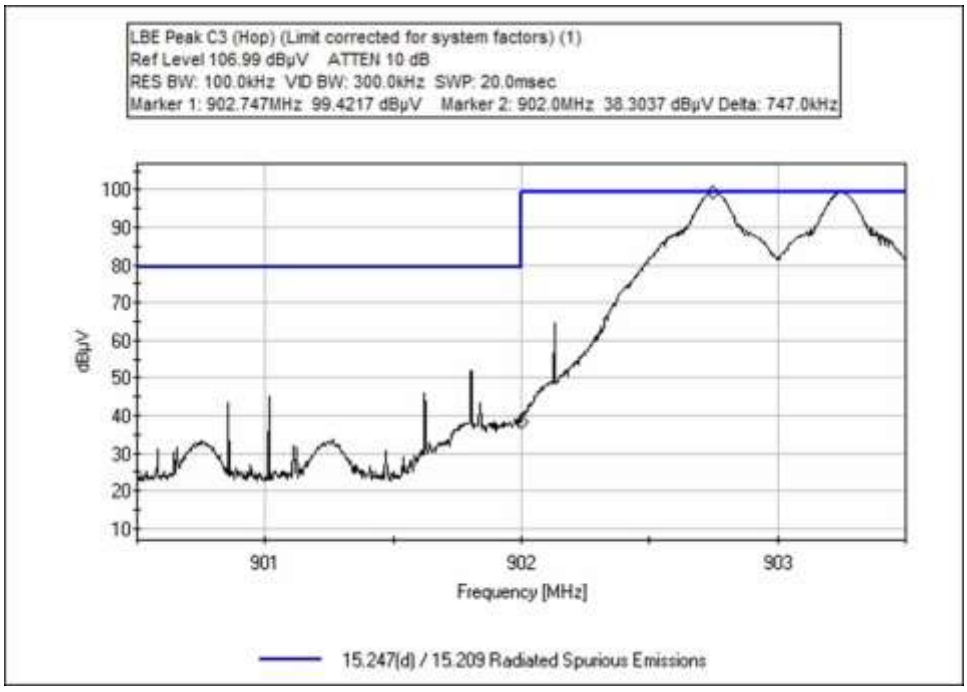
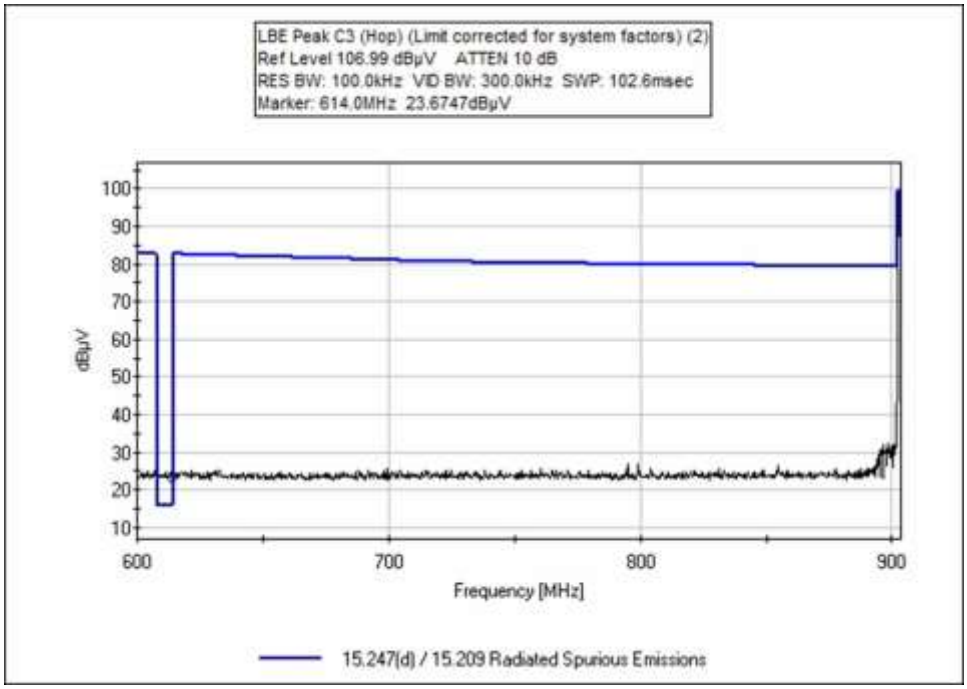
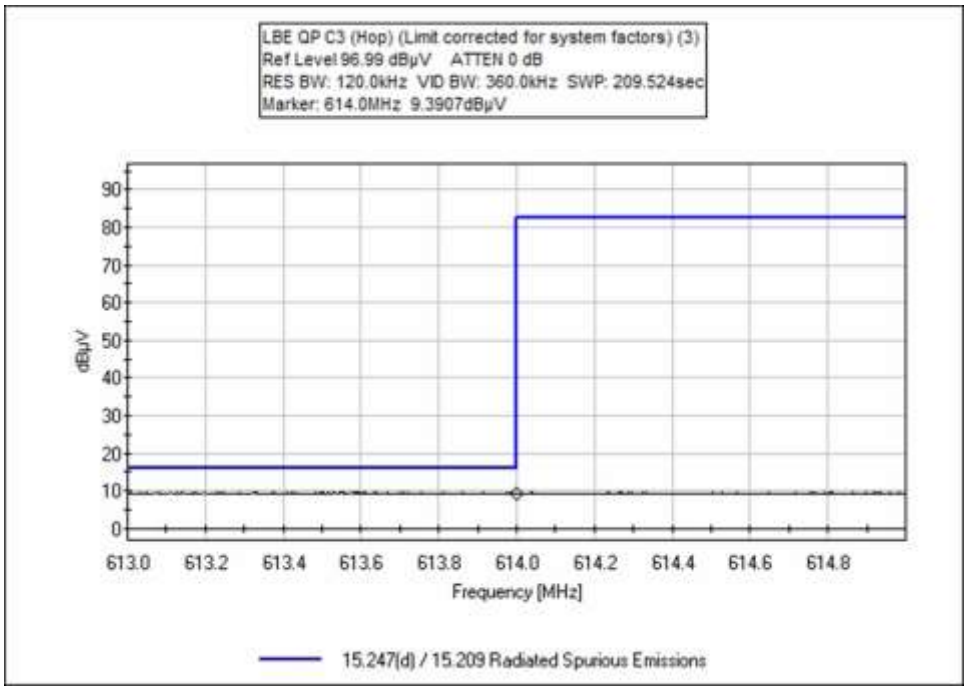
