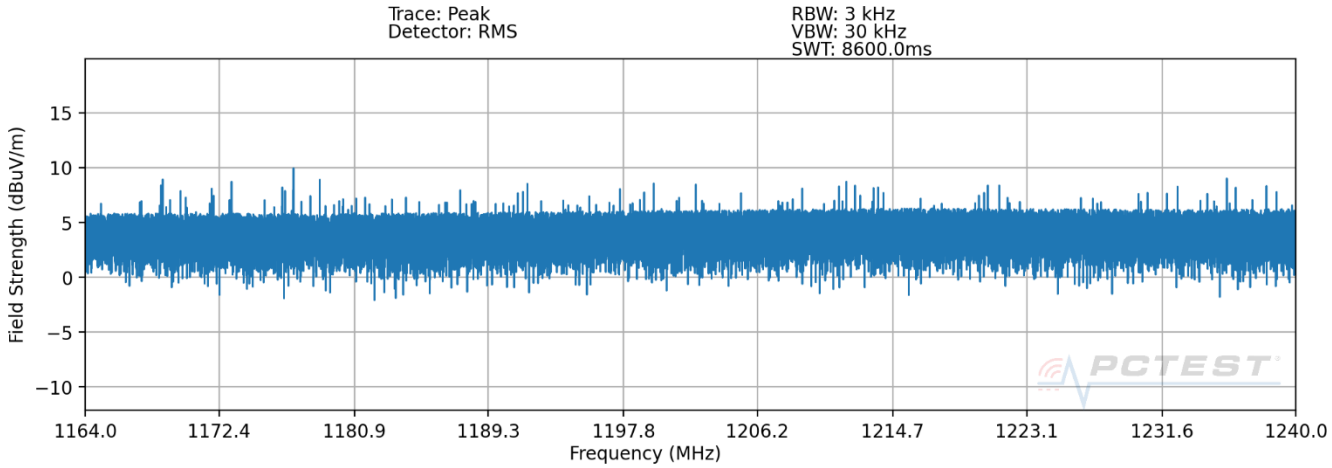
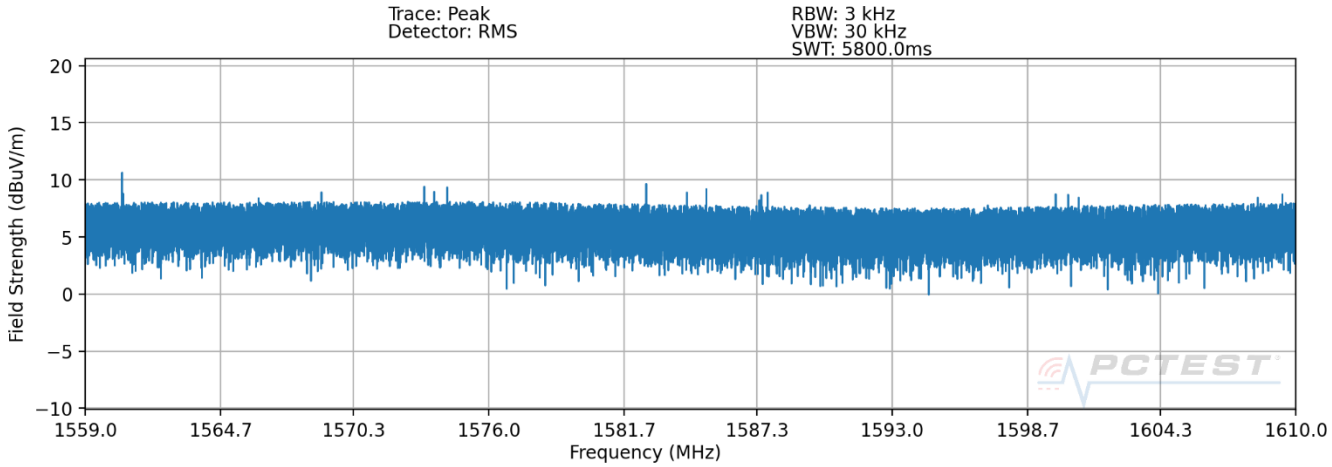


