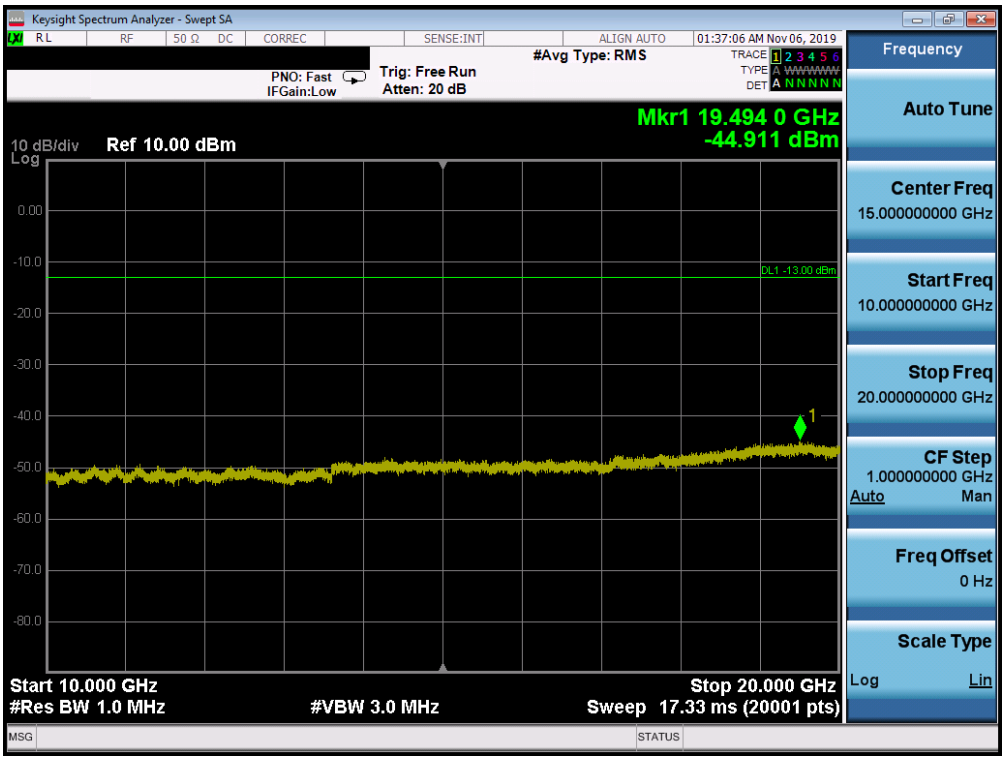


Table 7-467. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

Table 7-468. Lower Band Edge Plot (Band 66 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

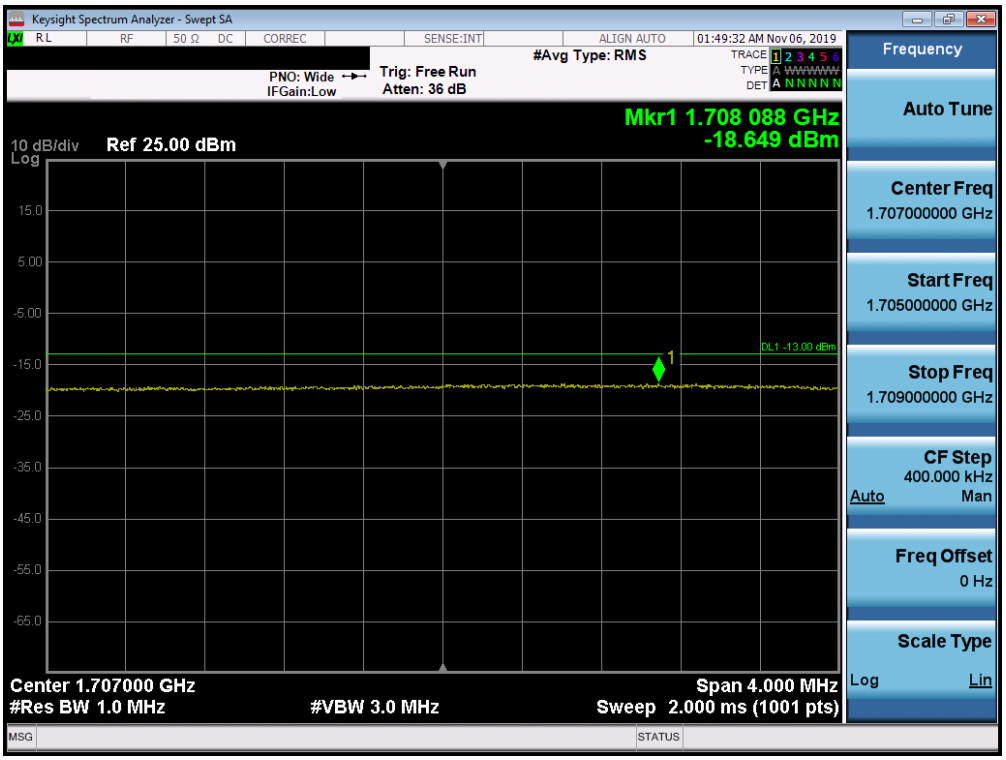


Table 7-469. Lower Extended Band Edge Plot (Band 66 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

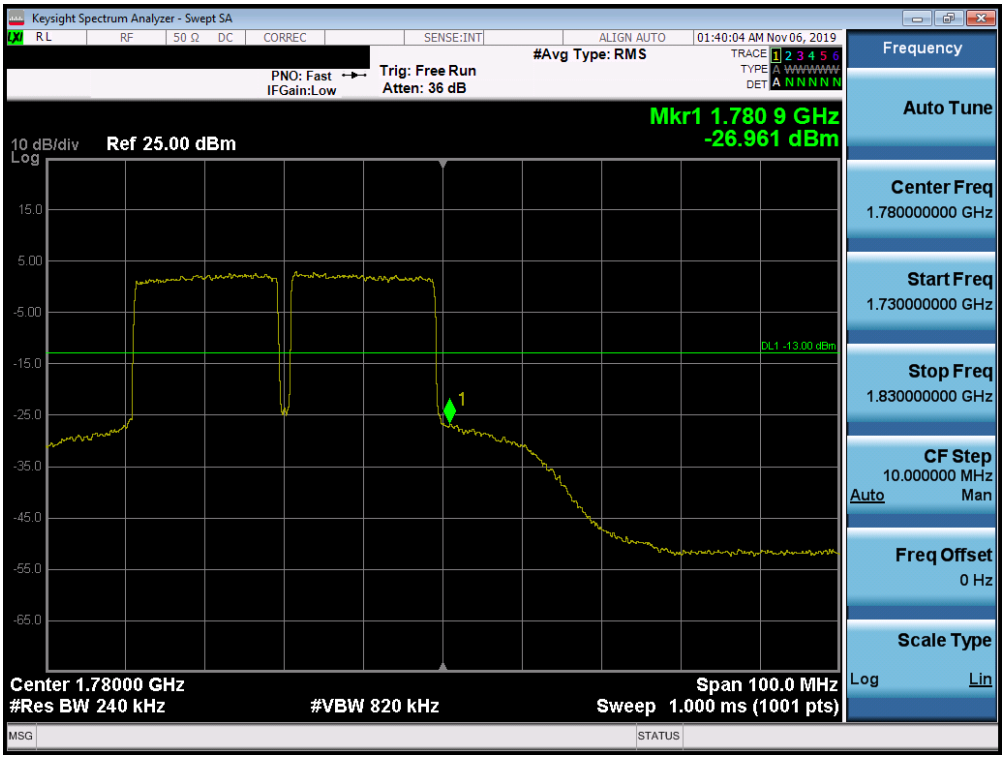


Table 7-470. Upper Band Edge Plot (Band 66 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

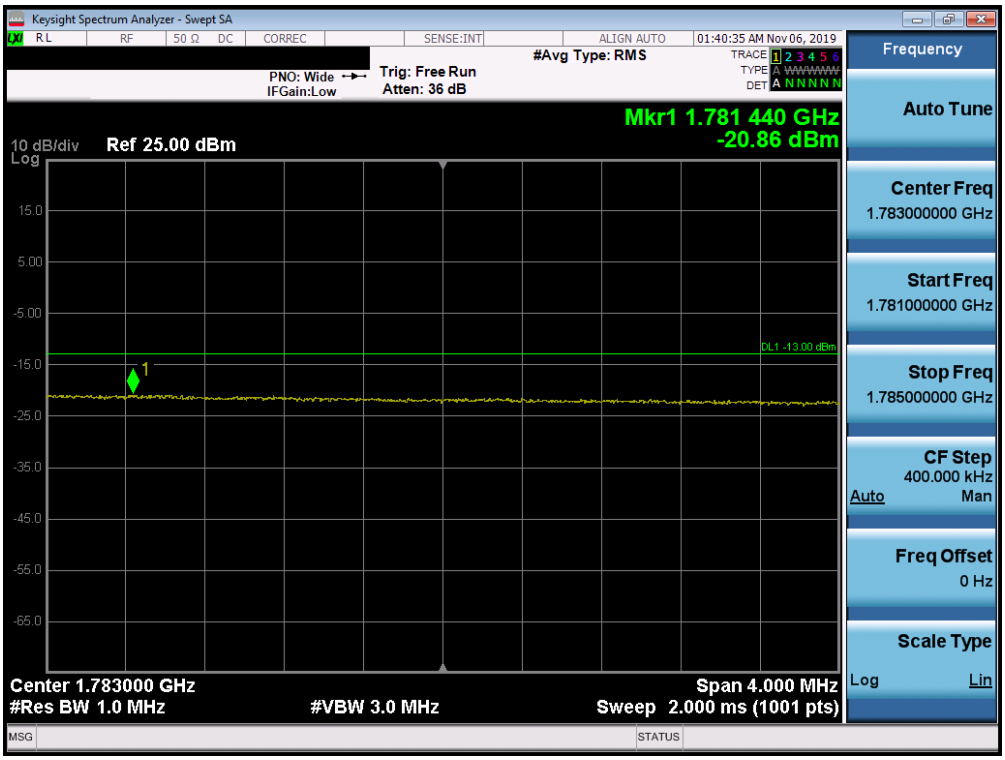


Table 7-471. Upper Extended Band Edge Plot (Band 66 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

Uplink CA Configuration B41 (PC3)

Power State	PCC							SCC							Power
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	24.74
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	24.53
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	24.95

Table 7-8. Conducted Powers (B41 PC3 – PCC/SCC: RB Size 1)

Power State	PCC							SCC							Power
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	100	0	LTE B41	20	39948	2525.8	QPSK	100	0	23.07
Max	LTE B41	20	39750	2506	16-QAM	100	0	LTE B41	20	39948	2525.8	16-QAM	100	0	22.19
Max	LTE B41	20	39750	2506	64-QAM	100	0	LTE B41	20	39948	2525.8	64-QAM	100	0	21.05
Max	LTE B41	20	39750	2506	256-QAM	100	0	LTE B41	20	39948	2525.8	256-QAM	100	0	19.28

Table 7-9. Conducted Powers (B41 PC3 with Various Combinations for 20MHz Channel Bandwidth)