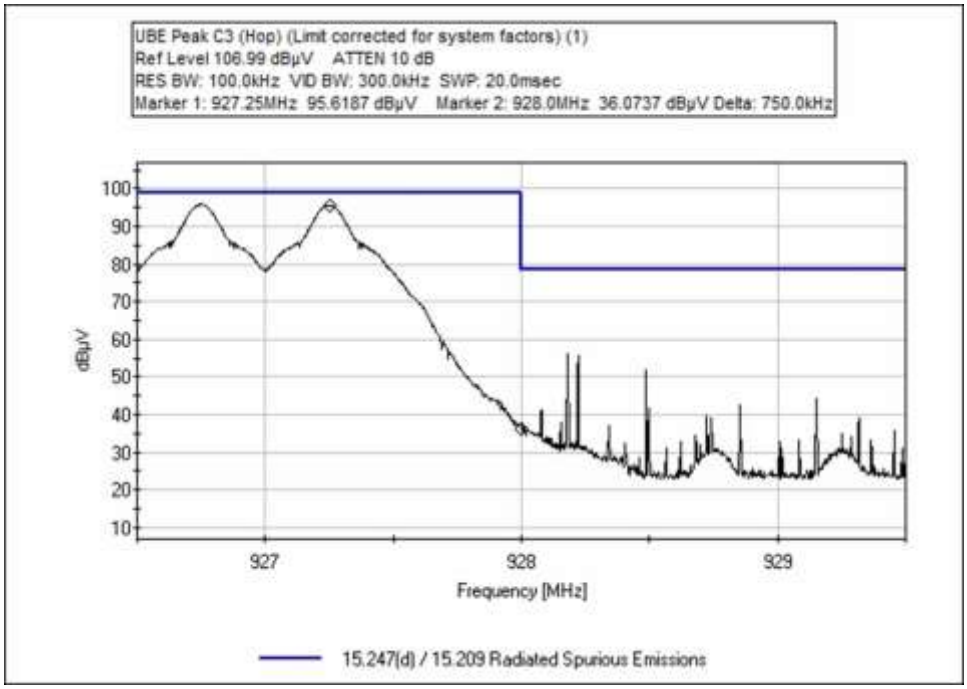
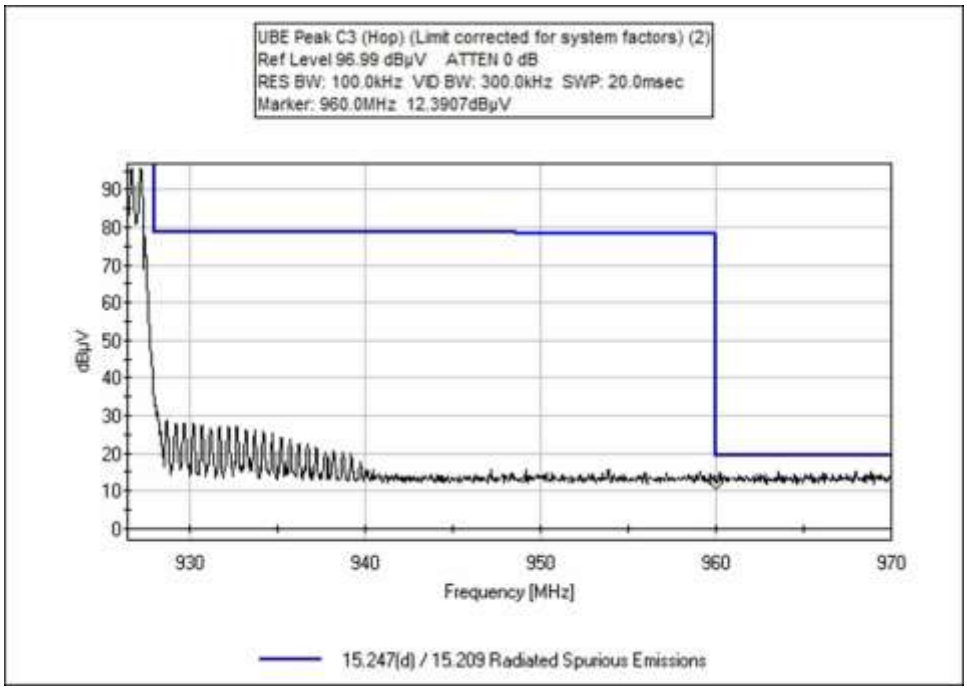
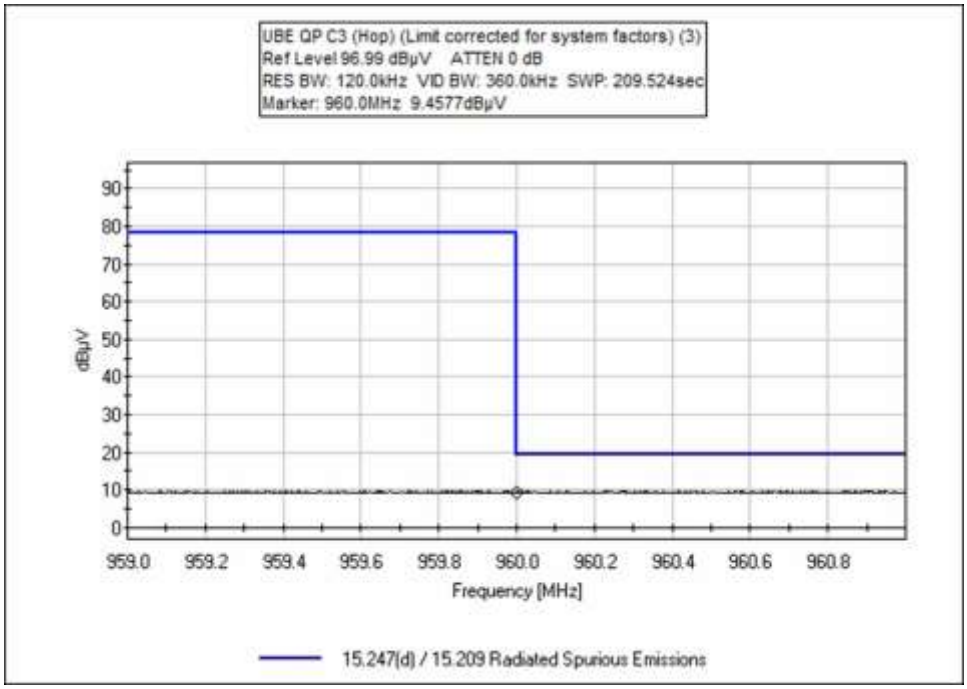

