

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

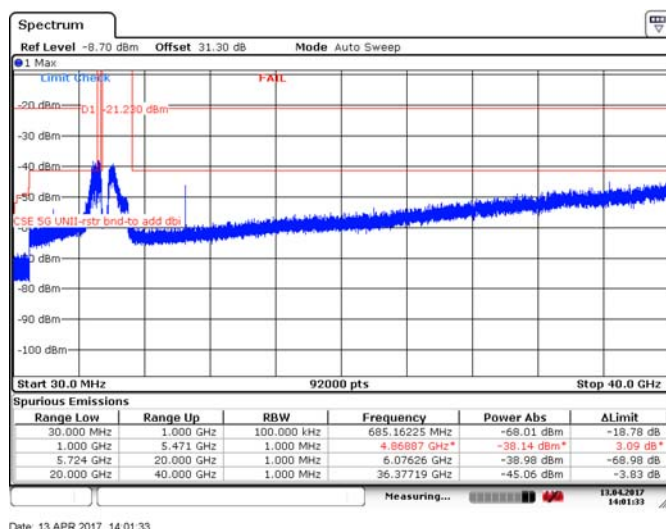


Figure 8.4-217: Spurious emissions within restricted bands, 10 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

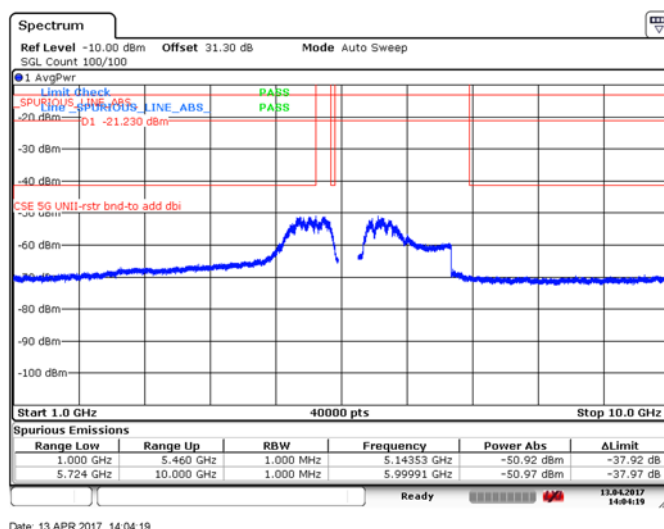


Figure 8.4-218: Average Spurious emissions within restricted bands, 10 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

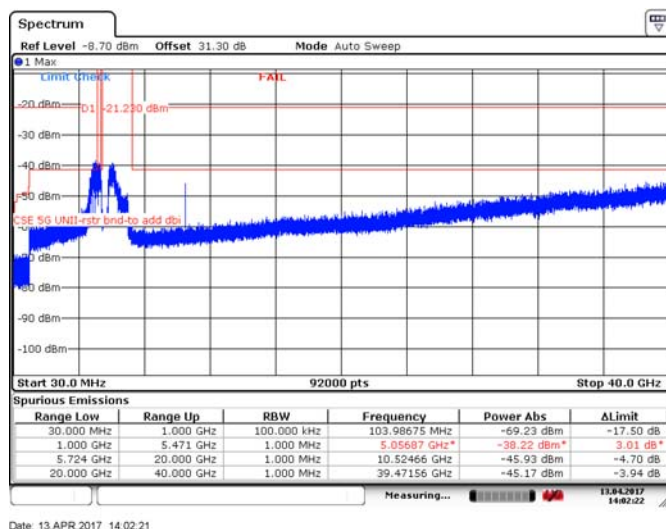


Figure 8.4-219: Spurious emissions within restricted bands, 10 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

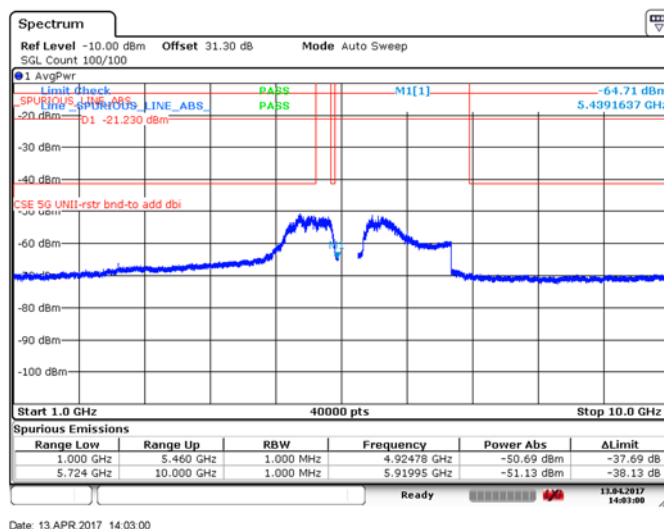


Figure 8.4-220: Average Spurious emissions within restricted bands, 10 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

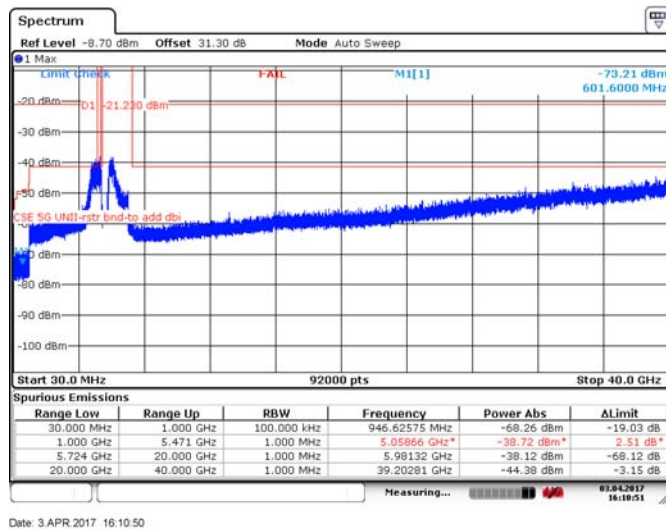


Figure 8.4-221: Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, cho, BPSK

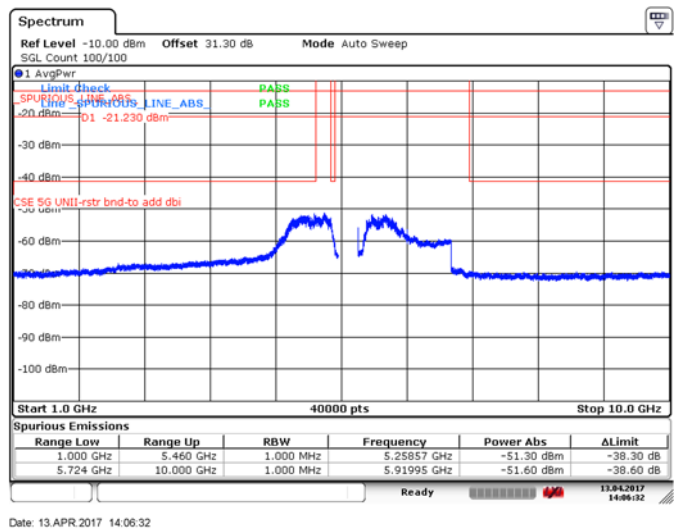


Figure 8.4-222: Average Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, cho, BPSK

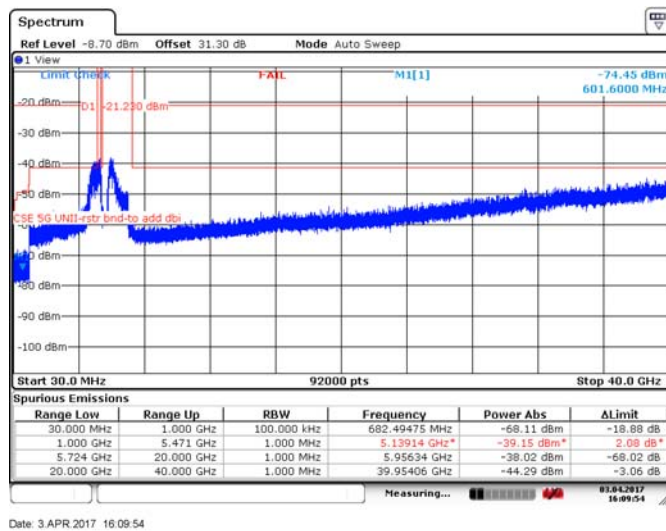


Figure 8.4-223: Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, cho, 256-QAM

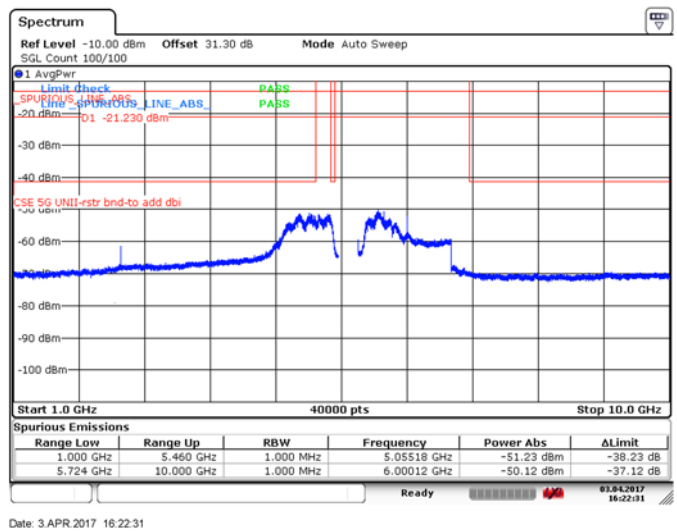


Figure 8.4-224: Average Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, cho, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

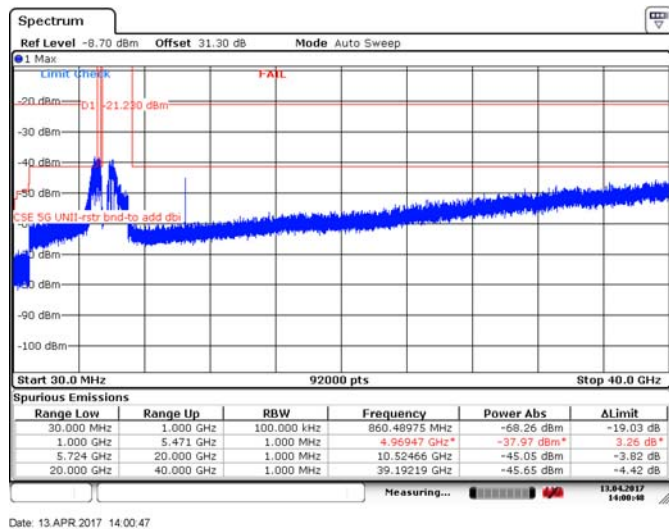


Figure 8.4-225: Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, ch1, BPSK

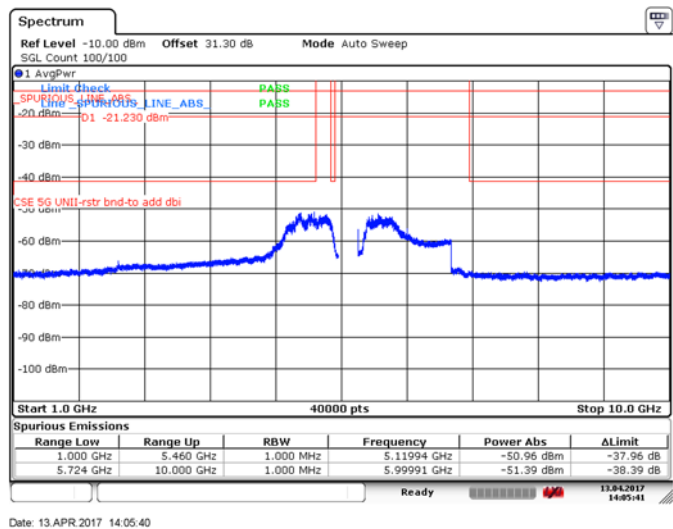


Figure 8.4-226: Average Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, ch1, BPSK