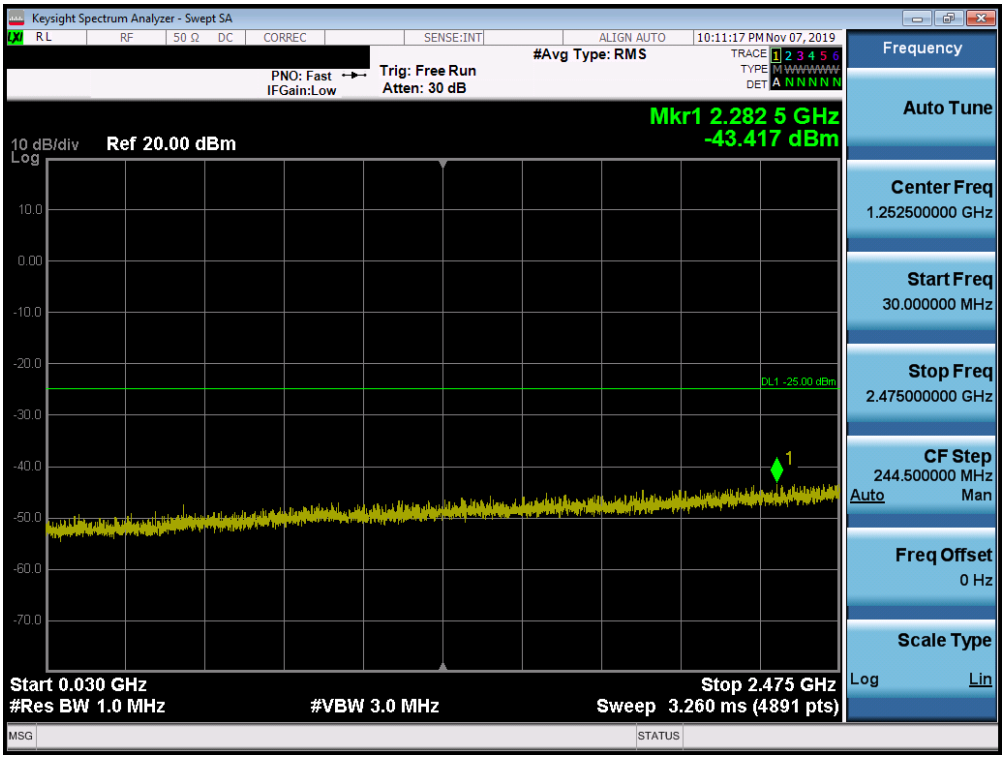


Table 7-472. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

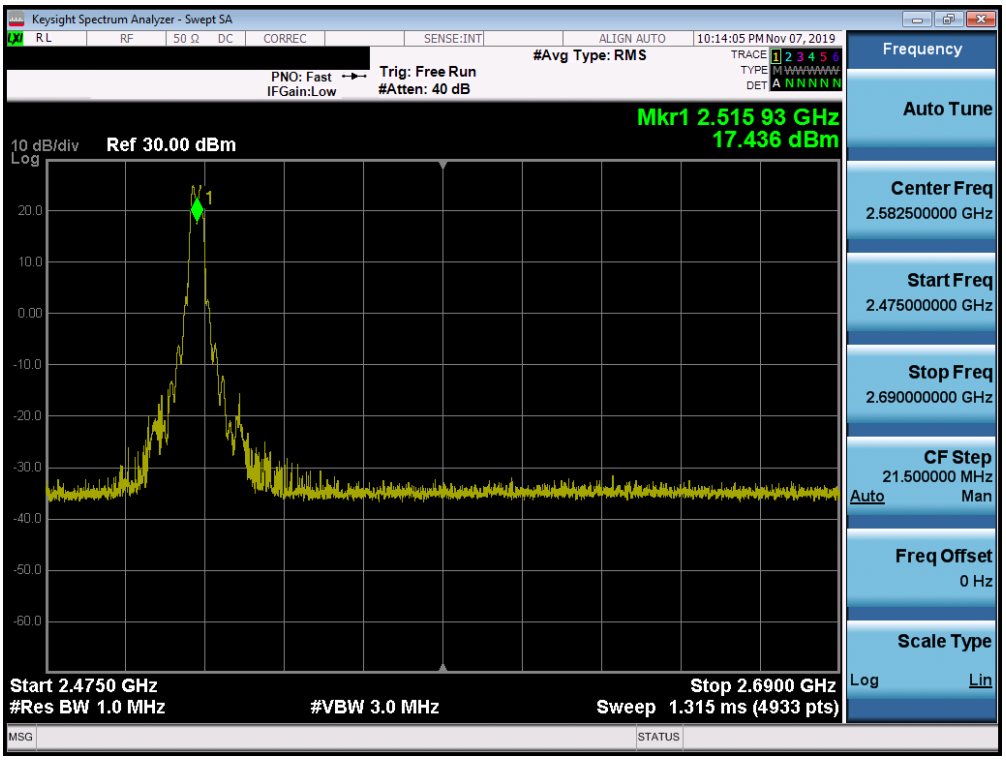


Table 7-473. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

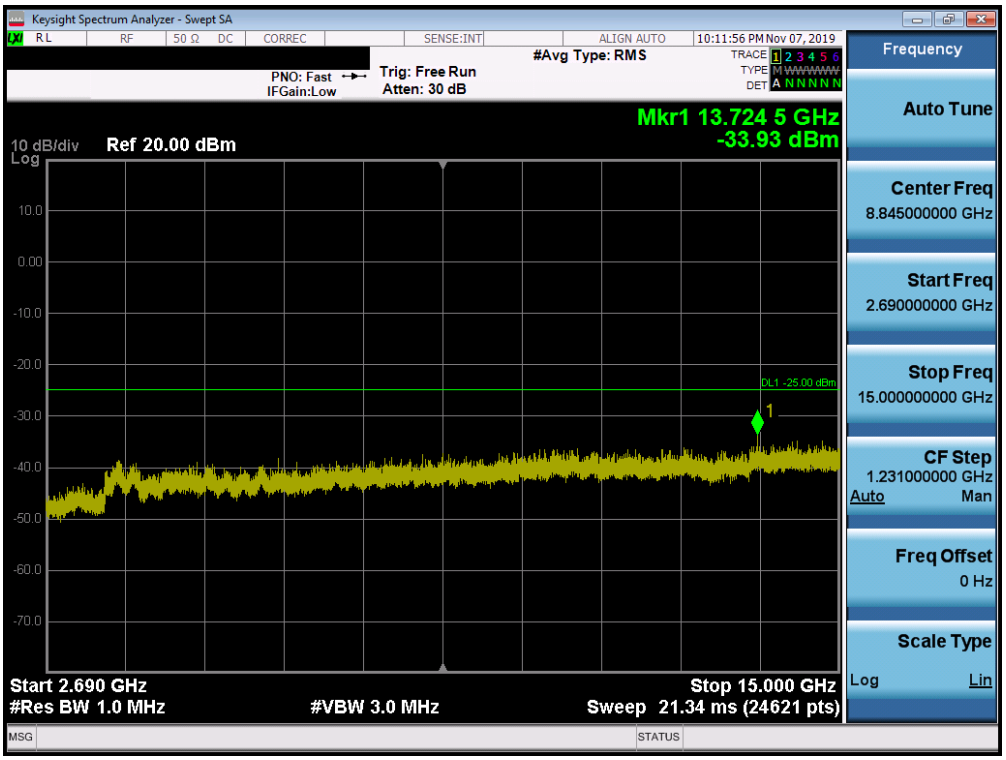


Table 7-474. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

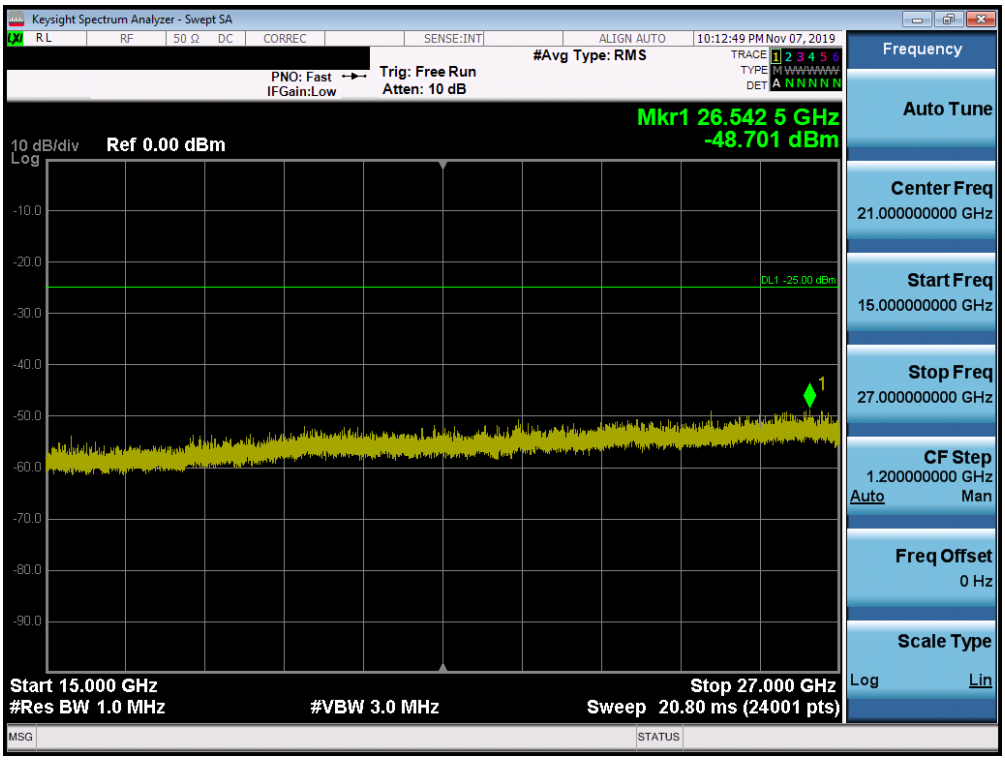


Table 7-475. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

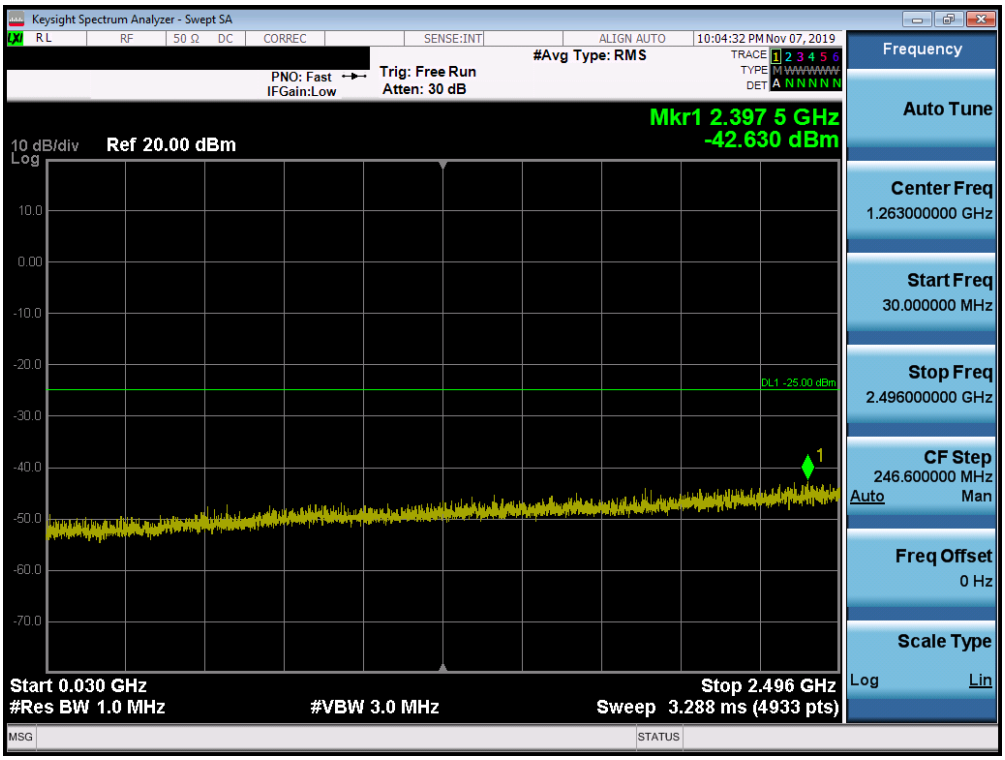


Table 7-476. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

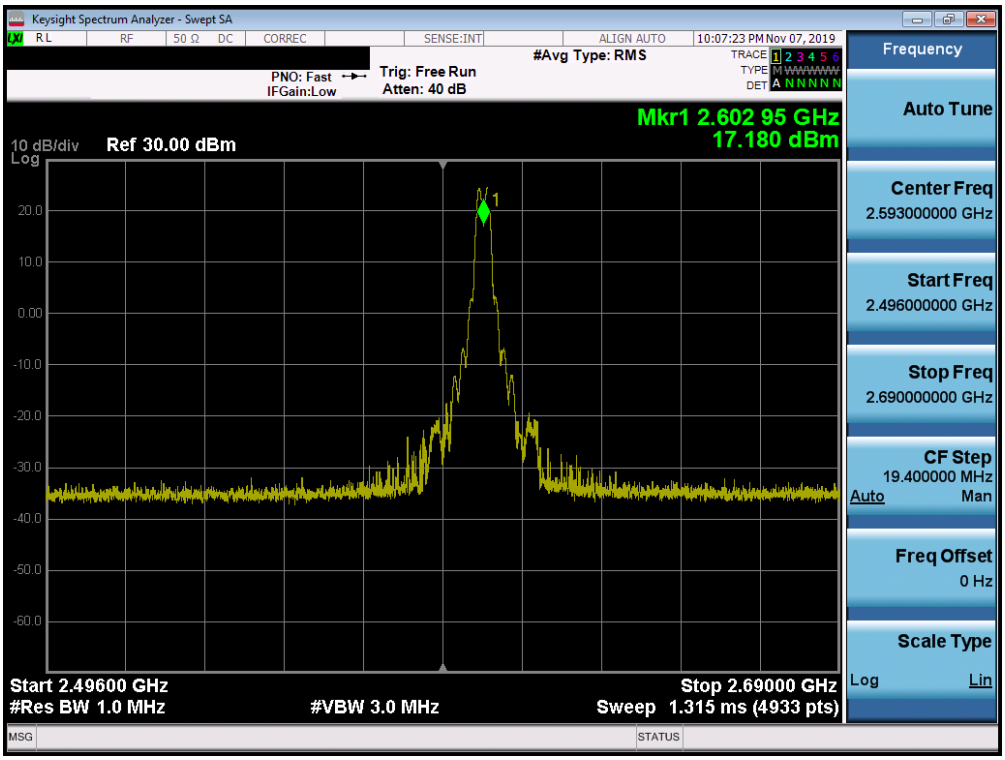


Table 7-477. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

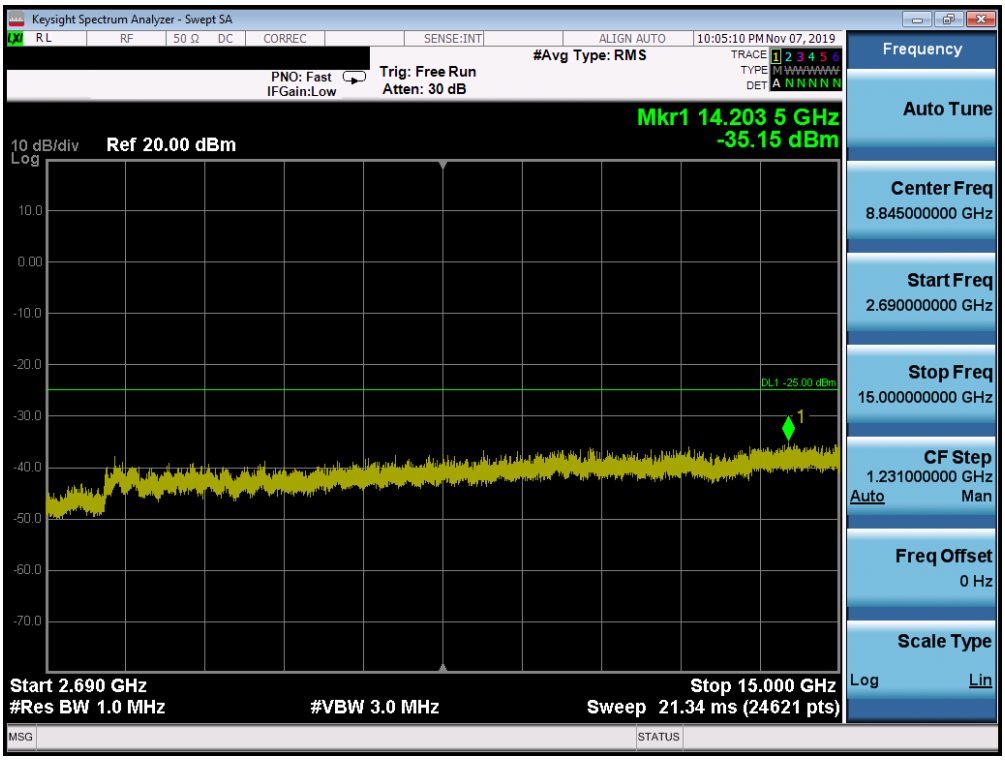


Table 7-478. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

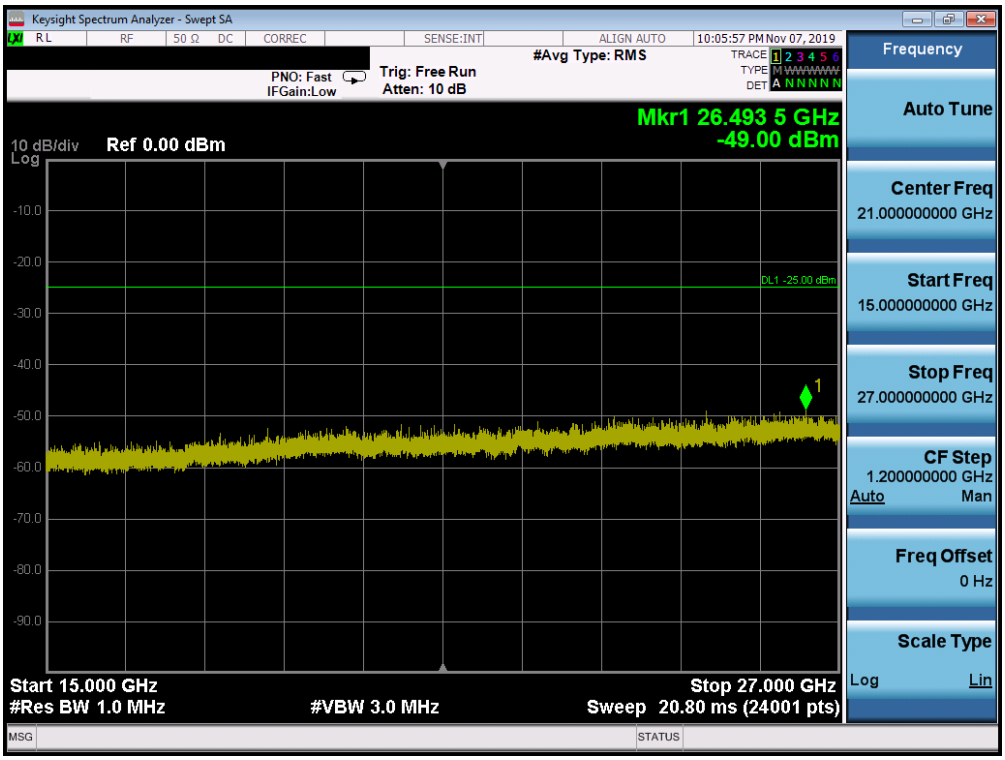


Table 7-479. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

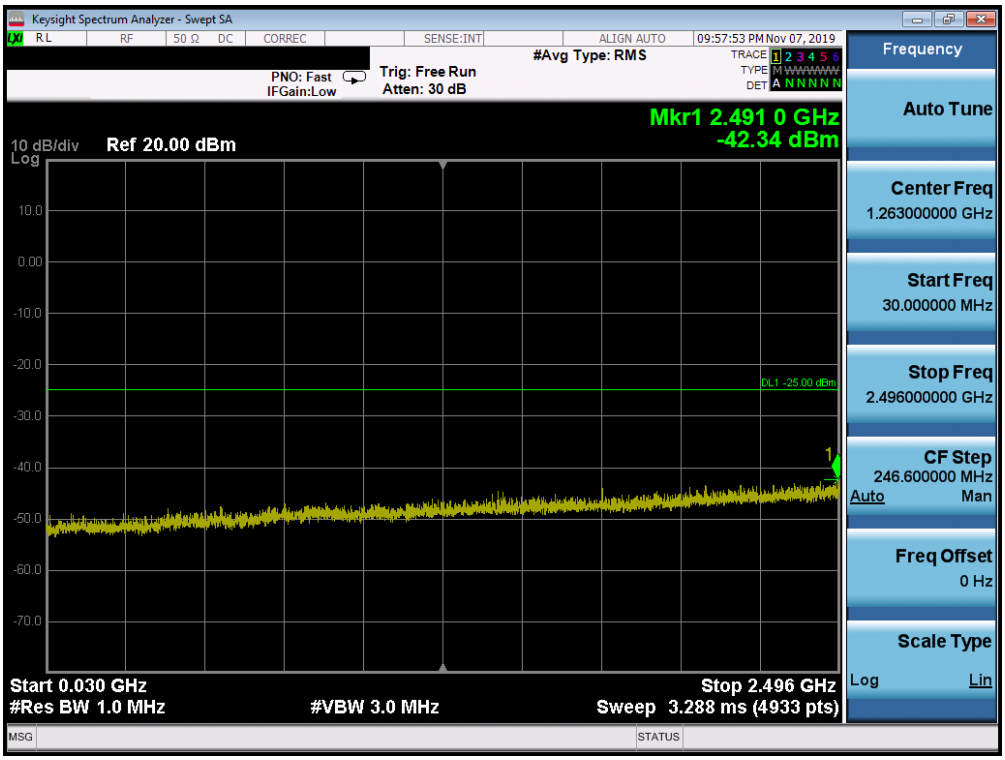


Table 7-480. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

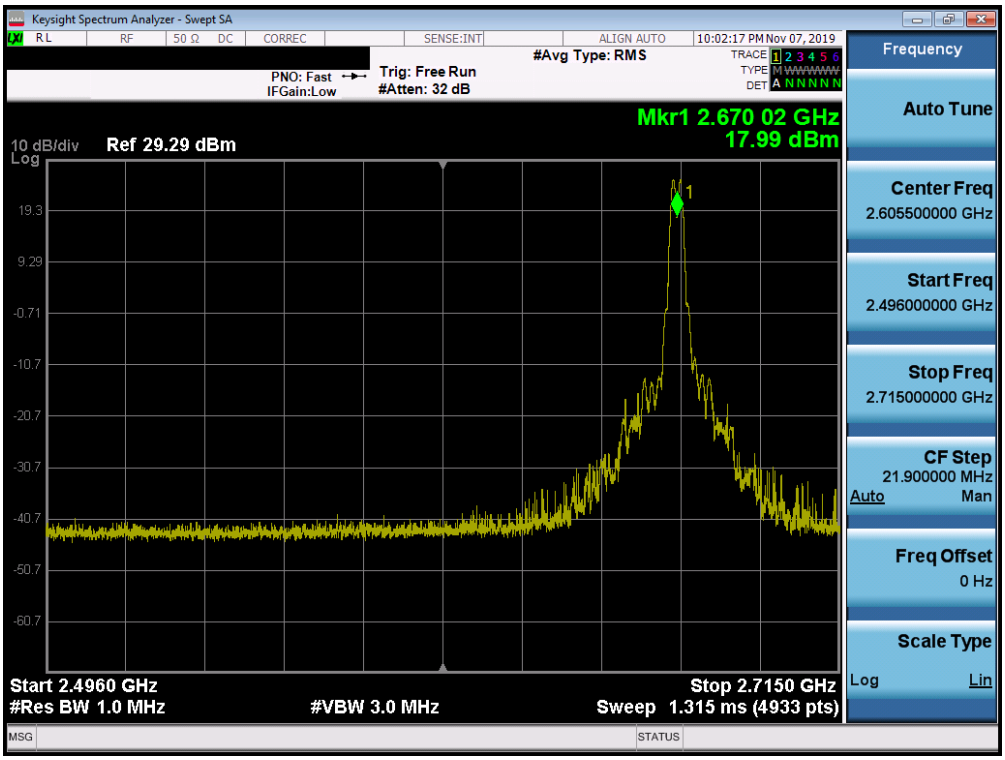


Table 7-481. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

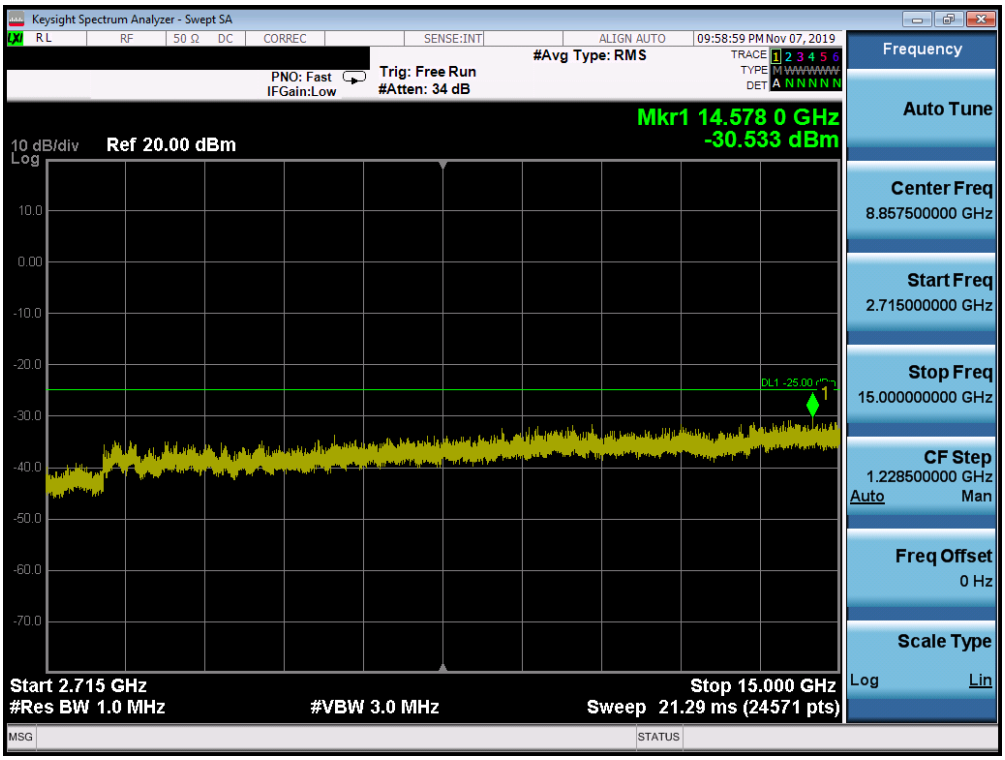


Table 7-482. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

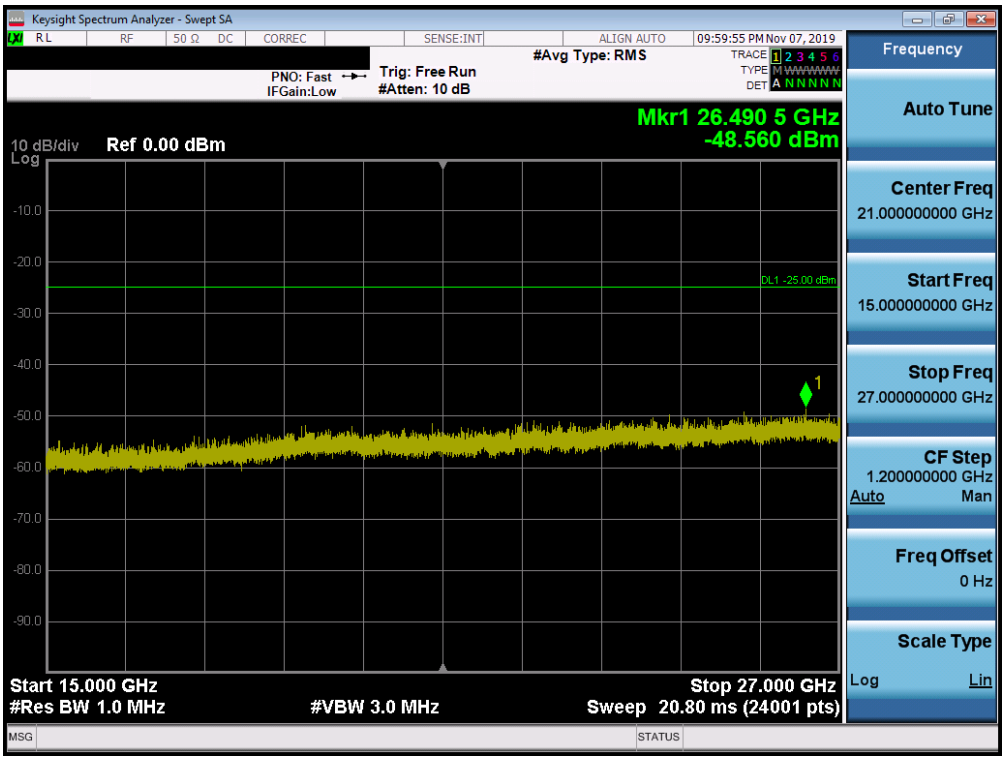
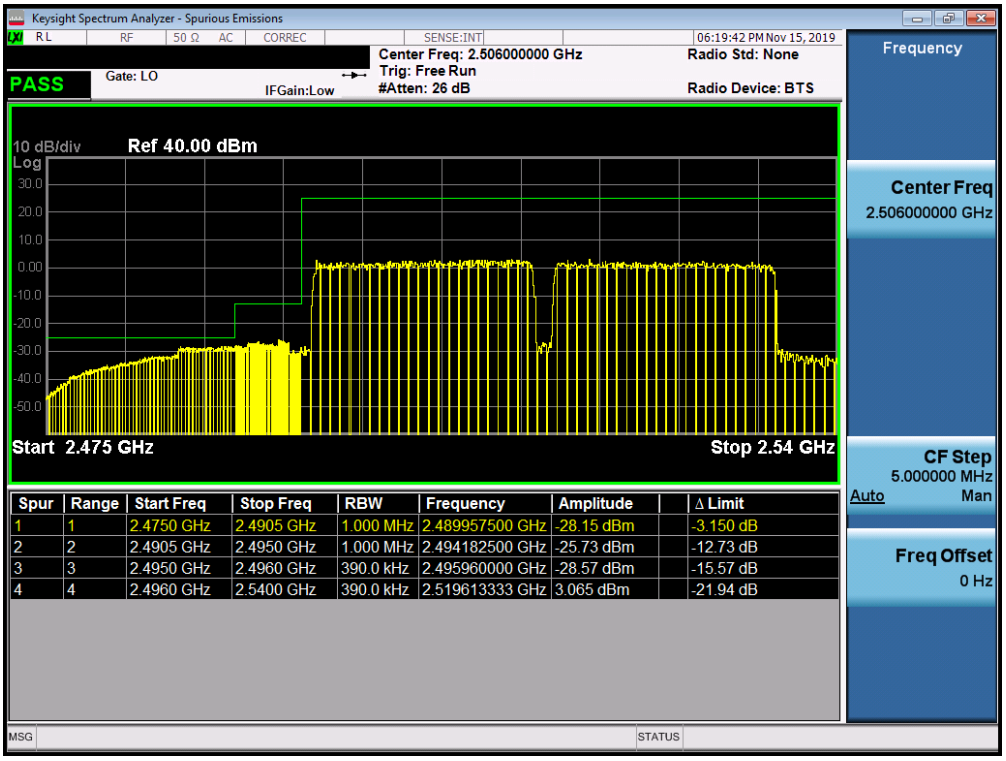
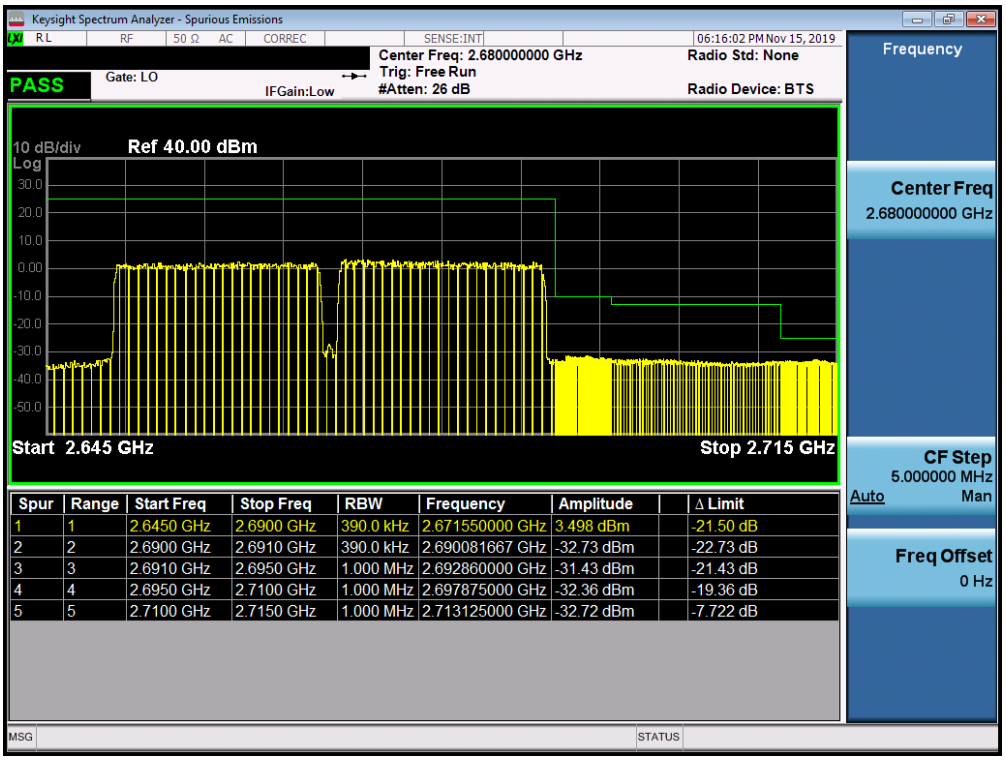


Table 7-483. Conducted Spurious Plot (Band 41 PC3 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489957500 GHz	-28.15 dBm	-3.150 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494182500 GHz	-25.73 dBm	-12.73 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495960000 GHz	-28.57 dBm	-15.57 dB
4	4	2.4960 GHz	2.5400 GHz	390.0 kHz	2.519613333 GHz	3.065 dBm	-21.94 dB

Table 7-484. Lower ACP Plot (Band 41 PC3 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6450 GHz	2.6900 GHz	390.0 kHz	2.671550000 GHz	3.498 dBm	-21.50 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690081667 GHz	-32.73 dBm	-22.73 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.692860000 GHz	-31.43 dBm	-21.43 dB
4	4	2.6950 GHz	2.7100 GHz	1.000 MHz	2.697875000 GHz	-32.36 dBm	-19.36 dB
5	5	2.7100 GHz	2.7150 GHz	1.000 MHz	2.713125000 GHz	-32.72 dBm	-7.722 dB

Table 7-485. Upper ACP Plot (Band 41 PC3 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

Uplink CA Configuration B41 (PC2)

Power State	PCC							SCC							Power
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	26.89
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	27.12
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	26.88

Table 7-10. Conducted Powers (B41 PC2 – PCC/SCC: RB Size 1)

Power State	PCC							SCC							Power
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	40620	2593	QPSK	100	0	LTE B41	20	40818	2612.8	QPSK	100	0	25.45
Max	LTE B41	20	40620	2593	16-QAM	100	0	LTE B41	20	40818	2612.8	16-QAM	100	0	24.65
Max	LTE B41	20	40620	2593	64-QAM	100	0	LTE B41	20	40818	2612.8	64-QAM	100	0	23.44
Max	LTE B41	20	40620	2593	256-QAM	100	0	LTE B41	20	40818	2612.8	256-QAM	100	0	21.52

Table 7-11. Conducted Powers (B41 PC2 with Various Combinations for 20MHz Channel Bandwidth)