LBE Peak C3 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.747MHz 99.4217 dBµV Marker 2: 902.0MHz 38.3037 dBµV Delta: 747.0kHz
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C3 (Hop) (Limit corrected for system factors) (2)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 23.6747dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

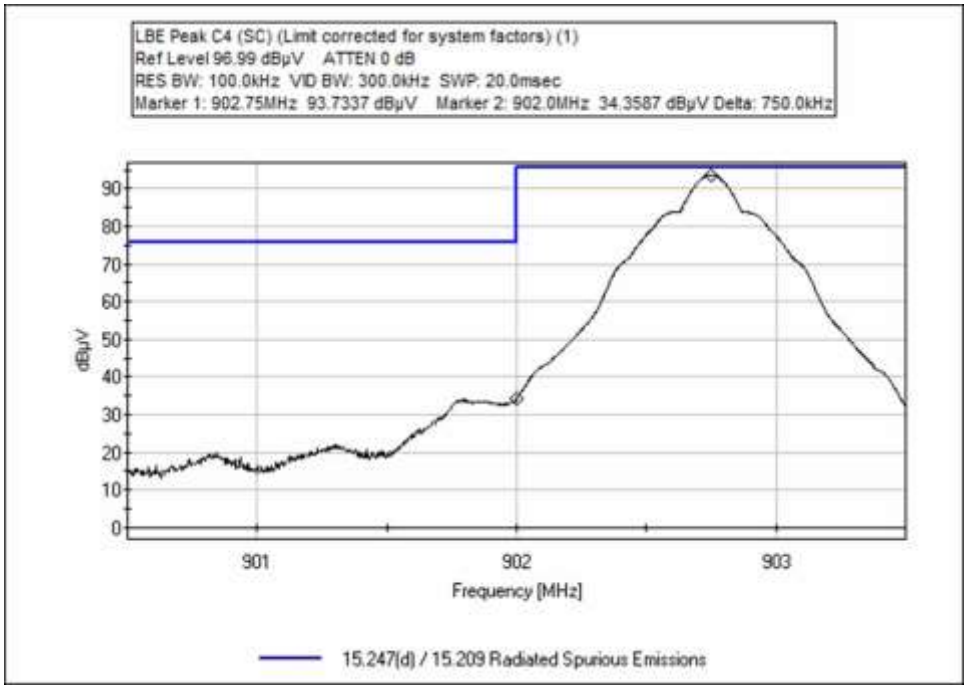

LBE QP C3 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.3907dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

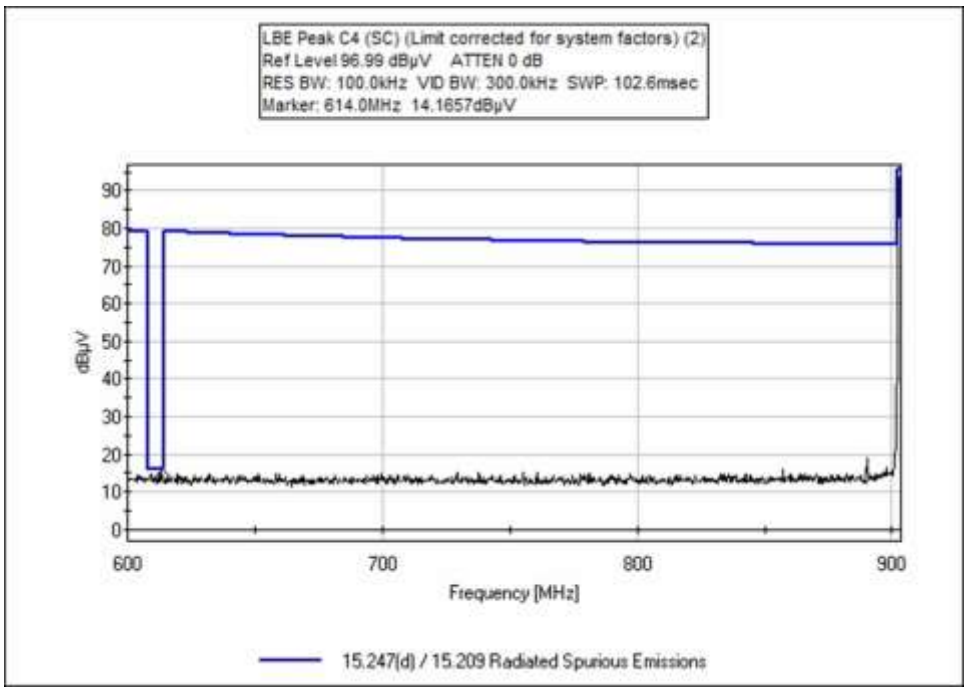

UBE Peak C3 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.25MHz 95.6187 dBµV Marker 2: 928.0MHz 36.0737 dBµV Delta: 750.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