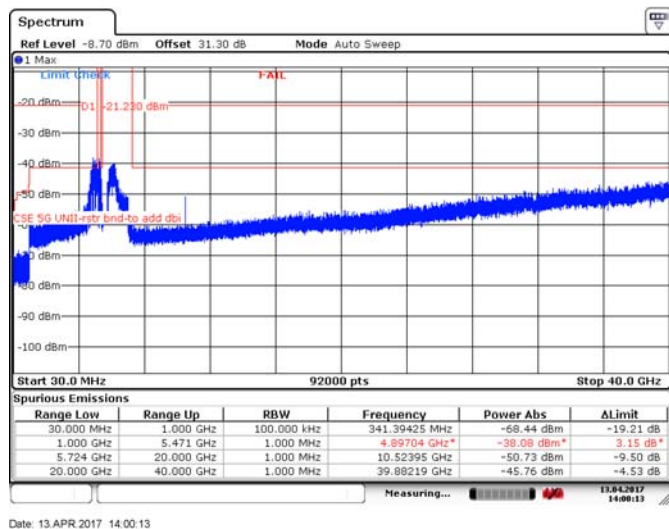


Figure 8.4-227: Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, ch1, 256-QAM

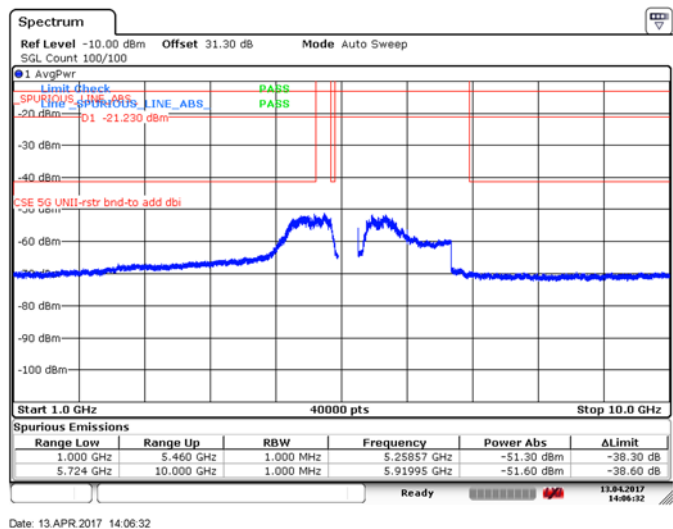


Figure 8.4-228: Average Spurious emissions within restricted bands, 10 MHz channel, high channel, 32 dBi antenna, ch1, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = -21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = -41.23 dBm

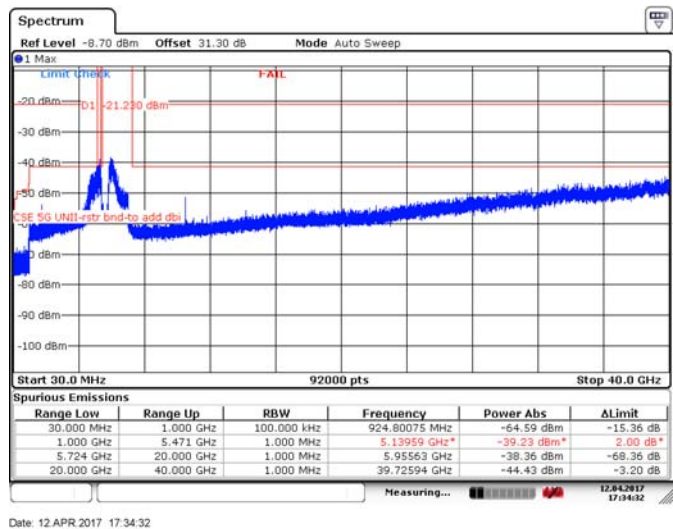


Figure 8.4-229: Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, cho, BPSK

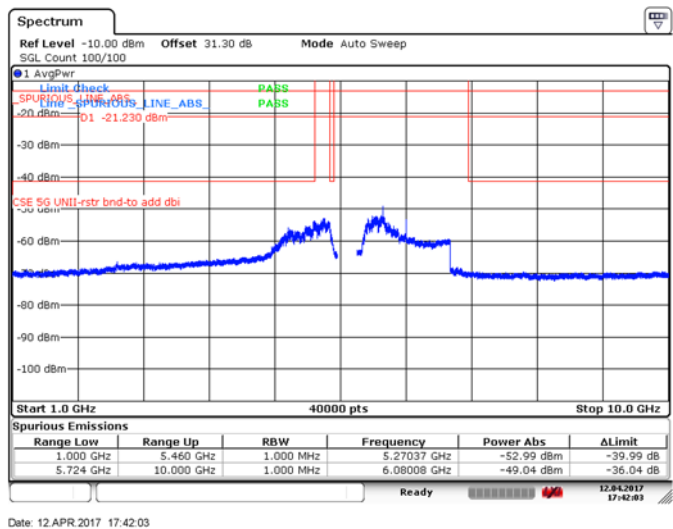


Figure 8.4-230: Average Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, cho, BPSK

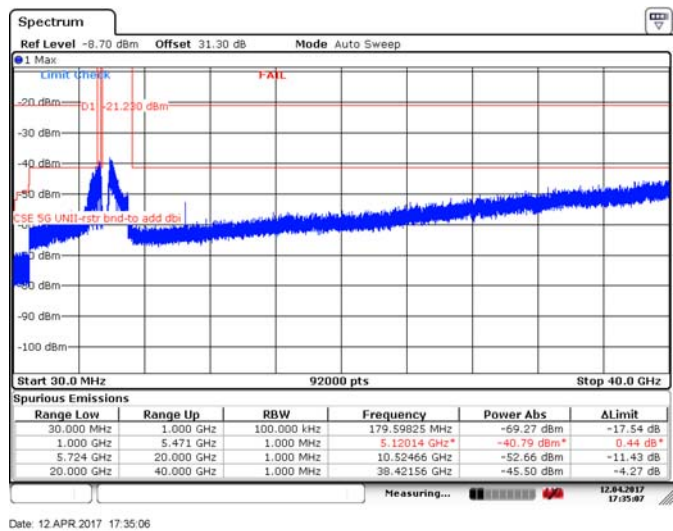


Figure 8.4-231: Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, cho,256QAM

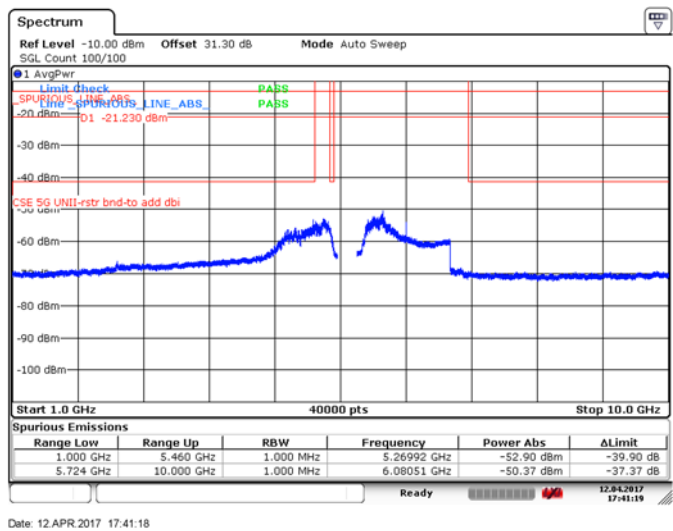


Figure 8.4-232: Average Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, cho,256QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

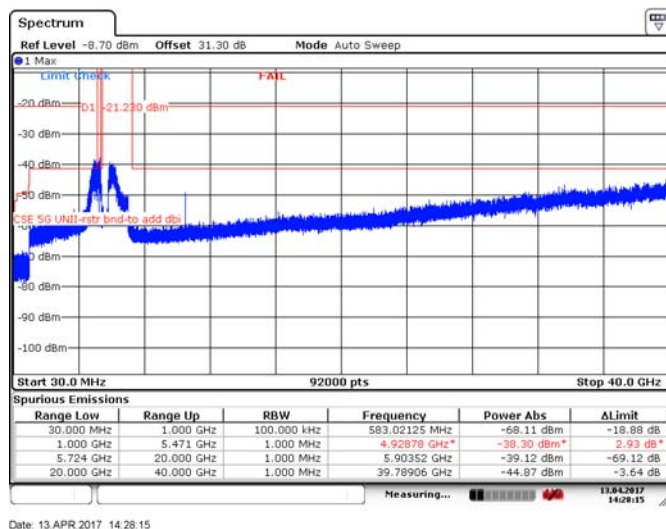


Figure 8.4-233: Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, ch1, BPSK

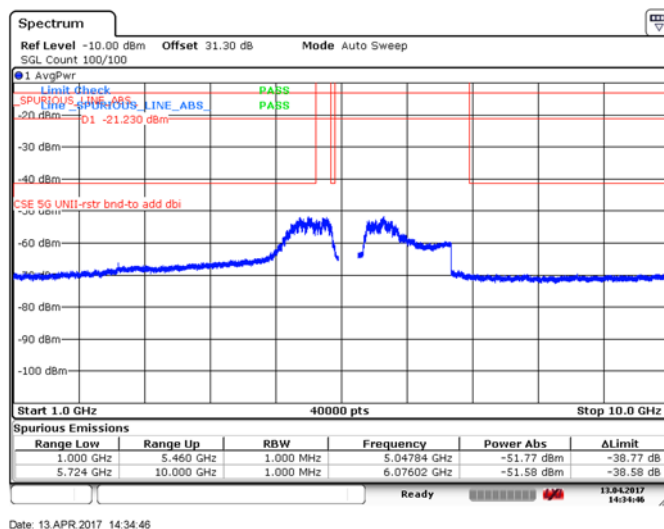


Figure 8.4-234: Average Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, ch1, BPSK

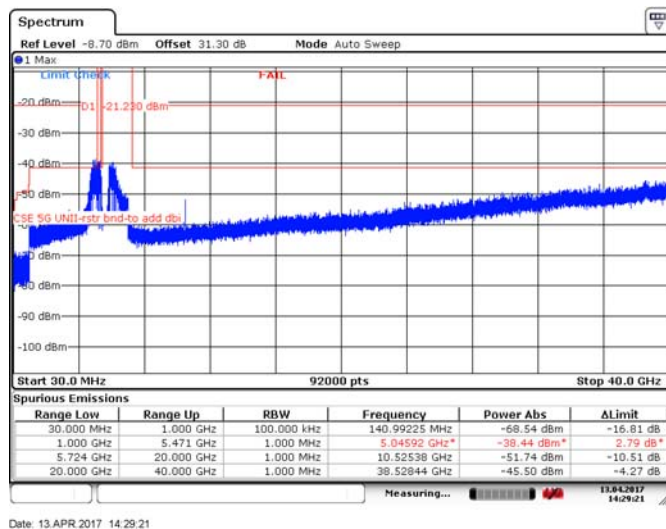


Figure 8.4-235: Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, ch1,256QAM

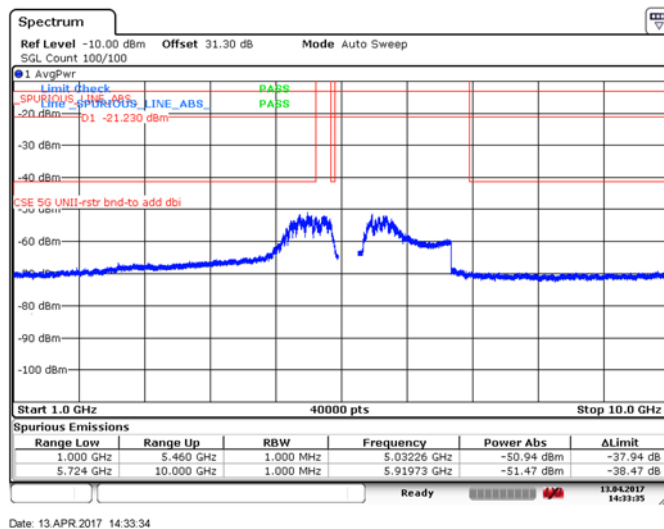


Figure 8.4-236: Average Spurious emissions within restricted bands, 20 MHz channel, low channel, 32 dBi antenna, ch1,256QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