Plot 7-181. Radiated Spurious Pre-Scan 1164 - 1240 MHz - CH.9 - ANT 1

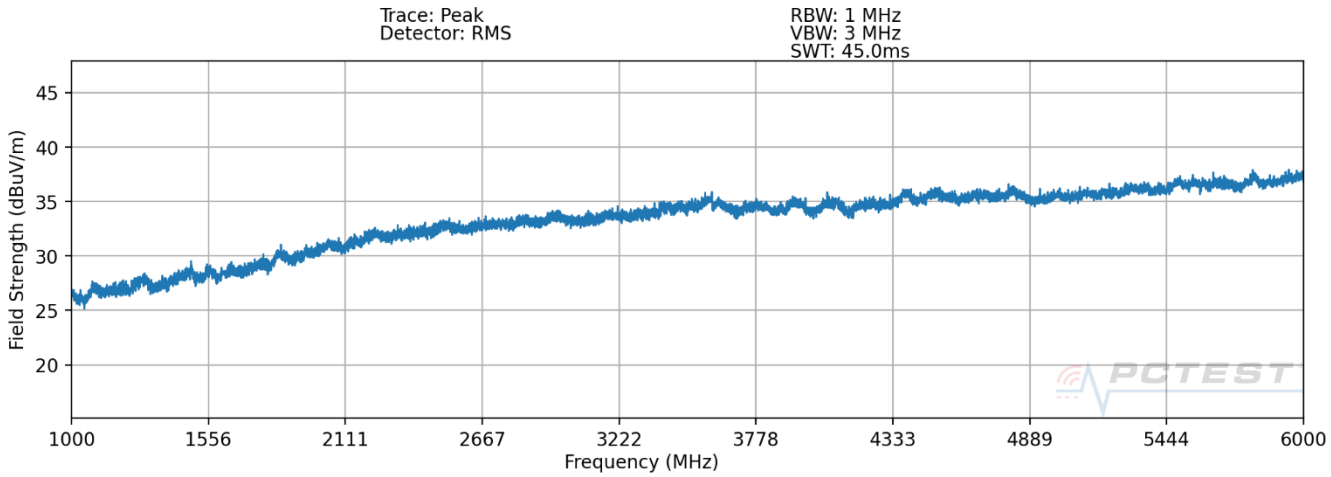


Plot 7-182. Radiated Spurious Pre-Scan 1559 - 1610 MHz - CH.9 - ANT 1

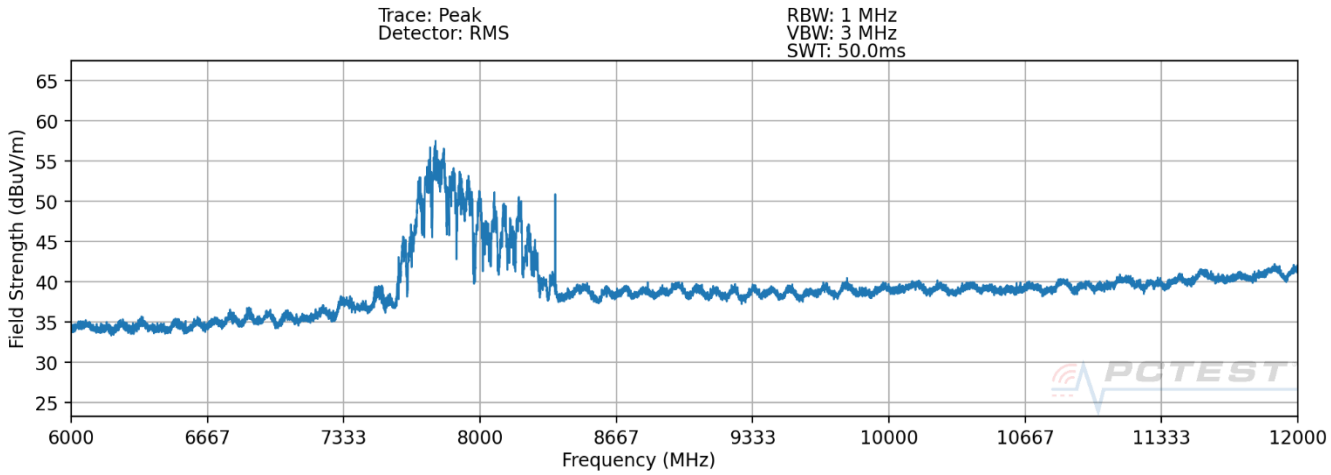
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1221.00	AVERAGE	H	-	-	-99.52	-6.47	-94.24	-85.30	-8.94
1571.00	AVERAGE	H	-	-	-98.66	-5.07	-91.98	-85.30	-6.68