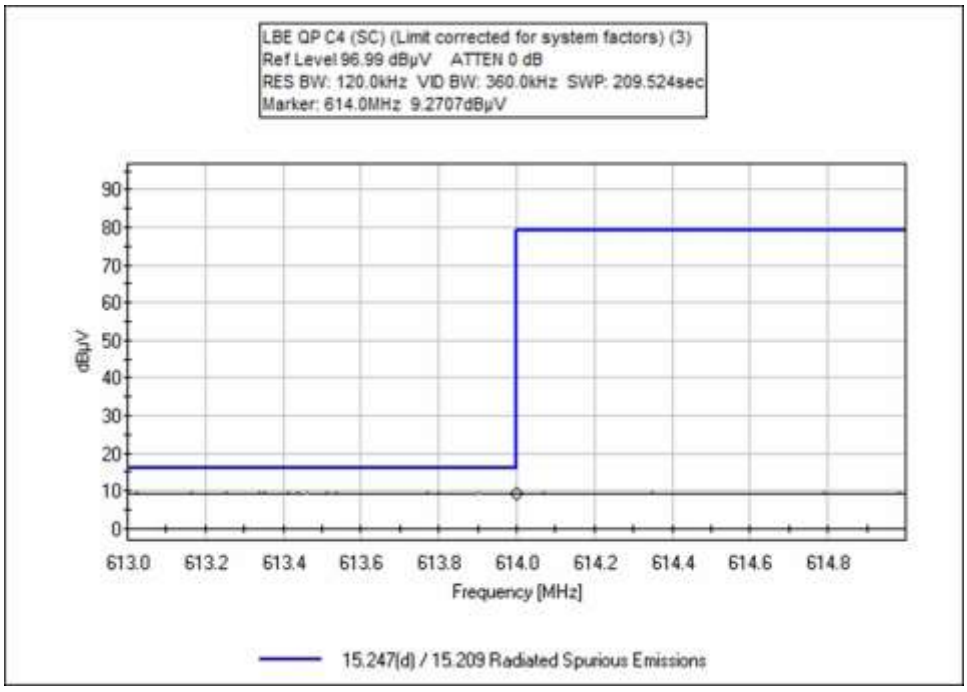

UBE Peak C3 (Hop) (Limit corrected for system factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 12.3907dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

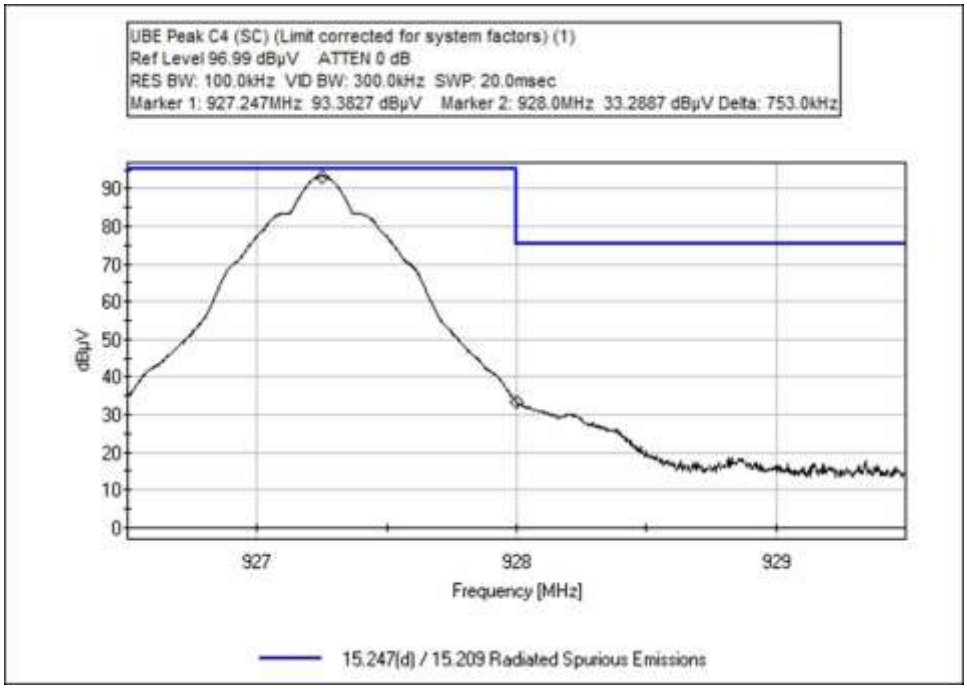

UBE QP C3 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.4577dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