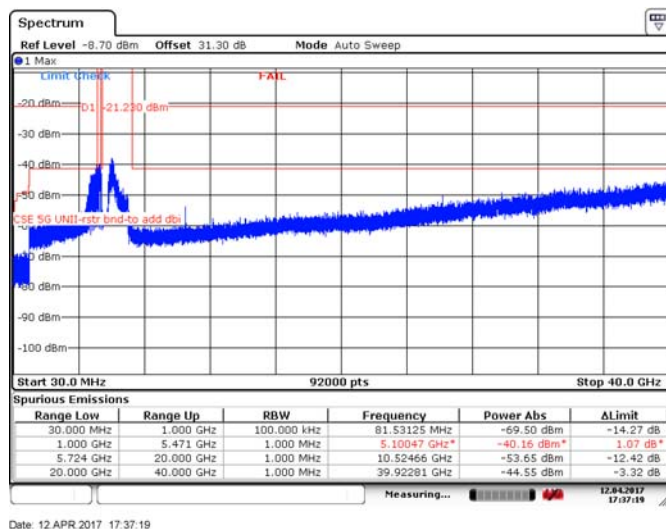


Figure 8.4-237: Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, cho, BPSK

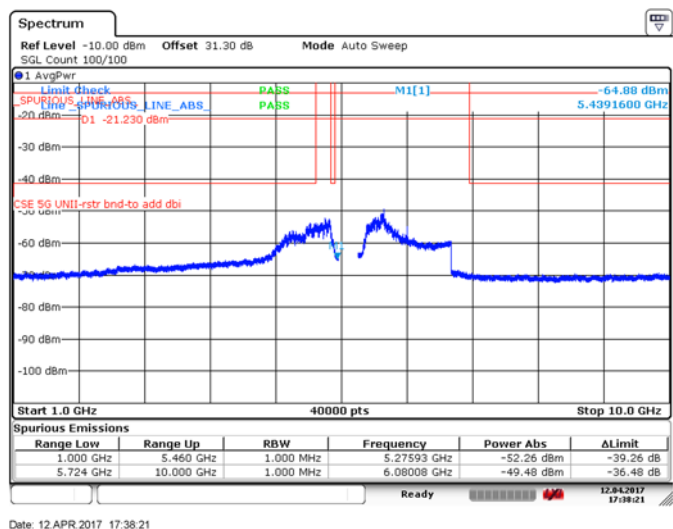


Figure 8.4-238: Average Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, cho, BPSK

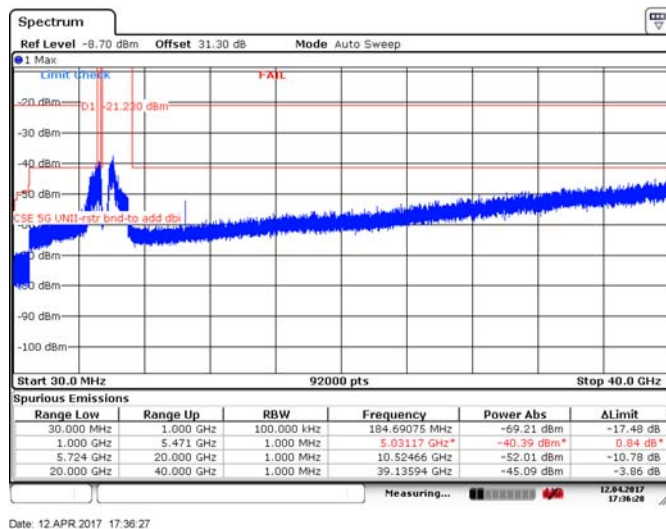


Figure 8.4-239: Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, cho, 256-QAM

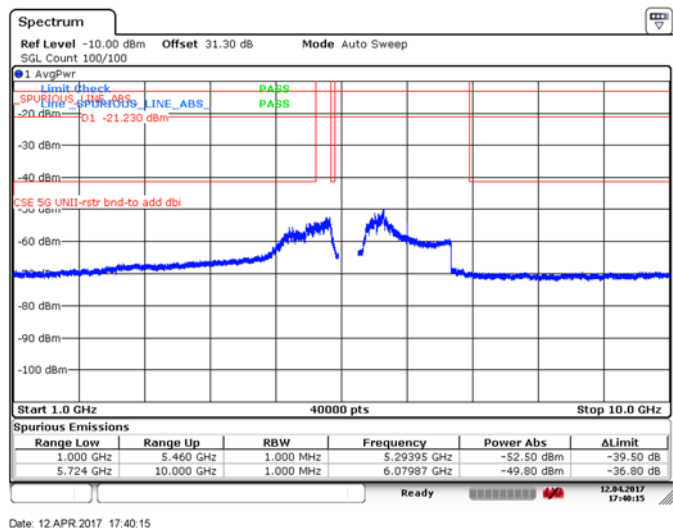


Figure 8.4-240: Average Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, cho, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

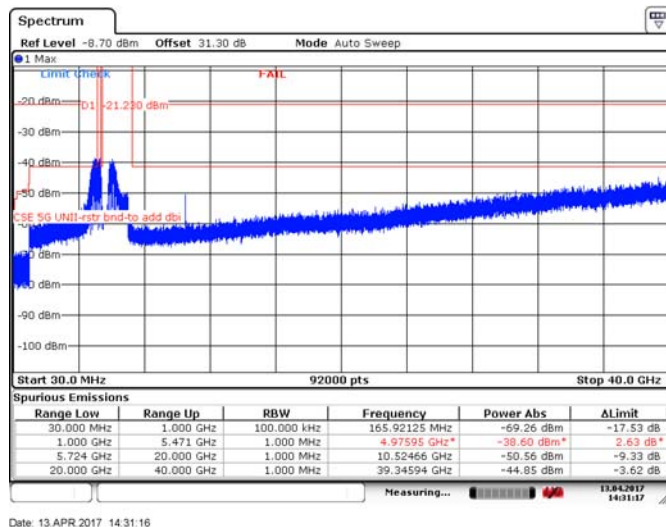


Figure 8.4-241: Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

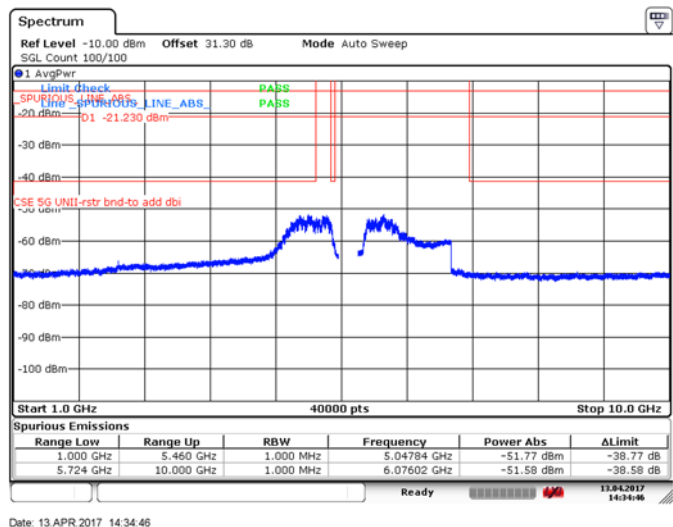


Figure 8.4-242: Average Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

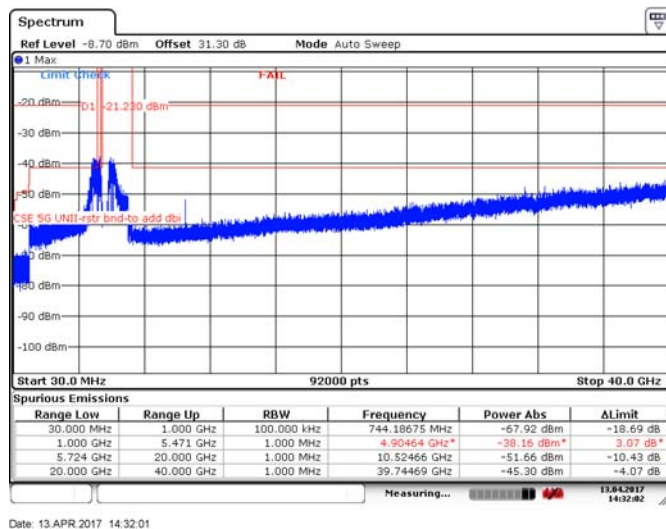


Figure 8.4-243: Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

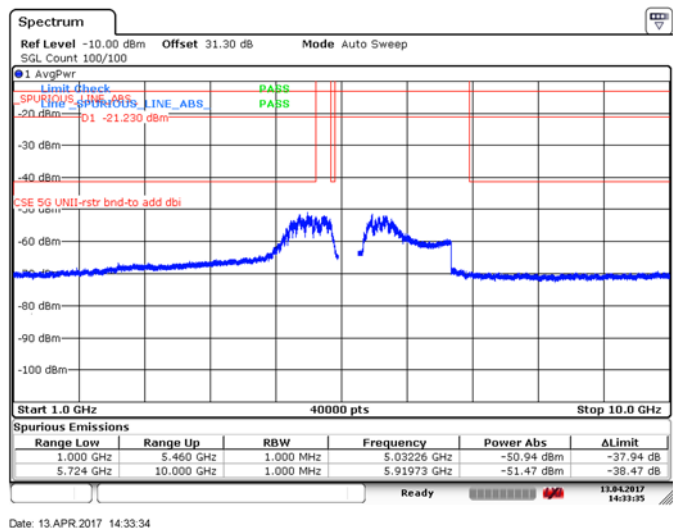


Figure 8.4-244: Average Spurious emissions within restricted bands, 20 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

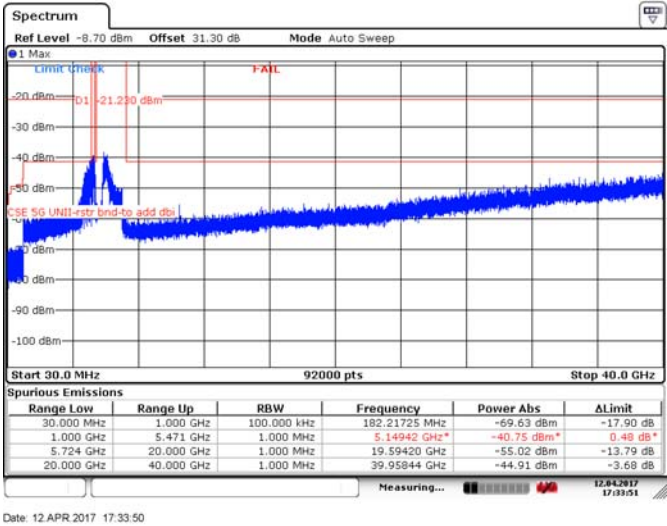


Figure 8.4-245: Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, cho, BPSK

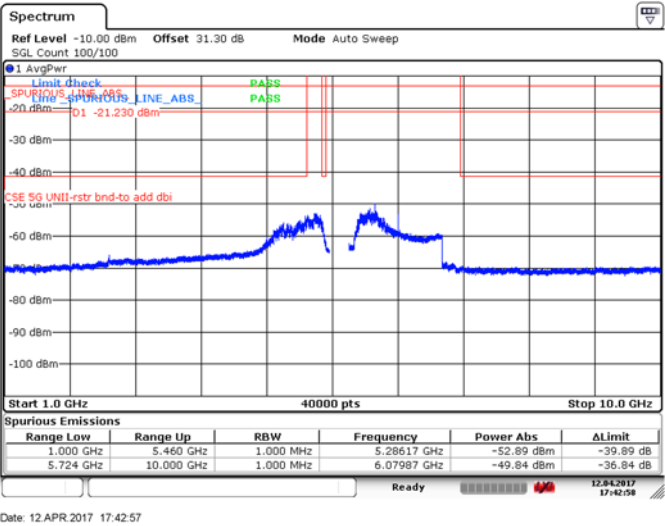


Figure 8.4-246: Average Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, cho, BPSK