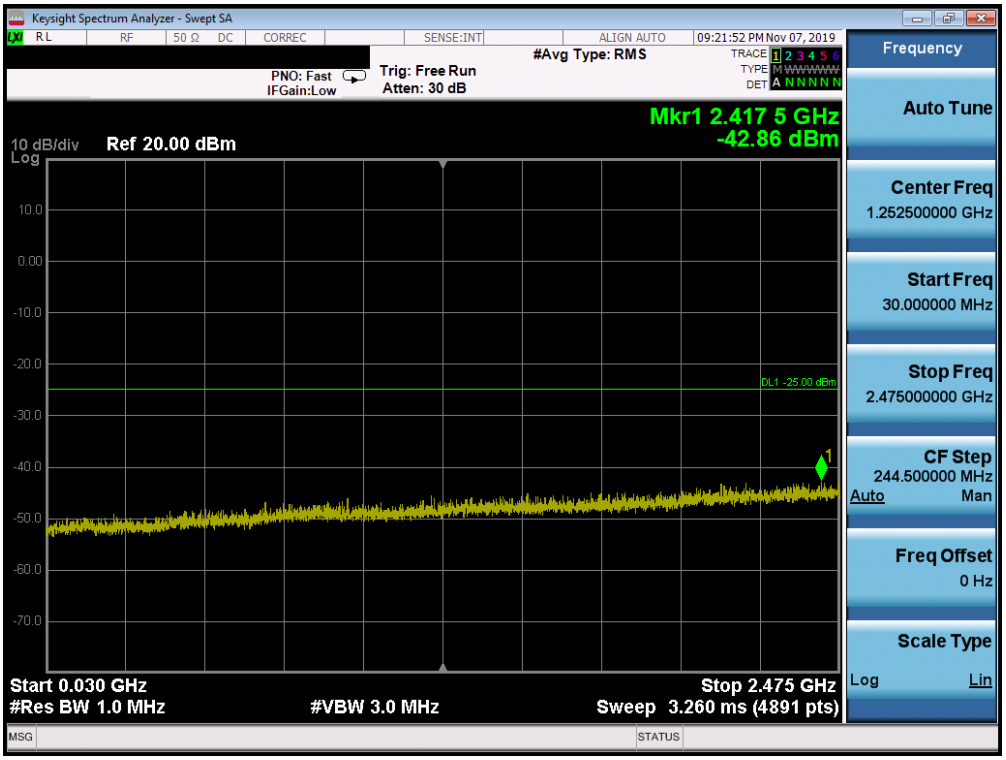


Table 7-486. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

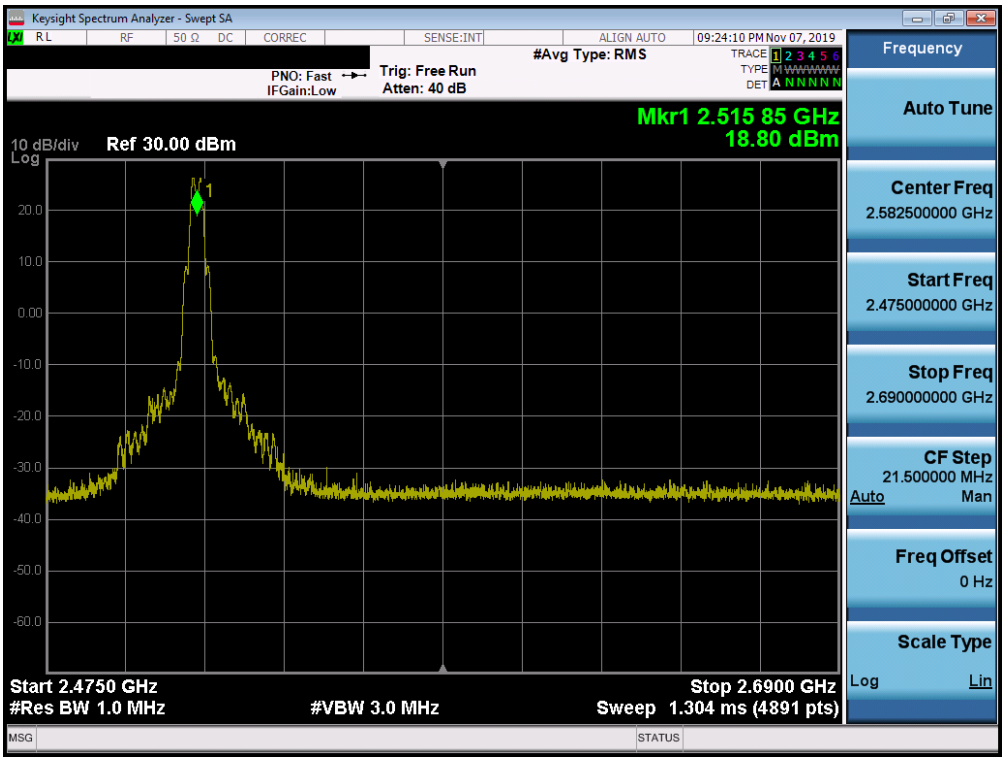


Table 7-487. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

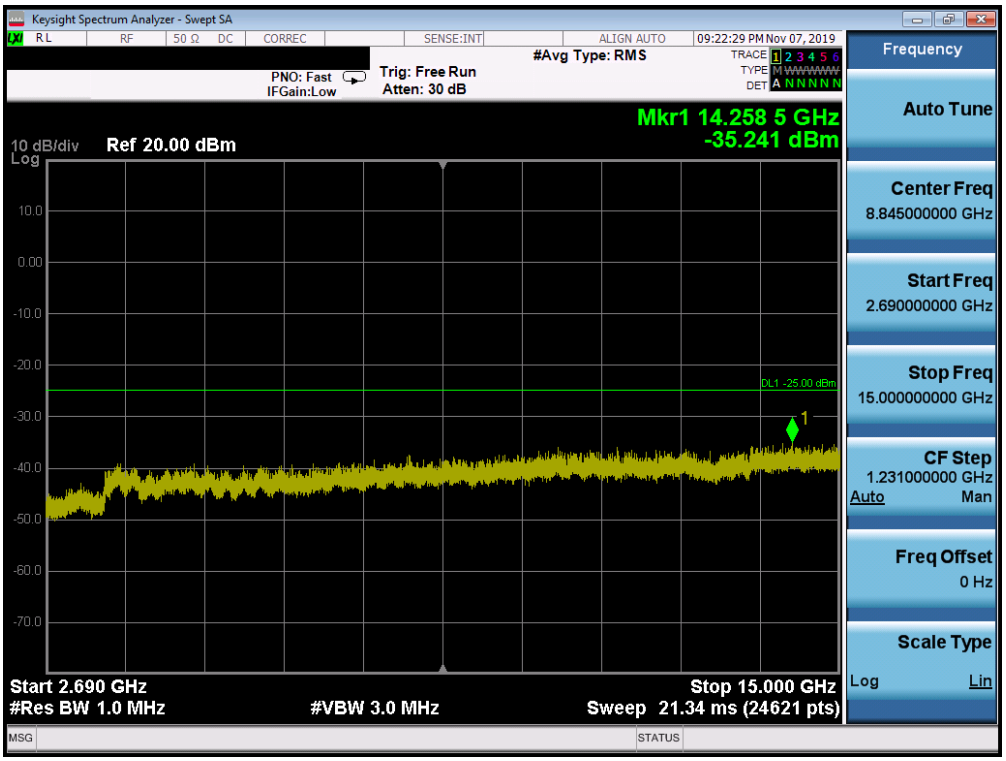


Table 7-488. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

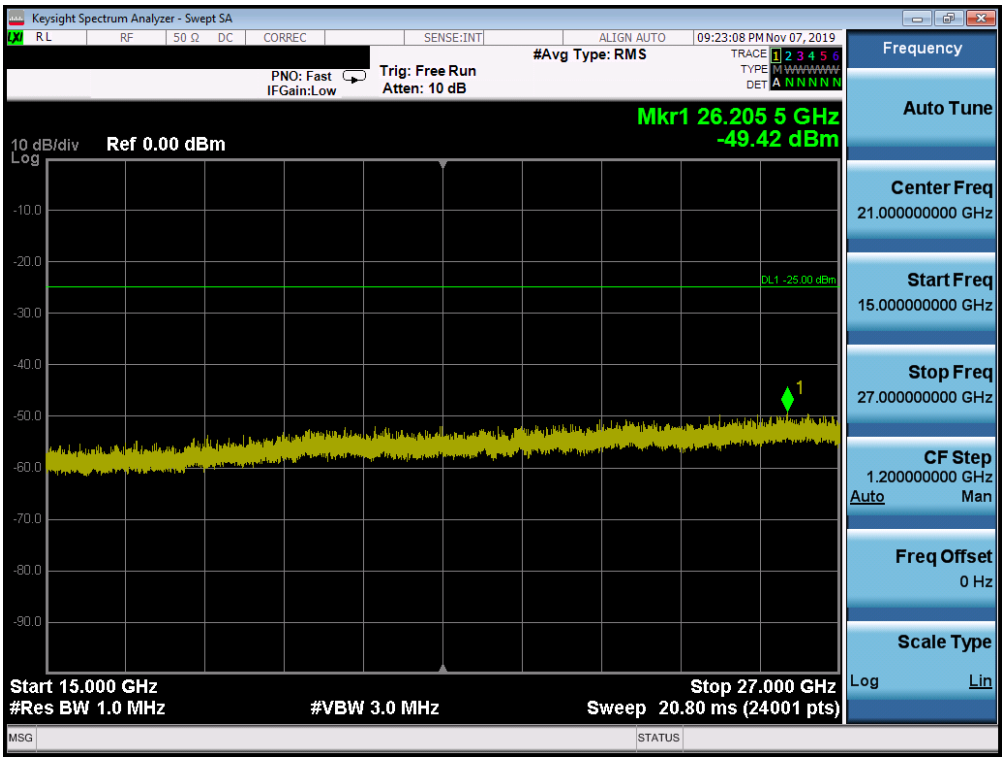


Table 7-489. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

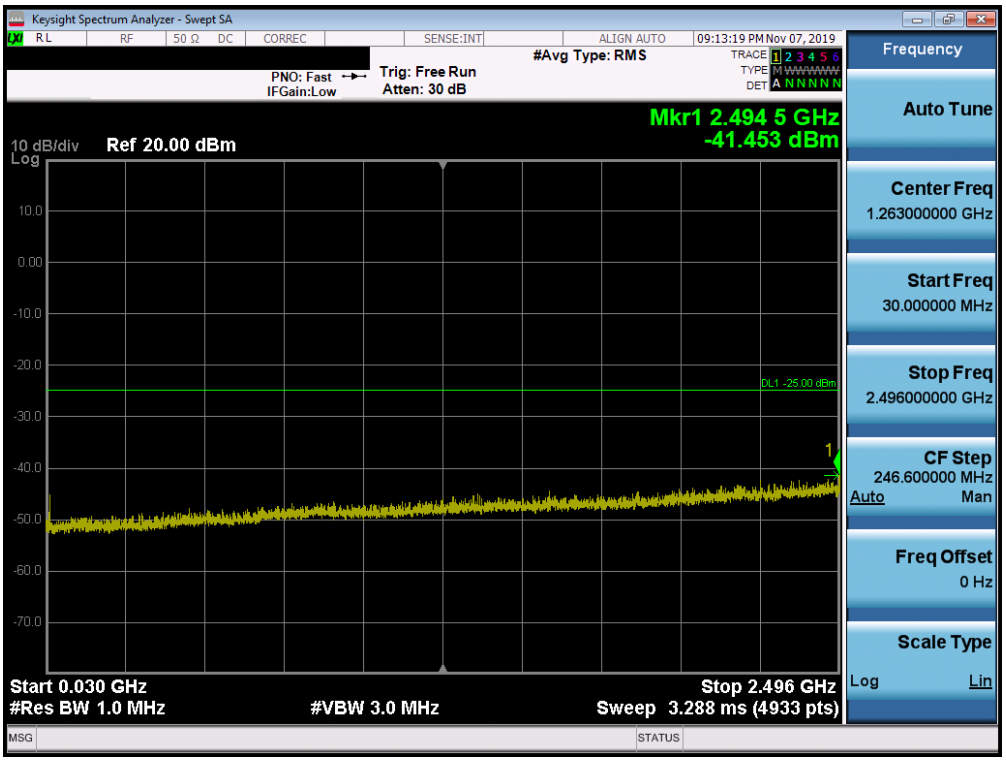


Table 7-490. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

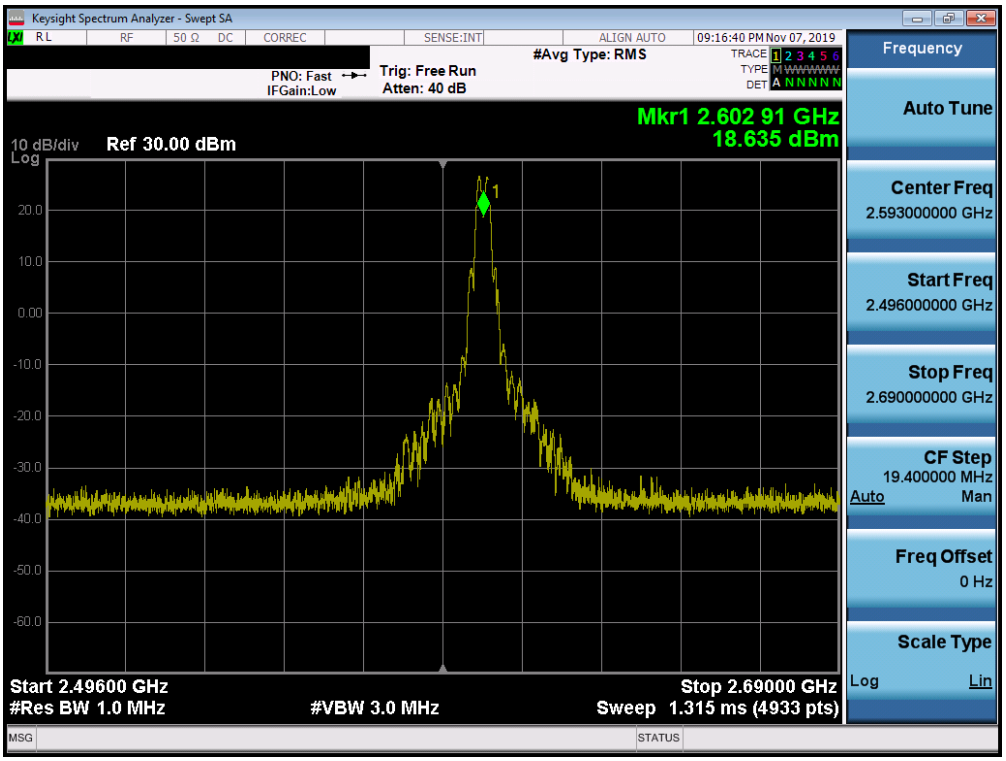


Table 7-491. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

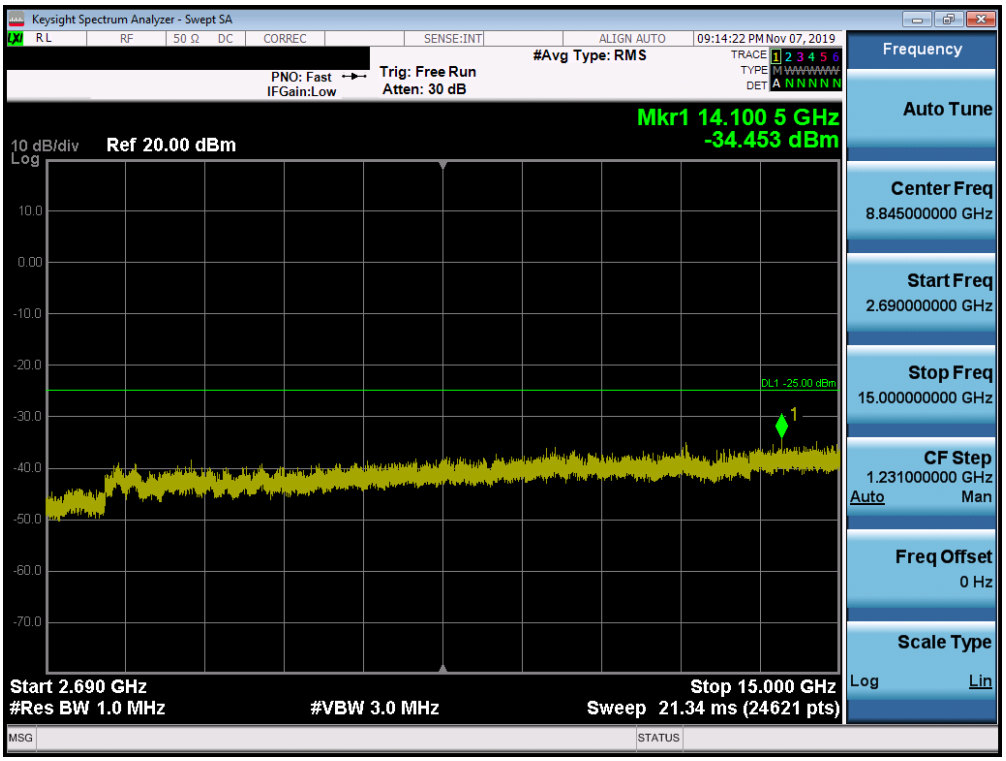


Table 7-492. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

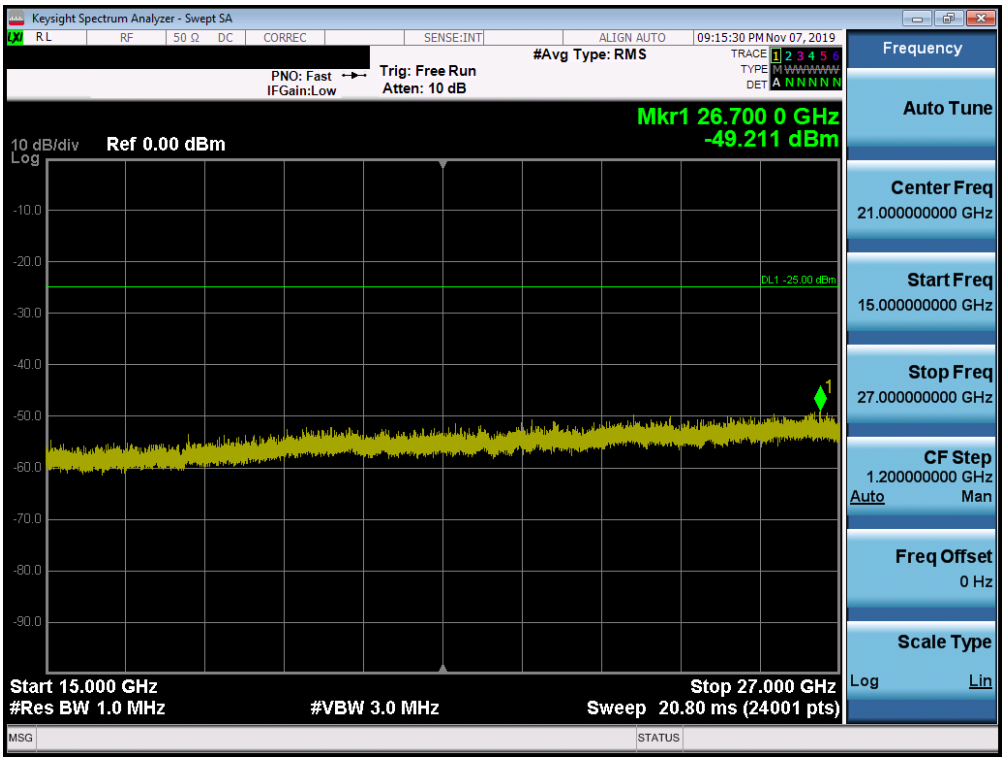


Table 7-493. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

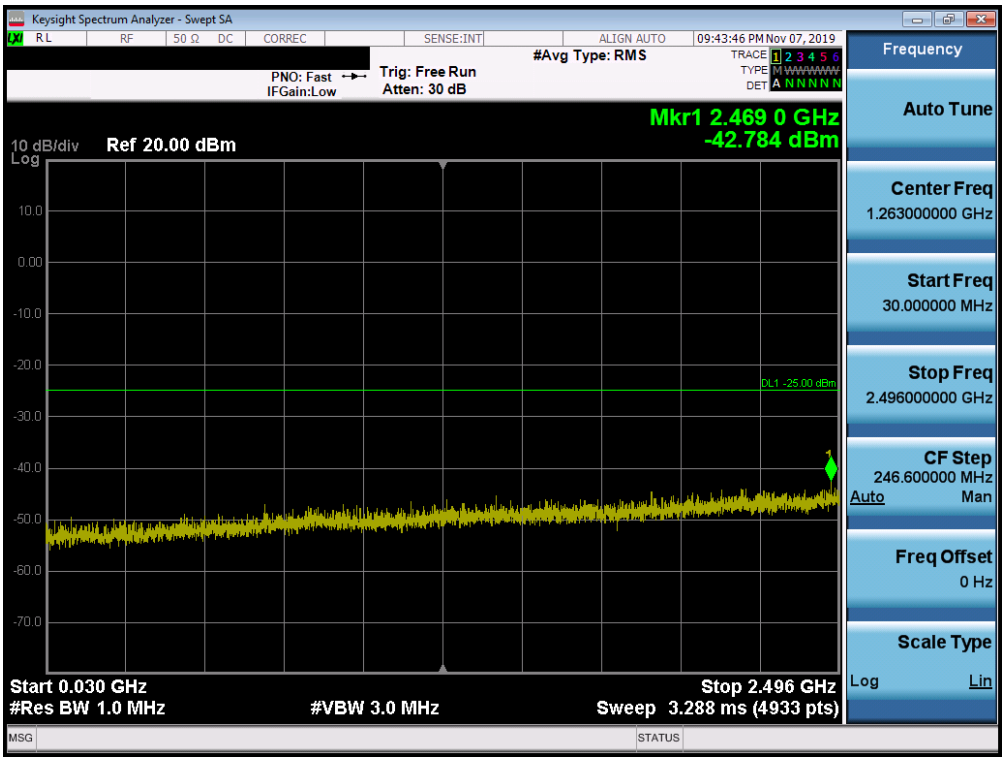


Table 7-494. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

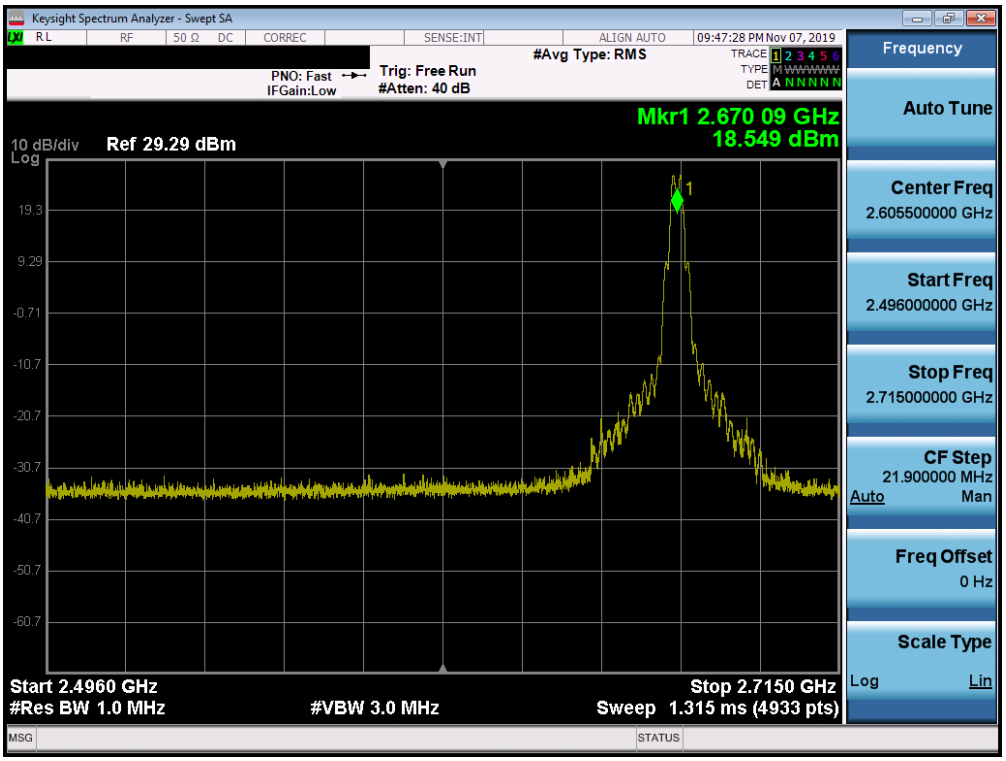


Table 7-495. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

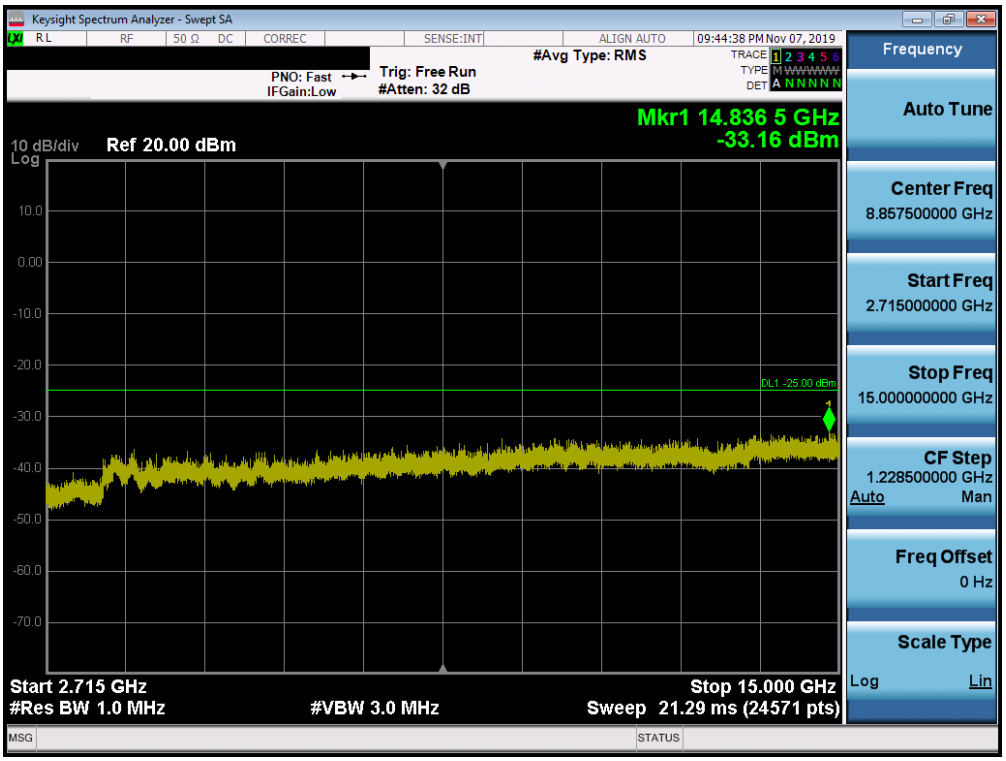


Table 7-496. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)

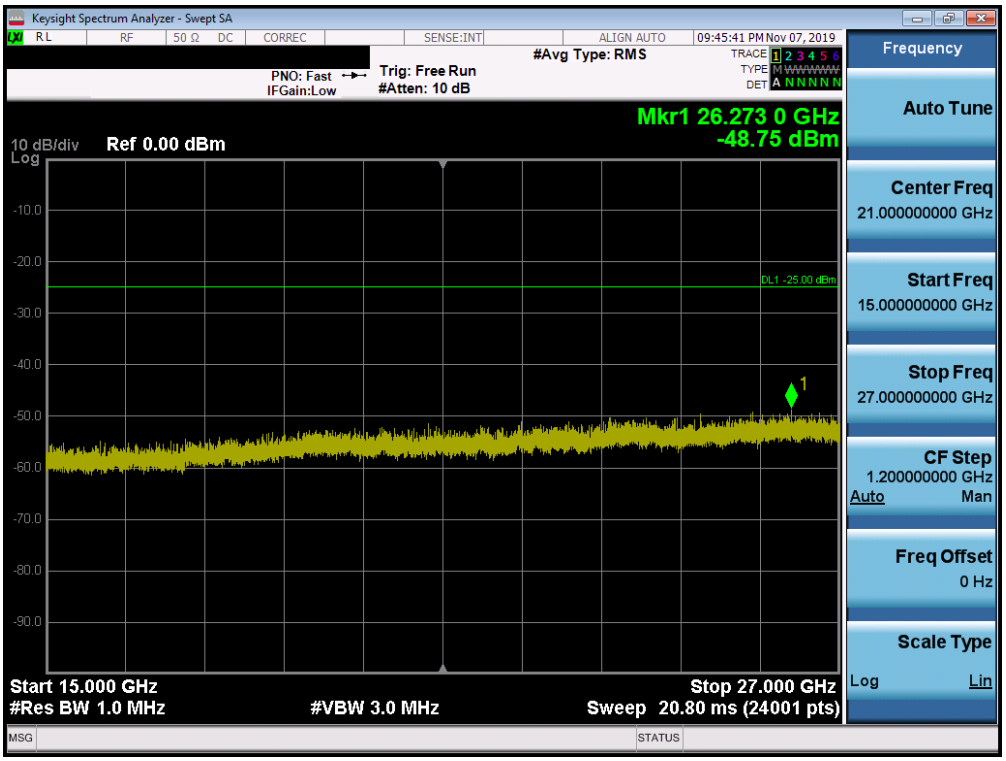
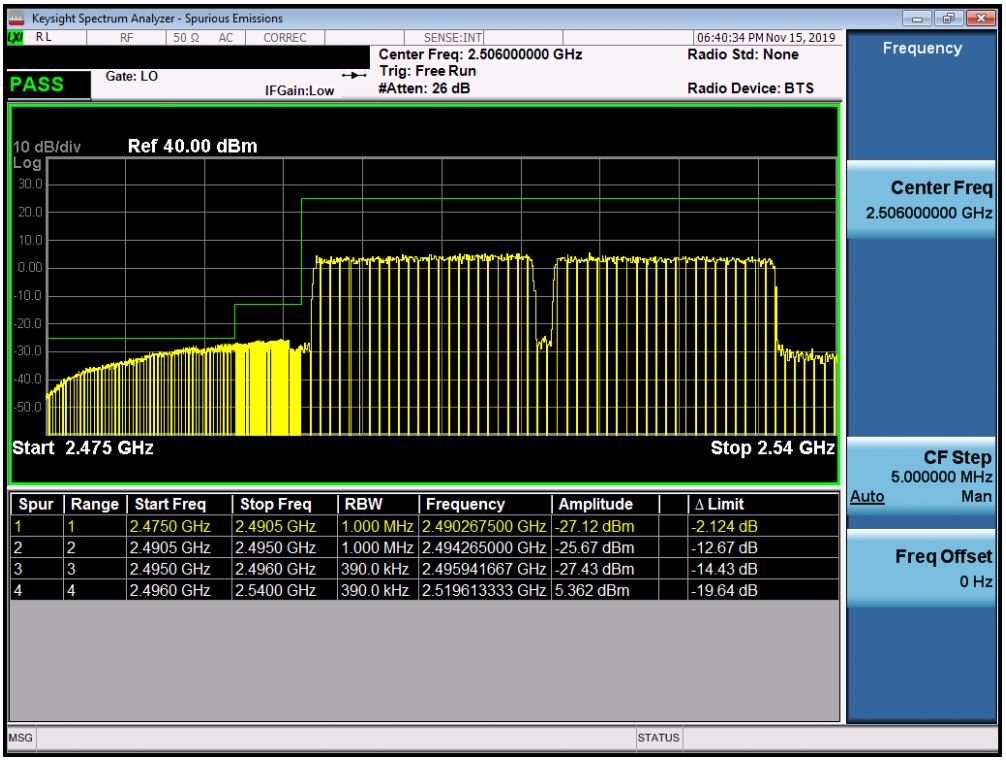
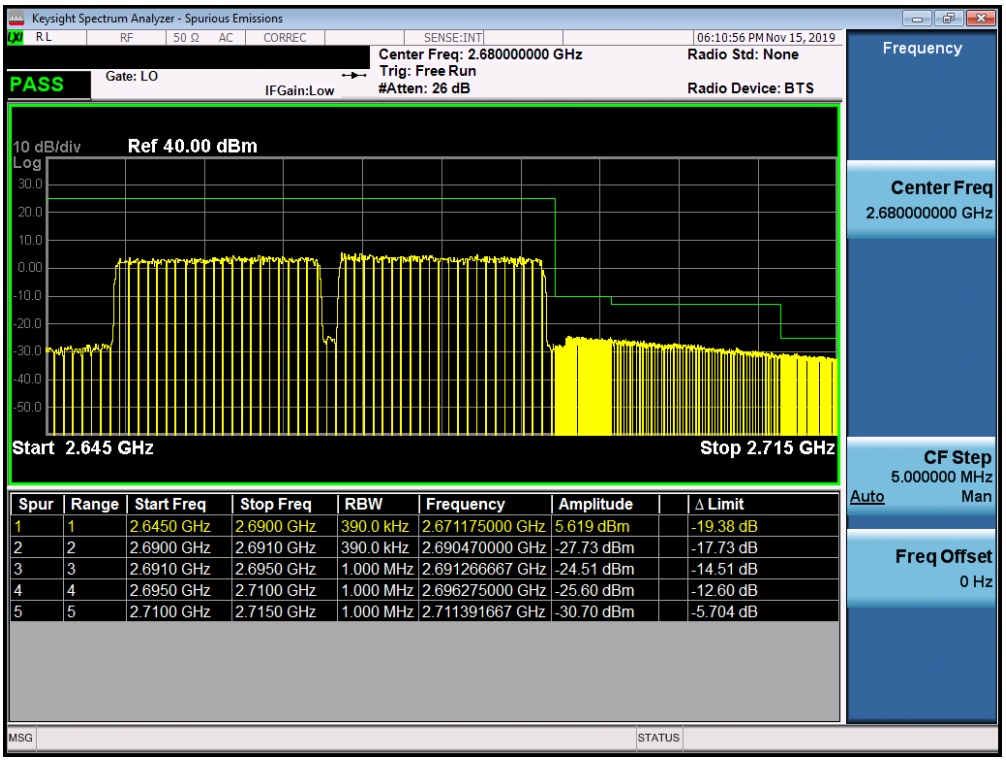


Table 7-497. Conducted Spurious Plot (Band 41 PC2 – 20.0MHz QPSK – PCC 1/0 SCC 1/99 – High Channel)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490267500 GHz	-27.12 dBm	-2.124 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494265000 GHz	-25.67 dBm	-12.67 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495941667 GHz	-27.43 dBm	-14.43 dB
4	4	2.4960 GHz	2.5400 GHz	390.0 kHz	2.519613333 GHz	5.362 dBm	-19.64 dB

Table 7-498. Lower ACP Plot (Band 41 PC2 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6450 GHz	2.6900 GHz	390.0 kHz	2.671175000 GHz	5.619 dBm	-19.38 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690470000 GHz	-27.73 dBm	-17.73 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691266667 GHz	-24.51 dBm	-14.51 dB
4	4	2.6950 GHz	2.7100 GHz	1.000 MHz	2.696275000 GHz	-25.60 dBm	-12.60 dB
5	5	2.7100 GHz	2.7150 GHz	1.000 MHz	2.711391667 GHz	-30.70 dBm	-5.704 dB

Table 7-499. Upper ACP Plot (Band 41 PC2 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

7.8 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. 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 Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Setup

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

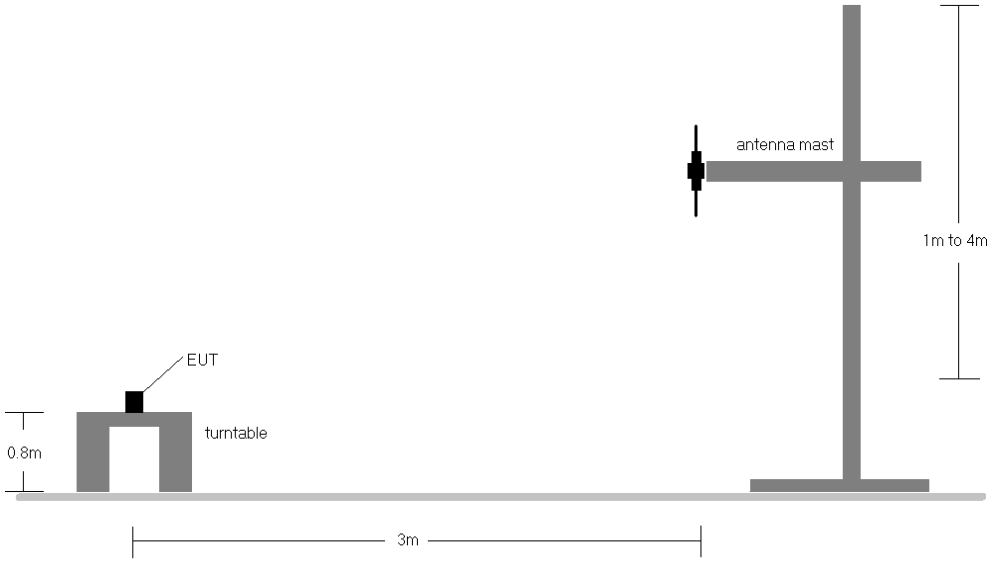


Figure 7-7. Radiated Test Setup <1GHz

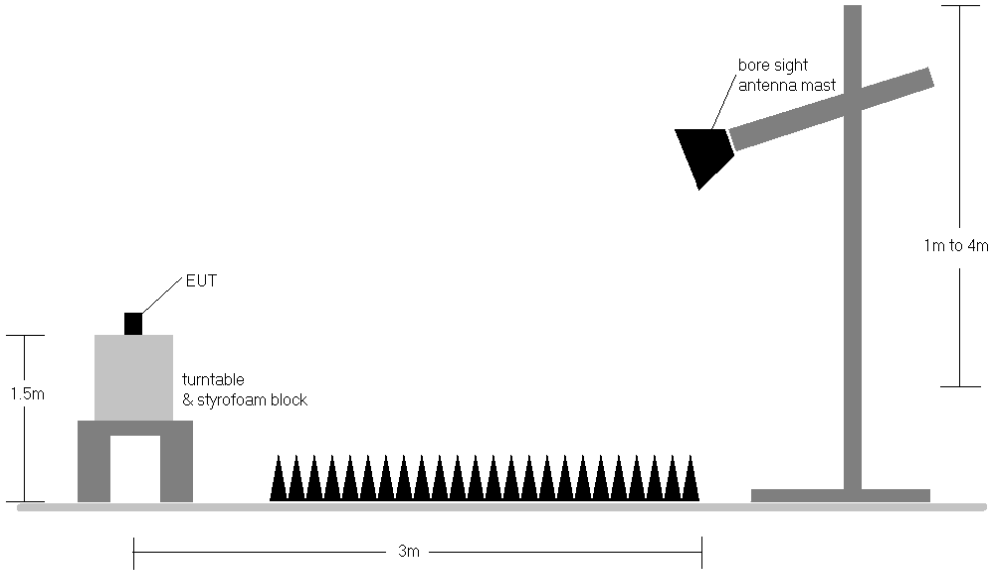


Figure 7-8. Radiated Test Setup >1GHz

Test Notes

1) 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.

