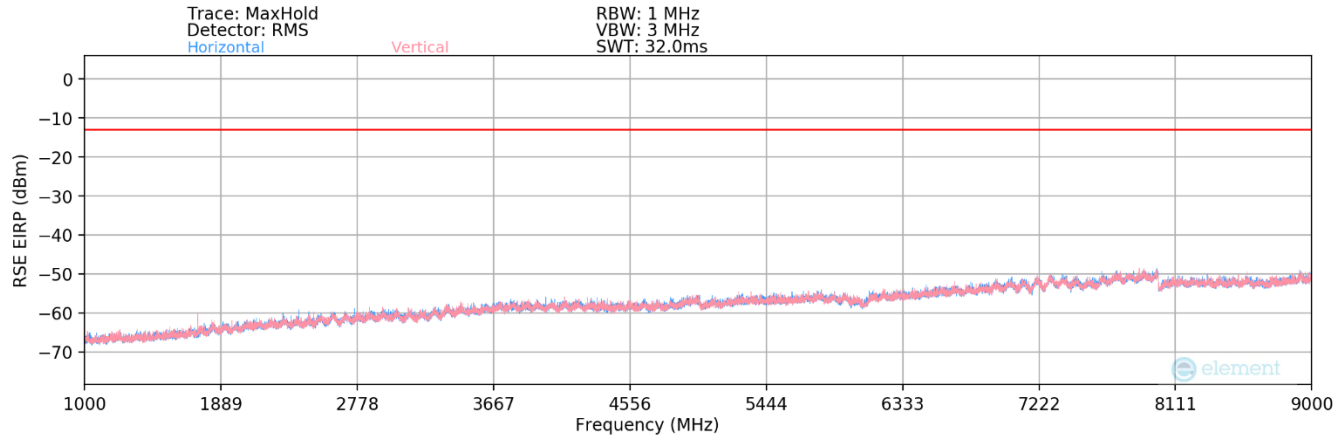


Plot 7-89. Radiated Spurious Plot Below 1GHz (WCDMA Cell – Ant A)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
946.21	H	-	-	-81.33	30.56	56.23	-41.18	-13.00	-28.18

Table 7-23. Radiated Spurious Data Below 1GHz (WCDMA Cell – Ant A)



Plot 7-90. Radiated Spurious Plot Above 1GHz (WCDMA Cell – Ant A)

Mode:	WCDMA RMC
Channel:	4132
Frequency (MHz):	826.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1652.80	H	-	-	-73.41	-9.00	24.59	-70.67	-13.00	-57.67
2479.20	H	-	-	-73.19	-5.64	28.17	-67.09	-13.00	-54.09
3305.60	H	-	-	-73.89	-2.50	30.61	-64.65	-13.00	-51.65

Table 7-24. Radiated Spurious Data Above 1GHz (WCDMA Cell – Low Channel – Ant A)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	-	-	-73.17	-8.81	25.02	-70.24	-13.00	-57.24
2509.80	H	-	-	-73.66	-5.28	28.06	-67.19	-13.00	-54.19
3346.40	H	-	-	-74.11	-1.96	30.93	-64.33	-13.00	-51.33

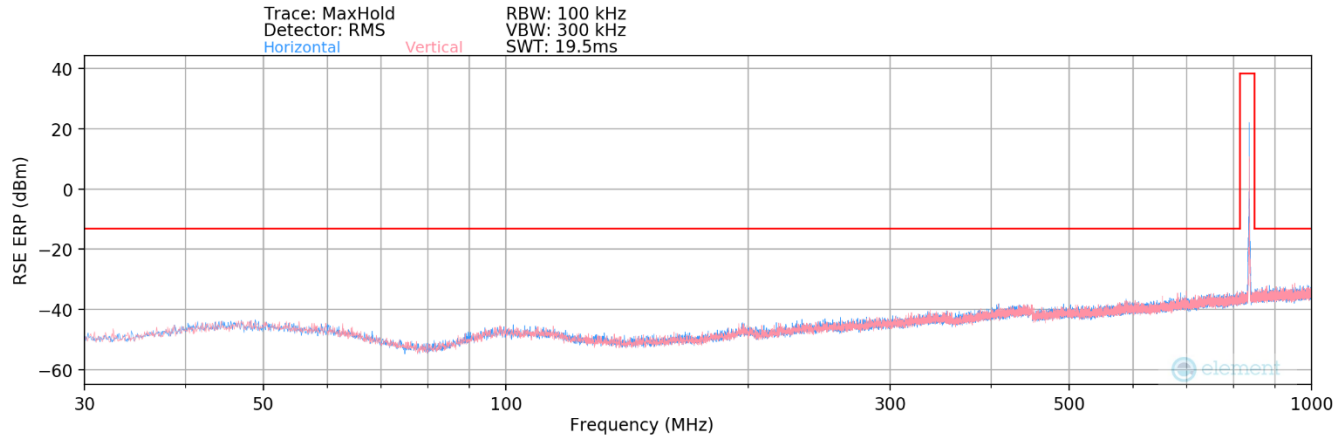
Table 7-25. Radiated Spurious Data Above 1GHz (WCDMA Cell – Mid Channel – Ant A)

Mode:	WCDMA RMC
Channel:	4233
Frequency (MHz):	846.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1693.20	H	-	-	-72.89	-8.56	25.55	-69.70	-13.00	-56.70
2539.80	H	-	-	-73.36	-5.00	28.64	-66.62	-13.00	-53.62
3386.40	H	-	-	-73.44	-1.63	31.93	-63.33	-13.00	-50.33

Table 7-26. Radiated Spurious Data Above 1GHz (WCDMA Cell – High Channel – Ant A)