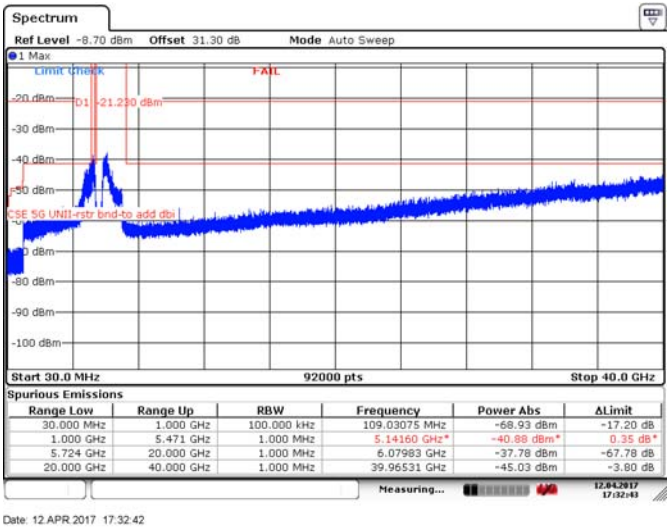


Figure 8.4-247: Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, cho, 256-QAM,

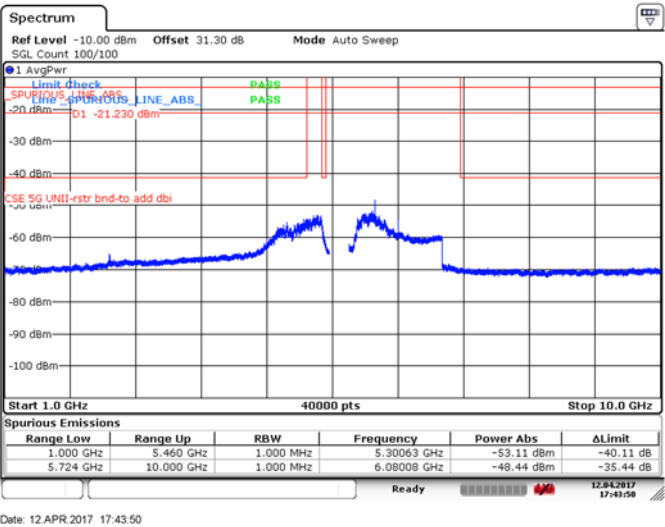


Figure 8.4-248: Average Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, cho, 256-QAM,

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

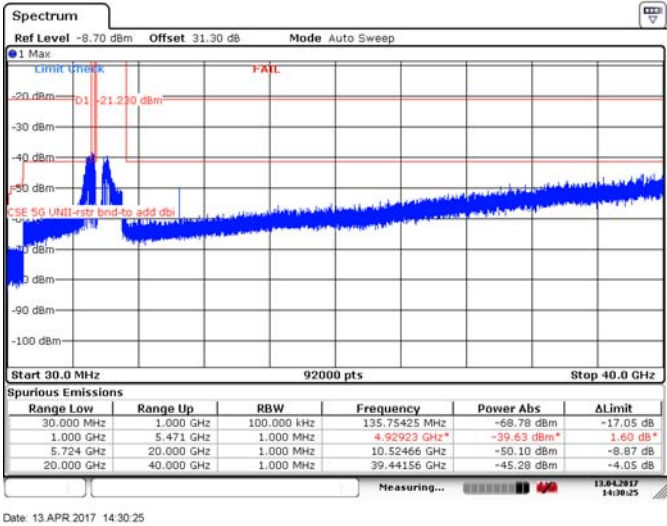


Figure 8.4-249: Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, ch1, BPSK

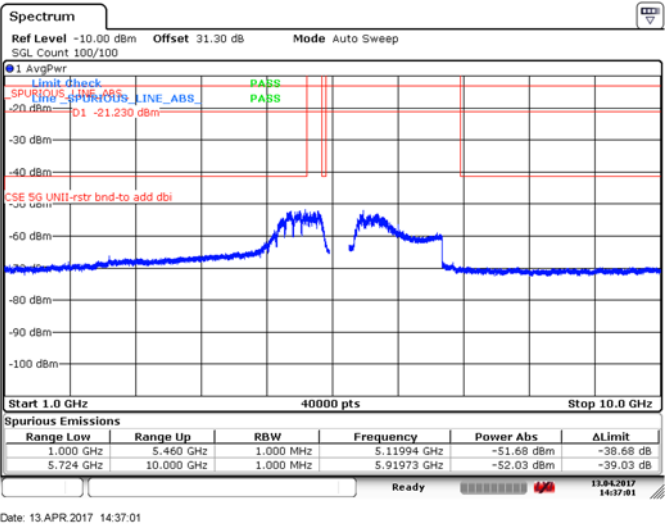


Figure 8.4-250: Average Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, ch1, BPSK

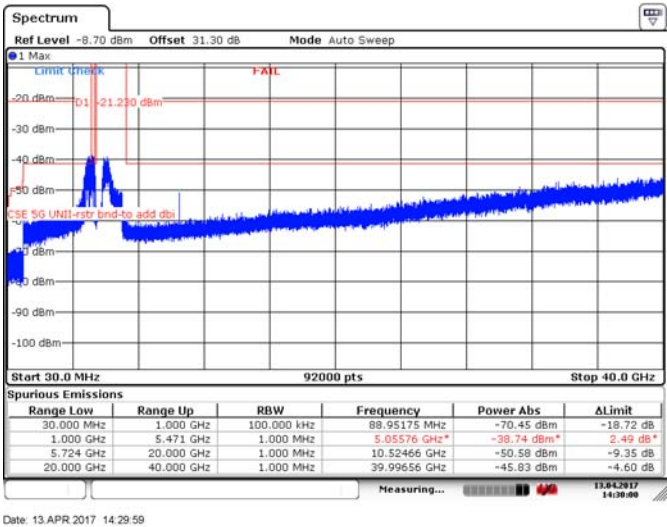


Figure 8.4-251: Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, ch1, 256-QAM,

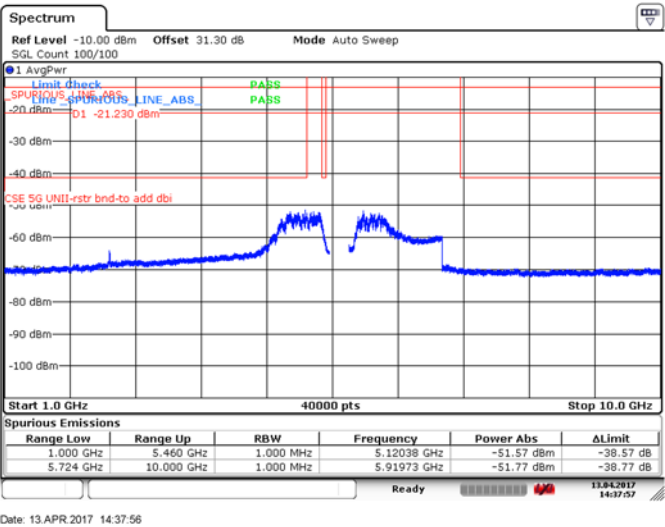


Figure 8.4-252: Average Spurious emissions within restricted bands, 20 MHz channel, high channel, 32 dBi antenna, ch1, 256-QAM,

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

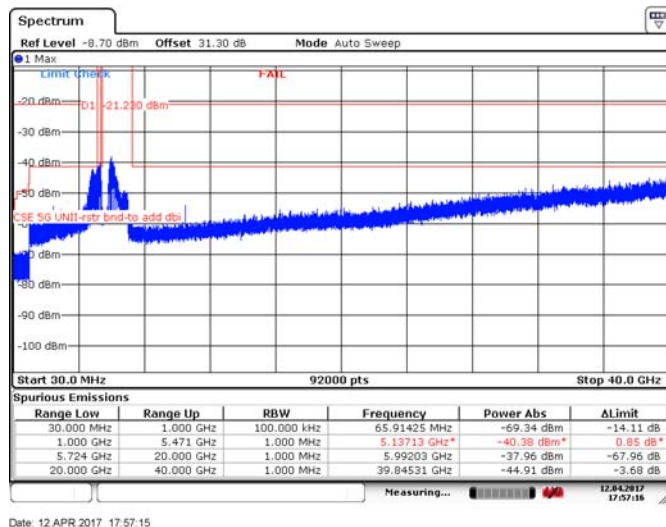


Figure 8.4-253: Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, cho, BPSK

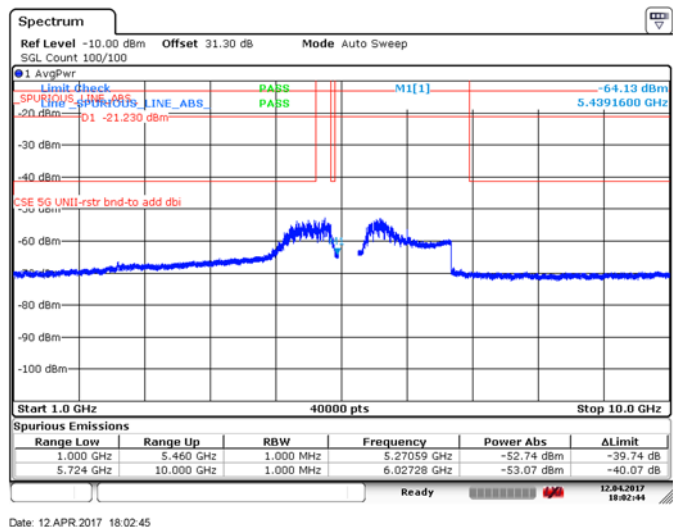


Figure 8.4-254: Average Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, cho, BPSK

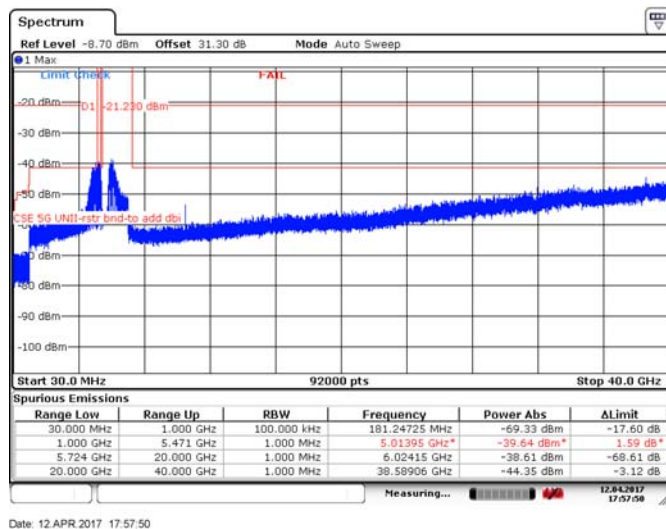


Figure 8.4-255: Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, cho, 256QAM

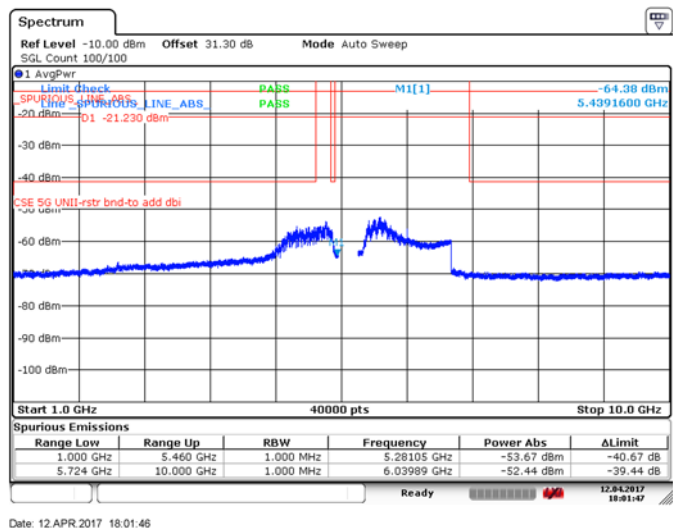


Figure 8.4-256: Average Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, cho, 256QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