2) This unit was tested with its standard battery.

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	H	175	283	1 / 24	15.02	2.90	15.77	0.038	34.77	-19.00
680.50	5	QPSK	H	175	280	1 / 24	16.11	3.20	**17.16**	0.052	34.77	-17.61
695.50	5	QPSK	H	173	282	1 / 24	15.36	3.30	16.51	0.045	34.77	-18.26
680.50	5	16-QAM	H	175	280	1 / 24	15.29	3.20	**16.34**	0.043	34.77	-18.43
680.50	5	64-QAM	H	175	280	1 / 24	13.74	3.20	**14.79**	0.030	34.77	-19.98
680.50	5	256-QAM	H	175	280	1 / 24	12.87	3.20	13.92	0.025	34.77	-20.85
668.00	10	QPSK	H	171	282	1 / 49	15.34	2.90	16.09	0.041	34.77	-18.68
680.50	10	QPSK	H	175	280	1 / 49	15.94	3.20	16.99	0.050	34.77	-17.78
693.00	10	QPSK	H	173	281	1 / 49	15.91	3.30	**17.06**	0.051	34.77	-17.71
680.50	10	16-QAM	H	175	280	1 / 49	15.60	3.20	**16.65**	0.046	34.77	-18.12
680.50	10	64-QAM	H	175	280	1 / 49	14.34	3.20	**15.39**	0.035	34.77	-19.38
680.50	10	256-QAM	H	175	280	1 / 49	11.72	3.20	**12.77**	**0.019**	34.77	-22.00
670.50	15	QPSK	H	172	277	1 / 74	15.44	3.00	16.29	0.043	34.77	-18.48
680.50	15	QPSK	H	172	275	1 / 74	16.16	3.20	**17.21**	**0.053**	34.77	-17.56
690.50	15	QPSK	H	172	278	1 / 74	15.79	3.30	16.94	0.049	34.77	-17.83
680.50	15	16-QAM	H	172	275	1 / 74	15.43	3.20	**16.48**	0.044	34.77	-18.29
680.50	15	64-QAM	H	172	275	1 / 74	14.20	3.20	**15.25**	0.033	34.77	-19.52
680.50	15	256-QAM	H	172	275	1 / 74	11.33	3.20	**12.38**	**0.017**	34.77	-22.39
673.00	20	QPSK	H	177	277	1 / 99	15.53	3.10	16.48	0.044	34.77	-18.29
680.50	20	QPSK	H	172	279	1 / 99	14.89	3.20	15.94	0.039	34.77	-18.83
688.00	20	QPSK	H	174	279	1 / 99	15.62	3.30	**16.77**	0.048	34.77	-18.00
688.00	20	16-QAM	H	174	279	1 / 99	14.84	3.30	**15.99**	0.040	34.77	-18.78
673.00	20	64-QAM	H	177	277	1 / 99	13.76	3.10	**14.71**	0.030	34.77	-20.06
688.00	20	256-QAM	H	174	279	1 / 99	10.74	3.30	**11.89**	**0.015**	34.77	-22.88
680.50	15	QPSK	V	155	155	1 / 74	12.55	3.20	13.60	0.023	34.77	-21.17
680.50	15 (WCP)	QPSK	H	172	281	1 / 74	12.12	3.20	13.17	0.021	34.77	-21.60

Table 7-12. ERP Data (Band 71)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	166	329	1 / 5	15.19	4.50	17.54	0.057	34.77	-17.23	19.69	0.093	36.99	-17.30
707.50	1.4	QPSK	V	172	303	1 / 5	15.51	4.60	**17.96**	0.063	34.77	-16.81	**20.11**	0.103	36.99	-16.88
715.30	1.4	QPSK	V	101	211	1 / 0	14.45	4.63	16.93	0.049	34.77	-17.84	19.08	0.081	36.99	-17.91
707.50	1.4	16-QAM	V	172	303	1 / 5	14.72	4.60	**17.17**	0.052	34.77	-17.60	**19.32**	0.086	36.99	-17.67
707.50	1.4	64-QAM	V	172	303	1 / 0	13.56	4.60	**16.01**	0.040	34.77	-18.76	**18.16**	0.065	36.99	-18.83
707.50	1.4	256-QAM	V	172	303	1 / 0	10.59	4.60	**13.04**	**0.020**	34.77	-21.73	**15.19**	**0.033**	36.99	-21.80
700.50	3	QPSK	V	185	235	1 / 0	15.55	4.55	**17.95**	0.062	34.77	-16.82	**20.10**	0.102	36.99	-16.89
707.50	3	QPSK	V	195	248	1 / 14	15.49	4.60	17.94	0.062	34.77	-16.83	20.09	0.102	36.99	-16.90
714.50	3	QPSK	V	100	246	1 / 0	14.44	4.60	16.89	0.049	34.77	-17.88	19.04	0.080	36.99	-17.95
707.50	3	16-QAM	V	195	248	1 / 0	15.07	4.60	**17.52**	0.056	34.77	-17.25	**19.67**	0.093	36.99	-17.32
707.50	3	64-QAM	V	195	248	1 / 0	13.91	4.60	**16.36**	0.043	34.77	-18.41	**18.51**	0.071	36.99	-18.48
707.50	3	256-QAM	V	195	248	1 / 0	11.09	4.60	**13.54**	**0.023**	34.77	-21.23	**15.69**	**0.037**	36.99	-21.30
701.50	5	QPSK	V	179	254	1 / 24	15.53	4.60	17.98	0.063	34.77	-16.79	20.13	0.103	36.99	-16.86
707.50	5	QPSK	V	187	296	1 / 0	15.83	4.60	**18.28**	**0.067**	34.77	-16.49	**20.43**	**0.110**	36.99	-16.56
713.50	5	QPSK	V	183	249	1 / 0	14.78	4.60	17.23	0.053	34.77	-17.54	19.38	0.087	36.99	-17.61
707.50	5	16-QAM	V	187	296	1 / 0	15.15	4.60	**17.60**	0.058	34.77	-17.17	**19.75**	0.094	36.99	-17.24
707.50	5	64-QAM	V	187	296	1 / 0	14.26	4.60	**16.71**	0.047	34.77	-18.06	**18.86**	0.077	36.99	-18.13
707.50	5	256-QAM	V	187	296	1 / 0	11.20	4.60	**13.65**	**0.023**	34.77	-21.12	**15.80**	**0.038**	36.99	-21.19
704.00	10	QPSK	V	101	285	1 / 49	13.19	4.50	15.54	0.036	34.77	-19.23	17.69	0.059	36.99	-19.30
707.50	10	QPSK	V	100	286	1 / 49	14.39	4.60	**16.84**	0.048	34.77	-17.93	**18.99**	0.079	36.99	-18.00
711.00	10	QPSK	V	101	271	1 / 49	14.32	4.60	16.77	0.048	34.77	-18.00	18.92	0.078	36.99	-18.07
711.00	10	16-QAM	V	101	271	1 / 49	13.69	4.60	**16.14**	0.041	34.77	-18.63	**18.29**	0.067	36.99	-18.70
707.50	10	64-QAM	V	100	286	1 / 49	12.64	4.60	**15.09**	0.032	34.77	-19.68	**17.24**	0.053	36.99	-19.75
711.00	10	256-QAM	V	101	271	1 / 49	10.14	4.60	**12.59**	**0.018**	34.77	-22.18	**14.74**	**0.030**	36.99	-22.25
707.50	5	QPSK	H	137	331	1 / 0	14.36	3.65	15.86	0.039	34.77	-18.91	18.01	0.063	36.99	-18.98
707.50	5 (WCP)	QPSK	V	176	298	1 / 0	12.73	4.60	15.18	0.033	34.77	-19.59	17.33	0.054	36.99	-19.66

Table 7-13. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
779.50	5	QPSK	H	102	290	1 / 24	14.34	5.80	17.99	0.063	34.77	-16.78
782.00	5	QPSK	H	101	290	1 / 24	14.40	5.80	**18.05**	0.064	34.77	-16.72
784.50	5	QPSK	H	101	290	1 / 0	14.20	5.90	17.95	0.062	34.77	-16.82
782.00	5	16-QAM	H	101	290	1 / 24	14.04	5.80	**17.69**	0.059	34.77	-17.08
782.00	5	64-QAM	H	101	290	1 / 24	11.74	5.80	**15.39**	0.035	34.77	-19.38
782.00	5	256-QAM	H	101	290	1 / 24	11.03	5.80	**14.68**	**0.029**	34.77	-20.09
782.00	10	QPSK	H	100	290	1 / 49	15.11	5.80	**18.76**	**0.075**	34.77	-16.01
782.00	10	16-QAM	H	100	290	1 / 49	14.24	5.80	**17.89**	0.062	34.77	-16.88
782.00	10	64-QAM	H	100	290	1 / 49	13.51	5.80	**17.16**	0.052	34.77	-17.61
782.00	10	256-QAM	H	100	290	1 / 49	11.37	5.80	**15.02**	**0.032**	34.77	-19.75
782.00	10	QPSK	V	161	245	1 / 49	14.61	5.80	18.26	0.067	34.77	-16.51
782.00	10 (WCP)	QPSK	H	227	264	1 / 49	14.21	5.80	17.86	0.061	34.77	-16.91

Table 7-14. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	H	145	291	1 / 0	12.81	6.70	17.36	0.054	38.45	-21.09
836.50	1.4	QPSK	H	145	291	1 / 0	13.57	6.70	**18.12**	0.065	38.45	-20.33
848.30	1.4	QPSK	H	141	290	1 / 5	13.38	6.70	17.93	0.062	38.45	-20.52
848.30	1.4	16-QAM	H	141	290	1 / 5	13.06	6.70	**17.61**	0.058	38.45	-20.84
848.30	1.4	64-QAM	H	141	290	1 / 5	12.29	6.70	**16.84**	0.048	38.45	-21.61
848.30	1.4	256-QAM	H	141	290	1 / 5	9.16	6.70	**13.71**	**0.023**	38.45	-24.74
825.50	3	QPSK	H	143	295	1 / 0	12.94	6.70	17.49	0.056	38.45	-20.96
836.50	3	QPSK	H	143	291	1 / 0	13.66	6.70	**18.21**	0.066	38.45	-20.24
847.50	3	QPSK	H	140	295	1 / 14	13.33	6.65	17.83	0.061	38.45	-20.62
847.50	3	16-QAM	H	140	295	1 / 14	12.92	6.65	**17.42**	0.055	38.45	-21.03
847.50	3	64-QAM	H	140	295	1 / 14	11.97	6.65	**16.47**	0.044	38.45	-21.98
825.50	3	256-QAM	H	143	295	1 / 0	9.71	6.70	**14.26**	**0.027**	38.45	-24.19
826.50	5	QPSK	H	140	292	1 / 0	13.05	6.70	17.60	0.058	38.45	-20.85
836.50	5	QPSK	H	141	291	1 / 0	13.78	6.70	**18.33**	0.068	38.45	-20.12
846.50	5	QPSK	H	136	291	1 / 24	13.37	6.60	17.82	0.061	38.45	-20.63
836.50	5	16-QAM	H	141	291	1 / 24	12.78	6.70	**17.33**	0.054	38.45	-21.12
846.50	5	64-QAM	H	136	291	1 / 24	11.84	6.60	**16.29**	0.043	38.45	-22.16
826.50	5	256-QAM	H	140	292	1 / 0	10.31	6.70	**14.86**	**0.031**	38.45	-23.59
829.00	10	QPSK	H	137	291	1 / 0	13.16	6.70	17.71	0.059	38.45	-20.74
836.50	10	QPSK	H	142	286	1 / 0	13.83	6.70	**18.38**	**0.069**	38.45	-20.07
844.00	10	QPSK	H	135	285	1 / 49	13.42	6.60	17.87	0.061	38.45	-20.58
836.50	10	16-QAM	H	142	286	1 / 0	12.93	6.70	**17.48**	0.056	38.45	-20.97
836.50	10	64-QAM	H	142	286	1 / 0	12.05	6.70	**16.60**	0.046	38.45	-21.85
829.00	10	256-QAM	H	137	291	1 / 0	10.63	6.70	**15.18**	**0.033**	38.45	-23.27
836.50	10	QPSK	V	326	185	1 / 0	11.65	6.70	16.20	0.042	38.45	-22.25
836.50	10 (WCP)	QPSK	H	201	259	1 / 0	12.48	6.70	17.03	0.050	38.45	-21.42

Table 7-15. ERP Data (Band 26/5)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
831.50	15	QPSK	H	135	290	1 / 0	11.94	6.70	16.49	0.045	38.45	-21.96
836.50	15	QPSK	H	141	285	1 / 0	12.69	6.70	**17.24**	0.053	38.45	-21.21
841.50	15	QPSK	H	135	285	1 / 74	12.28	6.60	16.73	0.047	38.45	-21.72
836.50	15	16-QAM	H	141	285	1 / 0	11.43	6.70	**15.98**	0.040	38.45	-22.47
836.50	15	64-QAM	H	141	285	1 / 0	10.61	6.70	**15.16**	0.033	38.45	-23.29
831.50	15	256-QAM	H	135	290	1 / 0	8.78	6.70	**13.33**	**0.022**	38.45	-25.12

Table 7-16. ERP Data (Band 26)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	H	154	210	1 / 0	9.41	9.44	18.85	0.077	30.00	-11.15
1745.00	1.4	QPSK	H	140	215	1 / 0	14.01	9.23	**23.24**	0.211	30.00	-6.76
1779.30	1.4	QPSK	H	133	211	1 / 0	9.04	9.26	18.30	0.068	30.00	-11.70
1779.30	1.4	16-QAM	H	133	211	1 / 0	12.69	9.26	**21.95**	0.157	30.00	-8.05
1779.30	1.4	64-QAM	H	133	211	1 / 5	11.09	9.26	**20.35**	0.108	30.00	-9.65
1710.70	1.4	256-QAM	H	154	210	1 / 0	9.13	9.44	**18.57**	**0.072**	30.00	-11.43
1711.50	3	QPSK	H	155	208	1 / 0	11.71	9.44	21.15	0.130	30.00	-8.85
1745.00	3	QPSK	H	140	215	1 / 0	13.93	9.23	**23.16**	0.207	30.00	-6.84
1778.50	3	QPSK	H	133	208	1 / 0	11.12	9.26	20.37	0.109	30.00	-9.63
1745.00	3	16-QAM	H	140	215	1 / 14	13.75	9.23	**22.98**	0.199	30.00	-7.02
1711.50	3	64-QAM	H	155	208	1 / 0	8.55	9.44	**17.99**	0.063	30.00	-12.01
1711.50	3	256-QAM	H	155	208	1 / 0	6.98	9.44	**16.42**	**0.044**	30.00	-13.58
1712.50	5	QPSK	H	155	210	1 / 0	12.86	9.43	22.29	0.170	30.00	-7.71
1745.00	5	QPSK	H	155	210	1 / 0	13.90	9.23	**23.13**	0.206	30.00	-6.87
1777.50	5	QPSK	H	124	211	1 / 0	12.30	9.26	21.56	0.143	30.00	-8.44
1745.00	5	16-QAM	H	155	210	1 / 24	13.29	9.23	**22.52**	0.179	30.00	-7.48
1712.50	5	64-QAM	H	155	210	1 / 0	10.16	9.43	**19.59**	0.091	30.00	-10.41
1712.50	5	256-QAM	H	155	210	1 / 0	8.48	9.43	**17.91**	**0.062**	30.00	-12.09
1715.00	10	QPSK	H	155	210	1 / 0	13.58	9.42	**22.99**	0.199	30.00	-7.01
1745.00	10	QPSK	H	140	215	1 / 0	13.72	9.23	22.95	0.197	30.00	-7.05
1775.00	10	QPSK	H	124	211	1 / 0	12.87	9.25	22.12	0.163	30.00	-7.88
1745.00	10	16-QAM	H	140	215	1 / 49	12.70	9.23	**21.93**	0.156	30.00	-8.07
1715.00	10	64-QAM	H	155	210	1 / 0	11.00	9.42	**20.41**	0.110	30.00	-9.59
1715.00	10	256-QAM	H	155	210	1 / 0	8.85	9.42	**18.26**	**0.067**	30.00	-11.74
1717.50	15	QPSK	H	155	210	1 / 0	13.78	9.40	**23.18**	0.208	30.00	-6.82
1745.00	15	QPSK	H	138	208	1 / 0	13.65	9.23	22.88	0.194	30.00	-7.12
1772.50	15	QPSK	H	124	207	1 / 0	13.06	9.25	22.31	0.170	30.00	-7.69
1745.00	15	16-QAM	H	138	208	1 / 0	13.42	9.23	**22.65**	0.184	30.00	-7.35
1717.50	15	64-QAM	H	155	210	1 / 0	11.41	9.40	**20.81**	0.121	30.00	-9.19
1717.50	15	256-QAM	H	155	210	1 / 0	9.28	9.40	**18.68**	**0.074**	30.00	-11.32
1720.00	20	QPSK	H	150	208	1 / 0	14.09	9.38	**23.47**	**0.223**	30.00	-6.53
1745.00	20	QPSK	H	138	208	1 / 0	13.82	9.23	23.05	0.202	30.00	-6.95
1770.00	20	QPSK	H	124	206	1 / 0	13.42	9.24	22.66	0.185	30.00	-7.34
1745.00	20	16-QAM	H	138	208	1 / 0	13.32	9.23	**22.55**	0.180	30.00	-7.45
1720.00	20	64-QAM	H	150	208	1 / 0	11.79	9.38	**21.17**	0.131	30.00	-8.83
1720.00	20	256-QAM	H	150	208	1 / 0	9.58	9.38	**18.96**	**0.079**	30.00	-11.04
1720.00	20	QPSK	V	155	333	1 / 0	12.99	9.38	22.37	0.173	30.00	-7.63
1720.00	20 (WCP)	QPSK	H	176	308	1 / 0	13.53	9.38	22.91	0.196	30.00	-7.09

Table 7-17. EIRP Data (Band 66/4)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	123	351	1 / 5	14.08	9.48	23.56	0.227	33.01	-9.45
1882.50	1.4	QPSK	H	153	356	1 / 0	13.72	9.94	**23.66**	0.232	33.01	-9.36
1914.30	1.4	QPSK	H	115	355	1 / 0	13.33	10.29	23.62	0.230	33.01	-9.39
1882.50	1.4	16-QAM	H	153	356	1 / 5	13.50	9.94	**23.44**	0.221	33.01	-9.58
1882.50	1.4	64-QAM	H	153	356	1 / 5	12.53	9.94	**22.47**	0.176	33.01	-10.55
1914.30	1.4	256-QAM	H	115	355	6 / 0	9.02	10.29	**19.31**	**0.085**	33.01	-13.70
1851.50	3	QPSK	H	126	358	1 / 14	14.19	9.50	23.69	0.234	33.01	-9.32
1882.50	3	QPSK	H	155	359	1 / 0	13.77	9.94	**23.71**	0.235	33.01	-9.31
1913.50	3	QPSK	H	117	350	1 / 0	13.41	10.29	23.70	0.234	33.01	-9.32
1882.50	3	16-QAM	H	155	359	1 / 14	13.46	9.94	**23.40**	0.219	33.01	-9.62
1882.50	3	64-QAM	H	155	359	1 / 0	12.06	9.94	**22.00**	0.158	33.01	-11.02
1882.50	3	256-QAM	H	155	359	15 / 0	9.28	9.94	**19.22**	**0.083**	33.01	-13.80
1852.50	5	QPSK	H	127	358	1 / 0	13.57	9.51	23.08	0.203	33.01	-9.93
1882.50	5	QPSK	H	153	336	1 / 24	13.44	9.94	**23.38**	0.218	33.01	-9.64
1912.50	5	QPSK	H	115	172	1 / 0	12.37	10.28	22.65	0.184	33.01	-10.36
1882.50	5	16-QAM	H	153	336	1 / 24	12.97	9.94	**22.91**	0.195	33.01	-10.11
1882.50	5	64-QAM	H	153	336	1 / 24	11.92	9.94	**21.86**	0.153	33.01	-11.16
1882.50	5	256-QAM	H	153	336	1 / 24	8.72	9.94	**18.66**	**0.073**	33.01	-14.36
1855.00	10	QPSK	H	216	354	1 / 0	13.75	9.55	**23.30**	0.214	33.01	-9.71
1882.50	10	QPSK	H	158	356	1 / 0	13.21	9.94	23.15	0.206	33.01	-9.87
1910.00	10	QPSK	H	189	354	1 / 49	12.59	10.26	22.85	0.193	33.01	-10.16
1882.50	10	16-QAM	H	158	356	1 / 0	12.70	9.94	**22.64**	0.183	33.01	-10.38
1882.50	10	64-QAM	H	158	356	1 / 0	11.28	9.94	**21.22**	0.132	33.01	-11.80
1855.00	10	256-QAM	H	216	354	1 / 0	9.19	9.55	**18.74**	**0.075**	33.01	-14.27
1857.50	15	QPSK	H	124	356	1 / 0	14.19	9.58	**23.77**	**0.238**	33.01	-9.24
1882.50	15	QPSK	H	150	356	1 / 74	13.78	9.94	23.72	0.235	33.01	-9.30
1907.50	15	QPSK	H	293	353	1 / 74	12.64	10.24	22.88	0.194	33.01	-10.13
1857.50	15	16-QAM	H	124	356	1 / 0	13.68	9.58	**23.26**	0.212	33.01	-9.75
1857.50	15	64-QAM	H	124	356	1 / 74	12.40	9.58	**21.98**	0.158	33.01	-11.03
1857.50	15	256-QAM	H	124	356	1 / 74	9.52	9.58	**19.10**	**0.081**	33.01	-13.91
1860.00	20	QPSK	H	110	349	1 / 99	13.52	9.62	**23.14**	0.206	33.01	-9.87
1882.50	20	QPSK	H	100	353	1 / 0	12.94	9.94	22.88	0.194	33.01	-10.14
1905.00	20	QPSK	H	102	349	1 / 0	12.05	10.22	22.27	0.169	33.01	-10.74
1860.00	20	16-QAM	H	110	349	1 / 99	13.36	9.62	**22.98**	0.198	33.01	-10.03
1860.00	20	64-QAM	H	110	349	1 / 99	11.81	9.62	**21.43**	0.139	33.01	-11.58
1860.00	20	256-QAM	H	110	349	1 / 99	9.69	9.62	**19.31**	**0.085**	33.01	-13.70
1857.50	15	QPSK	V	106	312	1 / 0	13.33	9.58	22.91	0.195	33.01	-10.10
1857.50	15 (WCP)	QPSK	H	151	222	1 / 0	11.92	9.58	21.50	0.141	33.01	-11.51

Table 7-18. EIRP Data (Band 25/2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2307.50	5	QPSK	H	152	194	1 / 24	12.70	10.31	23.01	0.200	23.98	-0.97
2312.50	5	QPSK	H	147	191	1 / 24	12.81	10.31	**23.12**	0.205	23.98	-0.86
2312.50	5	16-QAM	H	147	191	1 / 24	11.72	10.31	**22.03**	0.160	23.98	-1.95
2312.50	5	64-QAM	H	147	191	1 / 24	10.63	10.31	**20.94**	0.124	23.98	-3.04
2312.50	5	256-QAM	H	147	191	1 / 24	7.44	10.31	**17.75**	**0.060**	23.98	-6.23
2310.00	10	QPSK	H	153	188	1 / 49	12.87	10.31	**23.18**	**0.208**	23.98	-0.80
2310.00	10	16-QAM	H	153	188	1 / 49	11.70	10.31	22.01	0.159	23.98	-1.97
2310.00	10	64-QAM	H	153	188	1 / 49	10.44	10.31	20.75	0.119	23.98	-3.23
2310.00	10	256-QAM	H	153	188	1 / 49	7.16	10.31	**17.47**	**0.056**	23.98	-6.51
2310.00	10	QPSK	V	188	307	1 / 49	12.67	10.23	22.90	0.195	23.98	-1.08
2310.00	10 (WCP)	QPSK	H	107	173	1 / 49	12.40	10.31	22.71	0.187	23.98	-1.27