LTE Band 5 – Ant A

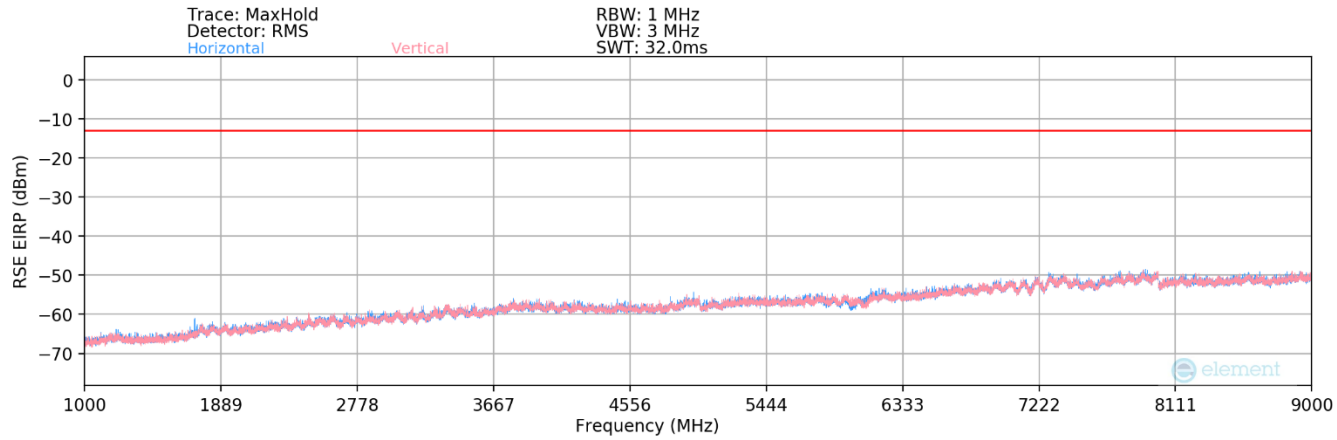


Plot 7-91. Radiated Spurious Plot Below 1GHz (LTE Band 5 – Ant A)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1/25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
911.45	H	-	-	-82.14	30.55	55.41	-42.00	-13.00	-29.00

Table 7-27. Radiated Spurious Data Below 1GHz (LTE Band 5 – Ant A)



Plot 7-92. Radiated Spurious Plot Above 1GHz (LTE Band 5 – Ant A)

Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	V	-	-	-73.29	-8.88	24.83	-70.43	-13.00	-57.43
2487.00	V	-	-	-74.77	-5.07	27.16	-68.10	-13.00	-55.10
3316.00	V	-	-	-75.35	-1.55	30.10	-65.16	-13.00	-52.16
4145.00	V	-	-	-75.69	-0.05	31.26	-63.99	-13.00	-50.99
4974.00	V	-	-	-75.13	1.29	33.16	-62.10	-13.00	-49.10

Table 7-28. Radiated Spurious Data Above 1GHz (LTE Band 5 – Low Channel – Ant A)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	V	-	-	-73.64	-8.79	24.57	-70.68	-13.00	-57.68
2509.50	V	-	-	-74.86	-4.88	27.26	-68.00	-13.00	-55.00
3346.00	V	-	-	-75.29	-1.21	30.50	-64.75	-13.00	-51.75
4182.50	V	-	-	-75.81	0.18	31.37	-63.89	-13.00	-50.89
5019.00	V	-	-	-75.04	0.78	32.74	-62.52	-13.00	-49.52

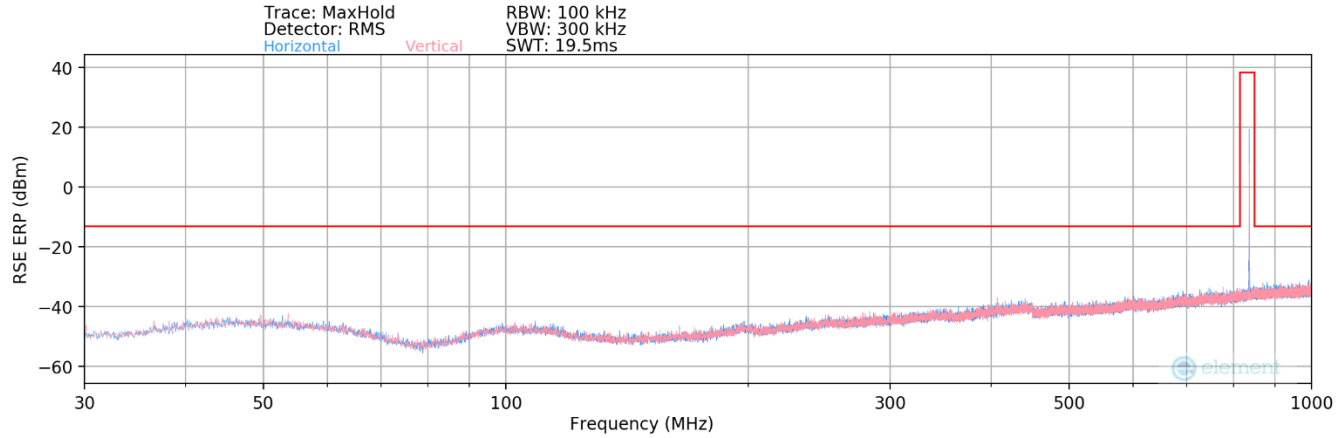
Table 7-29. Radiated Spurious Data Above 1GHz (LTE Band 5 – Mid Channel – Ant A)

Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	V	-	-	-73.62	-8.65	24.73	-70.53	-13.00	-57.53
2532.00	V	-	-	-74.44	-4.69	27.87	-67.39	-13.00	-54.39
3376.00	V	-	-	-75.12	-0.89	30.99	-64.27	-13.00	-51.27
4220.00	V	-	-	-75.66	0.04	31.38	-63.88	-13.00	-50.88
5064.00	V	-	-	-75.12	1.06	32.94	-62.32	-13.00	-49.32

Table 7-30. Radiated Spurious Data Above 1GHz (LTE Band 5 – High Channel – Ant A)