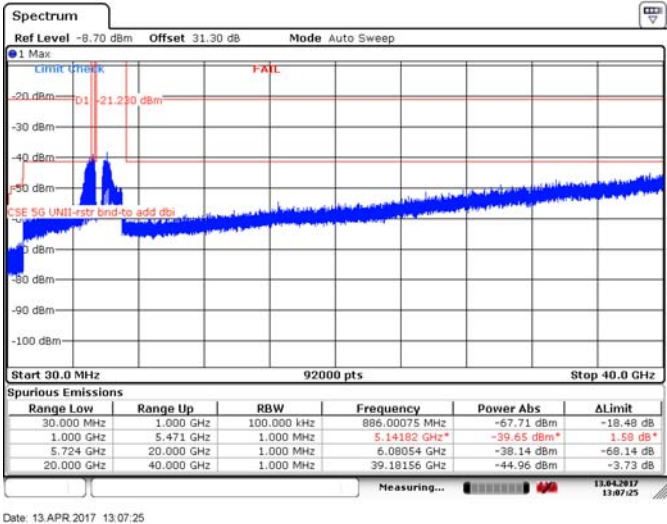


Figure 8.4-257: Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, ch1, BPSK

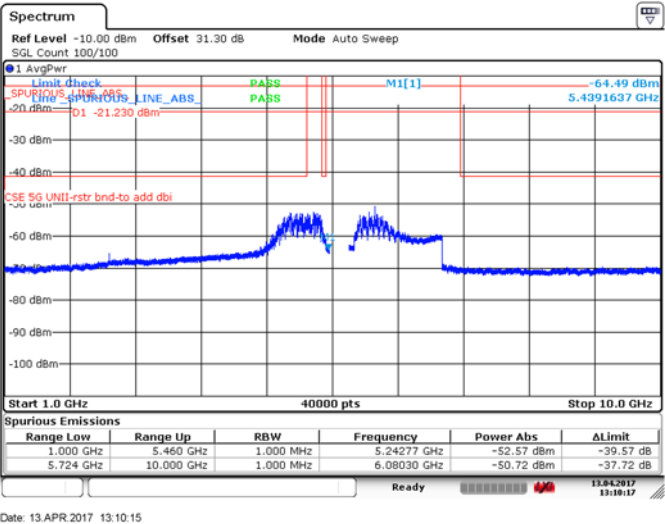


Figure 8.4-258: Average Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, ch1, BPSK

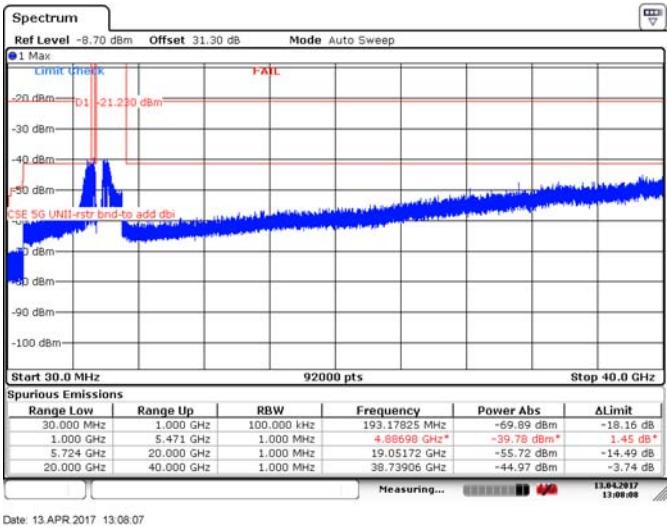


Figure 8.4-259: Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, ch1, 256QAM

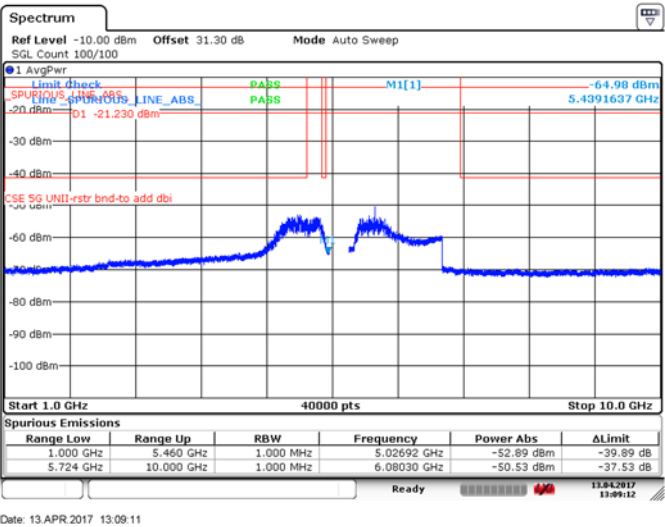


Figure 8.4-260: Average Spurious emissions within restricted bands, 40 MHz channel, low channel, 32 dBi antenna, ch1, 256QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

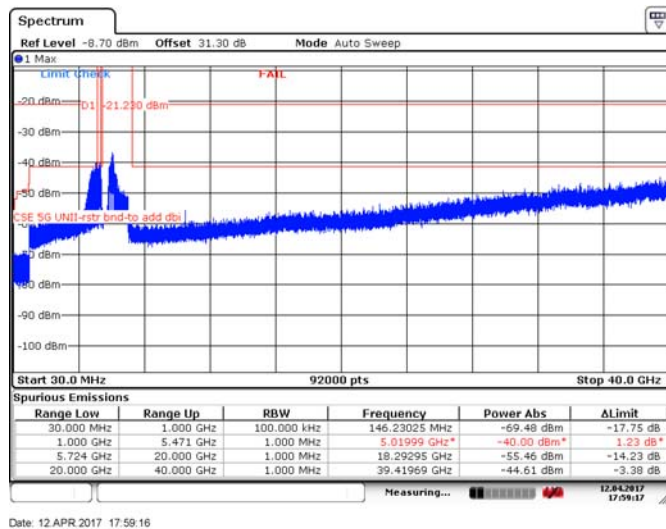


Figure 8.4-261: Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, cho, BPSK

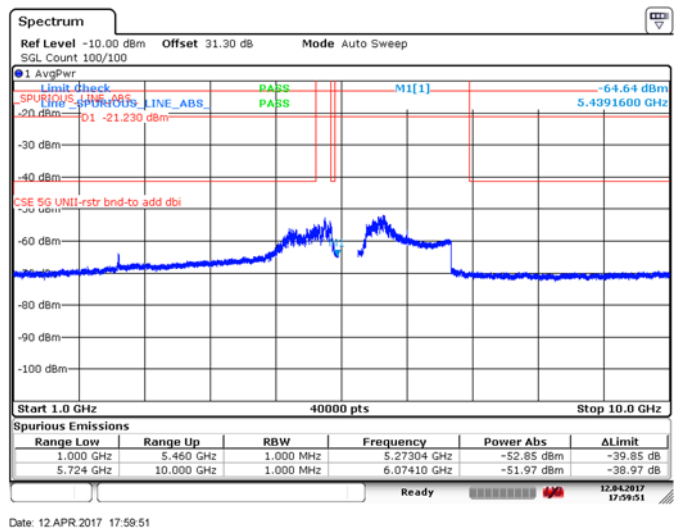


Figure 8.4-262: Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

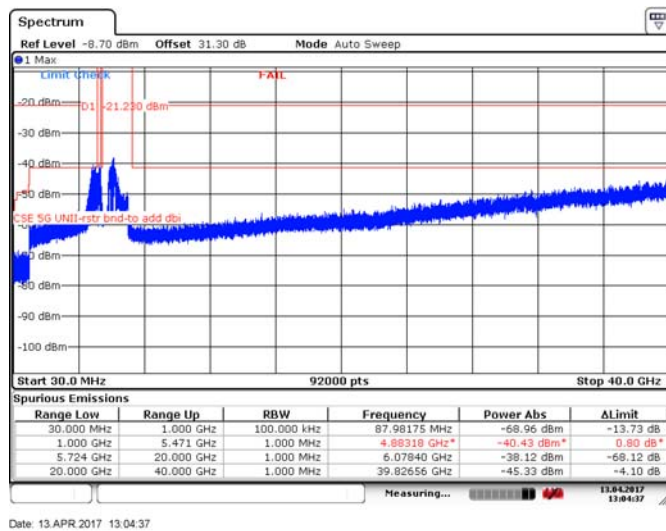


Figure 8.4-263: Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, cho, 256-QAM

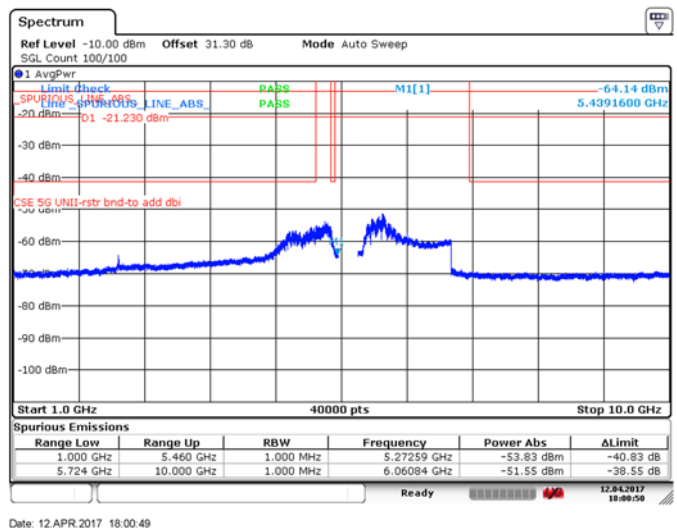


Figure 8.4-264: Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

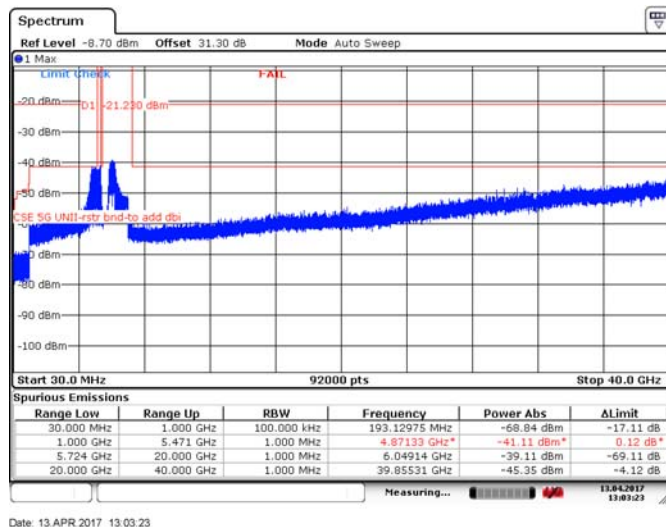


Figure 8.4-265: Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

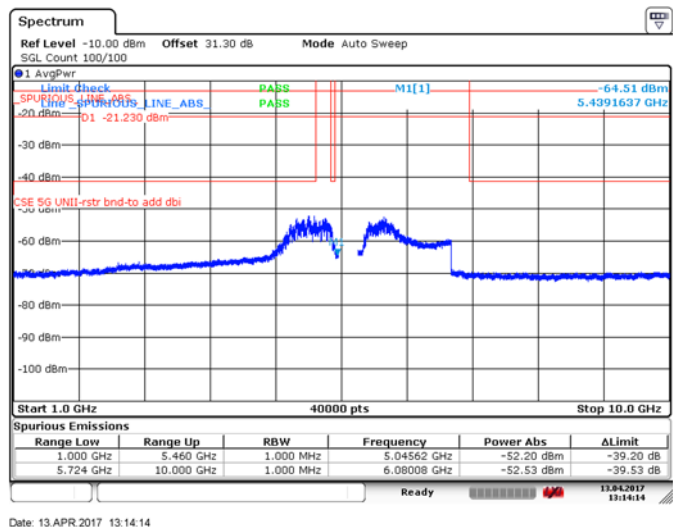


Figure 8.4-266: Average Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, ch1, BPSK