Table 7-19. EIRP Data (Band 30)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	112	215	1 / 0	12.36	9.43	21.79	0.151	33.01	-11.22
2535.00	5	QPSK	H	151	211	1 / 24	12.46	9.39	**21.85**	0.153	33.01	-11.16
2567.50	5	QPSK	H	120	215	1 / 24	11.99	9.45	21.44	0.139	33.01	-11.57
2535.00	5	16-QAM	H	151	211	1 / 0	12.22	9.39	**21.61**	0.145	33.01	-11.40
2502.50	5	64-QAM	H	112	215	1 / 24	10.44	9.43	**19.87**	0.097	33.01	-13.14
2567.50	5	256-QAM	H	120	215	1 / 24	7.00	9.45	**16.45**	**0.044**	33.01	-16.56
2505.00	10	QPSK	H	112	211	1 / 0	12.53	9.43	21.95	0.157	33.01	-11.06
2535.00	10	QPSK	H	151	210	1 / 49	12.58	9.39	21.97	0.158	33.01	-11.04
2565.00	10	QPSK	H	115	220	1 / 0	12.61	9.44	**22.05**	0.160	33.01	-10.96
2565.00	10	16-QAM	H	115	220	1 / 0	12.10	9.44	**21.54**	0.143	33.01	-11.47
2535.00	10	64-QAM	H	151	210	1 / 49	10.68	9.39	**20.07**	0.102	33.01	-12.94
2565.00	10	256-QAM	H	115	220	1 / 49	7.79	9.44	**17.23**	**0.053**	33.01	-15.78
2507.50	15	QPSK	H	119	211	1 / 0	12.47	9.42	21.89	0.155	33.01	-11.12
2535.00	15	QPSK	H	151	202	1 / 74	12.59	9.39	21.98	0.158	33.01	-11.03
2562.50	15	QPSK	H	120	220	1 / 0	12.63	9.43	**22.06**	0.161	33.01	-10.95
2535.00	15	16-QAM	H	151	202	1 / 74	12.44	9.39	**21.83**	0.153	33.01	-11.18
2535.00	15	64-QAM	H	151	202	1 / 74	10.92	9.39	**20.31**	0.108	33.01	-12.70
2535.00	15	256-QAM	H	151	202	1 / 74	8.18	9.39	**17.57**	**0.057**	33.01	-15.44
2510.00	20	QPSK	H	118	210	1 / 0	12.52	9.42	21.94	0.156	33.01	-11.07
2535.00	20	QPSK	H	151	200	1 / 99	12.76	9.39	**22.15**	**0.164**	33.01	-10.86
2560.00	20	QPSK	H	116	224	1 / 0	12.59	9.42	22.01	0.159	33.01	-11.00
2535.00	20	16-QAM	H	151	200	1 / 99	12.23	9.39	**21.62**	0.145	33.01	-11.39
2535.00	20	64-QAM	H	151	200	1 / 99	11.21	9.39	**20.60**	0.115	33.01	-12.41
2535.00	20	256-QAM	H	151	200	1 / 99	8.62	9.39	**18.01**	**0.063**	33.01	-15.00
2535.00	20	QPSK	V	130	349	1 / 99	12.13	9.39	21.52	0.142	33.01	-11.49
2535.00	20 (WCP)	QPSK	H	155	245	1 / 99	11.71	9.39	21.10	0.129	33.01	-11.91

Table 7-20. EIRP Data (Band 7)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	125	193	1 / 0	14.76	9.43	24.19	0.262	33.01	-8.82
2593.00	5	QPSK	H	166	192	1 / 24	15.45	9.55	25.00	0.317	33.01	-8.01
2687.50	5	QPSK	H	135	195	1 / 0	15.63	9.82	**25.45**	0.351	33.01	-7.56
2593.00	5	16-QAM	H	166	192	1 / 0	15.56	9.55	**25.11**	0.325	33.01	-7.90
2593.00	5	64-QAM	H	166	192	1 / 0	13.46	9.55	**23.01**	0.200	33.01	-10.00
2687.50	5	256-QAM	H	135	195	1 / 24	11.05	9.82	**20.87**	**0.122**	33.01	-12.14
2505.00	10	QPSK	H	123	202	1 / 0	14.98	9.43	24.40	0.276	33.01	-8.61
2593.00	10	QPSK	H	174	200	1 / 49	15.64	9.55	25.19	0.331	33.01	-7.82
2685.00	10	QPSK	H	135	200	1 / 0	15.89	9.82	**25.71**	0.372	33.01	-7.30
2593.00	10	16-QAM	H	174	200	1 / 0	15.54	9.55	**25.09**	0.323	33.01	-7.92
2593.00	10	64-QAM	H	174	200	1 / 0	13.64	9.55	**23.19**	0.209	33.01	-9.82
2685.00	10	256-QAM	H	135	200	1 / 49	11.40	9.82	**21.22**	**0.132**	33.01	-11.79
2507.50	15	QPSK	H	120	195	1 / 0	15.12	9.42	24.54	0.285	33.01	-8.47
2593.00	15	QPSK	H	174	200	1 / 74	15.44	9.55	24.99	0.316	33.01	-8.02
2682.50	15	QPSK	H	135	195	1 / 0	15.48	9.83	**25.31**	0.340	33.01	-7.70
2593.00	15	16-QAM	H	174	200	1 / 0	15.32	9.55	**24.87**	0.307	33.01	-8.14
2593.00	15	64-QAM	H	174	200	1 / 0	13.49	9.55	**23.04**	0.202	33.01	-9.97
2682.50	15	256-QAM	H	135	195	1 / 74	10.97	9.83	**20.80**	**0.120**	33.01	-12.21
2510.00	20	QPSK	H	119	196	1 / 0	15.35	9.42	24.77	0.300	33.01	-8.24
2593.00	20	QPSK	H	174	203	1 / 99	15.89	9.55	25.44	0.350	33.01	-7.57
2680.00	20	QPSK	H	135	210	1 / 0	15.93	9.83	**25.76**	**0.377**	33.01	-7.25
2680.00	20	16-QAM	H	135	210	1 / 0	14.98	9.83	**24.81**	0.303	33.01	-8.20
2593.00	20	64-QAM	H	174	203	1 / 0	13.92	9.55	**23.47**	0.223	33.01	-9.54
2593.00	20	256-QAM	H	174	203	1 / 0	11.23	9.55	**20.78**	**0.120**	33.01	-12.23
2680.00	20	QPSK	V	157	149	1 / 0	13.78	9.83	23.61	0.230	33.01	-9.40
2680.00	20 (WCP)	QPSK	H	149	208	1 / 0	14.79	9.83	24.62	0.290	33.01	-8.39

Table 7-21. EIRP Data (Band 41 – PC2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	155	201	1 / 0	11.85	9.43	21.28	0.134	33.01	-11.73
2593.00	5	QPSK	H	155	230	1 / 0	13.46	9.55	**23.01**	0.200	33.01	-10.00
2687.50	5	QPSK	H	112	230	1 / 0	8.21	9.82	18.03	0.063	33.01	-14.98
2502.50	5	16-QAM	H	155	201	1 / 0	12.99	9.43	**22.41**	0.174	33.01	-10.60
2502.50	5	64-QAM	H	155	201	1 / 0	11.36	9.43	**20.79**	0.120	33.01	-12.22
2502.50	5	256-QAM	H	155	201	1 / 0	7.26	9.43	**16.69**	**0.047**	33.01	-16.32
2505.00	10	QPSK	H	157	201	1 / 0	12.34	9.43	21.77	0.150	33.01	-11.24
2593.00	10	QPSK	H	155	246	1 / 0	13.25	9.55	**22.80**	0.191	33.01	-10.21
2685.00	10	QPSK	H	110	225	1 / 0	11.32	9.82	21.15	0.130	33.01	-11.86
2505.00	10	16-QAM	H	157	201	1 / 0	12.42	9.43	**21.85**	0.153	33.01	-11.16
2505.00	10	64-QAM	H	157	201	1 / 0	11.71	9.43	**21.14**	0.130	33.01	-11.87
2505.00	10	256-QAM	H	157	201	1 / 0	8.72	9.43	**18.15**	**0.065**	33.01	-14.86
2507.50	15	QPSK	H	157	199	1 / 0	12.51	9.42	21.93	0.156	33.01	-11.08
2593.00	15	QPSK	H	152	246	1 / 0	12.63	9.55	22.18	0.165	33.01	-10.83
2682.50	15	QPSK	H	108	222	1 / 0	13.22	9.83	**23.05**	0.202	33.01	-9.96
2507.50	15	16-QAM	H	157	199	1 / 0	12.75	9.42	**22.17**	0.165	33.01	-10.84
2507.50	15	64-QAM	H	157	199	1 / 0	11.69	9.42	**21.11**	0.129	33.01	-11.90
2507.50	15	256-QAM	H	157	199	1 / 0	9.31	9.42	**18.73**	**0.075**	33.01	-14.28
2510.00	20	QPSK	H	157	199	1 / 0	12.76	9.42	22.18	0.165	33.01	-10.83
2593.00	20	QPSK	H	152	246	1 / 0	12.81	9.55	22.36	0.172	33.01	-10.65
2680.00	20	QPSK	H	108	222	1 / 0	13.89	9.83	**23.72**	**0.236**	33.01	-9.29
2680.00	20	16-QAM	H	108	222	1 / 0	13.09	9.83	**22.92**	0.196	33.01	-10.09
2680.00	20	64-QAM	H	108	222	1 / 0	11.62	9.83	**21.45**	0.140	33.01	-11.56
2510.00	20	256-QAM	H	157	199	1 / 0	9.64	9.42	**19.06**	**0.081**	33.01	-13.95
20.00	20	QPSK	V	184	205	1 / 0	12.04	9.83	21.87	0.154	33.01	-11.14
20.00	20 (WCP)	QPSK	H	252	45	1 / 0	12.13	9.83	21.96	0.157	33.01	-11.05

Table 7-22. EIRP Data (Band 41 – PC3)

7.9 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

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.

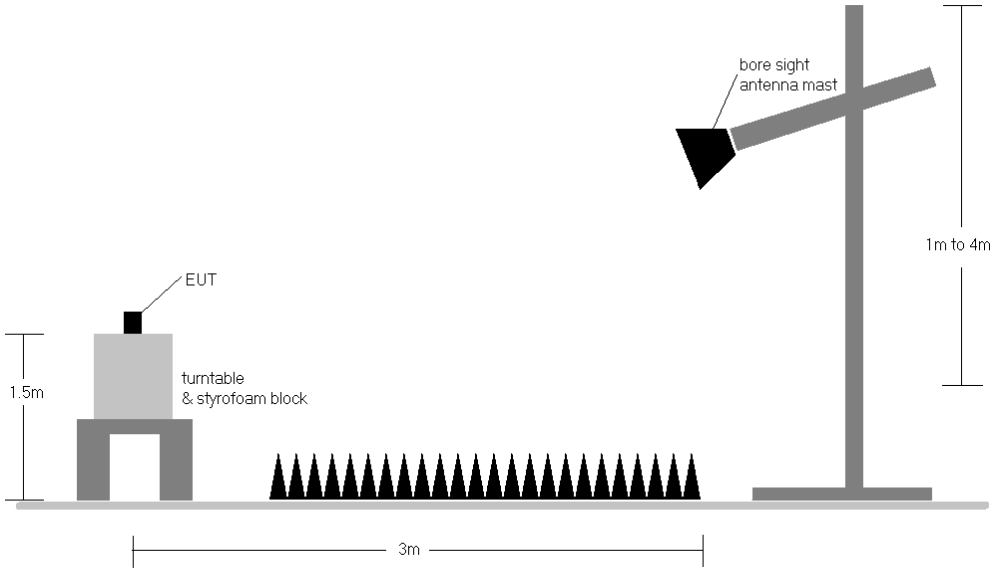


Figure 7-9. Test Instrument & Measurement Setup

Test Notes

1) 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.

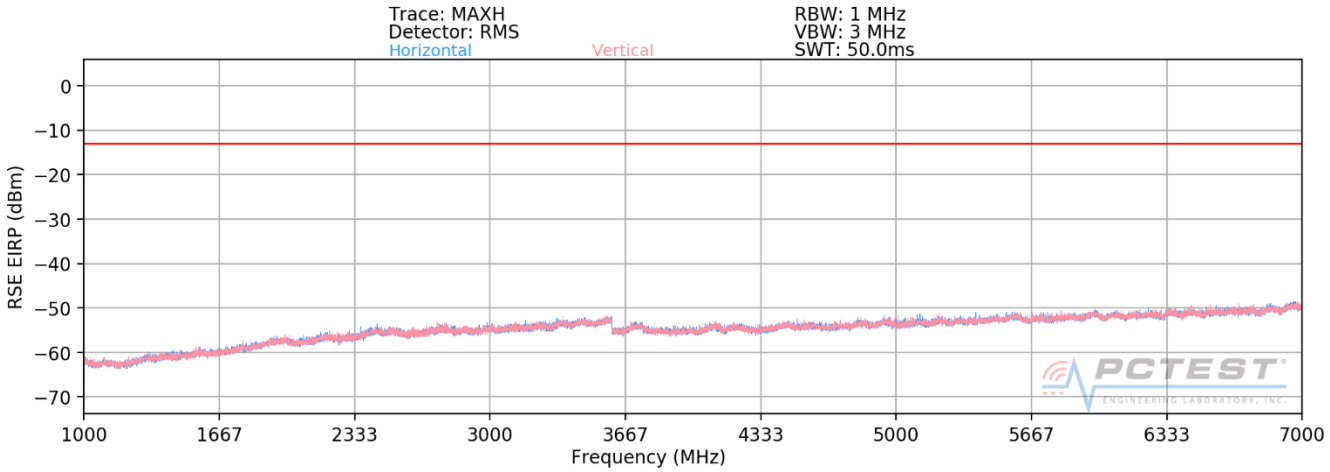
2) This unit was tested with its standard battery.

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

4) 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.

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

Band 71



Plot 7-500. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	670.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1341.00	V	169	351	-72.38	8.77	-63.62	-50.6
2011.50	V	177	179	-70.96	10.28	-60.68	-47.7
2682.00	V	385	310	-68.55	9.83	-58.72	-45.7
3352.50	V	-	-	-65.63	7.30	-58.33	-45.3
4023.00	V	-	-	-66.70	7.35	-59.35	-46.4

Table 7-23. Radiated Spurious Data (Band 71 – Low Channel)

OPERATING FREQUENCY:	680.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	168	233	-70.83	8.61	-62.22	-49.2
2041.50	V	385	243	-67.18	10.04	-57.15	-44.1
2722.00	V	-	-	-69.61	9.58	-60.04	-47.0
3402.50	V	-	-	-66.24	7.33	-58.91	-45.9

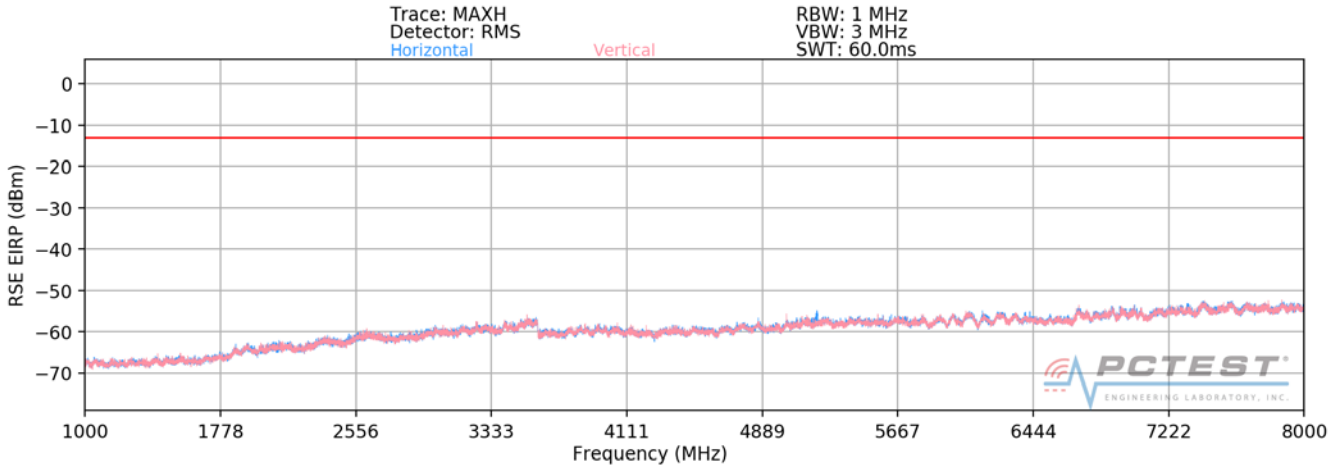
Table 7-24. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY:	690.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1381.00	V	207	123	-72.43	8.35	-64.08	-51.1
2071.50	V	280	187	-66.65	9.82	-56.83	-43.8
2762.00	V	-	-	-69.12	9.25	-59.87	-46.9
3452.50	V	-	-	-66.17	7.55	-58.62	-45.6

Table 7-25. Radiated Spurious Data (Band 71 – High Channel)

Band 12



Plot 7-501. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY:	701.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1403.00	V	161	282	-37.90	8.12	-29.77	-16.8
2104.50	V	133	249	-37.02	9.62	-27.40	-14.4
2806.00	V	-	-	-39.48	9.09	-30.39	-17.4
3507.50	V	-	-	-37.34	7.44	-29.90	-16.9

Table 7-26. Radiated Spurious Data (Band 12 – Low Channel)

OPERATING FREQUENCY:	707.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	V	150	293	-38.89	8.22	-30.67	-17.7
2122.50	V	125	278	-37.38	9.59	-27.80	-14.8
2830.00	V	-	-	-39.42	9.10	-30.32	-17.3
3537.50	V	-	-	-37.24	7.26	-29.98	-17.0

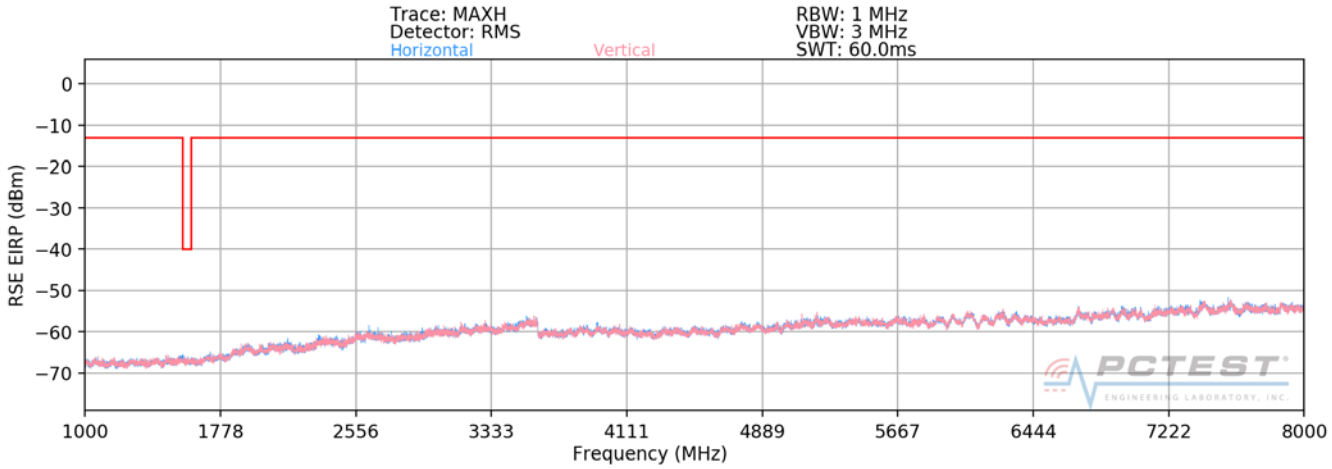
Table 7-27. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY:	713.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1427.00	V	398	282	-41.96	8.31	-33.65	-20.7
2140.50	V	183	279	-36.80	9.56	-27.25	-14.2
2854.00	V	-	-	-39.47	9.12	-30.35	-17.4
3567.50	V	-	-	-37.14	7.10	-30.04	-17.0

Table 7-28. Radiated Spurious Data (Band 12 – High Channel)

Band 13



Plot 7-502. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY:	782.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	V	137	113	-69.09	9.43	-59.66	-46.7
3128.00	V	-	-	-74.60	9.34	-65.26	-52.3
3910.00	V	-	-	-73.62	9.37	-64.25	-51.2

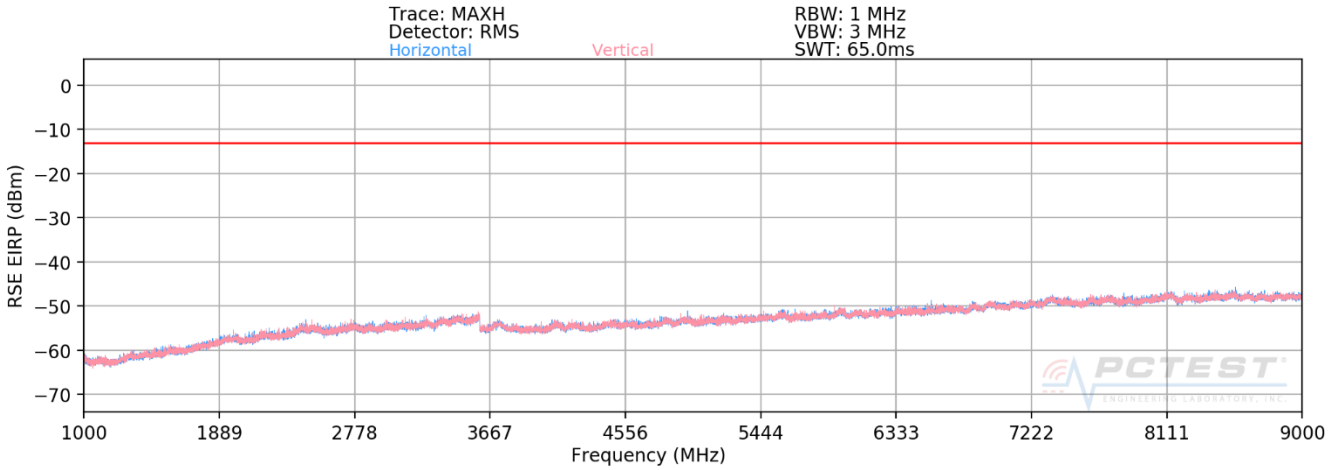
Table 7-29. Radiated Spurious Data (Band 13 – Mid Channel)

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1564.00	V	136	310	-78.29	8.53	-69.76	-29.8

Table 7-30. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

Band 26/5



Plot 7-503. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY:	829.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	V	368	176	-75.10	9.55	-65.54	-52.5
2487.00	V	114	92	-69.91	9.45	-60.46	-47.5
3316.00	V	-	-	-69.19	7.44	-61.75	-48.7
4145.00	V	-	-	-70.06	8.05	-62.01	-49.0

Table 7-31. Radiated Spurious Data (Band 26/5 – Low Channel)

OPERATING FREQUENCY:	836.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	V	241	8	-74.39	9.54	-64.85	-51.9
2509.50	V	108	80	-69.85	9.42	-60.43	-47.4
3346.00	V	-	-	-68.08	7.32	-60.77	-47.8
4182.50	V	-	-	-69.30	8.16	-61.14	-48.1

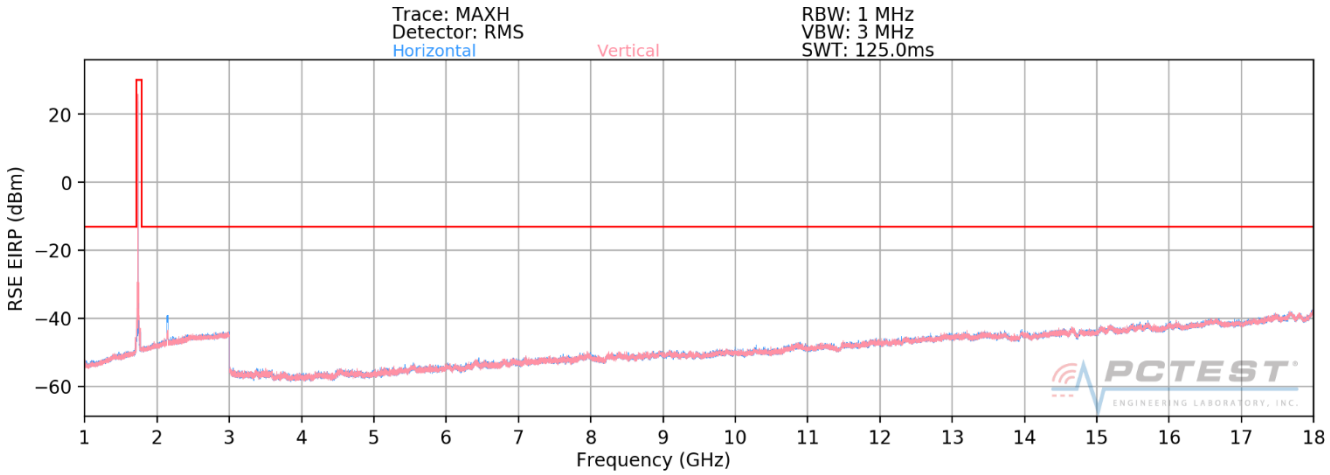
Table 7-32. Radiated Spurious Data (Band 26/5 – Mid Channel)

OPERATING FREQUENCY:	844.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	V	185	155	-73.16	9.52	-63.64	-50.6
2532.00	V	138	113	-67.82	9.40	-58.42	-45.4
3376.00	V	-	-	-68.50	7.31	-61.19	-48.2
4220.00	V	-	-	-68.89	8.34	-60.56	-47.6

Table 7-33. Radiated Spurious Data (Band 26/5 – High Channel)

Band 66/4



Plot 7-504. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY:	1720.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	H	-	-	-66.60	7.51	-59.09	-46.1
5160.00	H	-	-	-68.87	11.10	-57.77	-44.8

Table 7-34. Radiated Spurious Data (Band 66/4 – Low Channel)

OPERATING FREQUENCY:	1745.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	-	-	-66.49	7.50	-58.99	-46.0
5235.00	H	-	-	-69.57	11.26	-58.31	-45.3

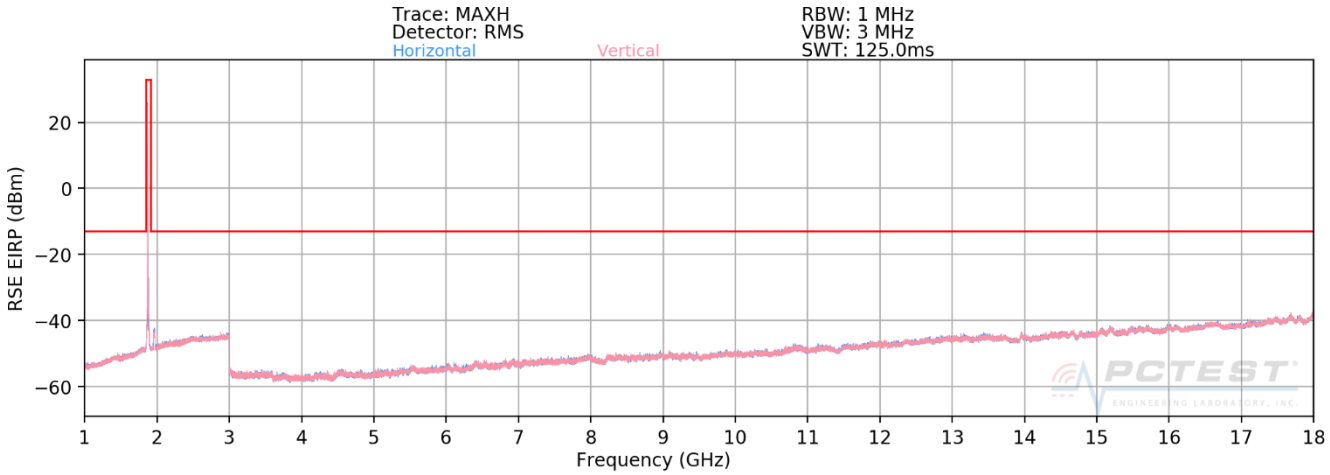
Table 7-35. Radiated Spurious Data (Band 66/4 – Mid Channel)

OPERATING FREQUENCY:	1770.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	H	-	-	-66.32	7.24	-59.07	-46.1
5310.00	H	-	-	-69.83	11.51	-58.32	-45.3

Table 7-36. Radiated Spurious Data (Band 66/4 – High Channel)

Band 25/2



Plot 7-505. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY:	1860.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3720.00	H	-	-	-72.67	9.51	-63.17	-50.2
5580.00	H	-	-	-72.48	10.99	-61.50	-48.5

Table 7-37. Radiated Spurious Data (Band 25/2 – Low Channel)

OPERATING FREQUENCY:	1882.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	H	-	-	-73.14	9.36	-63.78	-50.8
5647.50	H	-	-	-71.91	11.19	-60.71	-47.7