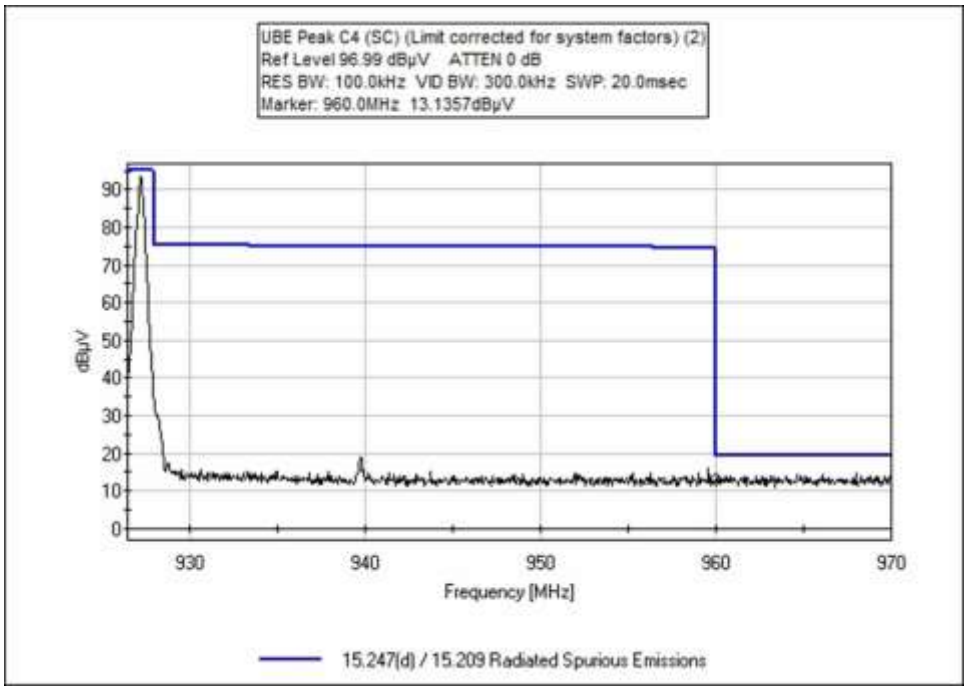
Configuration 4

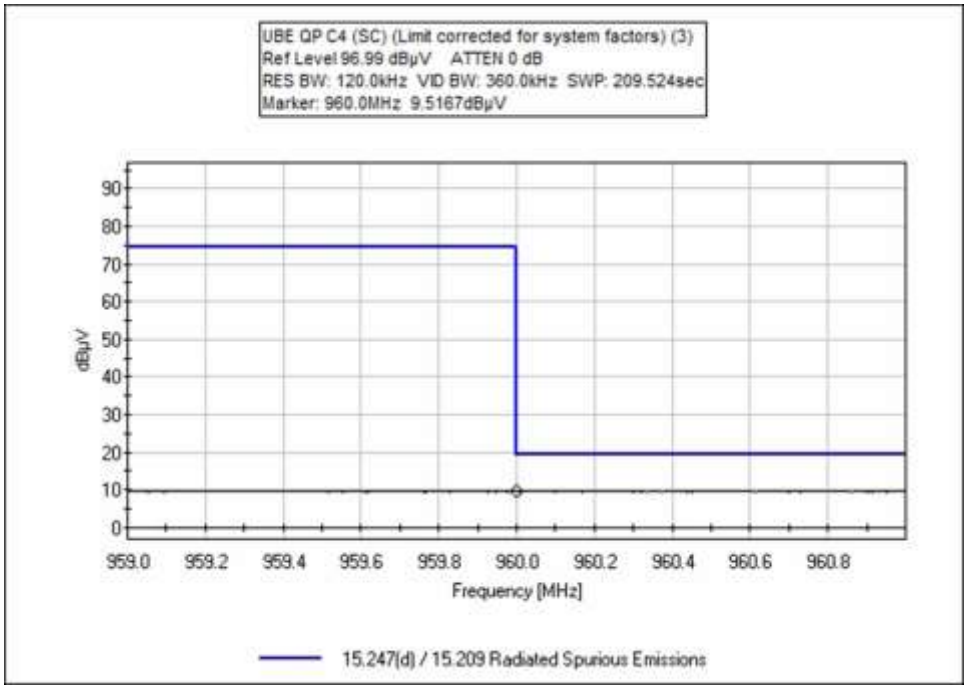


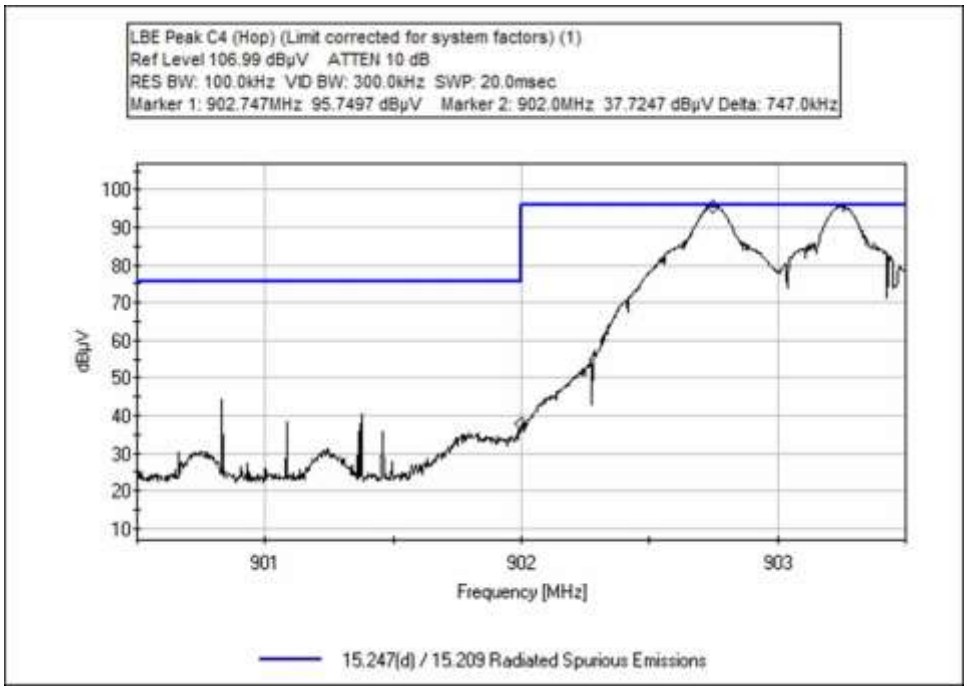


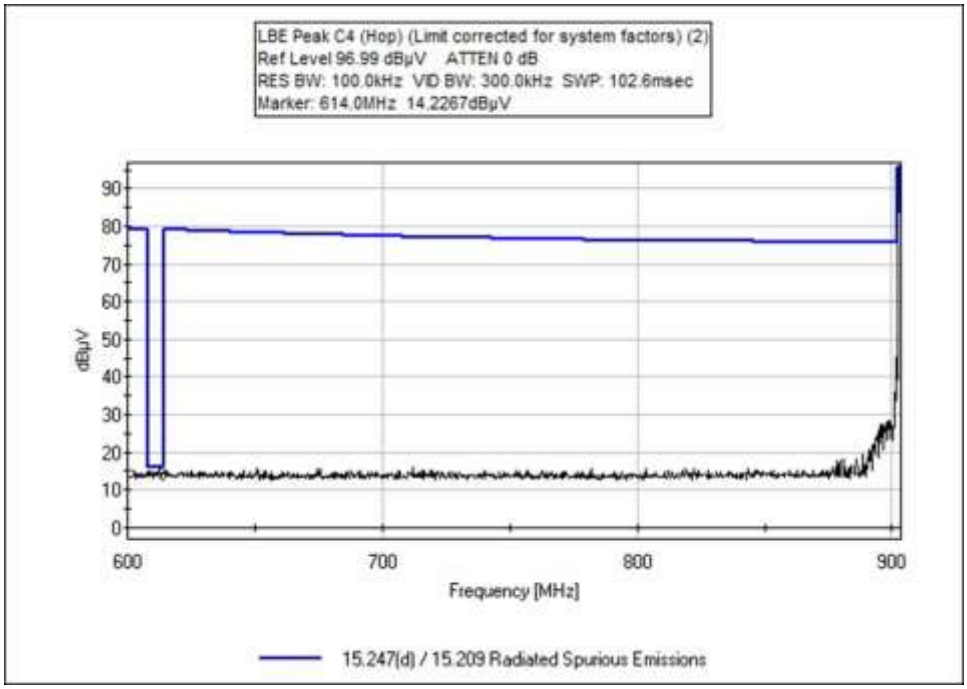

LBE QP C4 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.2707dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