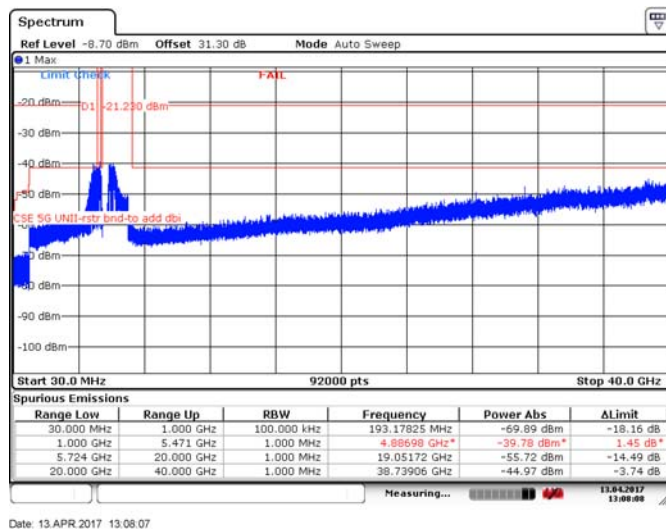


Figure 8.4-267: Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

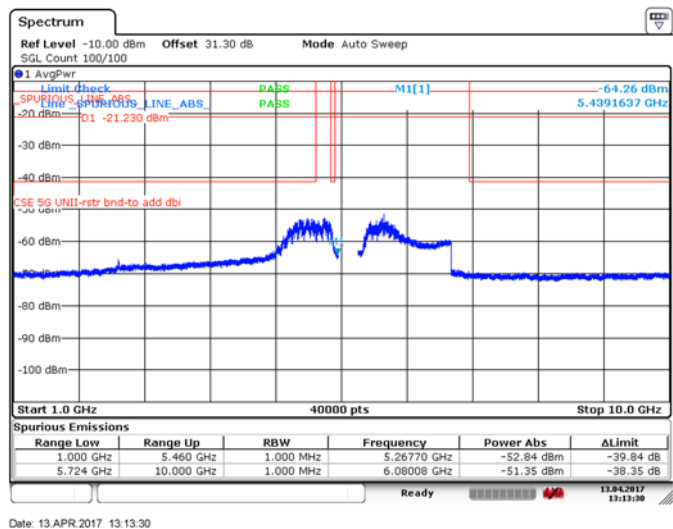


Figure 8.4-268: Average Spurious emissions within restricted bands, 40 MHz channel, mid channel, 32 dBi antenna, ch1, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

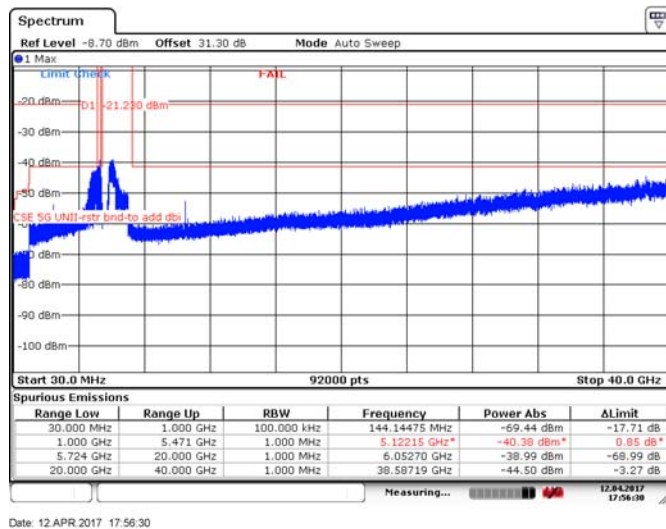


Figure 8.4-269: Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, cho, BPSK

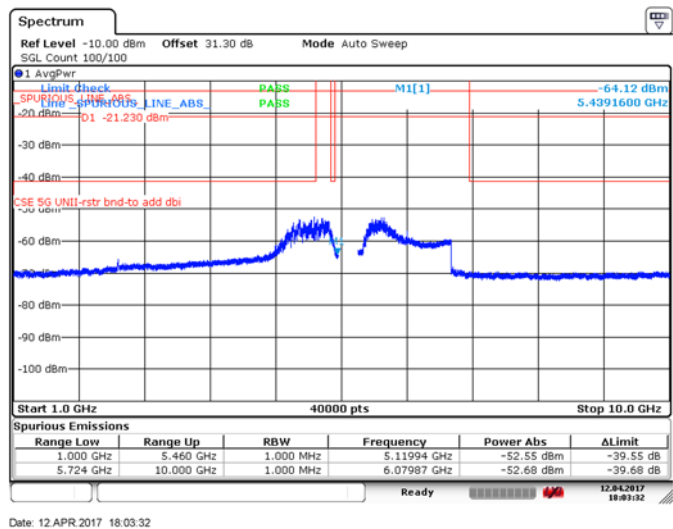


Figure 8.4-270: Average Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, cho, BPSK

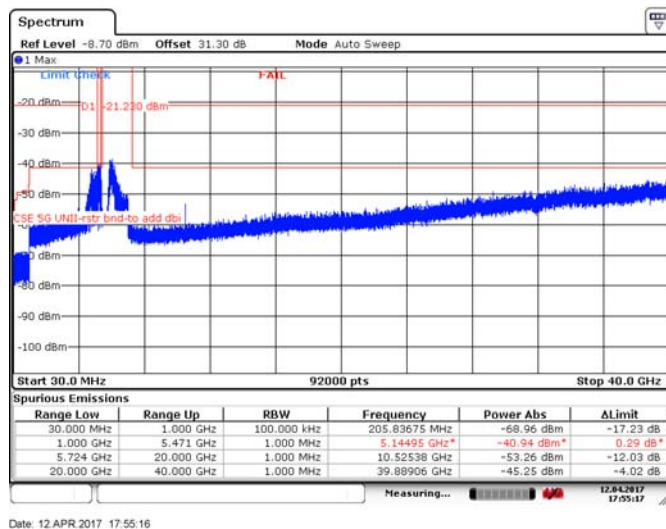


Figure 8.4-271: Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, cho, 256-QAM

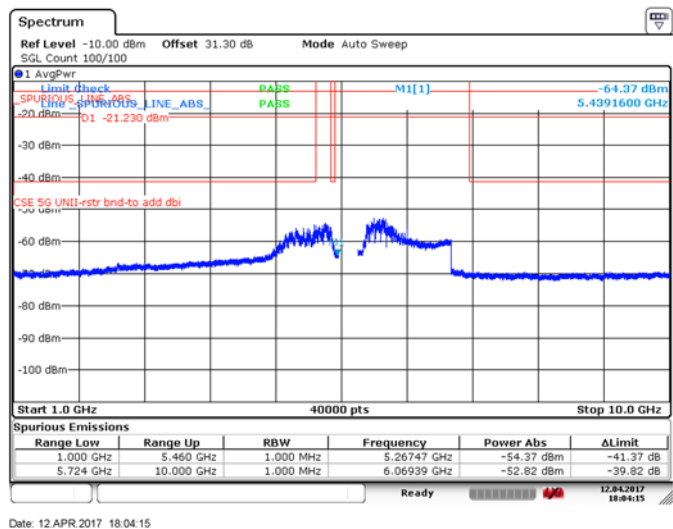


Figure 8.4-272: Average Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, cho, 256-QAM

Section 8	Testing data
Test name	FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
Specification	FCC Part 15 Subpart E and RSS-247 Issue 2

Peak limit EIRP equivalent: 74 dBμV/m – 95.23 dB = –21.23 dBm
Average limit EIRP equivalent: 54 dBμV/m – 95.23 dB = –41.23 dBm

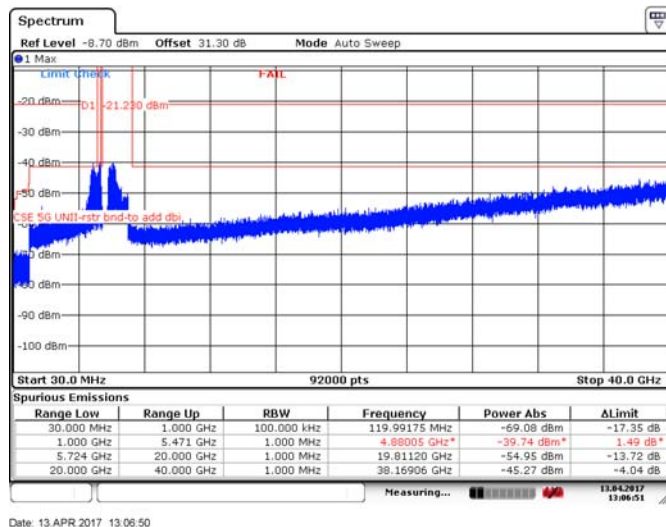


Figure 8.4-273: Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, ch1, BPSK

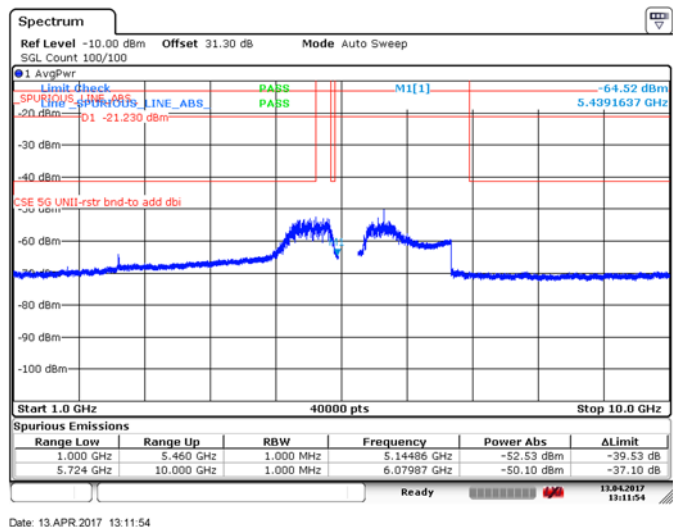


Figure 8.4-274: Average Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, ch1, BPSK

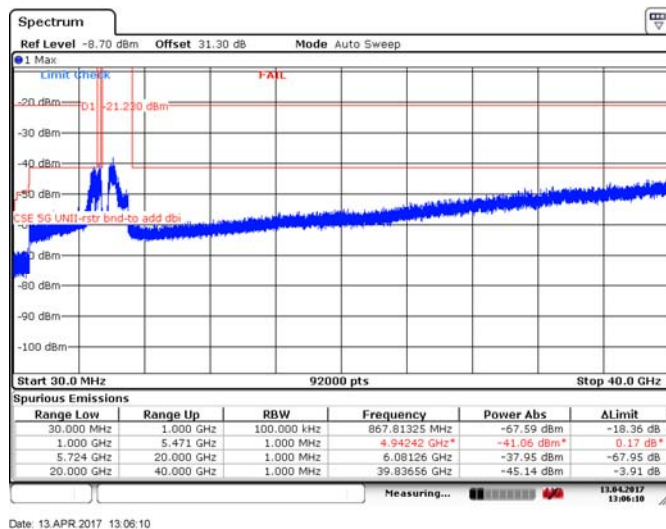


Figure 8.4-275: Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, ch1, 256-QAM

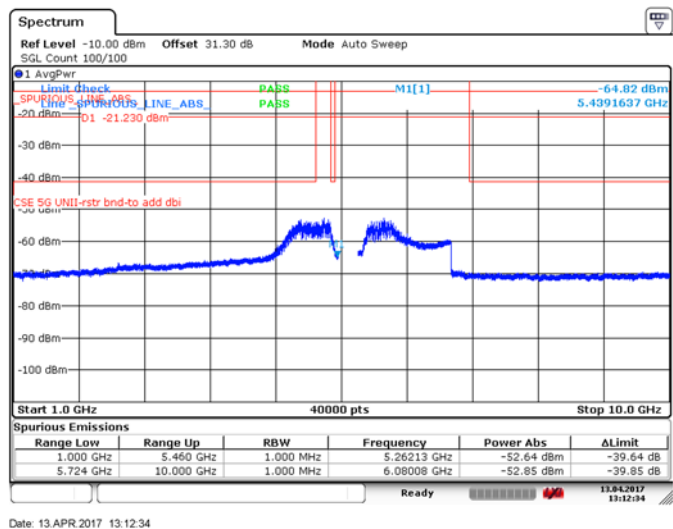


Figure 8.4-276: Average Spurious emissions within restricted bands, 40 MHz channel, high channel, 32 dBi antenna, ch1, 256-QAM