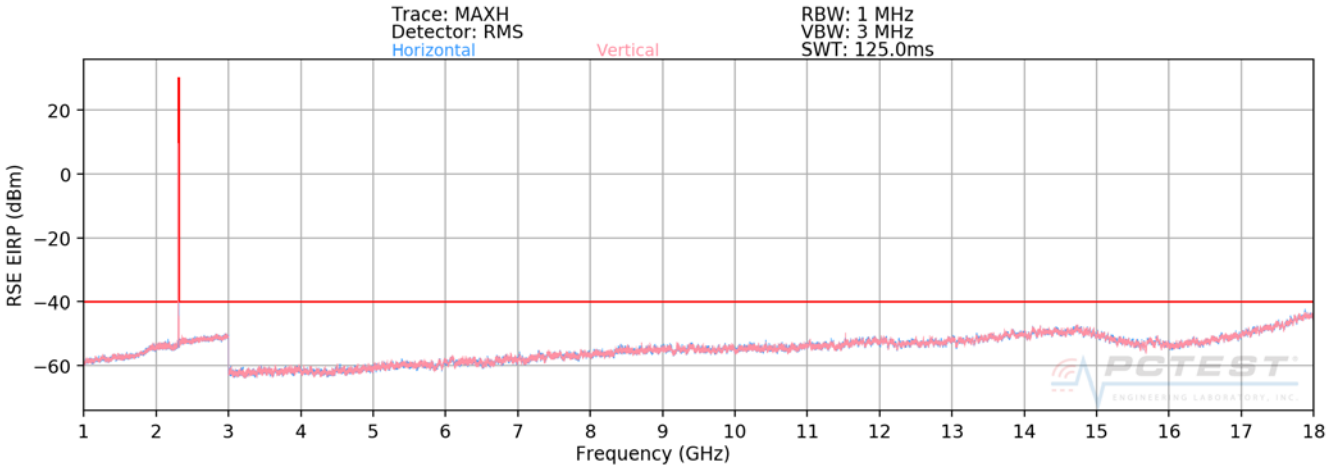
Table 7-38. Radiated Spurious Data (Band 25/2 – Mid Channel)

OPERATING FREQUENCY:	1905.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

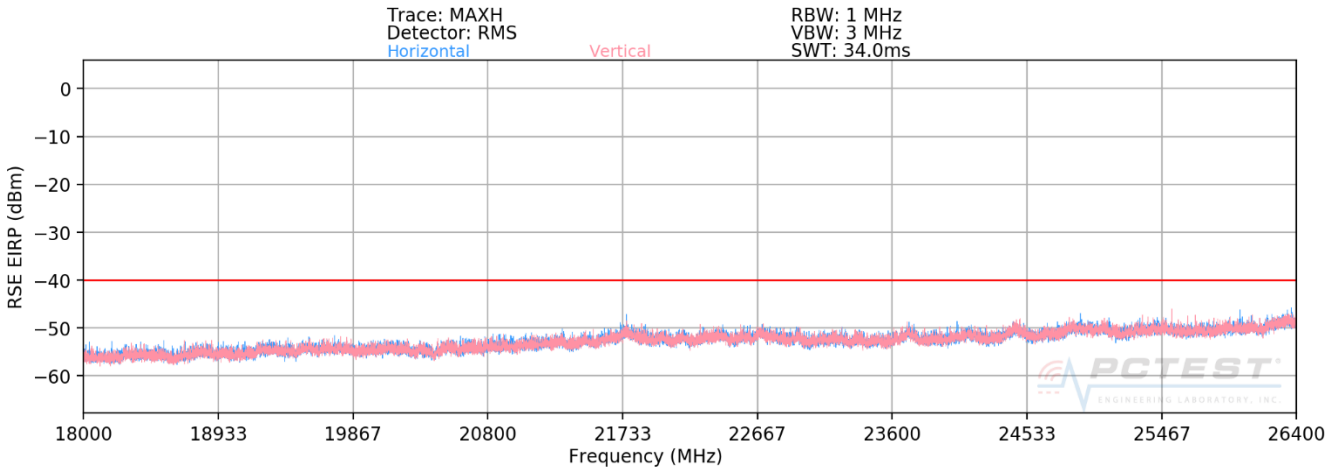
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	H	-	-	-72.74	9.29	-63.44	-50.4
5715.00	H	-	-	-72.50	11.35	-61.15	-48.1

Table 7-39. Radiated Spurious Data (Band 25/2 – High Channel)

Band 30



Plot 7-506. Radiated Spurious Plot 1GHz - 18GHz (Band 30)



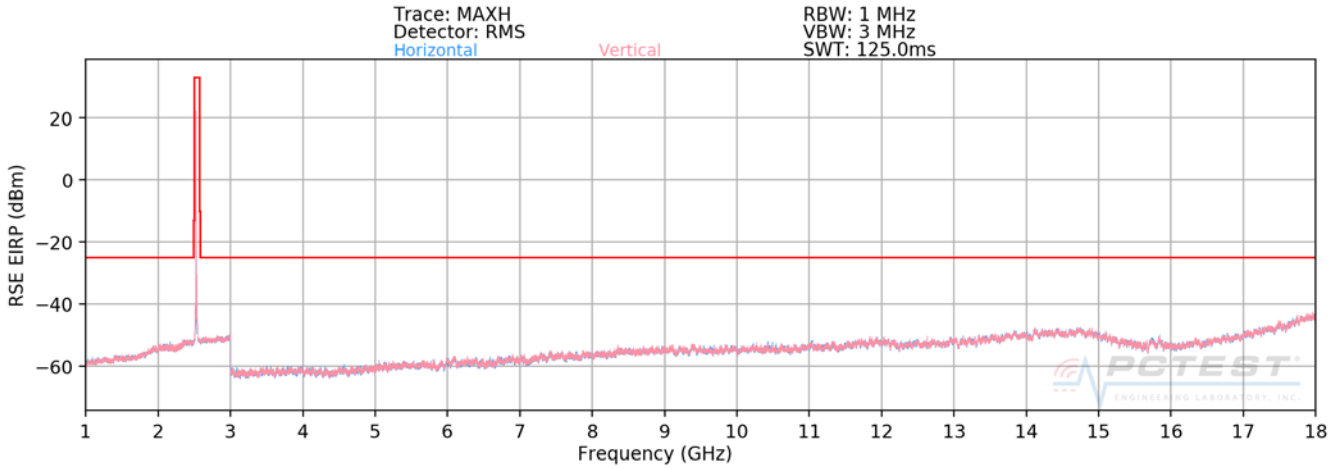
Plot 7-507. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30)

OPERATING FREQUENCY:	2310.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-40	dBm

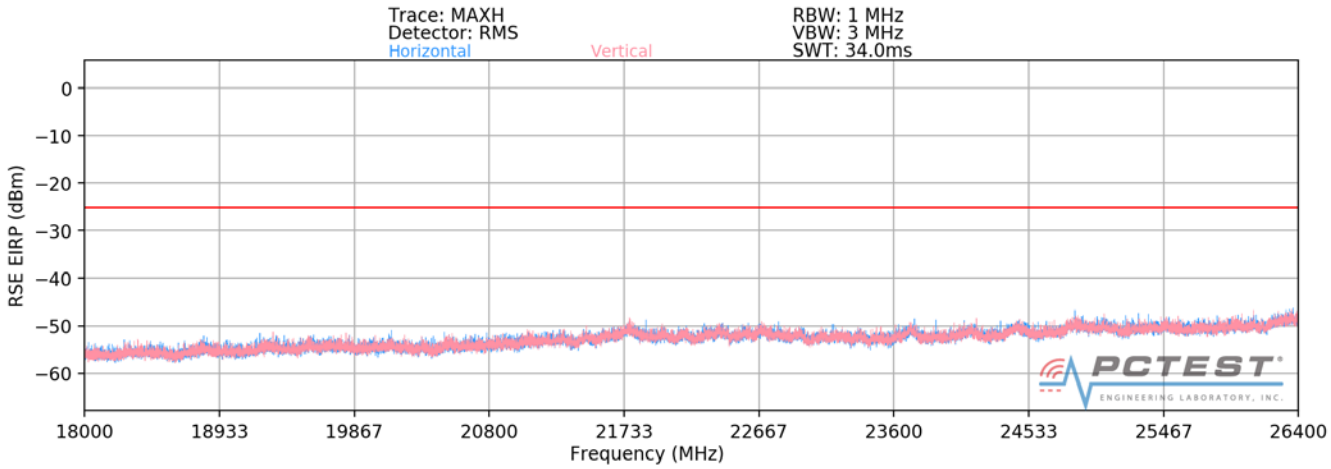
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4620.00	H	119	114	-73.46	10.92	-62.54	-22.5
6930.00	H	-	-	-71.93	11.74	-60.19	-20.2
9240.00	H	118	107	-68.24	11.62	-56.62	-16.6
11550.00	H	250	281	-66.25	12.72	-53.53	-13.5
13860.00	H	-	-	-62.78	11.99	-50.78	-10.8
16170.00	H	-	-	-70.23	16.59	-53.63	-13.6

Table 7-40. Radiated Spurious Data (Band 30 – Mid Channel)

Band 7



Plot 7-508. Radiated Spurious Plot 1GHz - 18GHz (Band 7)



Plot 7-509. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7)

OPERATING FREQUENCY:	2510.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	H	108	188	-66.12	10.80	-55.32	-30.3
7530.00	H	-	-	-65.87	12.56	-53.32	-28.3
10040.00	H	-	-	-61.08	9.75	-51.33	-26.3

Table 7-41. Radiated Spurious Data (Band 7 – Low Channel)

OPERATING FREQUENCY:	2535.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	H	124	194	-67.09	10.92	-56.17	-31.2
7605.00	H	-	-	-65.42	12.40	-53.02	-28.0
10140.00	H	-	-	-60.89	9.84	-51.05	-26.0

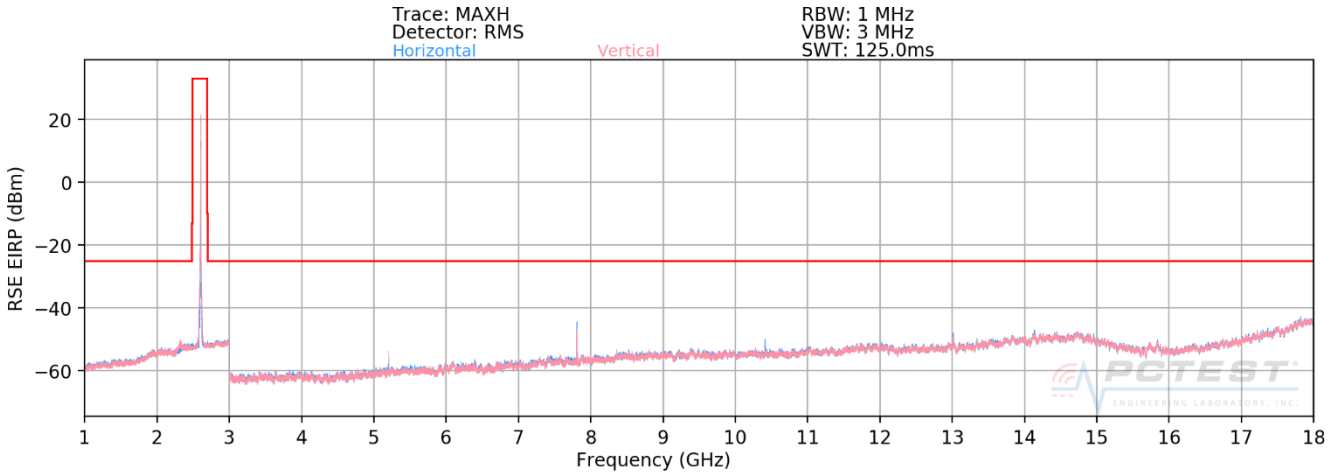
Table 7-42. Radiated Spurious Data (Band 7 – Mid Channel)

OPERATING FREQUENCY:	2560.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

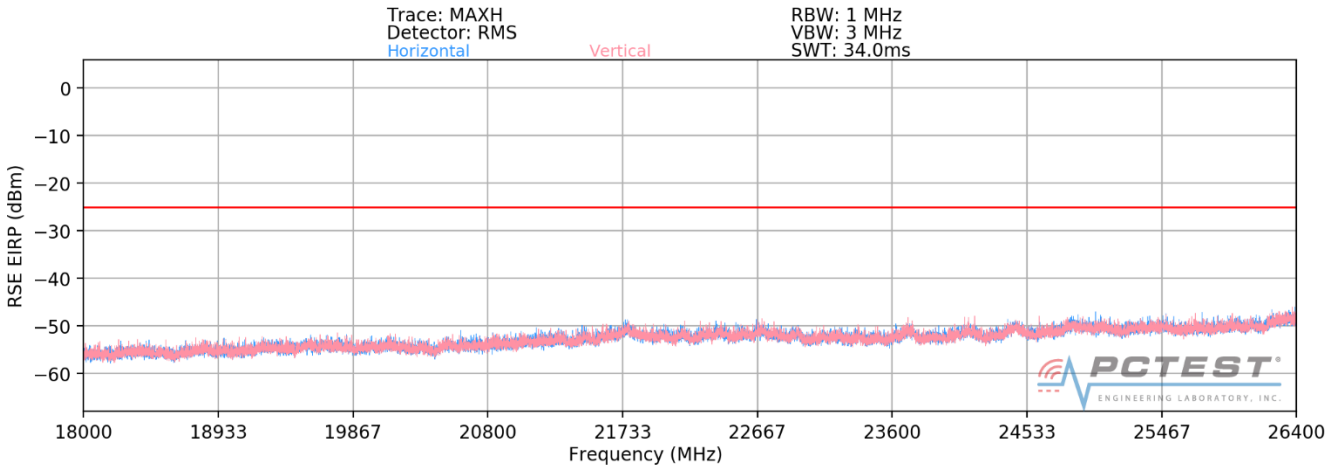
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	H	128	185	-66.82	10.99	-55.83	-30.8
7680.00	H	-	-	-65.85	12.35	-53.51	-28.5
10240.00	H	-	-	-60.50	9.65	-50.84	-25.8

Table 7-43. Radiated Spurious Data (Band 7 – High Channel)

Band 41 PC2



Plot 7-510. Radiated Spurious Plot 1GHz - 18GHz (Band 41)



Plot 7-511. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41)

OPERATING FREQUENCY:	2510.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	V	395	280	-64.49	10.80	-53.69	-28.7
7530.00	V	286	194	-55.71	12.56	-43.16	-18.2
10040.00	V	264	39	-59.87	9.85	-50.02	-25.0
12550.00	V	105	81	-55.67	9.05	-46.62	-21.6
15060.00	V	-	-	-53.73	8.74	-44.99	-20.0
17570.00	V	-	-	-49.22	7.63	-41.59	-16.6

Table 7-44. Radiated Spurious Data (Band 41 – Low Channel)

OPERATING FREQUENCY:	2593.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	114	290	-61.00	11.14	-49.87	-24.9
7779.00	V	110	197	-48.17	12.33	-35.84	-10.8
10372.00	V	108	15	-52.33	9.62	-42.70	-17.7
12965.00	V	100	1	-48.36	8.99	-39.37	-14.4
15558.00	V	-	-	-53.42	8.32	-45.11	-20.1

Table 7-45. Radiated Spurious Data (Band 41 – Mid Channel)

OPERATING FREQUENCY:	2680.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	261	284	-67.99	11.49	-56.50	-31.5
8040.00	V	130	209	-51.64	12.03	-39.61	-14.6
10720.00	V	108	12	-49.70	9.32	-40.38	-15.4
13400.00	V	166	284	-53.73	8.77	-44.96	-20.0
16080.00	V	-	-	-52.82	8.00	-44.82	-19.8

Table 7-46. Radiated Spurious Data (Band 41 – High Channel)

OPERATING FREQUENCY:	2680.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	152	63	-59.48	8.99	-50.48	-25.5
8040.00	V	-	-	-57.13	9.35	-47.77	-22.8
10720.00	V	-	-	-54.25	9.39	-44.85	-19.9

Table 7-47. Radiated Spurious Data with WCP (Band 41 – PC2 High Channel)

7.10 Uplink Carrier Aggregation Radiated Measurements

§2.1053, §27.53(m)

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. No. of sweep points ≥ 2 x span / RBW
4. Detector = RMS
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. The trace was allowed to stabilize

Test Setup

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

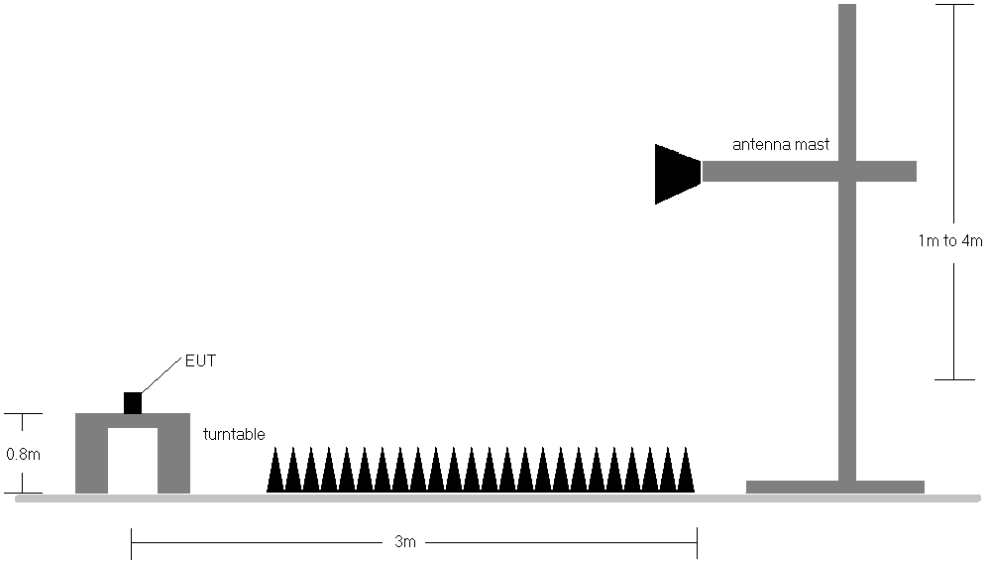


Figure 7-10. Test Instrument & Measurement Setup

Test Notes

1) 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.

2) This unit was tested with its standard battery.

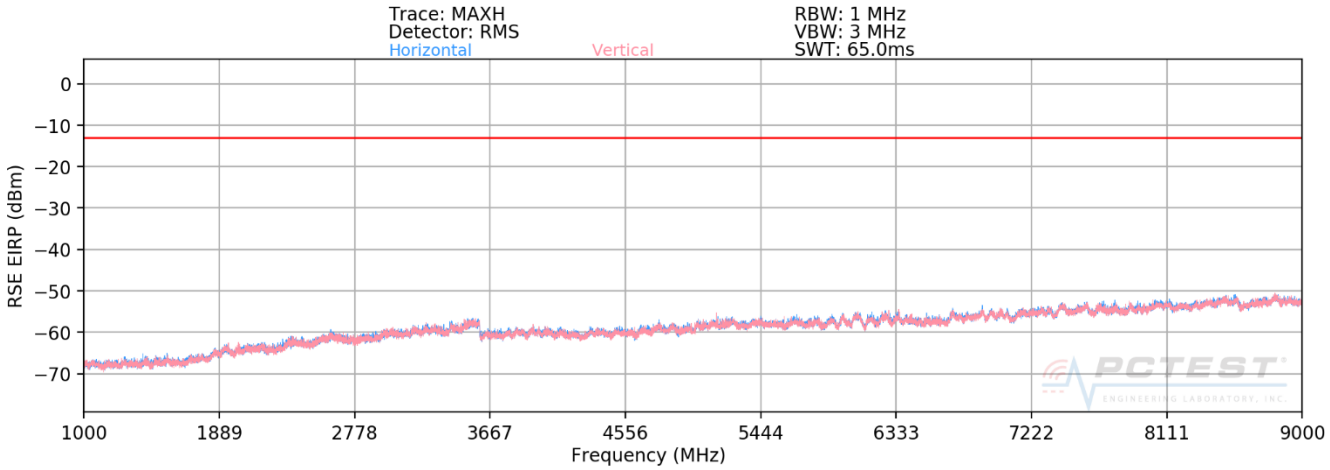
3) Radiated spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. The worst case (highest) emissions were found while operating with QPSK modulation with both carriers set to transmit using 1RB.

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

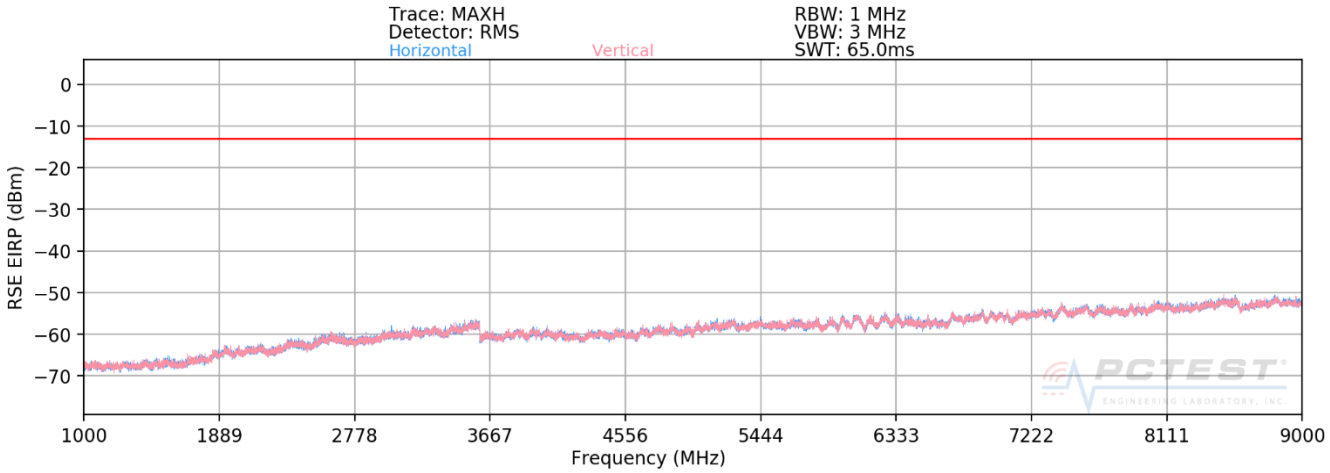
5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

6) No significant emissions were found as a result of two uplink carriers operating contiguously.

ULCA Band 5



Plot 7-512. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 5- Low Channel)



Plot 7-513. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 5- High Channel)

OPERATING FREQUENCY (PCC):	829.00	MHz
OPERATING FREQUENCY (SCC):	838.90	MHz
CHANNEL (PCC):	20450	
CHANNEL (SCC):	20549	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

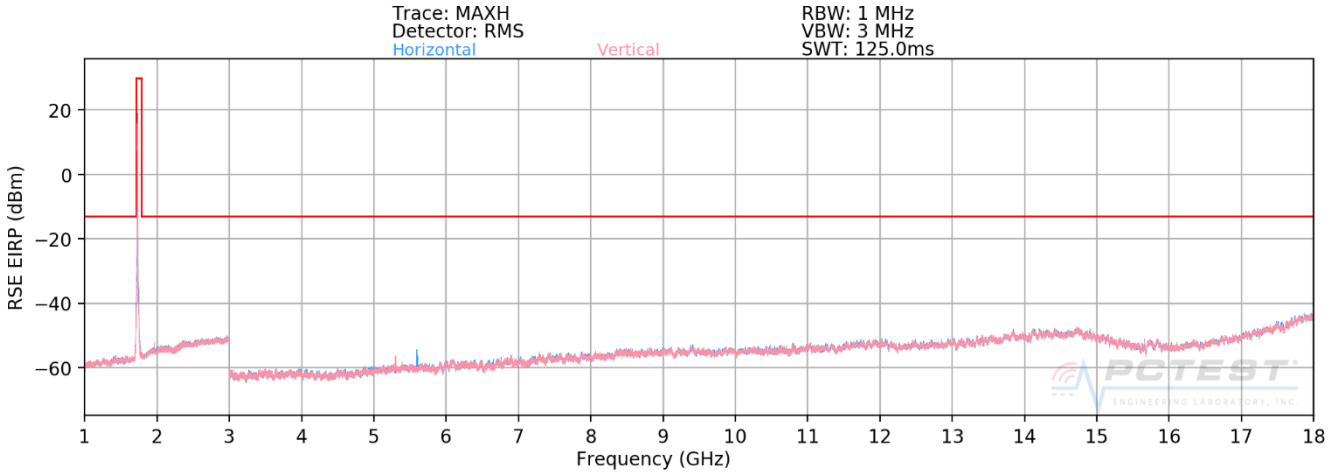
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	V	398	166	-80.50	9.55	-70.94	-57.9
2487.00	V	400	67	-78.53	9.45	-69.08	-56.1
3316.00	V	-	-	-73.38	7.44	-65.94	-52.9
4145.00	V	-	-	-73.11	8.05	-65.06	-52.1

Table 7-48. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

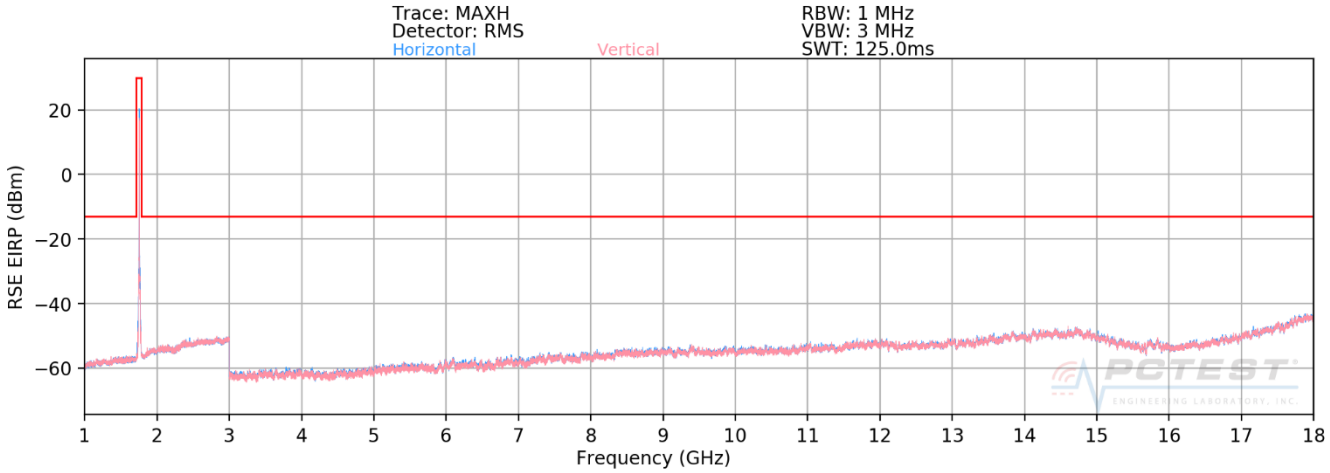
OPERATING FREQUENCY (PCC):	844.00	MHz
OPERATING FREQUENCY (SCC):	834.10	MHz
CHANNEL (PCC):	20600	
CHANNEL (SCC):	20501	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	V	395	167	-80.36	9.52	-70.83	-57.8
2532.00	V	-	-	-79.06	9.40	-69.66	-56.7
3376.00	V	-	-	-73.73	7.31	-66.42	-53.4

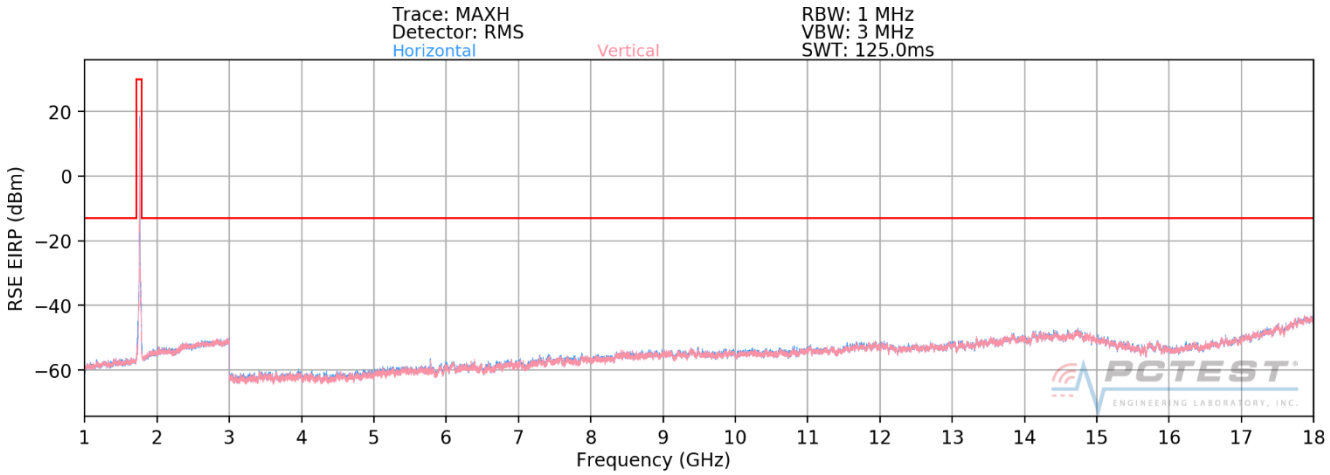
Table 7-49. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)