NR Band n5 – Ant A

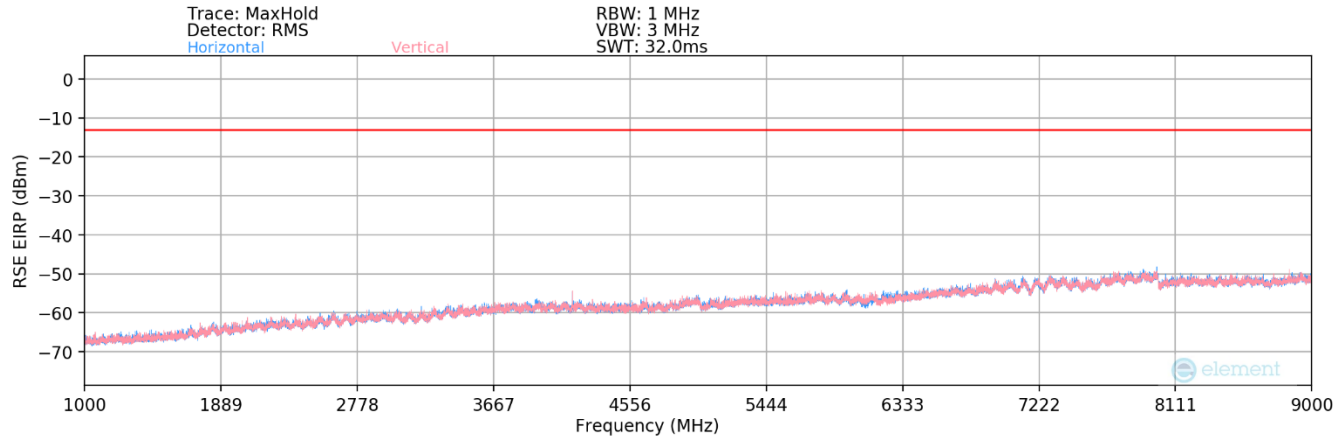


Plot 7-93. Radiated Spurious Plot Below 1GHz (NR Band n5 – Ant A)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1/53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
973.10	H	125	270	-73.59	30.94	64.35	-33.06	-13.00	-20.06

Table 7-31. Radiated Spurious Data Below 1GHz (NR Band n5 – Ant A)



Plot 7-94. Radiated Spurious Plot Above 1GHz (NR Band n5 – Ant A)

Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1668.00	V	-	-	-74.75	-8.86	23.39	-71.86	-13.00	-58.86
2502.00	V	-	-	-75.59	-5.38	26.03	-69.23	-13.00	-56.23
3336.00	V	-	-	-76.05	-2.09	28.86	-66.39	-13.00	-53.39
4170.00	V	120	309	-72.07	-0.10	34.83	-60.43	-13.00	-47.43
5004.00	V	-	-	-76.31	1.00	31.69	-63.57	-13.00	-50.57
5838.00	V	-	-	-76.93	2.33	32.40	-62.86	-13.00	-49.86
6672.00	V	-	-	-76.83	4.20	34.37	-60.88	-13.00	-47.88

Table 7-32. Radiated Spurious Data Above 1GHz (NR Band n5 – Low Channel – Ant A)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	V	-	-	-74.37	-8.82	23.81	-71.44	-13.00	-58.44
2509.50	V	-	-	-75.24	-5.28	26.48	-68.78	-13.00	-55.78
3346.00	V	-	-	-75.38	-1.97	29.65	-65.61	-13.00	-52.61
4182.50	V	124	313	-71.57	-0.02	35.41	-59.85	-13.00	-46.85
5019.00	V	-	-	-76.47	0.52	31.05	-64.21	-13.00	-51.21
5855.50	V	-	-	-76.40	2.18	32.78	-62.47	-13.00	-49.47
6692.00	V	-	-	-76.95	4.39	34.44	-60.82	-13.00	-47.82

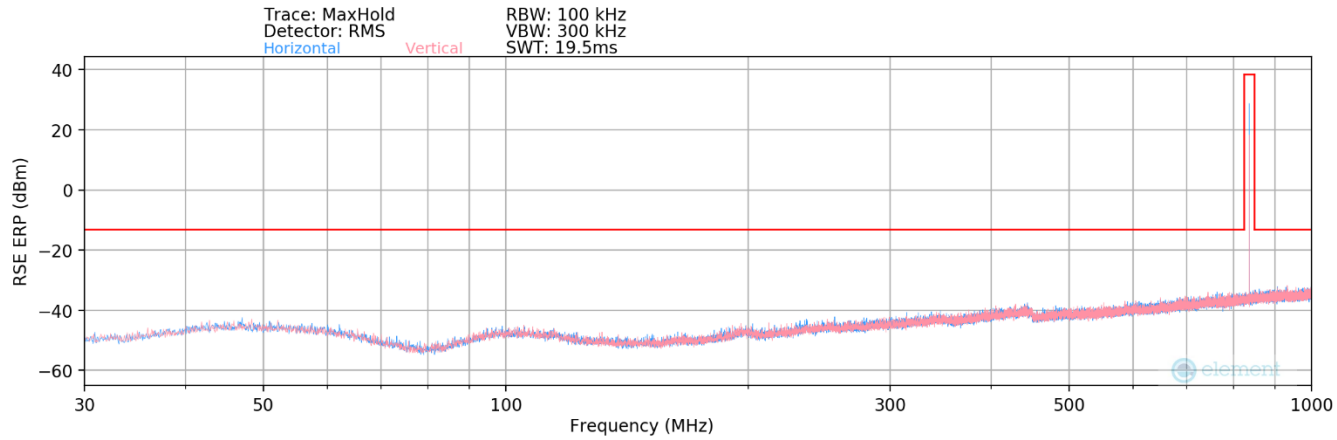
Table 7-33. Radiated Spurious Data Above 1GHz (NR Band n5 – Mid Channel – Ant A)

Bandwidth (MHz):	20
Frequency (MHz):	839
RB / Offset:	1 / 53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1678.00	V	-	-	-74.44	-8.76	23.80	-71.46	-13.00	-58.46
2517.00	V	-	-	-74.66	-5.17	27.17	-68.09	-13.00	-55.09
3356.00	V	-	-	-75.37	-1.81	29.82	-65.43	-13.00	-52.43
4195.00	V	138	318	-71.54	-0.06	35.40	-59.86	-13.00	-46.86
5034.00	V	-	-	-76.87	0.64	30.77	-64.49	-13.00	-51.49
5873.00	V	-	-	-76.52	2.44	32.92	-62.33	-13.00	-49.33
6712.00	V	-	-	-77.17	4.05	33.88	-61.38	-13.00	-48.38

Table 7-34. Radiated Spurious Data Above 1GHz (NR Band n5 – High Channel – Ant A)