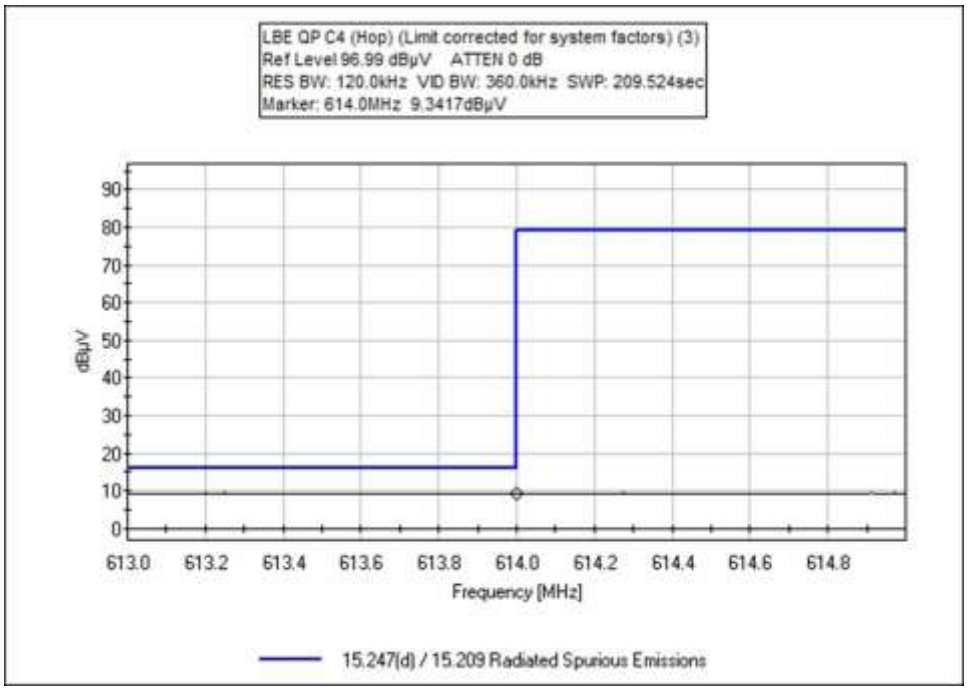

UBE Peak C4 (SC) (Limit corrected for system factors) (1)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 93.3827 dBµV Marker 2: 928.0MHz 33.2887 dBµV Delta: 753.0kHz
dBµV
90
80
70
60
50
40
30
20
10
0
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

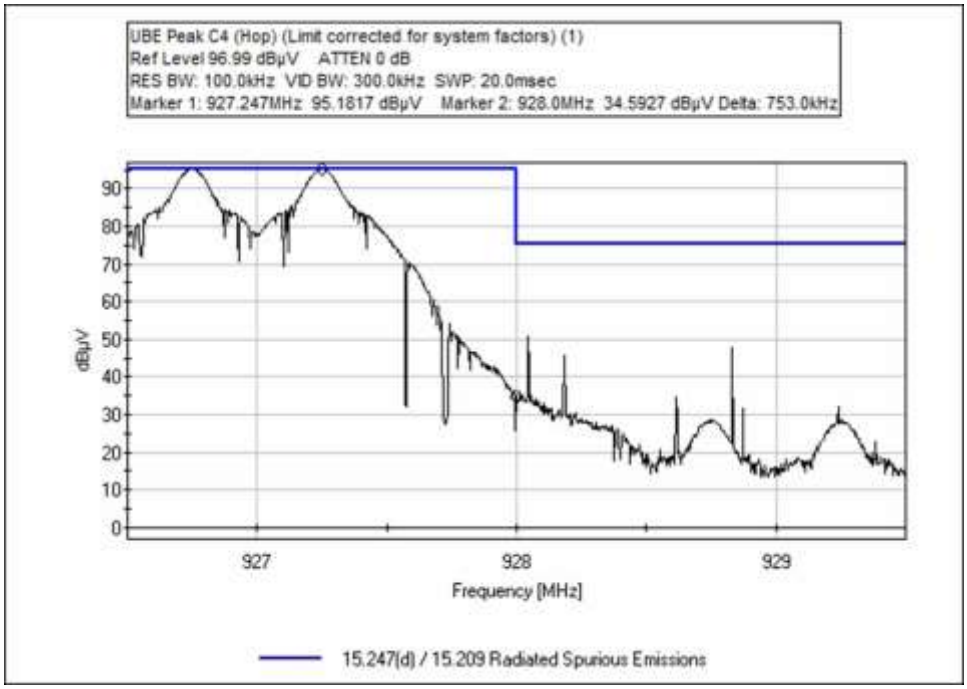

UBE Peak C4 (SC) (Limit corrected for system factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 13.1357dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

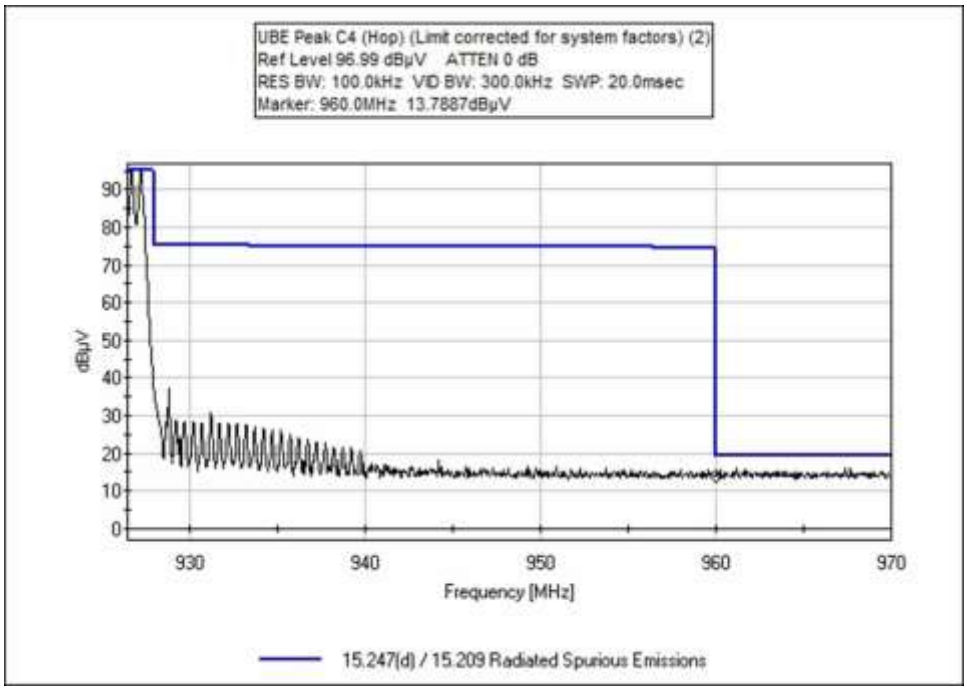

UBE QP C4 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.5167dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