Table 7-15. Radiated Spurious Emissions CH. 9 – ANT1 – GPS BANDs

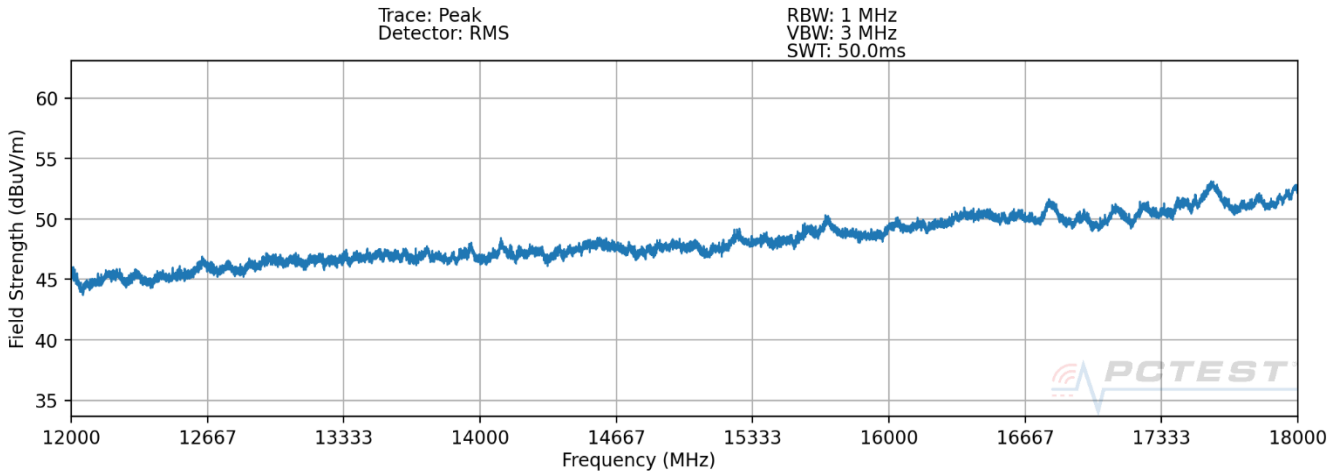
Channel 9 ANTENNA 2:



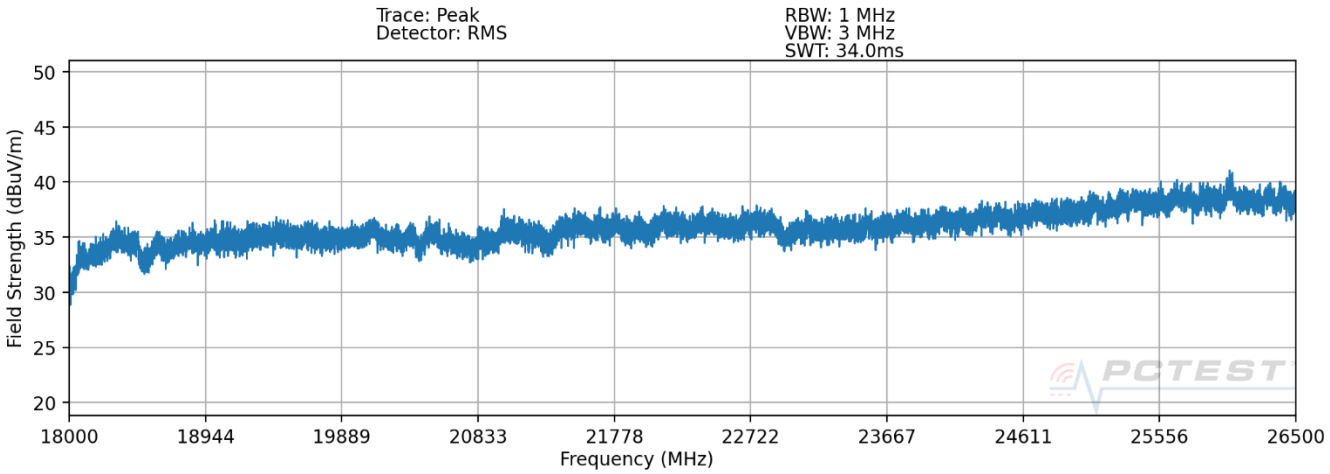
Plot 7-183. Radiated Spurious Pre-Scan 960 - 6000 MHz - CH.9 - ANT 2