GSM/GPRS Cell – Ant E

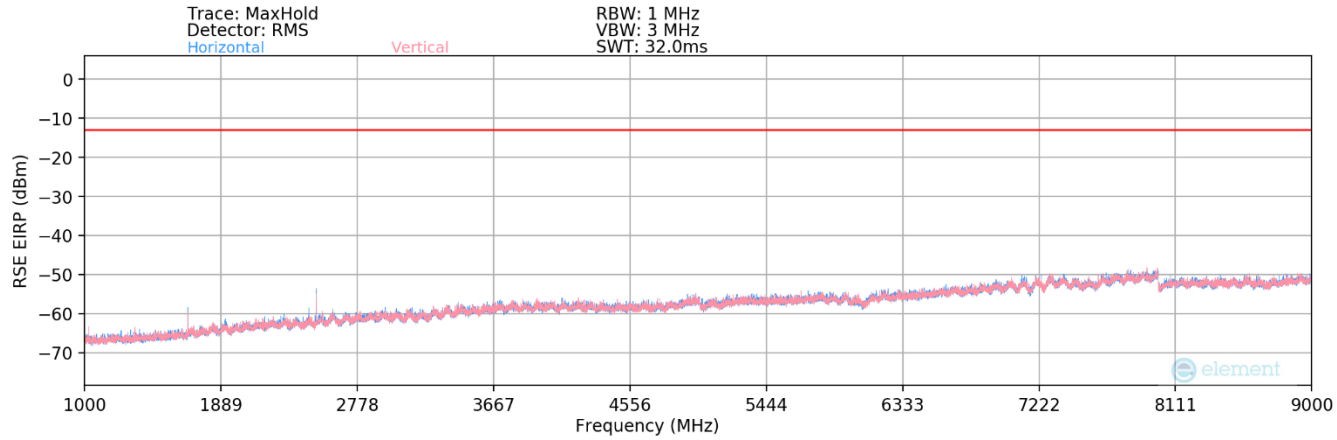


Plot 7-95. Radiated Spurious Plot Below 1GHz (GPRS Cell – Ant E)

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
952.14	H	-	-	-82.17	30.61	55.44	-41.97	-13.00	-28.97

Table 7-35. Radiated Spurious Data Below 1GHz (GPRS Cell – Ant E)



Plot 7-96. Radiated Spurious Plot Above 1GHz (GPRS Cell – Ant E)

Mode:	GPRS 1 Tx Slot
Channel:	128
Frequency (MHz):	824.2

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1648.40	H	132	232	-58.40	-9.05	39.55	-55.71	-13.00	-42.71
2472.60	H	142	237	-59.77	-5.69	41.54	-53.72	-13.00	-40.72
3296.80	H	-	-	-71.02	-2.58	33.40	-61.86	-13.00	-48.86
4121.00	H	-	-	-71.00	-0.18	35.82	-59.44	-13.00	-46.44
4945.20	H	-	-	-71.85	1.04	36.19	-59.06	-13.00	-46.06

Table 7-36. Radiated Spurious Data Above 1GHz (GPRS Cell – Low Channel – Ant E)

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	146	234	-60.16	-8.81	38.03	-57.23	-13.00	-44.23
2509.80	H	137	230	-59.15	-5.28	42.57	-52.68	-13.00	-39.68
3346.40	H	-	-	-71.25	-1.96	33.79	-61.47	-13.00	-48.47
4183.00	H	-	-	-71.64	-0.03	35.33	-59.92	-13.00	-46.92
5019.60	H	-	-	-72.04	0.50	35.46	-59.80	-13.00	-46.80

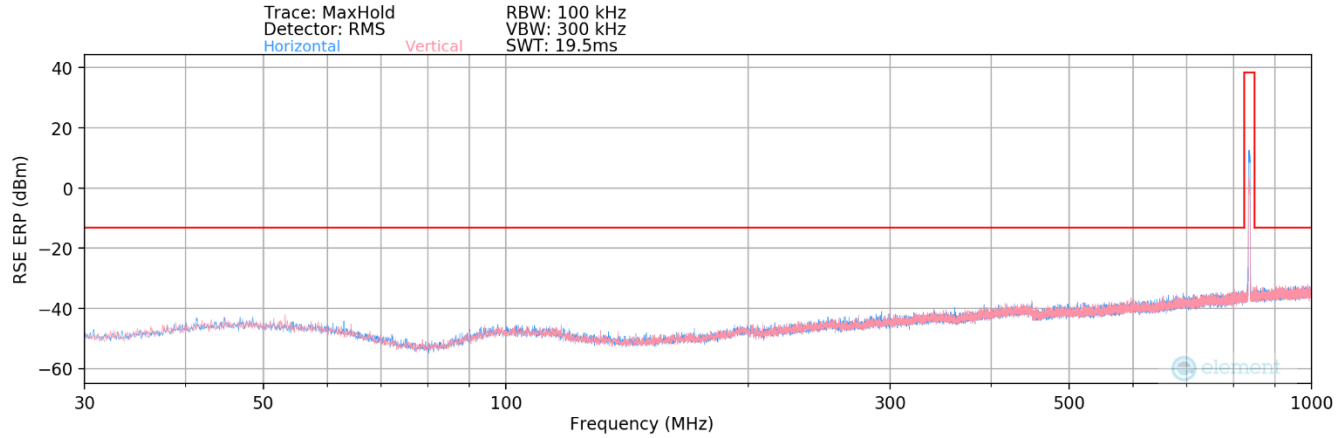
Table 7-37. Radiated Spurious Data Above 1GHz (GPRS Cell – Mid Channel – Ant E)

Mode:	GPRS 1 Tx Slot
Channel:	251
Frequency (MHz):	848.8

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1697.60	H	151	233	-61.87	-8.50	36.63	-58.62	-13.00	-45.62
2546.40	H	151	236	-54.79	-4.96	47.25	-48.01	-13.00	-35.01
3395.20	H	-	-	-71.96	-1.65	33.39	-61.87	-13.00	-48.87
4244.00	H	-	-	-71.10	-0.60	35.30	-59.96	-13.00	-46.96
5092.80	H	-	-	-71.52	1.11	36.59	-58.66	-13.00	-45.66

Table 7-38. Radiated Spurious Data Above 1GHz (GPRS Cell – High Channel – Ant E)