Section 8
Test name
Specification

Testing data
FCC 15.407(b) and RSS-247 6.2.3 Spurious (out-of-band) emissions
FCC Part 15 Subpart E and RSS-247 Issue 2

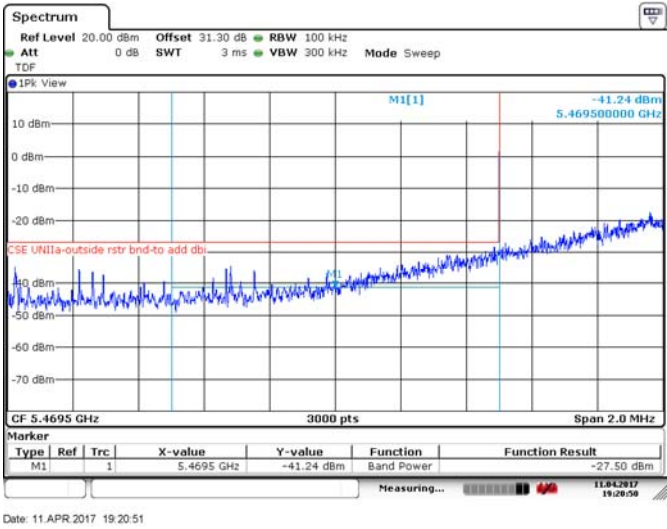


Figure 8.4-277: Lower band edge, 10 MHz channel, 32 dBi antenna, BPSK

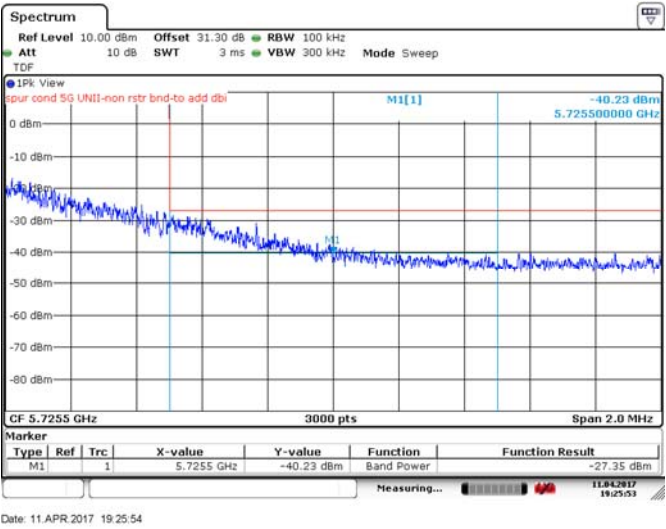


Figure 8.4-278: Upper band edge, 10 MHz channel, 32 dBi antenna, BPSK

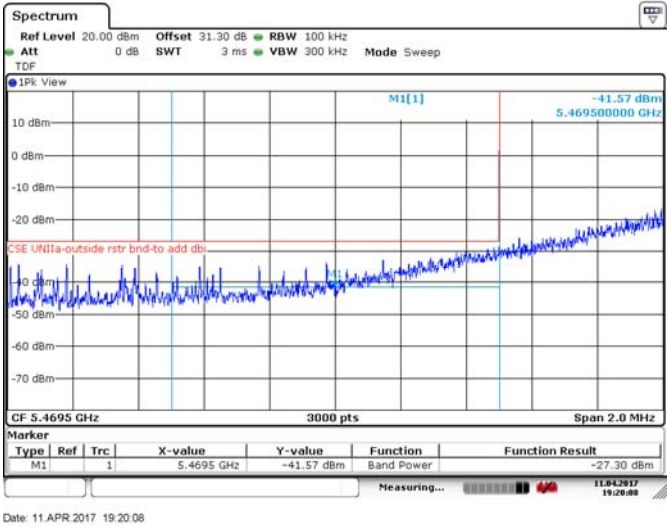


Figure 8.4-279: Lower band edge, 10 MHz channel, 32 dBi antenna, 256QAM

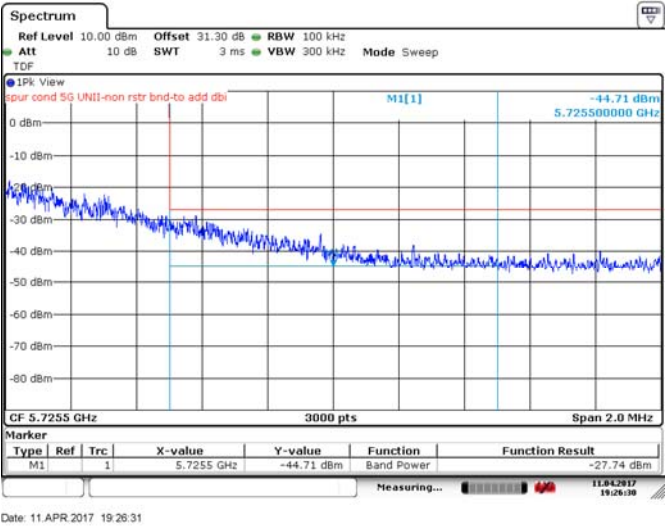


Figure 8.4-280: Upper band edge, 10 MHz channel, 32 dBi antenna, 256QAM

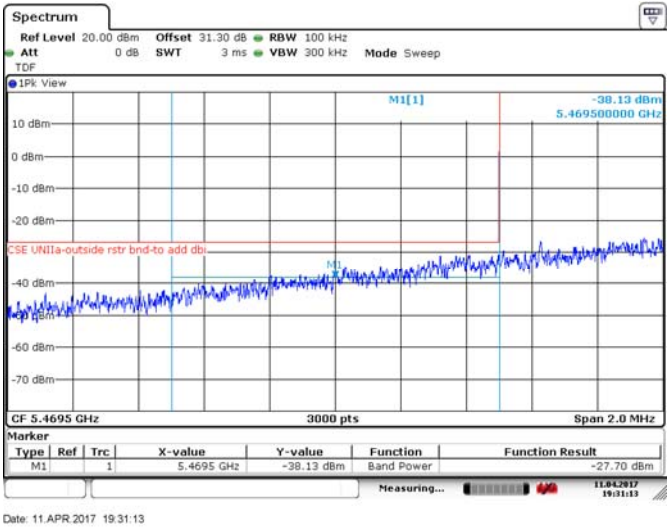


Figure 8.4-281: Lower band edge, 20 MHz channel, 32 dBi antenna, BPSK

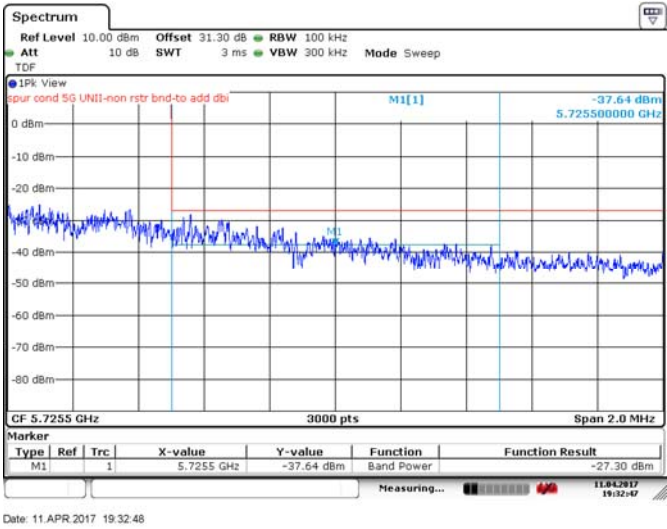


Figure 8.4-282: Upper band edge, 20 MHz channel, 32 dBi antenna, BPSK

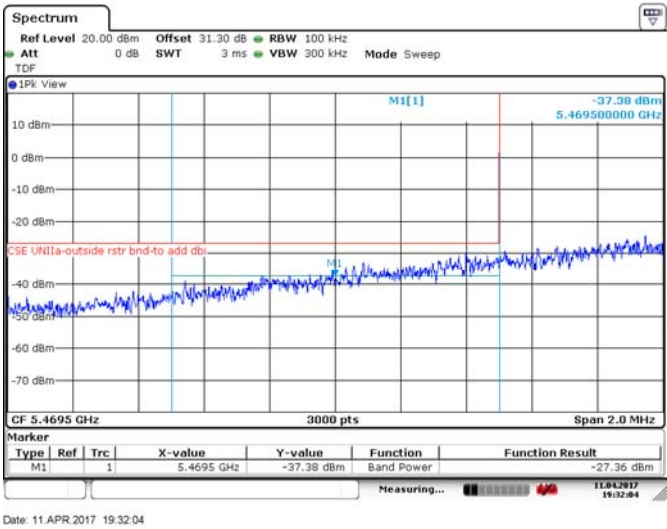


Figure 8.4-283: Lower band edge, 20 MHz channel, 32 dBi antenna, 256QAM

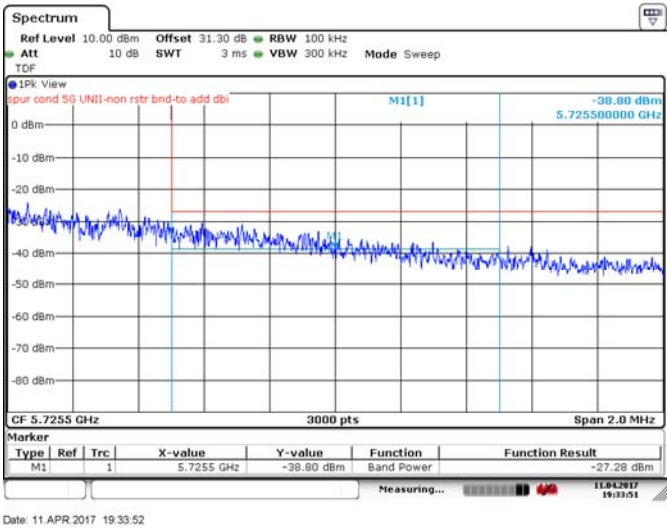


Figure 8.4-284: Upper band edge, 20 MHz channel, 32 dBi antenna, 256QAM

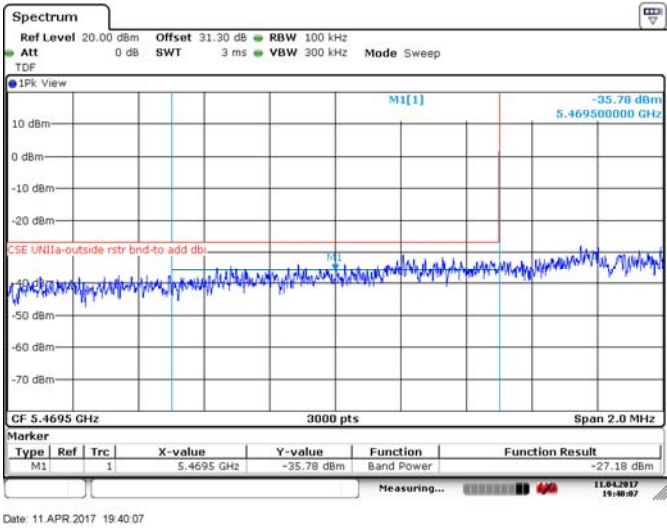


Figure 8.4-285: Lower band edge, 40 MHz channel, 32 dBi antenna, BPSK

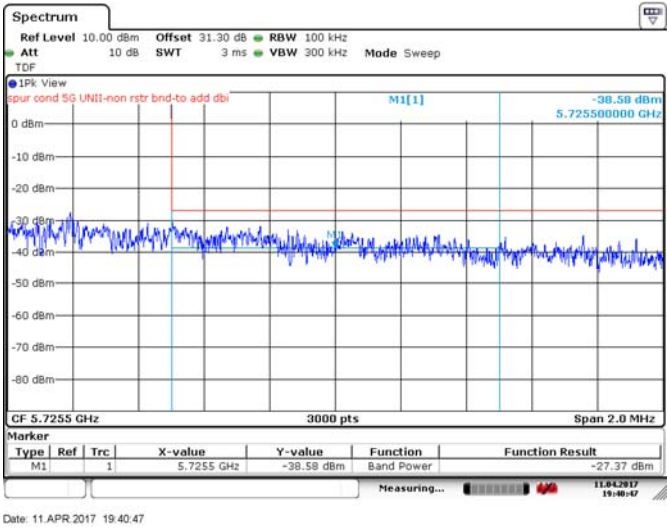


Figure 8.4-286: Upper band edge, 40 MHz channel, 32 dBi antenna, BPSK

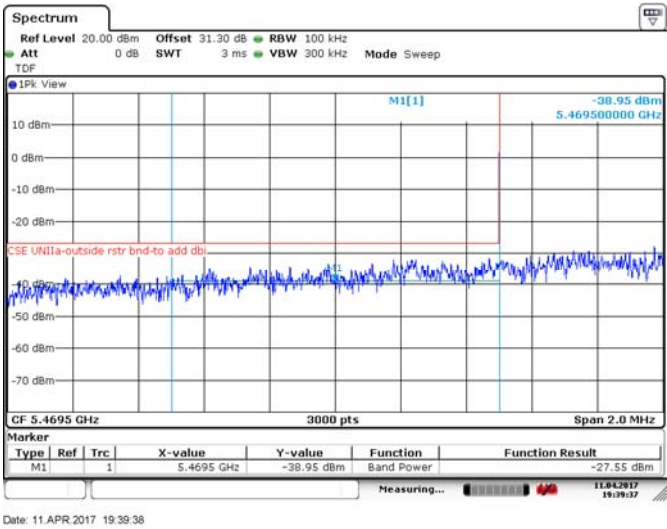


Figure 8.4-287: Lower band edge, 40 MHz channel, 32 dBi antenna, 256QAM

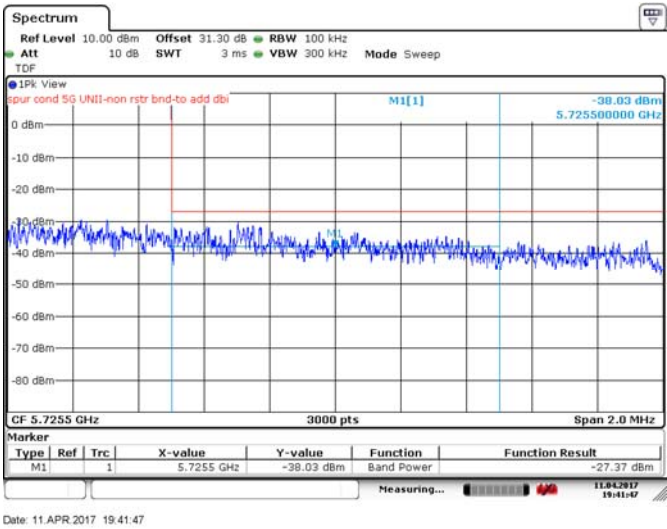


Figure 8.4-288: Upper band edge, 40 MHz channel, 32 dBi antenna, 256QAM