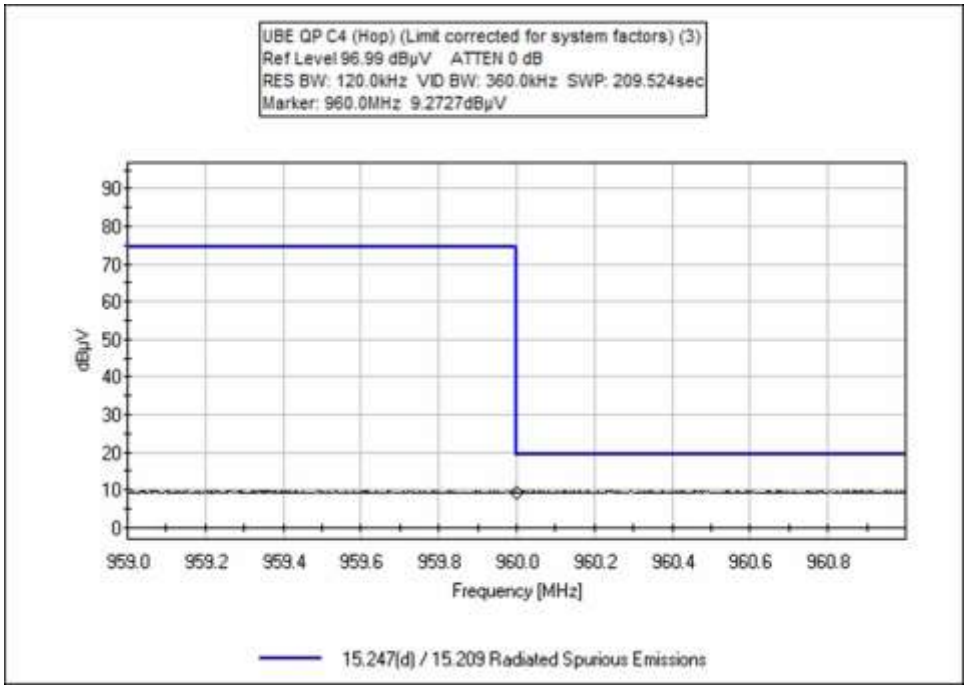

LBE Peak C4 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.747MHz 95.7497 dBµV Marker 2: 902.0MHz 37.7247 dBµV Delta: 747.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
901
902
903
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C4 (Hop) (Limit corrected for system factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 14.2267dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
600
700
800
900
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

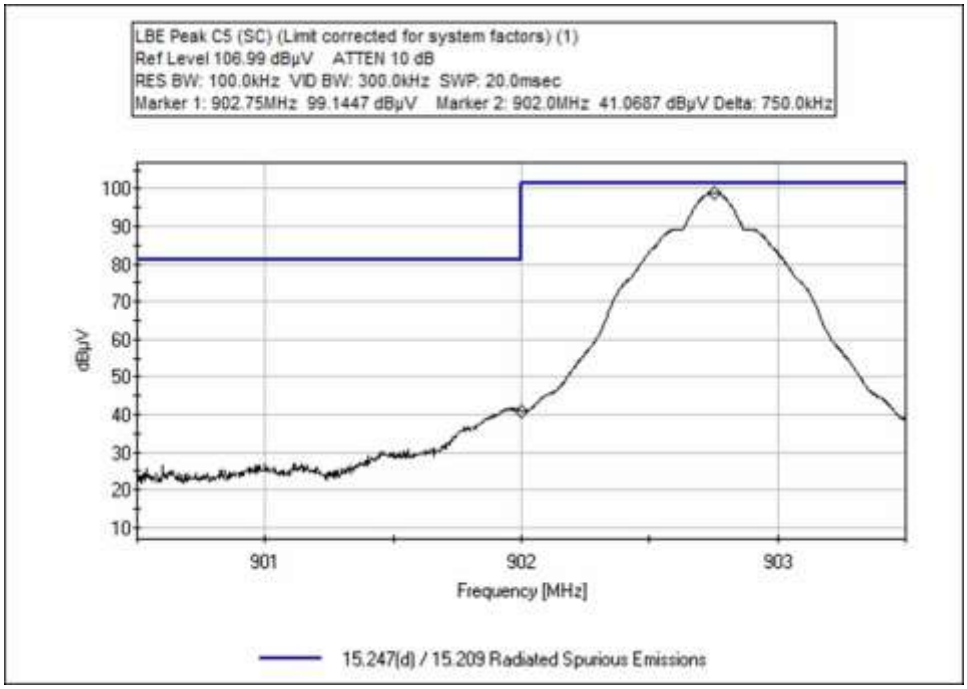

LBE QP C4 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.3417dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