WCDMA Cell – Ant E

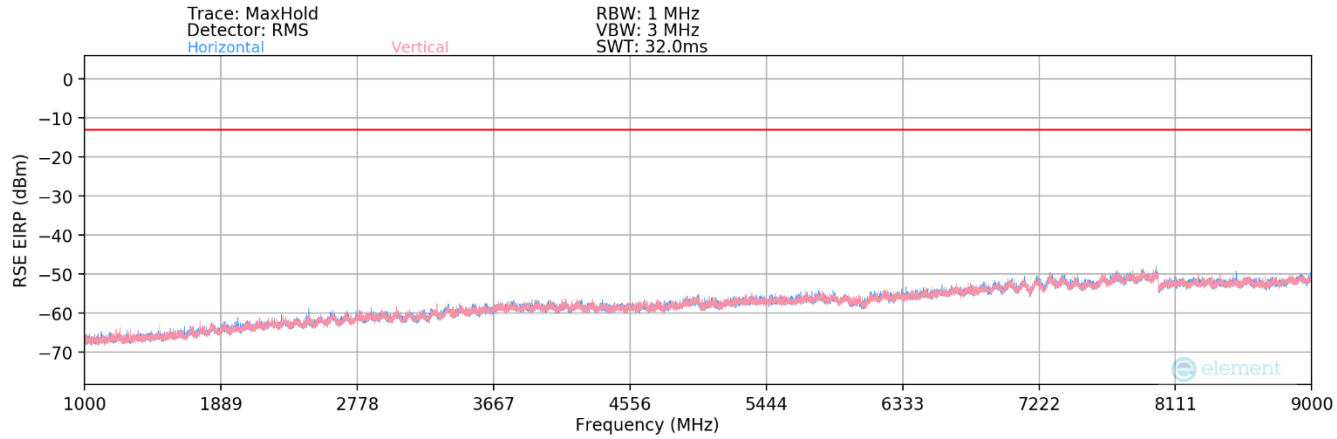


Plot 7-97. Radiated Spurious Plot Below 1GHz (WCDMA Cell – Ant E)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
939.00	H	-	-	-82.09	30.55	55.46	-41.95	-13.00	-28.95

Table 7-39. Radiated Spurious Data Below 1GHz (WCDMA Cell – Ant E)



Plot 7-98. Radiated Spurious Plot Above 1GHz (WCDMA Cell – Ant E)

Mode:	WCDMA RMC
Channel:	4132
Frequency (MHz):	826.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1652.80	H	-	-	-74.74	-9.00	23.26	-72.00	-13.00	-59.00
2479.20	H	-	-	-75.61	-5.64	25.75	-69.51	-13.00	-56.51
3305.60	H	-	-	-75.80	-2.50	28.70	-66.56	-13.00	-53.56

Table 7-40. Radiated Spurious Data Above 1GHz (WCDMA Cell – Low Channel – Ant E)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	-	-	-74.39	-8.81	23.80	-71.46	-13.00	-58.46
2509.80	H	-	-	-75.51	-5.28	26.21	-69.04	-13.00	-56.04
3346.40	H	-	-	-75.60	-1.96	29.44	-65.82	-13.00	-52.82

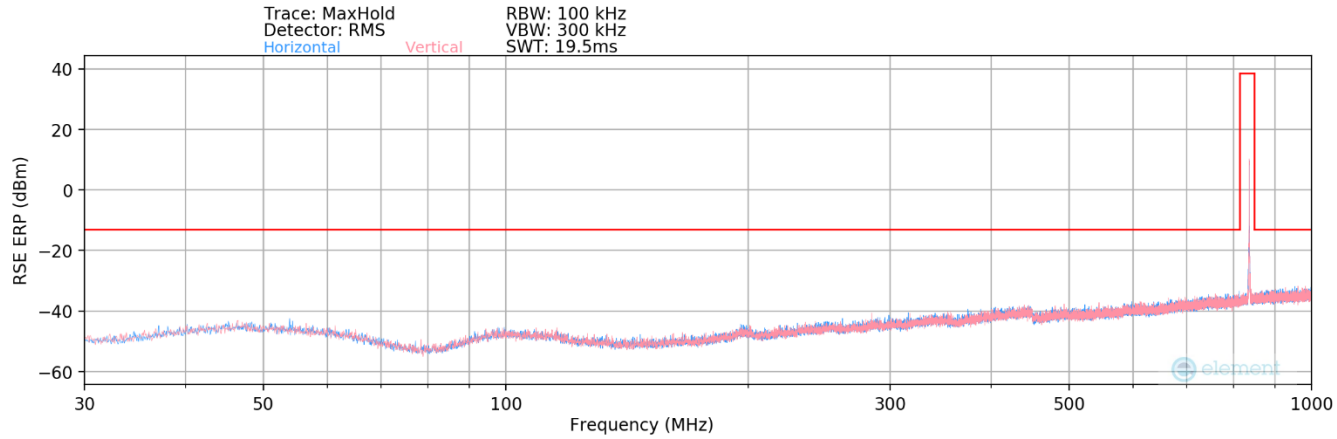
Table 7-41. Radiated Spurious Data Above 1GHz (WCDMA Cell – Mid Channel – Ant E)

Mode:	WCDMA RMC
Channel:	4233
Frequency (MHz):	846.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1693.20	H	-	-	-74.89	-8.56	23.55	-71.70	-13.00	-58.70
2539.80	H	-	-	-75.15	-5.00	26.85	-68.41	-13.00	-55.41
3386.40	H	-	-	-75.61	-1.63	29.76	-65.50	-13.00	-52.50

Table 7-42. Radiated Spurious Data Above 1GHz (WCDMA Cell – High Channel – Ant E)