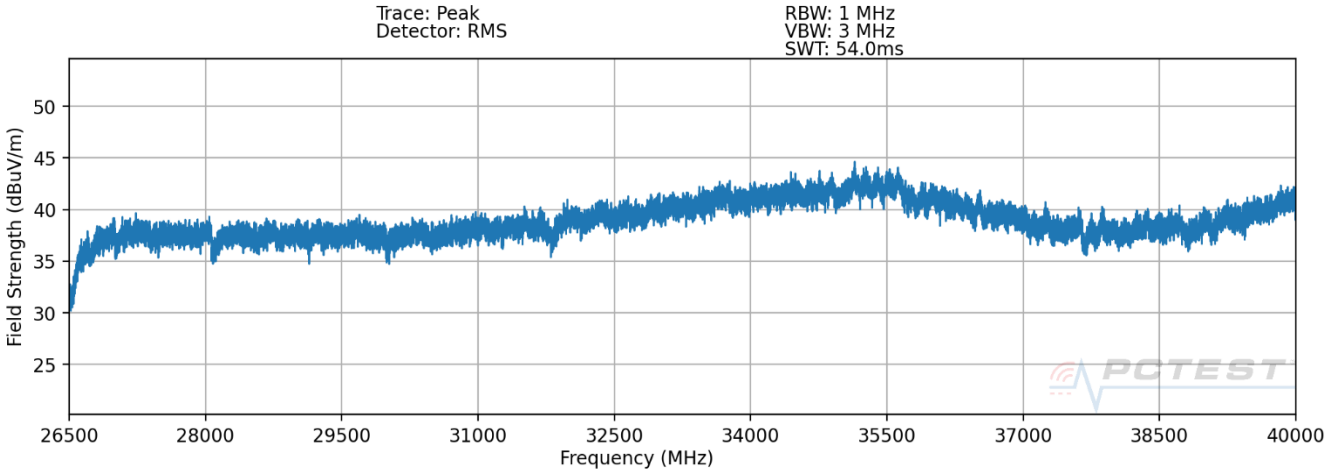
Plot 7-184. Radiated Spurious Pre-Scan 6000 - 12000 MHz - CH.9 - ANT 2