Plot 7-514. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 66- Low Channel- PCC/SCC 1RB)



Plot 7-515. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 66- Mid Channel- PCC/SCC 1RB)



Plot 7-516. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 66- High Channel- PCC/SCC 1RB)

OPERATING FREQUENCY (PCC):	1720.00	MHz
OPERATING FREQUENCY (SCC):	1739.80	MHz
CHANNEL (PCC):	132072	
CHANNEL (SCC):	132270	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	V	-	-	-71.81	7.51	-64.30	-51.3
5160.00	V	187	97	-67.91	11.10	-56.81	-43.8
6880.00	V	-	-	-70.62	11.72	-58.90	-45.9
8600.00	V	-	-	-64.24	8.83	-55.41	-42.4

Table 7-50. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC):	1745.00	MHz
OPERATING FREQUENCY (SCC):	1764.80	MHz
CHANNEL (PCC):	132322	
CHANNEL (SCC):	132520	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	V	-	-	-72.71	7.50	-65.20	-52.2
5235.00	V	-	-	-74.53	11.26	-63.28	-50.3

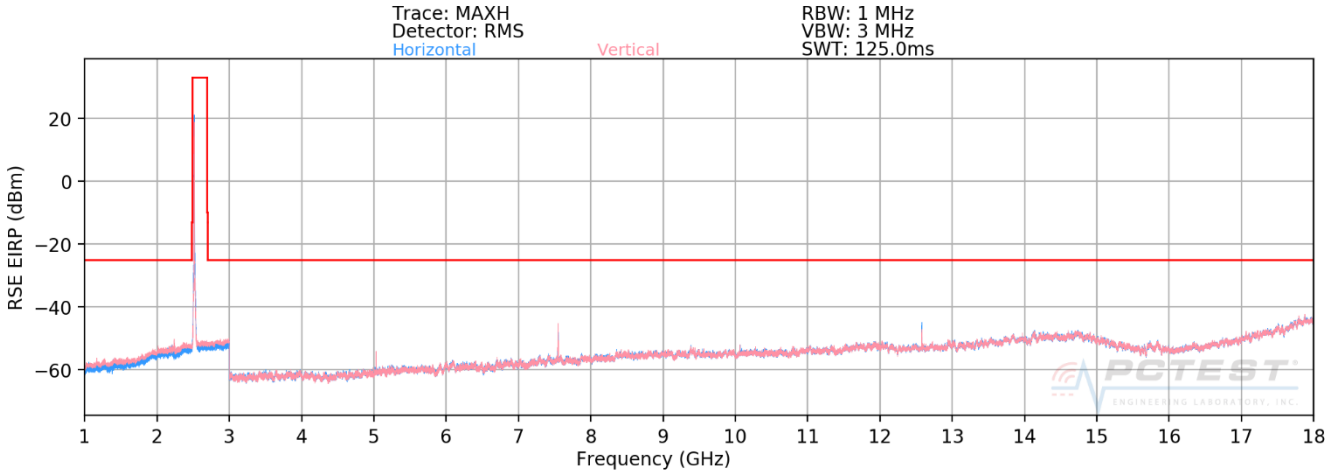
Table 7-51. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

OPERATING FREQUENCY (PCC):	1770.00	MHz
OPERATING FREQUENCY (SCC):	1750.20	MHz
CHANNEL (PCC):	132572	
CHANNEL (SCC):	132374	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

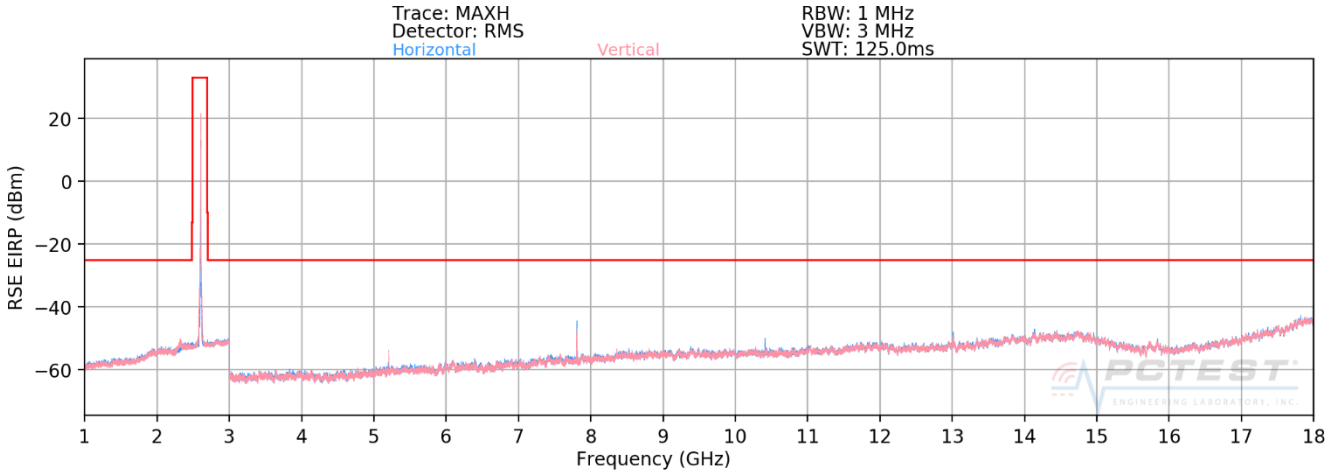
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	V	-	-	-71.74	7.24	-64.50	-51.5
5310.00	V	-	-	-75.38	11.51	-63.87	-50.9

Table 7-52. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

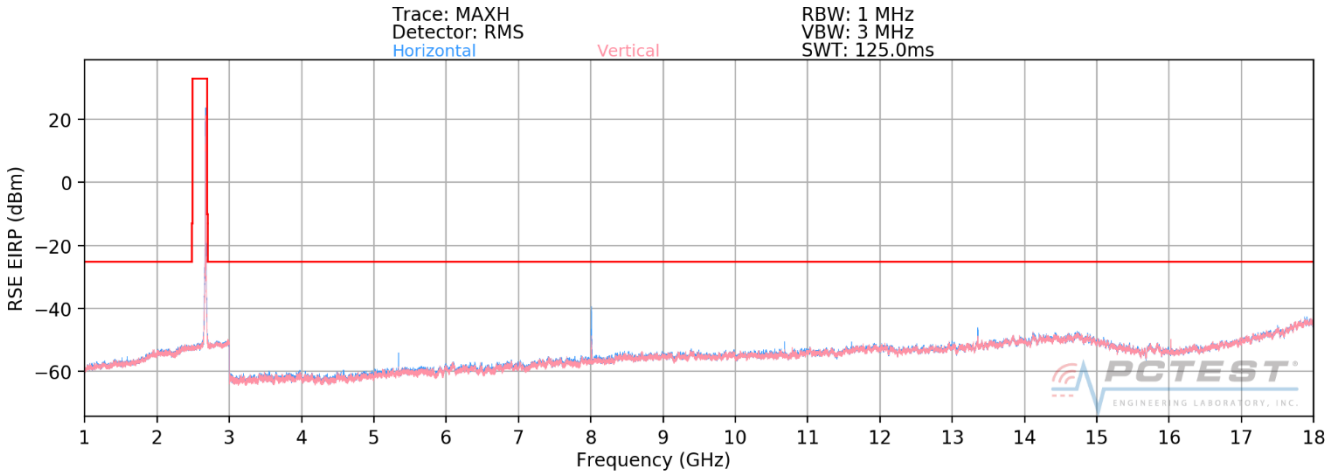
ULCA Band 41 (PC2)



Plot 7-517. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 (PC2)- Low Channel- PCC/SCC 1RB)



Plot 7-518. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 (PC2) - Mid Channel- PCC/SCC 1RB)



Plot 7-519. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 (PC2) - High Channel- PCC/SCC 1RB)

OPERATING FREQUENCY (PCC):	2506.00	MHz
OPERATING FREQUENCY (SCC):	2525.80	MHz
CHANNEL (PCC):	39750	
CHANNEL (SCC):	39948	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	V	136	346	-65.43	10.77	-54.66	-29.7
7518.00	V	113	353	-55.51	12.55	-42.96	-18.0
10024.00	V	252	5	-62.97	9.85	-53.12	-28.1
12530.00	V	208	330	-54.06	9.05	-45.01	-20.0
15036.00	V	-	-	-63.59	8.74	-54.85	-29.8
17542.00	V	-	-	-59.56	7.63	-51.93	-26.9

Table 7-53. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC):	2593.00	MHz
OPERATING FREQUENCY (SCC):	2612.80	MHz
CHANNEL (PCC):	40620	
CHANNEL (SCC):	40818	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	226	9	-64.64	11.14	-53.50	-28.5
7779.00	V	116	3	-54.49	12.33	-42.16	-17.2
10372.00	V	268	2	-61.52	9.62	-51.89	-26.9
12965.00	V	226	323	-52.65	8.99	-43.66	-18.7
15558.00	V	238	354	-61.32	8.32	-53.01	-28.0

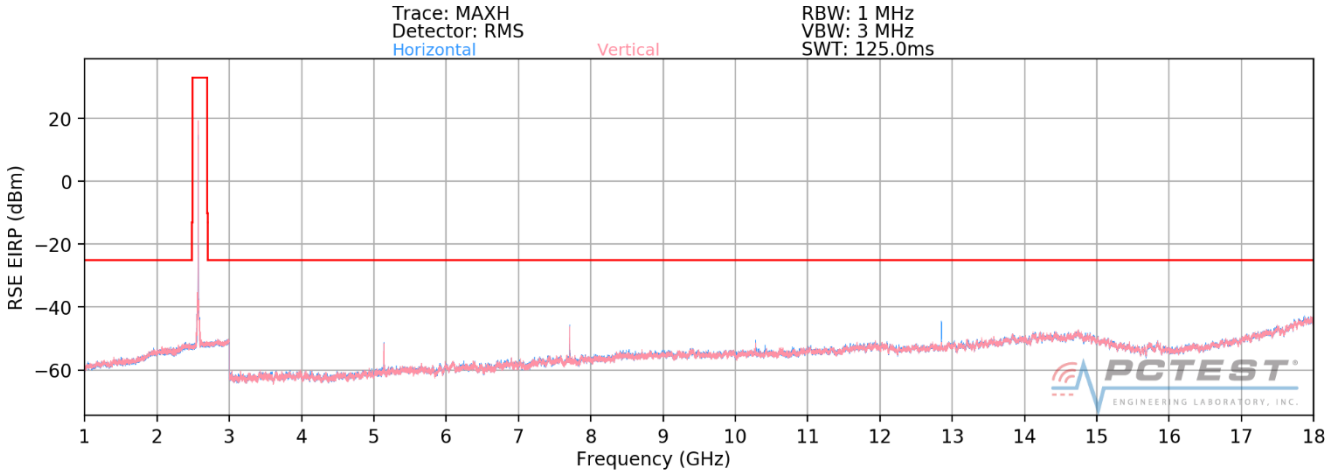
Table 7-54. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

OPERATING FREQUENCY (PCC):	2680.00	MHz
OPERATING FREQUENCY (SCC):	2660.20	MHz
CHANNEL (PCC):	41490	
CHANNEL (SCC):	41292	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

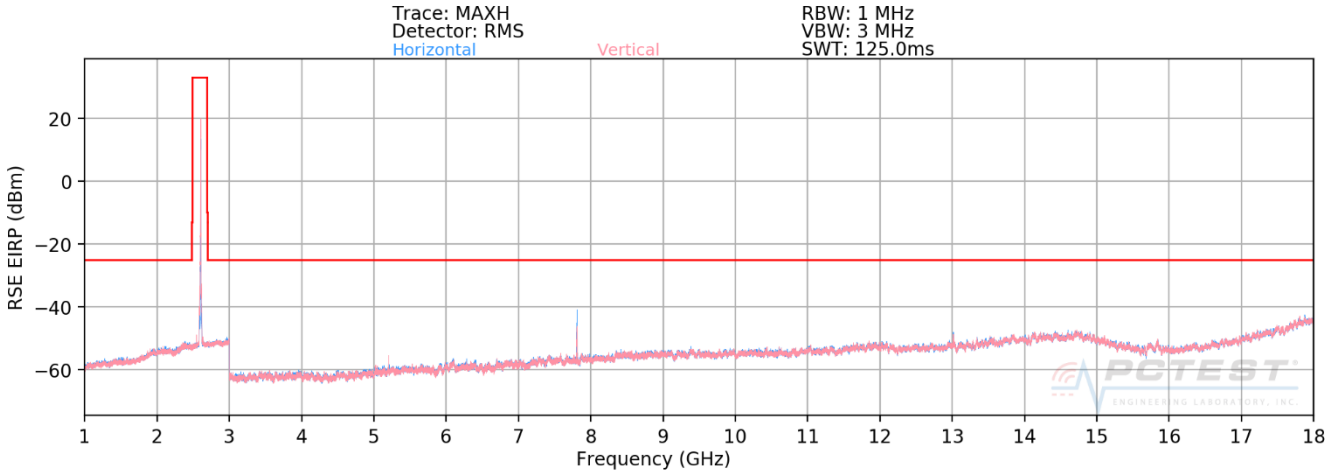
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	283	344	-67.14	11.49	-55.66	-30.7
8040.00	V	116	350	-55.81	12.03	-43.79	-18.8
10720.00	V	236	19	-59.41	9.32	-50.09	-25.1
13400.00	V	209	322	-55.69	8.77	-46.92	-21.9
16080.00	V	179	18	-59.35	8.00	-51.35	-26.4

Table 7-55. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel

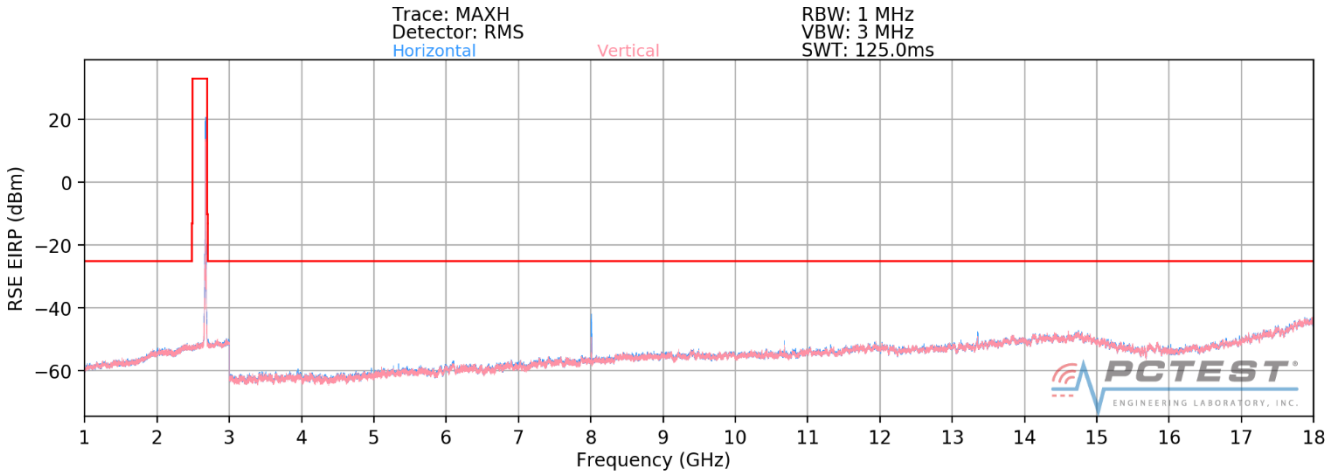
ULCA Band 41 (PC3)



Plot 7-520. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 (PC3)- Low Channel- PCC/SCC 1RB)



Plot 7-521. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 (PC3) - Mid Channel- PCC/SCC 1RB)



Plot 7-522. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 (PC3)- High Channel- PCC/SCC 1RB)

OPERATING FREQUENCY (PCC):	2506.00	MHz
OPERATING FREQUENCY (SCC):	2525.80	MHz
CHANNEL (PCC):	39750	
CHANNEL (SCC):	39948	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	V	133	93	-68.01	10.77	-57.24	-32.2
7518.00	V	282	357	-57.01	12.55	-44.46	-19.5
10024.00	V	171	10	-64.27	9.85	-54.42	-29.4
12530.00	V	252	323	-55.98	9.05	-46.93	-21.9
15036.00	V	-	-	-63.45	8.74	-54.71	-29.7
17542.00	V	-	-	-59.64	7.63	-52.01	-27.0

Table 7-56. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC):	2593.00	MHz
OPERATING FREQUENCY (SCC):	2612.80	MHz
CHANNEL (PCC):	40620	
CHANNEL (SCC):	40818	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	262	227	-72.52	11.14	-61.38	-36.4
7779.00	V	287	19	-52.20	12.33	-39.87	-14.9
10372.00	V	262	358	-61.63	9.62	-52.00	-27.0
12965.00	V	216	319	-53.25	8.99	-44.26	-19.3
15558.00	V	-	-	-62.77	8.32	-54.46	-29.5

Table 7-57. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

OPERATING FREQUENCY (PCC):	2680.00	MHz
OPERATING FREQUENCY (SCC):	2660.20	MHz
CHANNEL (PCC):	41490	
CHANNEL (SCC):	41292	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	400	336	-66.94	11.49	-55.46	-30.5
8040.00	V	121	4	-50.35	12.03	-38.33	-13.3
10720.00	V	261	21	-59.85	9.32	-50.53	-25.5
13400.00	V	400	16	-52.16	8.77	-43.39	-18.4
16080.00	V	168	346	-59.76	8.00	-51.76	-26.8

Table 7-58. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel

7.11 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. 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, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

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

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	680,499,802	-198	-0.0000291
100 %		- 20	680,500,061	61	0.0000090
100 %		- 10	680,500,205	205	0.0000301
100 %		0	680,499,976	-24	-0.0000035
100 %		+ 10	680,500,098	98	0.0000144
100 %		+ 20	680,499,751	-249	-0.0000366
100 %		+ 30	680,500,383	383	0.0000563
100 %		+ 40	680,500,327	327	0.0000481
100 %		+ 50	680,499,881	-119	-0.0000175
BATT. ENDPOINT	3.79	+ 20	680,499,803	-197	-0.0000289

Table 7-59. Frequency Stability Data (Band 71)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 71 Frequency Stability Measurements

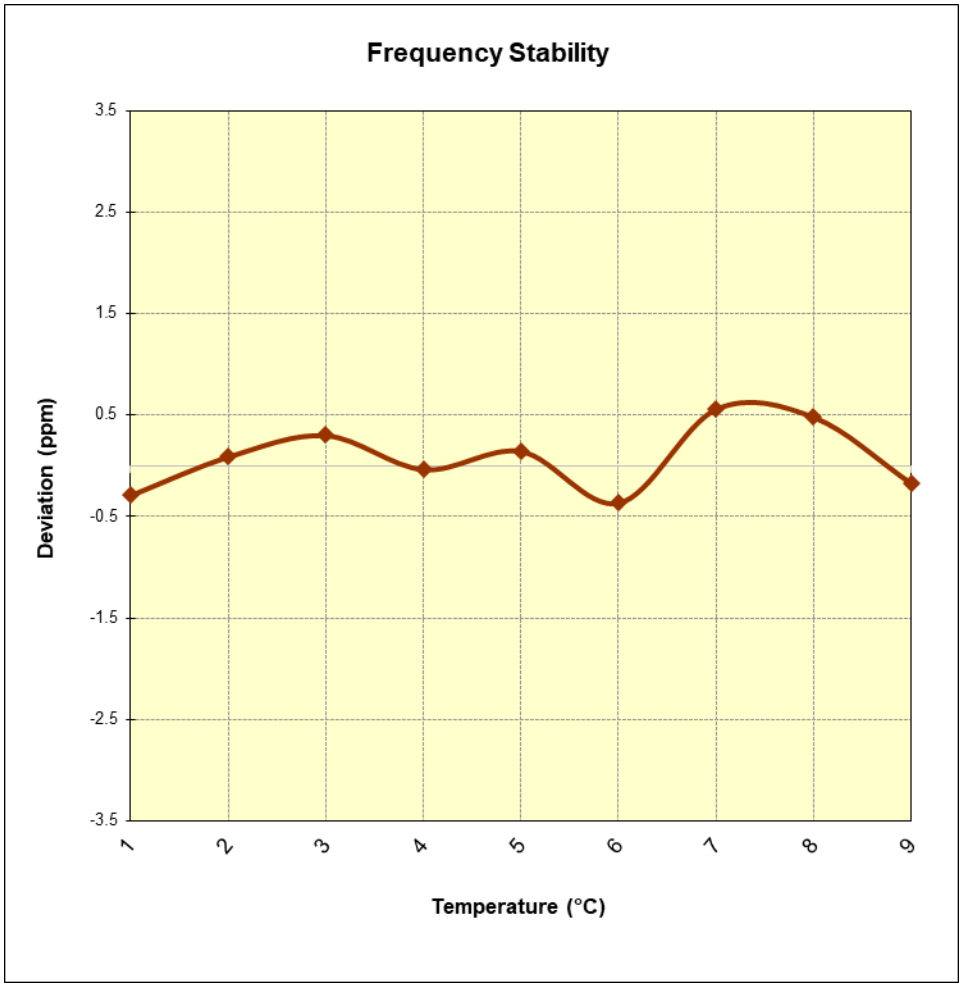


Figure 7-11. Frequency Stability Graph (Band 71)

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	707,499,838	-162	-0.0000229
100 %		- 20	707,500,253	253	0.0000358
100 %		- 10	707,499,929	-71	-0.0000100
100 %		0	707,499,756	-244	-0.0000345
100 %		+ 10	707,499,988	-12	-0.0000017
100 %		+ 20	707,499,886	-114	-0.0000161
100 %		+ 30	707,500,237	237	0.0000335
100 %		+ 40	707,500,029	29	0.0000041
100 %		+ 50	707,500,079	79	0.0000112
BATT. ENDPOINT	3.79	+ 20	707,500,076	76	0.0000107

Table 7-60. Frequency Stability Data (Band 12)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 12 Frequency Stability Measurements

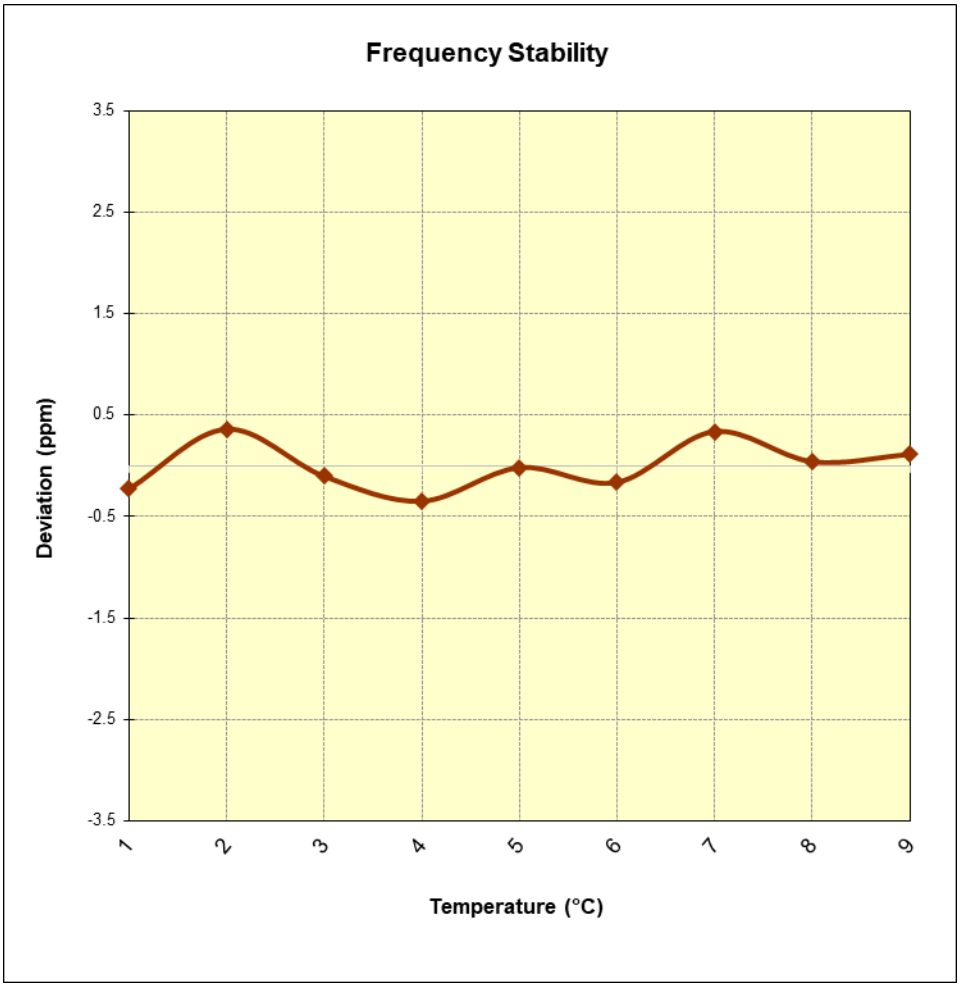


Figure 7-12. Frequency Stability Graph (Band 12)

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	782,000,117	117	0.0000150
100 %		- 20	781,999,879	-121	-0.0000155
100 %		- 10	782,000,260	260	0.0000332
100 %		0	782,000,066	66	0.0000084
100 %		+ 10	781,999,933	-67	-0.0000086
100 %		+ 20	781,999,891	-109	-0.0000139
100 %		+ 30	782,000,186	186	0.0000238
100 %		+ 40	782,000,194	194	0.0000248
100 %		+ 50	782,000,221	221	0.0000283
BATT. ENDPOINT	3.79	+ 20	781,999,844	-156	-0.0000199

Table 7-61. Frequency Stability Data (Band 13)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 13 Frequency Stability Measurements