LTE Band 5 – Ant E

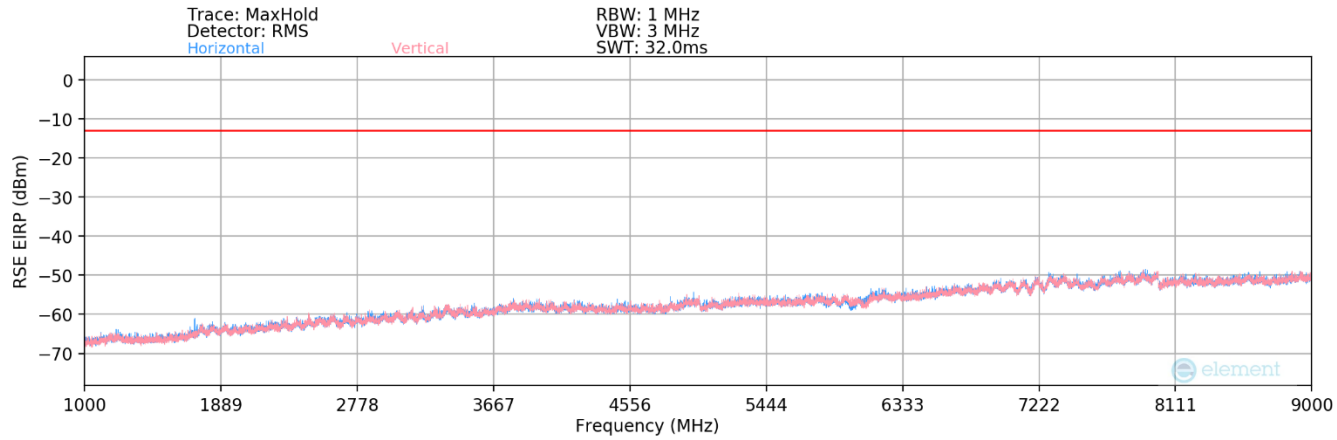


Plot 7-99. Radiated Spurious Plot Below 1GHz (LTE Band 5 – Ant E)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1/25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
886.98	H	-	-	-81.93	26.42	51.49	-45.92	-13.00	-32.92

Table 7-43. Radiated Spurious Data Below 1GHz (LTE Band 5 – Ant E)



Plot 7-100. Radiated Spurious Plot Above 1GHz (LTE Band 5 – Ant E)

Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	H	-	-	-73.61	-8.88	24.51	-70.75	-13.00	-57.75
2487.00	H	-	-	-74.35	-5.07	27.58	-67.68	-13.00	-54.68
3316.00	H	-	-	-74.52	-1.55	30.93	-64.33	-13.00	-51.33
4145.00	H	-	-	-75.62	-0.05	31.33	-63.92	-13.00	-50.92
4974.00	H	-	-	-74.97	1.29	33.32	-61.94	-13.00	-48.94

Table 7-44. Radiated Spurious Data Above 1GHz (LTE Band 5 – Low Channel – Ant E)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	-	-	-73.59	-8.79	24.62	-70.63	-13.00	-57.63
2509.50	H	-	-	-74.30	-4.88	27.82	-67.44	-13.00	-54.44
3346.00	H	-	-	-74.58	-1.21	31.21	-64.04	-13.00	-51.04
4182.50	H	-	-	-75.55	0.18	31.63	-63.63	-13.00	-50.63
5019.00	H	-	-	-74.93	0.78	32.85	-62.41	-13.00	-49.41

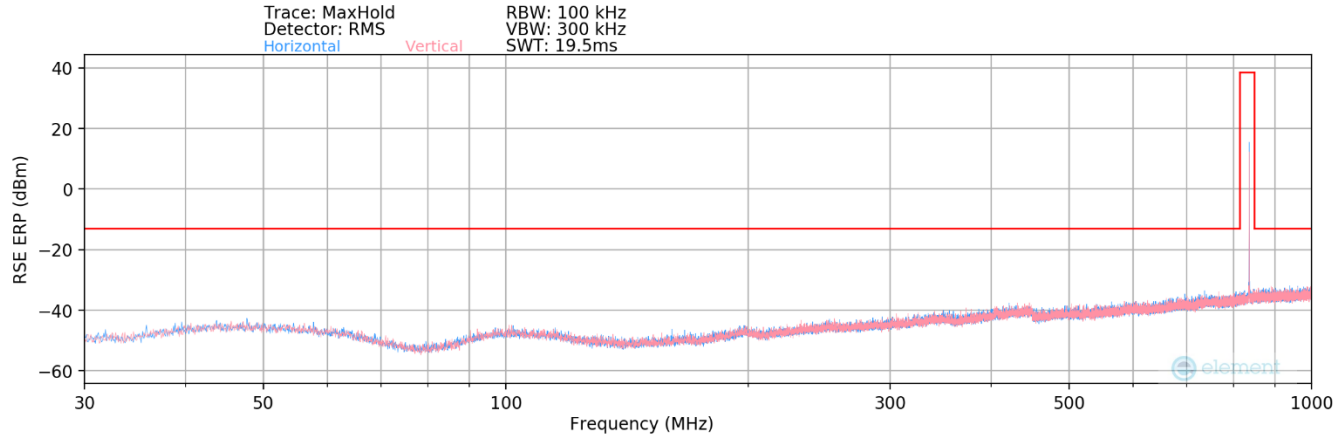
Table 7-45. Radiated Spurious Data Above 1GHz (LTE Band 5 – Mid Channel – Ant E)

Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	H	-	-	-73.74	-8.65	24.61	-70.65	-13.00	-57.65
2532.00	H	-	-	-74.42	-4.69	27.89	-67.37	-13.00	-54.37
3376.00	H	-	-	-74.55	-0.89	31.56	-63.70	-13.00	-50.70
4220.00	H	-	-	-75.62	0.04	31.42	-63.84	-13.00	-50.84
5064.00	H	-	-	-74.86	1.06	33.20	-62.06	-13.00	-49.06

Table 7-46. Radiated Spurious Data Above 1GHz (LTE Band 5 – High Channel – Ant E)