Plot 7-185. Radiated Spurious Pre-Scan 12000 - 18000 MHz - CH.9 - ANT 2



Plot 7-186. Radiated Spurious Pre-Scan 18 – 26.5 GHz - CH.9 - ANT 2

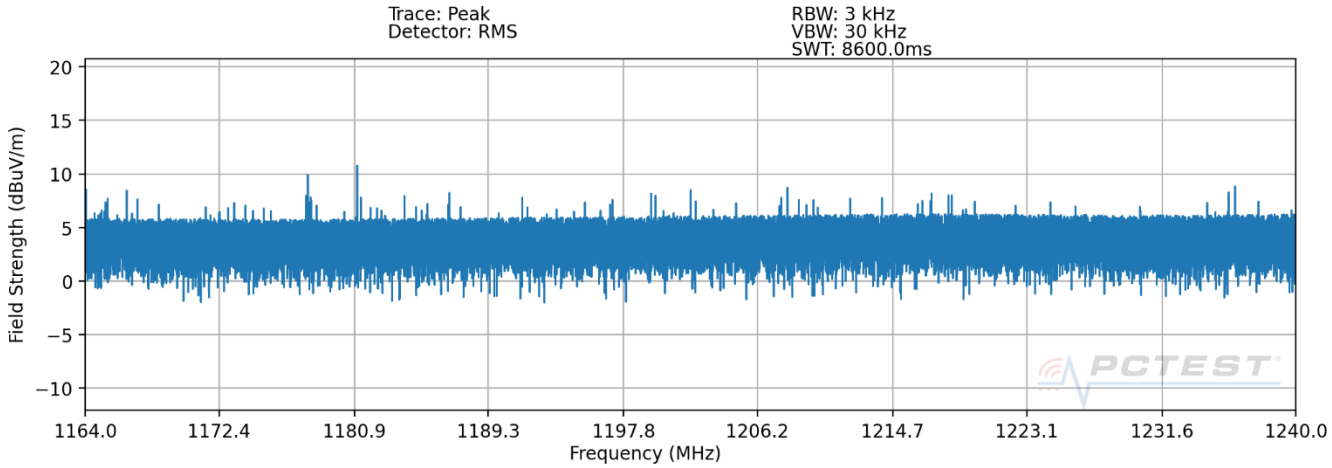


Plot 7-187. Radiated Spurious Pre-Scan 26.5 – 40.0 GHz - CH.9 - ANT 2

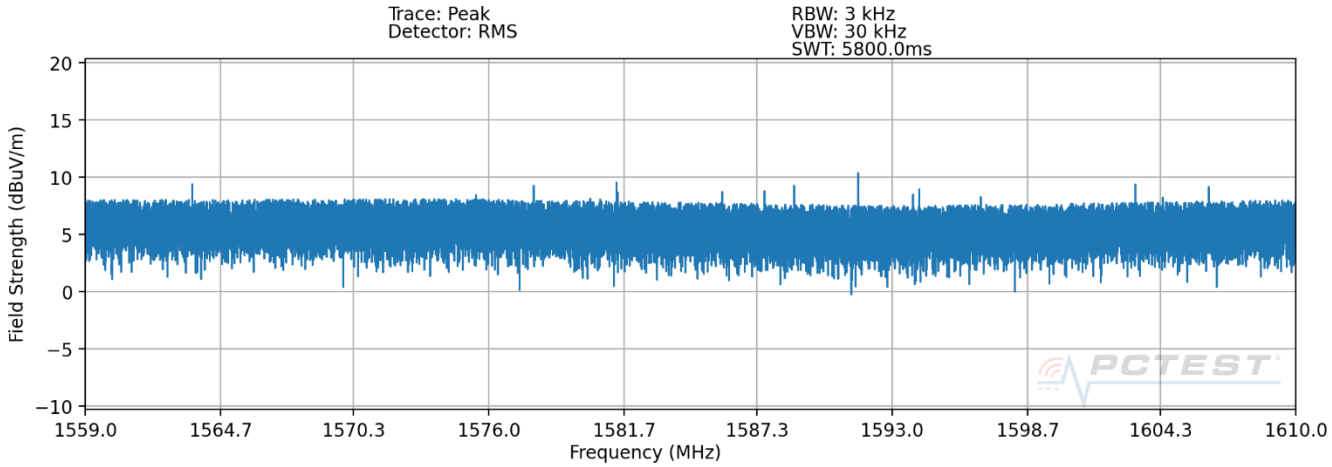
Channel:	9
Frequency (MHz):	8000
Preamble id:	12
Config	SP3

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1703.00	AVERAGE	H	-	-	-77.22	-4.98	24.80	-70.46	-63.30	-7.16
2225.00	AVERAGE	H	-	-	-76.99	-2.60	27.41	-67.85	-61.30	-6.55
3024.00	AVERAGE	H	-	-	-77.89	-0.31	28.80	-66.46	-61.30	-5.16
9000.00	AVERAGE	H	-	-	-80.57	11.35	37.78	-57.48	-41.30	-16.18
10467.00	AVERAGE	H	-	-	-81.11	12.18	38.07	-57.19	-41.30	-15.89

Table 7-16. Radiated Spurious Emissions CH. 9 – ANT2



Plot 7-188. Radiated Spurious Pre-Scan 1164 - 1240 MHz - CH.9 - ANT 2



Plot 7-189. Radiated Spurious Pre-Scan 1559 - 1610 MHz - CH.9 - ANT 2

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1227.00	AVERAGE	H	-	-	-98.14	-6.40	2.46	-92.80	-85.30	-7.50
1589.00	AVERAGE	H	-	-	-99.09	-5.31	2.60	-92.66	-85.30	-7.36

Table 7-17. Radiated Spurious Emissions CH. 9 – ANT2 – GPS BANDs

7.6 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209(a), §15.519(c); RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-18 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-18. Radiated Limits