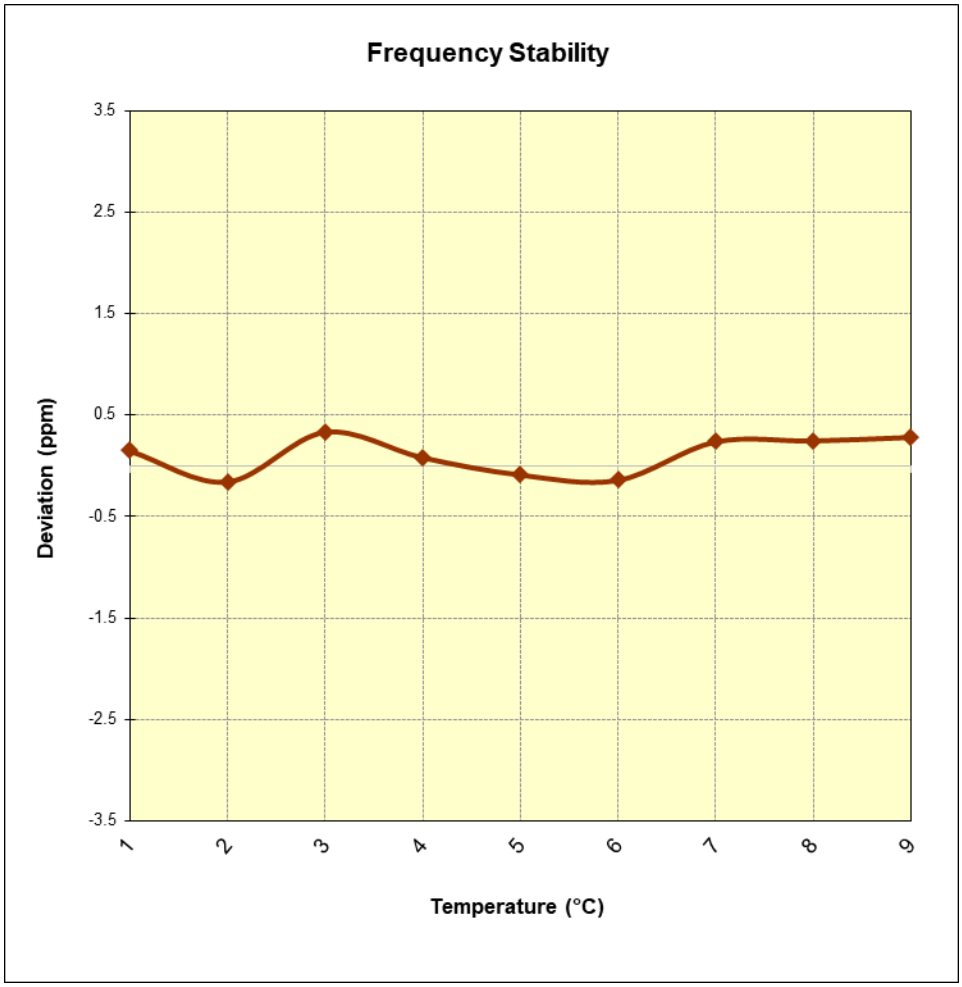


Figure 7-13. Frequency Stability Graph (Band 13)

Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 831,500,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	831,499,835	-165	-0.0000198
100 %		- 20	831,499,589	-411	-0.0000494
100 %		- 10	831,499,919	-81	-0.0000097
100 %		0	831,499,997	-3	-0.0000004
100 %		+ 10	831,500,237	237	0.0000285
100 %		+ 20	831,500,168	168	0.0000202
100 %		+ 30	831,500,013	13	0.0000016
100 %		+ 40	831,499,727	-273	-0.0000328
100 %		+ 50	831,500,012	12	0.0000014
BATT. ENDPOINT	3.79	+ 20	831,499,915	-85	-0.0000102

Table 7-62. Frequency Stability Data (Band 26/5)

Band 26/5 Frequency Stability Measurements

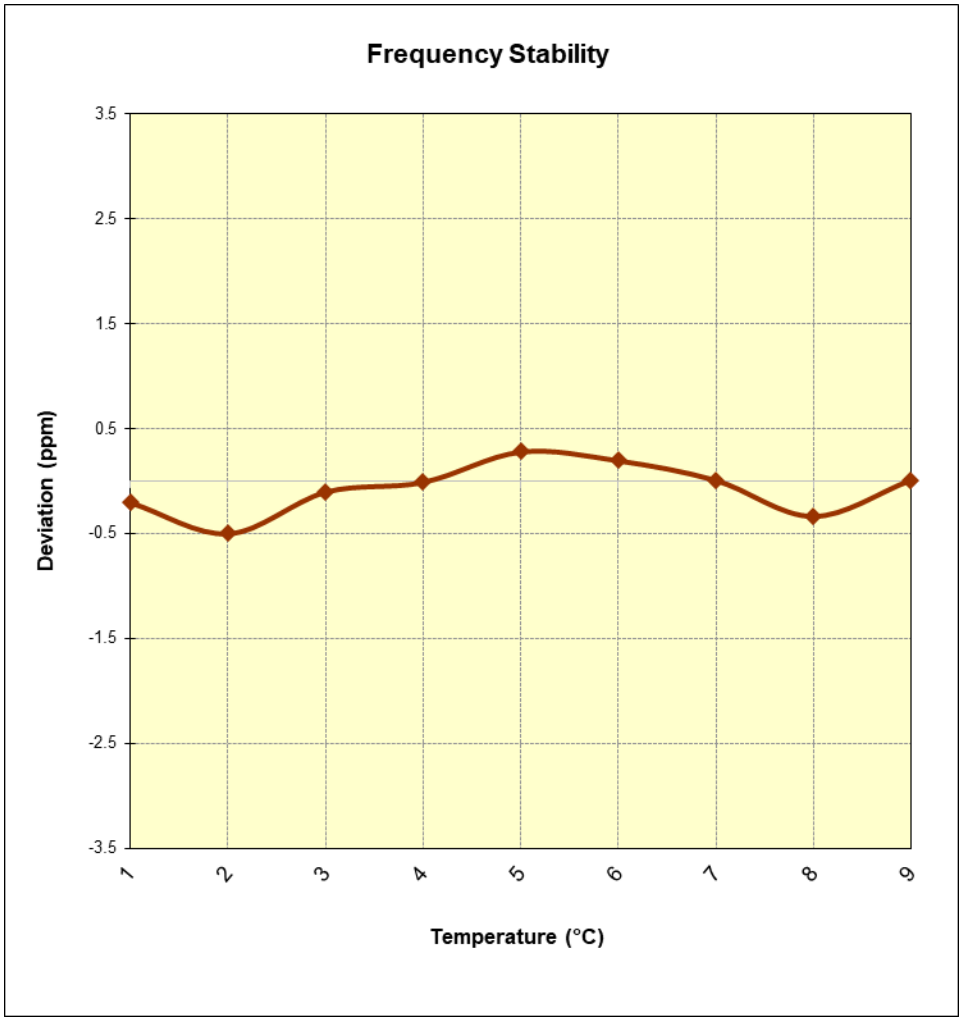


Figure 7-14. Frequency Stability Graph (Band 26/5)

Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	1,745,000,285	285	0.0000163
100 %		- 20	1,745,000,085	85	0.0000049
100 %		- 10	1,744,999,829	-171	-0.0000098
100 %		0	1,745,000,156	156	0.0000089
100 %		+ 10	1,745,000,121	121	0.0000069
100 %		+ 20	1,744,999,903	-97	-0.0000056
100 %		+ 30	1,745,000,023	23	0.0000013
100 %		+ 40	1,744,999,855	-145	-0.0000083
100 %		+ 50	1,744,999,934	-66	-0.0000038
BATT. ENDPOINT	3.79	+ 20	1,745,000,001	1	0.0000001

Table 7-63. Frequency Stability Data (Band 66/4)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 66/4 Frequency Stability Measurements

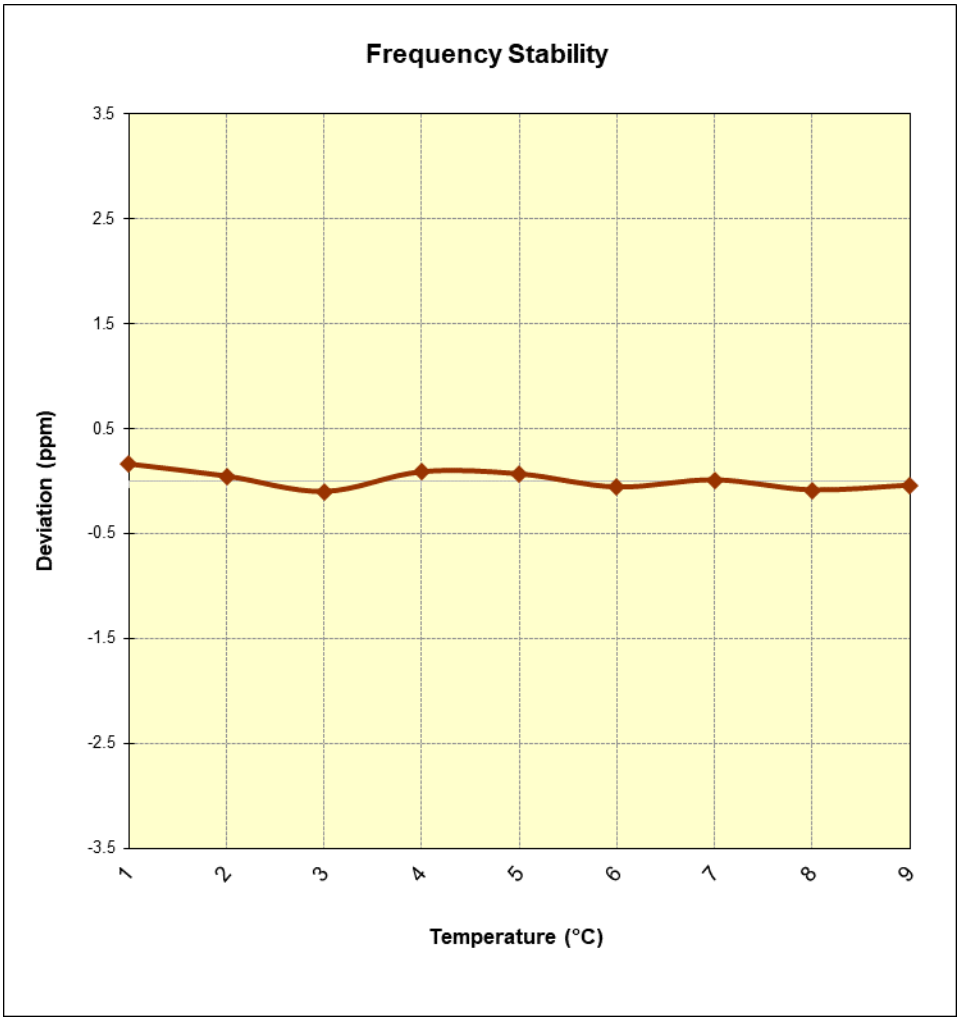


Figure 7-15. Frequency Stability Graph (Band 66/4)

Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	1,882,500,224	224	0.0000119
100 %		- 20	1,882,499,985	-15	-0.0000008
100 %		- 10	1,882,500,121	121	0.0000064
100 %		0	1,882,500,214	214	0.0000114
100 %		+ 10	1,882,499,914	-86	-0.0000046
100 %		+ 20	1,882,500,029	29	0.0000015
100 %		+ 30	1,882,500,011	11	0.0000006
100 %		+ 40	1,882,500,299	299	0.0000159
100 %		+ 50	1,882,499,827	-173	-0.0000092
BATT. ENDPOINT	3.79	+ 20	1,882,500,183	183	0.0000097

Table 7-64. Frequency Stability Data (Band 25/2)

Band 25/2 Frequency Stability Measurements

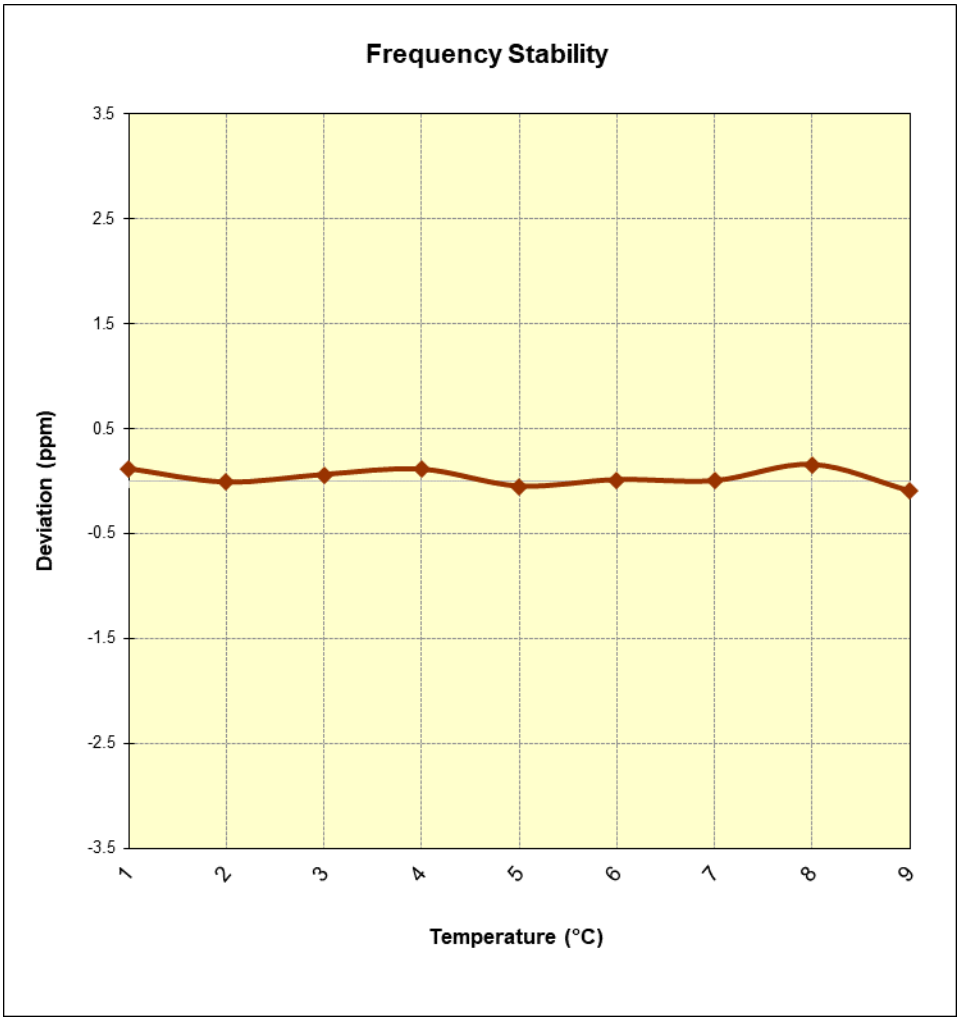


Figure 7-16. Frequency Stability Graph (Band 25/2)

Band 30 Frequency Stability Measurements

OPERATING FREQUENCY: 2,310,000,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	2,310,000,028	28	0.0000012
100 %		- 20	2,310,000,005	5	0.0000002
100 %		- 10	2,310,000,011	11	0.0000005
100 %		0	2,309,999,894	-106	-0.0000046
100 %		+ 10	2,309,999,603	-397	-0.0000172
100 %		+ 20	2,309,999,942	-58	-0.0000025
100 %		+ 30	2,309,999,930	-70	-0.0000030
100 %		+ 40	2,309,999,800	-200	-0.0000087
100 %		+ 50	2,309,999,685	-315	-0.0000136
BATT. ENDPOINT	3.79	+ 20	2,309,999,669	-331	-0.0000143

Table 7-65. Frequency Stability Data (Band 30)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 30 Frequency Stability Measurements

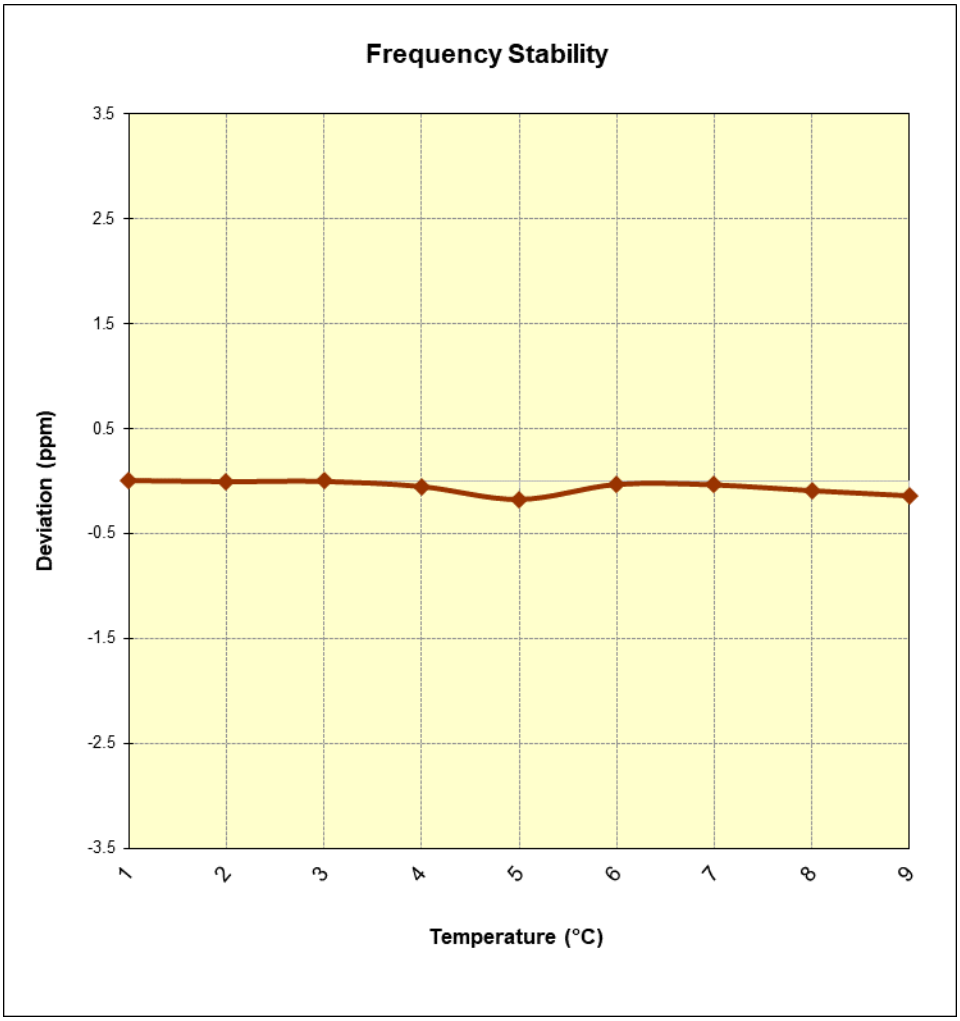


Figure 7-17. Frequency Stability Graph (Band 30)

Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	2,535,000,305	305	0.0000120
100 %		- 20	2,535,000,032	32	0.0000013
100 %		- 10	2,534,999,691	-309	-0.0000122
100 %		0	2,535,000,315	315	0.0000124
100 %		+ 10	2,535,000,008	8	0.0000003
100 %		+ 20	2,534,999,846	-154	-0.0000061
100 %		+ 30	2,534,999,923	-77	-0.0000030
100 %		+ 40	2,535,000,042	42	0.0000017
100 %		+ 50	2,534,999,896	-104	-0.0000041
BATT. ENDPOINT	3.79	+ 20	2,534,999,957	-43	-0.0000017

Table 7-66. Frequency Stability Data (Band 7)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 7 Frequency Stability Measurements

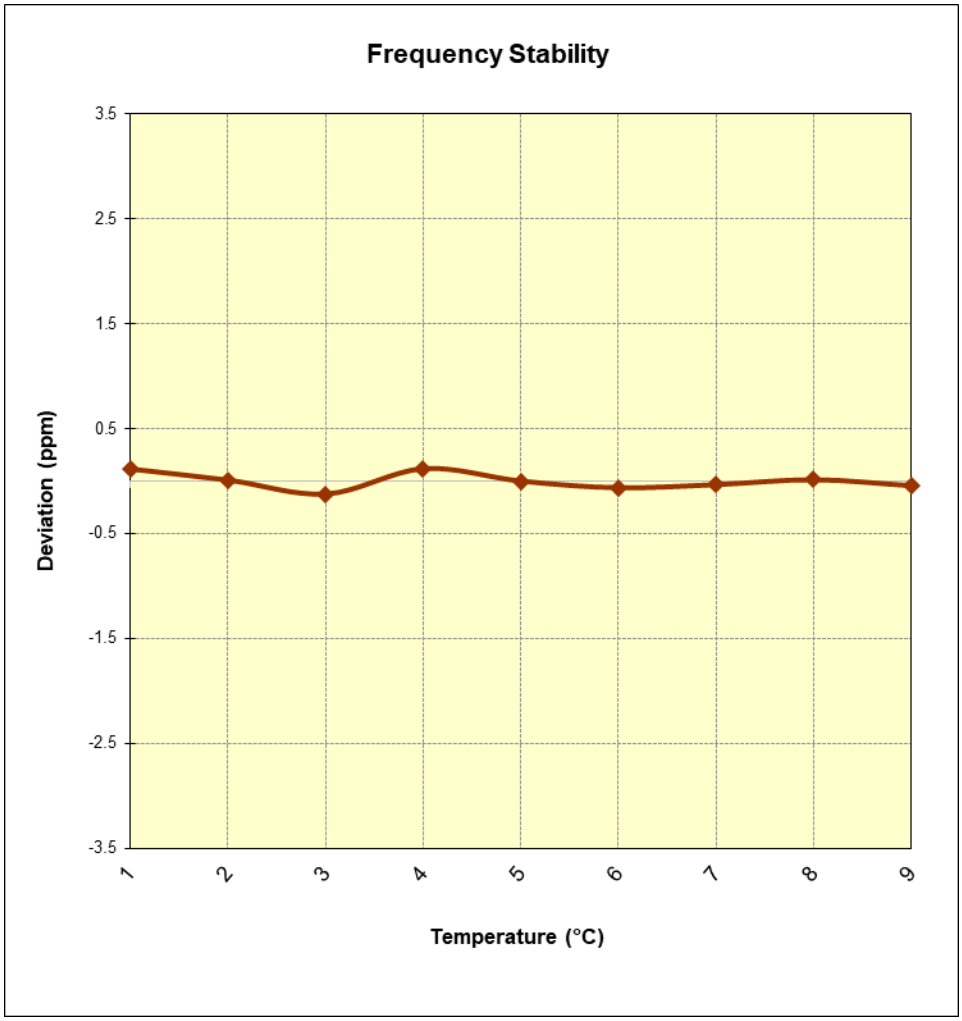


Figure 7-18. Frequency Stability Graph (Band 7)

Band 41 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz

REFERENCE VOLTAGE: 4.19 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	2,593,000,112	112	0.0000043
100 %		- 20	2,592,999,885	-115	-0.0000044
100 %		- 10	2,592,999,832	-168	-0.0000065
100 %		0	2,593,000,031	31	0.0000012
100 %		+ 10	2,592,999,792	-208	-0.0000080
100 %		+ 20	2,592,999,944	-56	-0.0000022
100 %		+ 30	2,592,999,872	-128	-0.0000049
100 %		+ 40	2,592,999,830	-170	-0.0000066
100 %		+ 50	2,592,999,882	-118	-0.0000046
BATT. ENDPOINT	3.79	+ 20	2,593,000,236	236	0.0000091

Table 7-67. Frequency Stability Data (Band 41)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 41 Frequency Stability Measurements

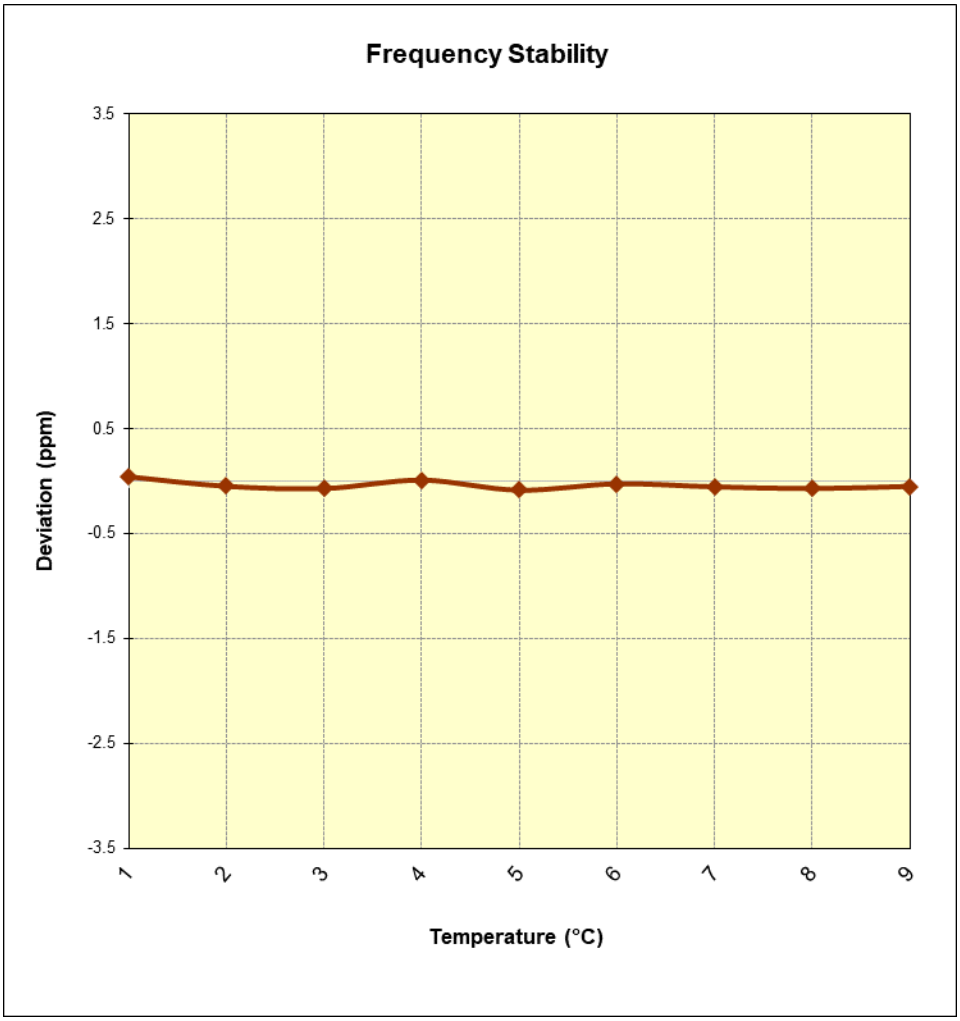


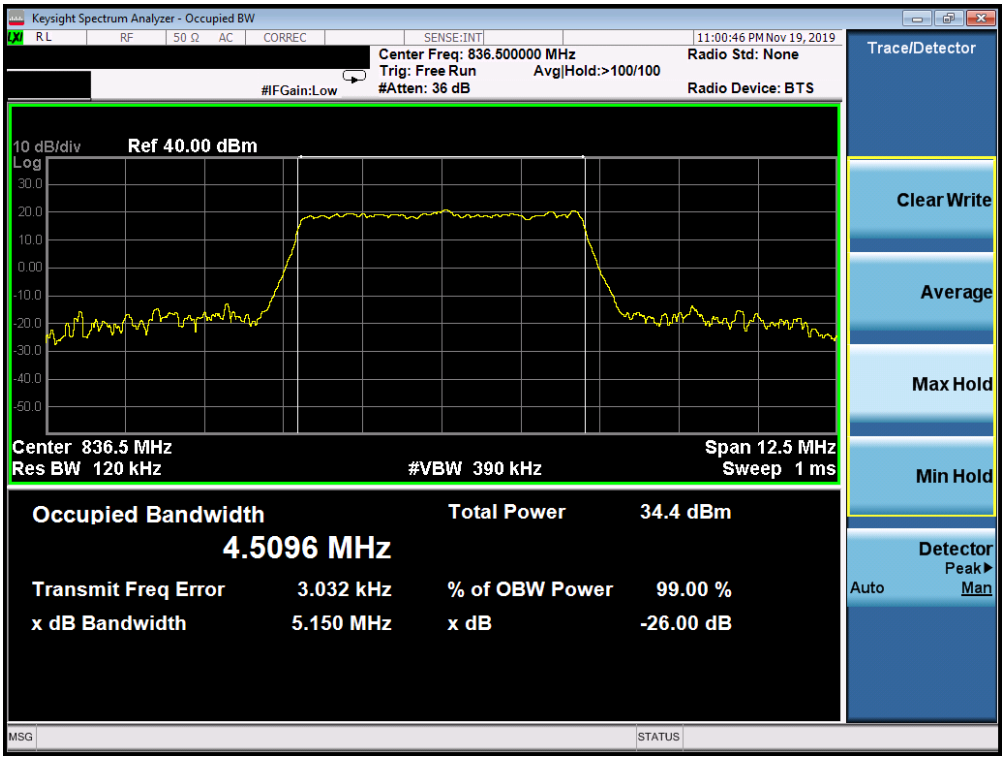
Figure 7-19. Frequency Stability Graph (Band 41)

7.12 Sub 6GHz NR / EN-DC Test Results

Occupied Bandwidth

All SCS's and Waveforms (CP-OFDM vs 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.

NR Band n5



Plot 7-523. Occupied Bandwidth Plot (n5 5MHz QPSK-CP-OFDM - Full RB Configuration)