NR Band n5 – Ant E

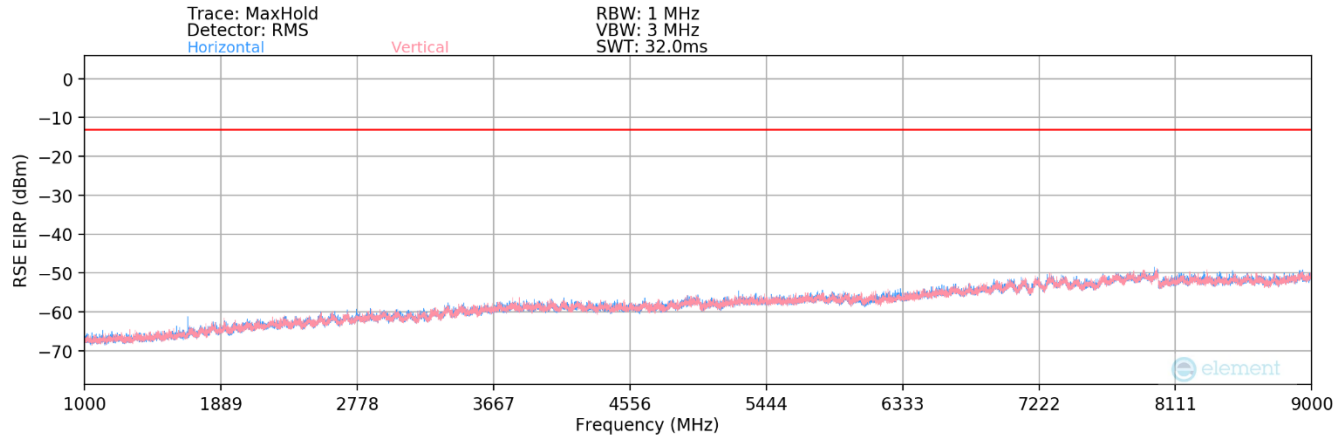


Plot 7-101. Radiated Spurious Plot Below 1GHz (NR Band n5 – Ant E)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1/53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
870.82	H	117	233	-73.17	30.17	64.00	-33.40	-13.00	-20.40

Table 7-47. Radiated Spurious Data Below 1GHz (NR Band n5 – Ant E)



Plot 7-102. Radiated Spurious Plot Above 1GHz (NR Band n5 – Ant E)

Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1668.00	H	129	214	-68.34	-8.86	29.80	-65.45	-13.00	-52.45
2502.00	H	-	-	-75.81	-5.38	25.81	-69.45	-13.00	-56.45
3336.00	H	-	-	-76.68	-2.09	28.23	-67.02	-13.00	-54.02
4170.00	H	-	-	-76.47	-0.10	30.43	-64.83	-13.00	-51.83

Table 7-48. Radiated Spurious Data Above 1GHz (NR Band n5 – Low Channel – Ant E)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	124	215	-68.37	-8.82	29.81	-65.44	-13.00	-52.44
2509.50	H	-	-	-75.49	-5.28	26.23	-69.03	-13.00	-56.03
3346.00	H	-	-	-75.73	-1.97	29.30	-65.96	-13.00	-52.96
4182.50	H	-	-	-77.29	-0.02	29.69	-65.57	-13.00	-52.57

Table 7-49. Radiated Spurious Data Above 1GHz (NR Band n5 – Mid Channel – Ant E)

Bandwidth (MHz):	20
Frequency (MHz):	839
RB / Offset:	1 / 53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1678.00	H	125	217	-68.78	-8.76	29.46	-65.80	-13.00	-52.80
2517.00	H	-	-	-75.81	-5.17	26.02	-69.24	-13.00	-56.24
3356.00	H	-	-	-75.35	-1.81	29.84	-65.41	-13.00	-52.41
4195.00	H	-	-	-76.26	-0.06	30.68	-64.58	-13.00	-51.58

Table 7-50. Radiated Spurious Data Above 1GHz (NR Band n5 – High Channel – Ant E)

7.7 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. 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 non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22 and RSS-132, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency.

Test Procedure Used

ANSI C63.26-2015 – Section 5.6

Test Settings

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

Test Setup

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

Test Notes

None

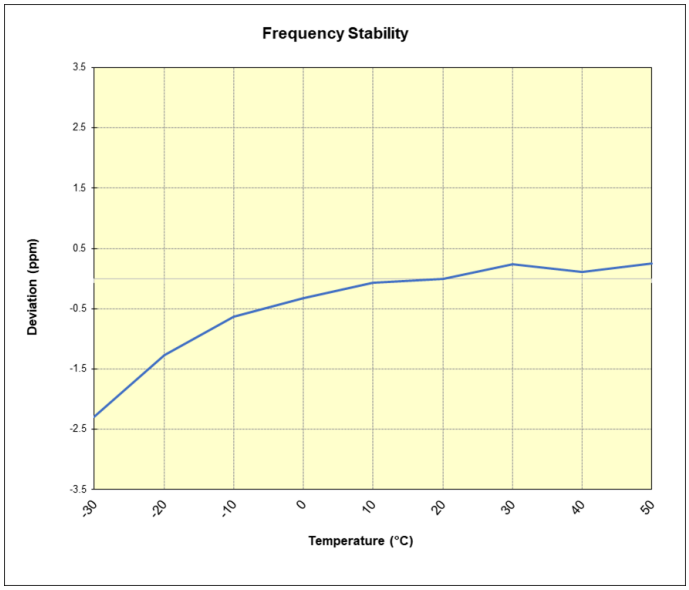
GSM/GPRS Cell

GSM/GPRS Cellular

Operating Frequency (Hz):	836,600,000
Ref. Voltage (VDC):	4.27
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	836,040,667	-1,921	-0.0002298
		- 20	836,041,527	-1,061	-0.0001269
		- 10	836,042,062	-526	-0.0000629
		0	836,042,314	-274	-0.0000328
		+ 10	836,042,536	-52	-0.0000062
		+ 20 (Ref)	836,042,588	0	0.0000000
		+ 30	836,042,789	201	0.0000240
		+ 40	836,042,677	89	0.0000106
		+ 50	836,042,802	214	0.0000256
Battery Endpoint	3.68	+ 20	836,043,586	998	0.0001194