Test Procedures Used

ANSI C63.10-2013

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Test Setup

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

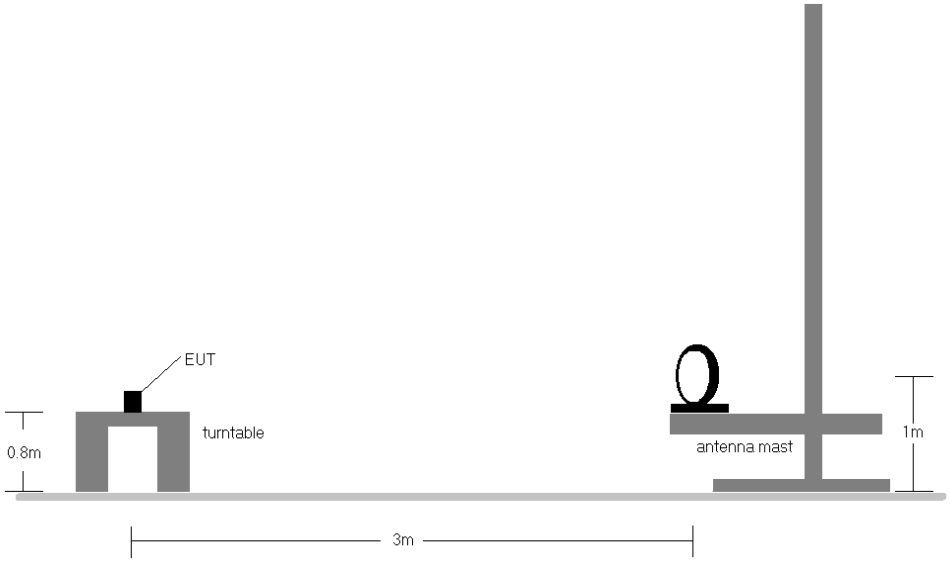


Figure 7-3. Radiated Test Setup < 30Mhz

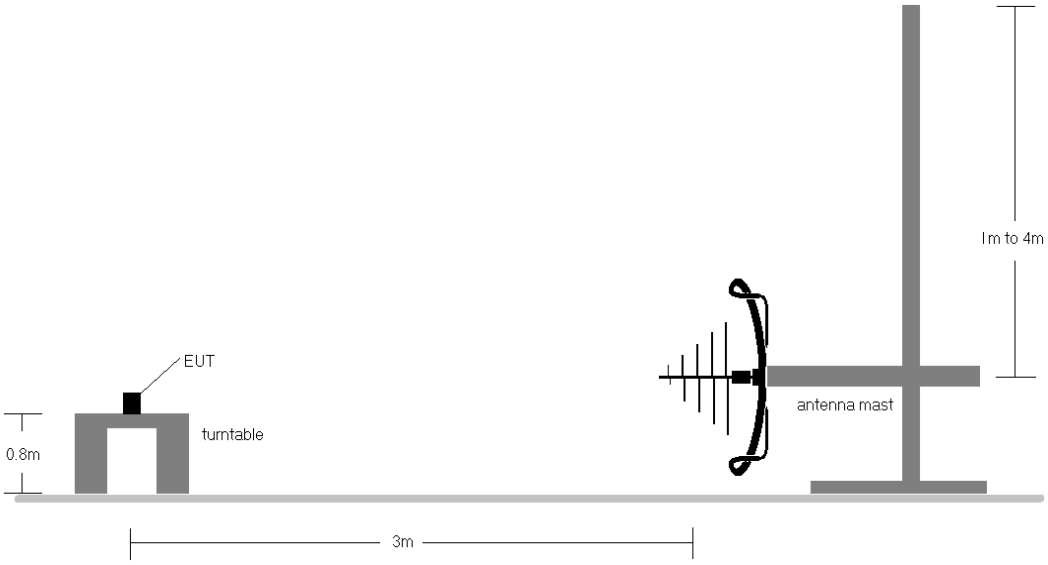
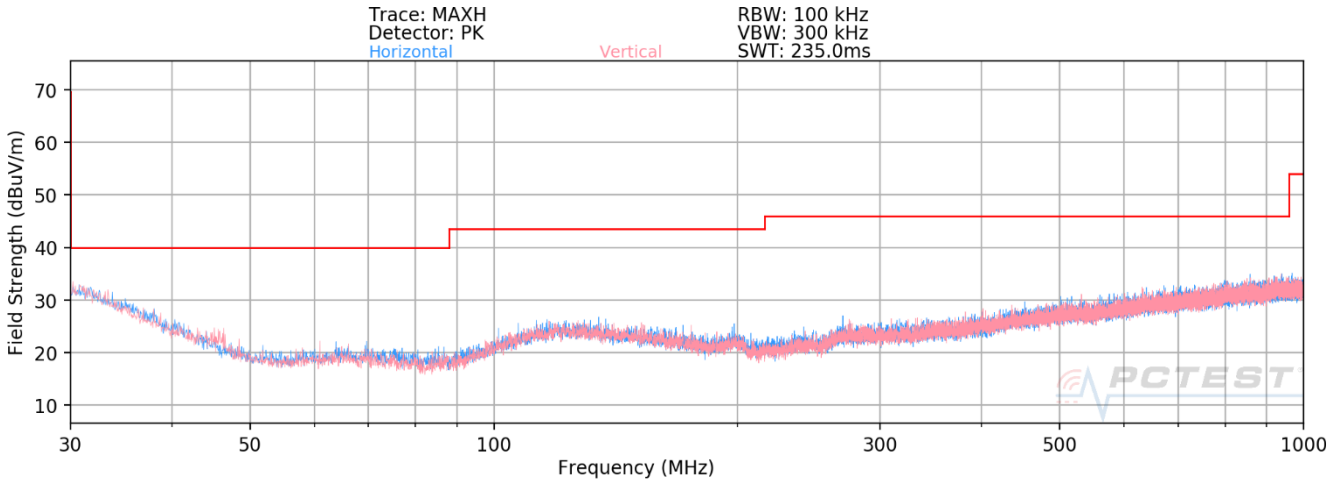