8.5 FCC 15.407(g) and RSS-Gen 8.11 Frequency stability

8.5.1 Definitions and limits

Manufacturers of U-NII (IC: LE-LAN) devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

8.5.2 Test summary

Test date:	April 19, 2017	Temperature:	21 °C
Test engineer:	Yong Huang	Air pressure:	1008 mbar
Verdict:	Pass	Relative humidity:	31 %

8.5.3 Observations, settings and special notes

Spectrum analyser settings:

Resolution bandwidth:	10 Hz
Video bandwidth:	10 Hz
Detector mode:	Peak
Trace mode:	Max Hold

8.5.4 Test data

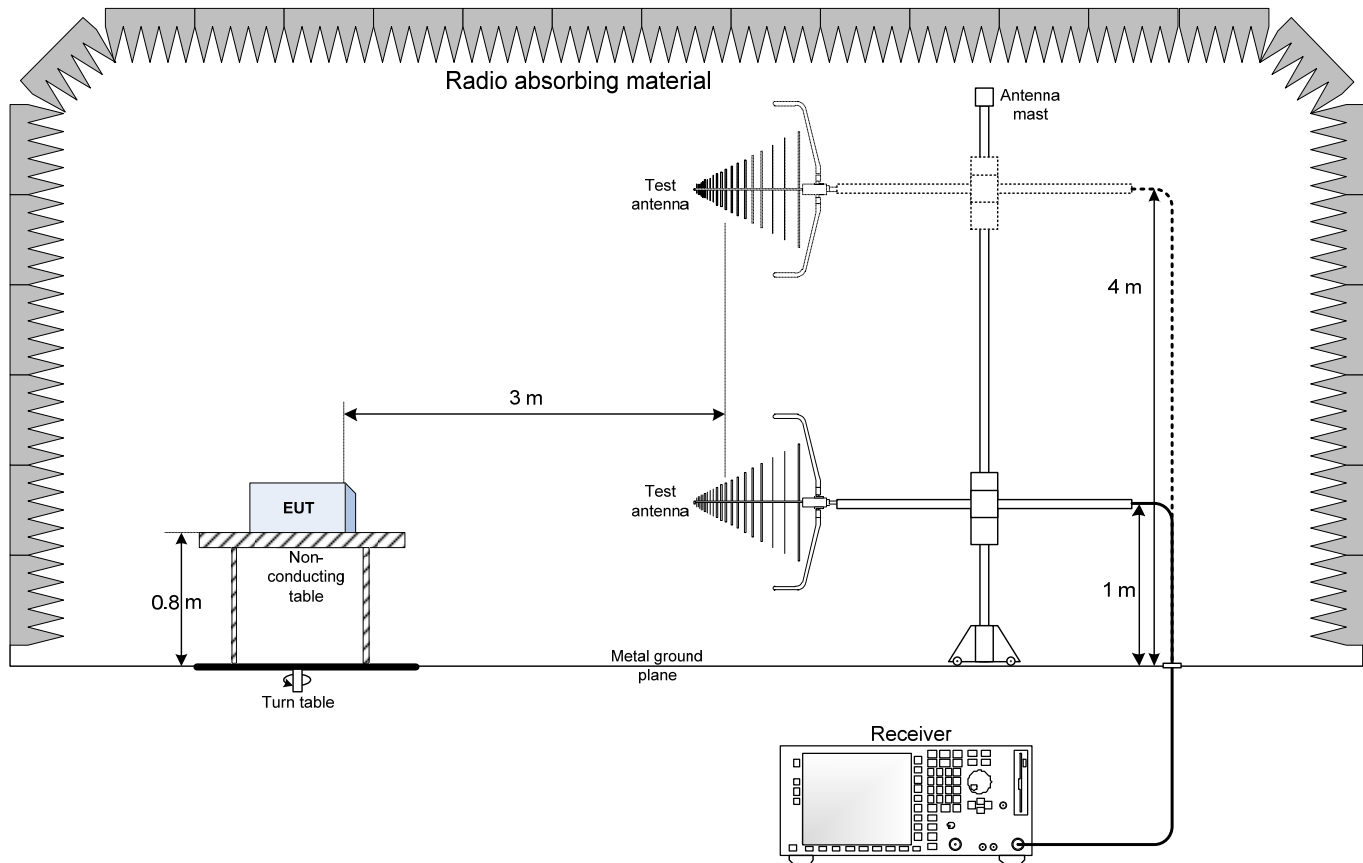
Table 8.5-1: Frequency drift measurement

Test conditions	Frequency, Hz	Drift, Hz
+50 °C, Nominal	5474998550	-26246
+40 °C, Nominal	5475007530	-17266
+30 °C, Nominal	5475010130	-14666
+20 °C, +15 %	5475026500	1704
+20 °C, Nominal	5475024796	reference
+20 °C, -15 %	5475025200	404
+10 °C, Nominal	5475040180	15384
0 °C, Nominal	5475052420	27624
-10 °C, Nominal	5475068630	43834
-20 °C, Nominal	5475062120	37324
-30 °C, Nominal	5475083290	58494

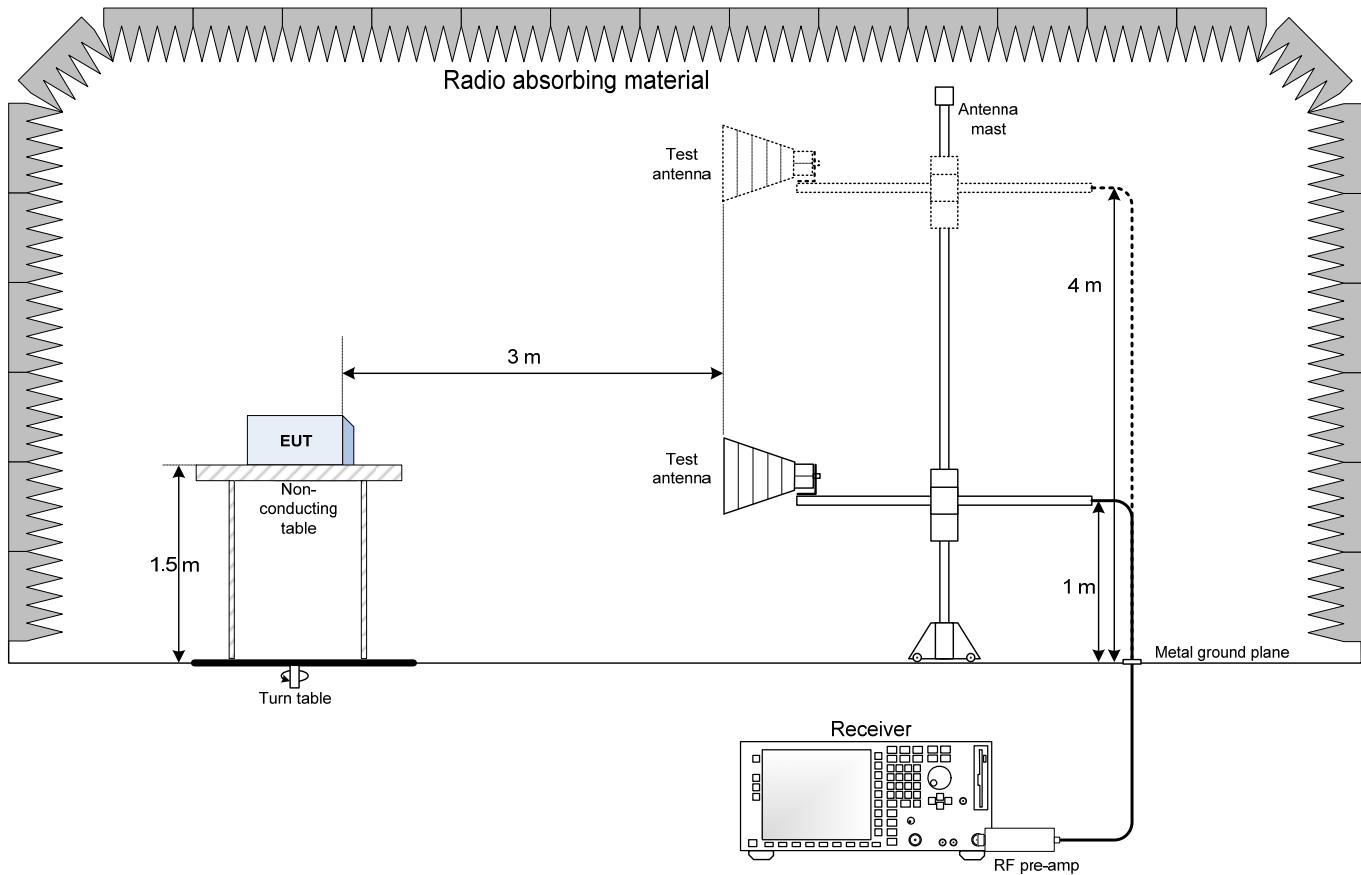
Note: Minimum lower band edge margin is more than 350 kHz.
Minimum upper band edge margin is more than 2MHz
The frequency drifts in above table are within these minimum margins, the emissions are deemed to maintain within the band of operation.

Section 9. Block diagrams of test set-ups

9.1 Radiated emissions set-up for frequencies below 1 GHz



9.2 Radiated emissions set-up for frequencies above 1 GHz



9.3 Conducted antenna port set-up