Table 7-51. GSM/GPRS Cell Frequency Stability Data



Plot 7-103. GSM/GPRS Cell Frequency Stability Chart

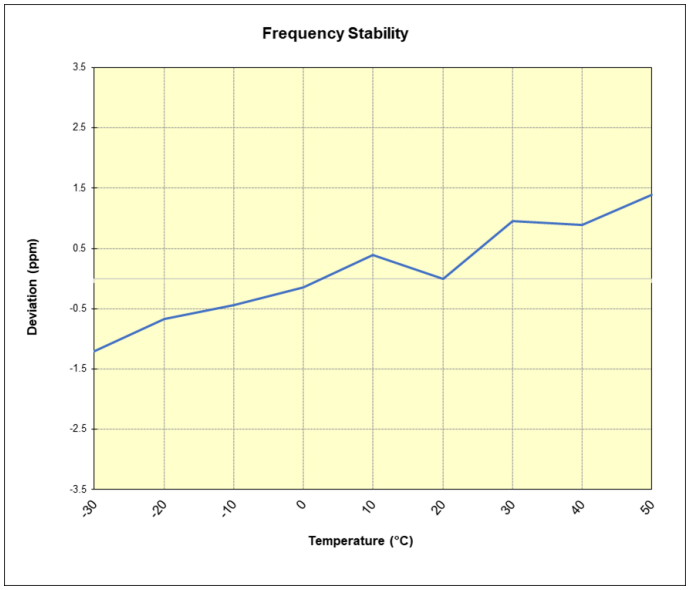
WCDMA Cell

WCDMA Cellular

Operating Frequency (Hz):	836,600,000
Ref. Voltage (VDC):	4.27
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	836,613,218	-1,004	-0.0001200
		- 20	836,613,666	-556	-0.0000665
		- 10	836,613,853	-369	-0.0000441
		0	836,614,100	-122	-0.0000146
		+ 10	836,614,550	328	0.0000392
		+ 20 (Ref)	836,614,222	0	0.0000000
		+ 30	836,615,023	801	0.0000957
		+ 40	836,614,967	745	0.0000890
		+ 50	836,615,380	1,158	0.0001384
Battery Endpoint	3.68	+ 20	836,612,122	-2,100	-0.0002510

Table 7-52. WCDMA Cell Frequency Stability Data



Plot 7-104. WCDMA Cell Frequency Stability Chart

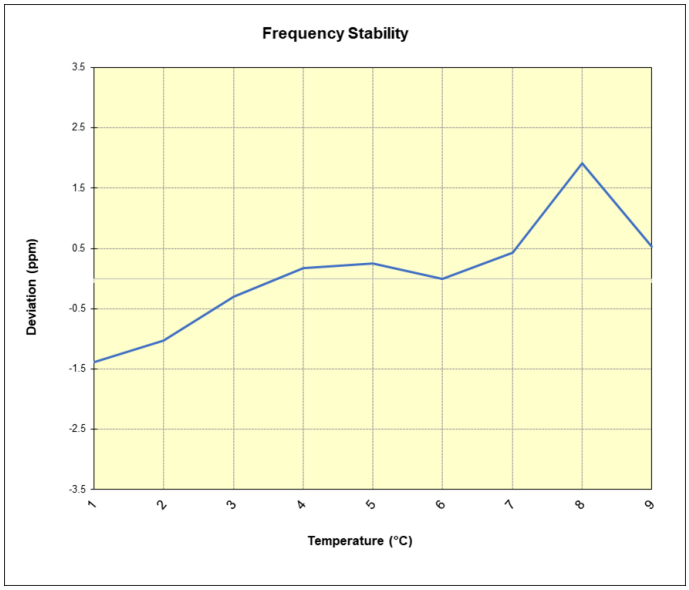
LTE Band 5

LTE Band 26/5

Operating Frequency (Hz):	836,500,000
Ref. Voltage (VDC):	4.27
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	831,574,081	-1,147	-0.0001379
		- 20	831,574,371	-857	-0.0001031
		- 10	831,574,981	-247	-0.0000297
		0	831,575,370	142	0.0000171
		+ 10	831,575,437	209	0.0000251
		+ 20 (Ref)	831,575,228	0	0.0000000
		+ 30	831,575,582	354	0.0000426
		+ 40	831,576,825	1,597	0.0001920
		+ 50	831,575,672	444	0.0000534
Battery Endpoint	3.68	+ 20	831,575,575	347	0.0000417

Table 7-53. LTE Band 5 Frequency Stability Data



Plot 7-105. LTE Band 5 Frequency Stability Chart

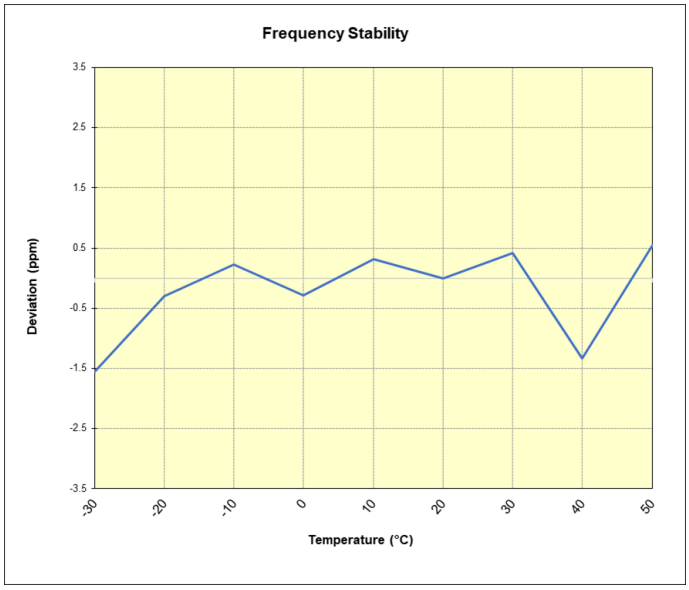
NR Band n5

NR Band n26/5

Operating Frequency (Hz):	836,500,000
Ref. Voltage (VDC):	4.27
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	836,500,124	-1,298	-0.0001552
		- 20	836,501,176	-246	-0.0000294
		- 10	836,501,609	187	0.0000224
		0	836,501,186	-236	-0.0000282
		+ 10	836,501,688	266	0.0000318
		+ 20 (Ref)	836,501,422	0	0.0000000
		+ 30	836,501,770	348	0.0000416
		+ 40	836,500,311	-1,111	-0.0001328
		+ 50	836,501,879	457	0.0000546
Battery Endpoint	3.68	+ 20	836,502,418	996	0.0001191

Table 7-54. NR Band n5 Frequency Stability Data



Plot 7-106. NR Band n5 Frequency Stability Chart

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS928JPN** complies with all the requirements of Part 22 of the FCC rules.