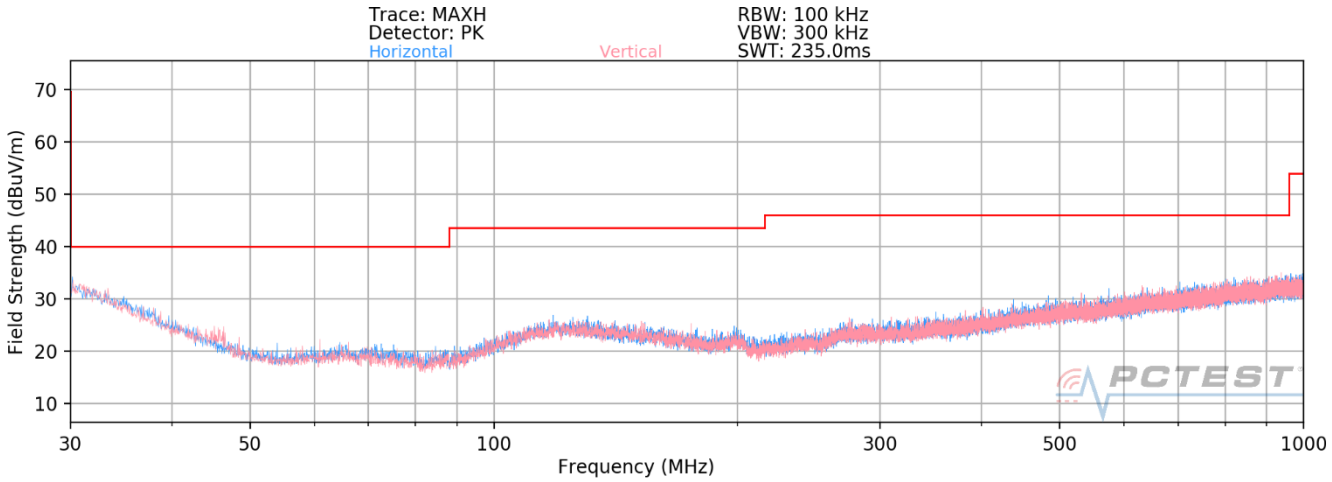
Figure 7-4. Radiated Test Setup < 1GHz

Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen(8.10) are below the limit shown in Table 7-18 .
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
4. Emissions were measured at a 3 meter test distance.
5. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
6. No spurious emissions were detected within 20dB of the limit below 30MHz.
7. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
8. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.



Plot 7-190. 30MHz - 1 GHz Pre-Scan Plots ANT1



Plot 7-191. 30MHz - 1 GHz Pre-Scan Plots ANT2

7.7 Line Conducted Measurement Data

§15.207

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limit shown in the table below.

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-19. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.4-2014

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Field Strength Measurements

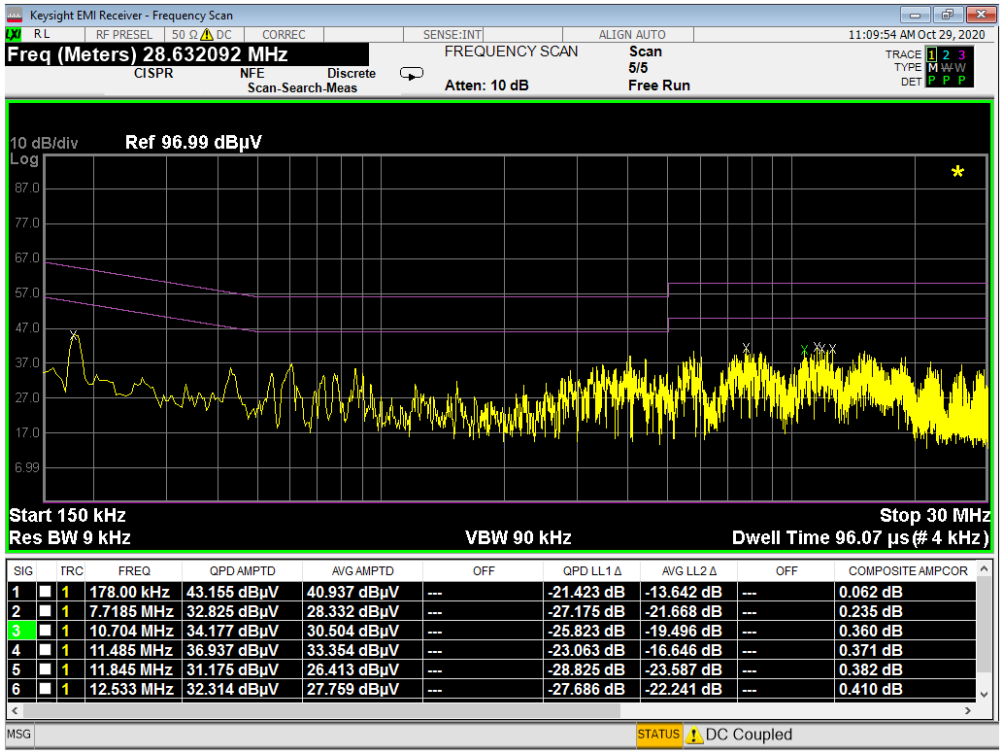
1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Test Setup

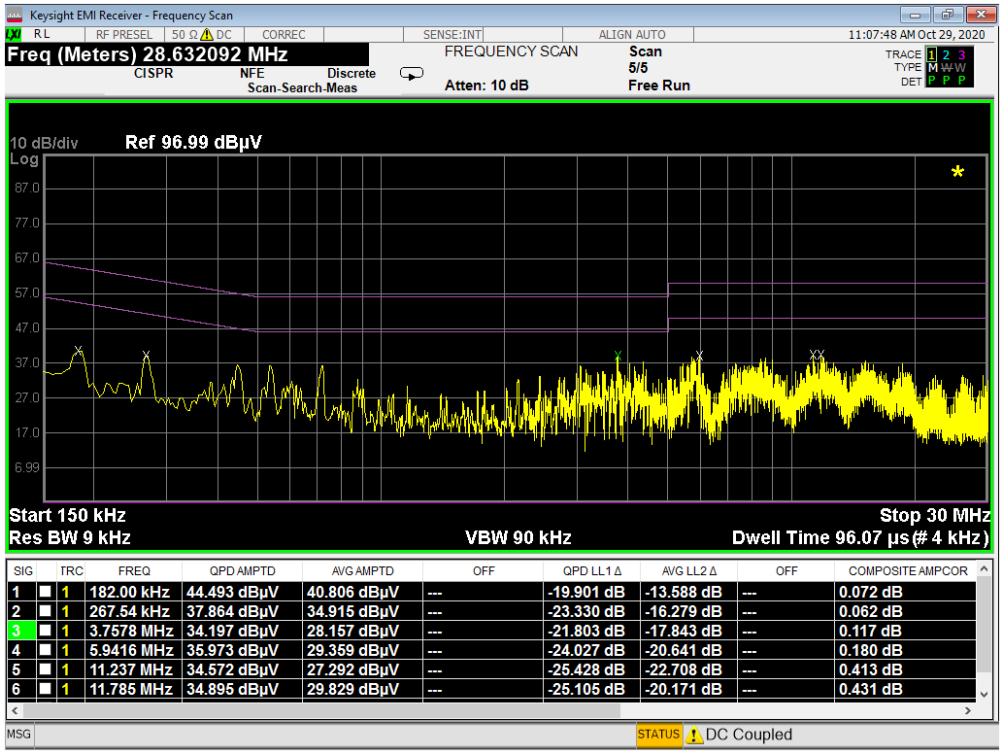
The EUT and measurement equipment were set up as shown in the test setup photos provided.

Test Notes

1. All Modes of operation were investigated and the worst-case emissions are reported.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.107 and ICES-003.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Reading (dBµV) + Factor (dB)
6. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.



Plot 7-192. Line Conducted Plot (L1)



Plot 7-193. Line Conducted Plot (N)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG998U** has been tested to comply with the requirements specified in §15.519 and §15.521 of the FCC rules.