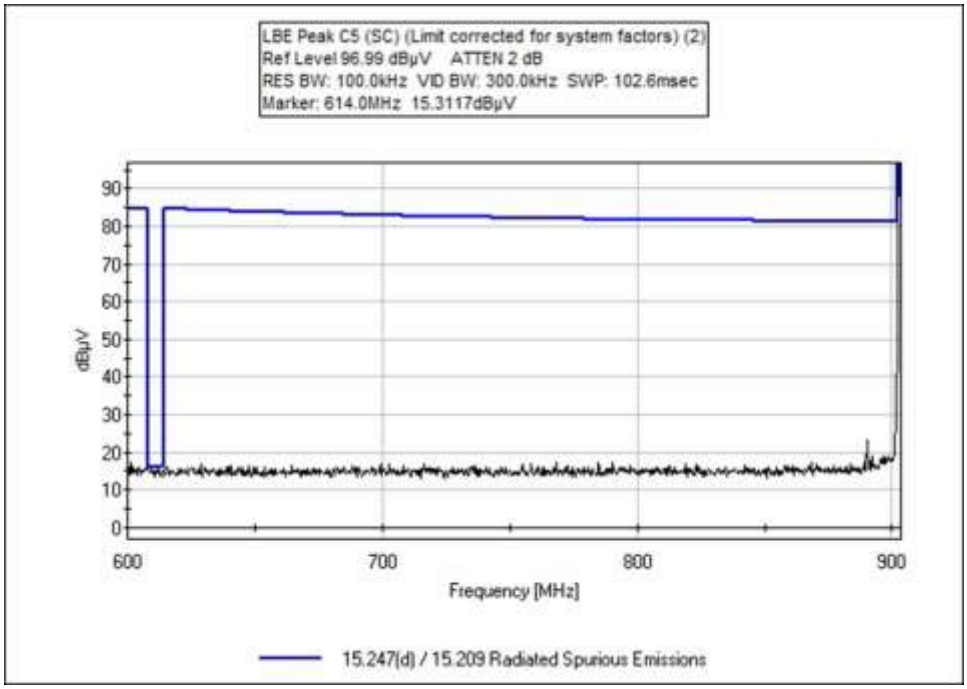

UBE Peak C4 (Hop) (Limit corrected for system factors) (1)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 95.1817 dBµV Marker 2: 928.0MHz 34.5927 dBµV Delta: 753.0kHz
dBµV
90
80
70
60
50
40
30
20
10
0
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

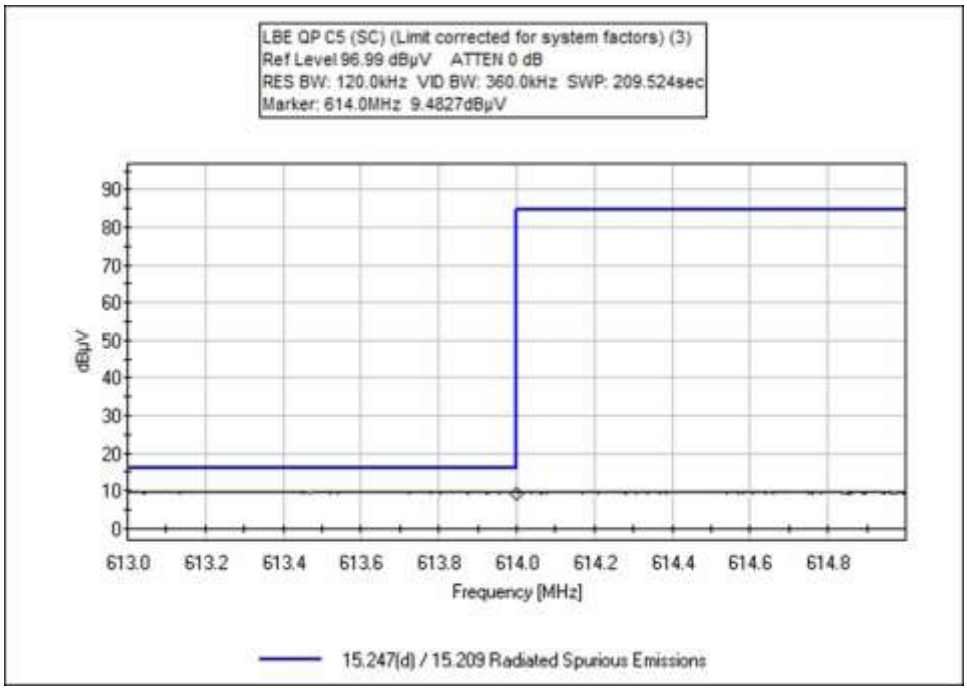

UBE Peak C4 (Hop) (Limit corrected for system factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 13.7887dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

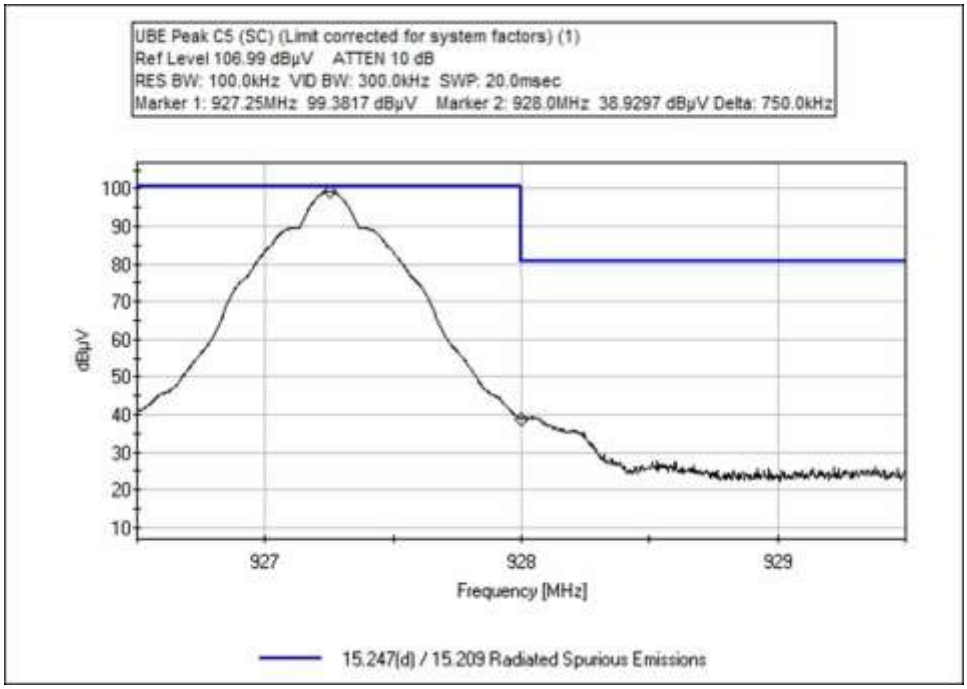

UBE QP C4 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.2727dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

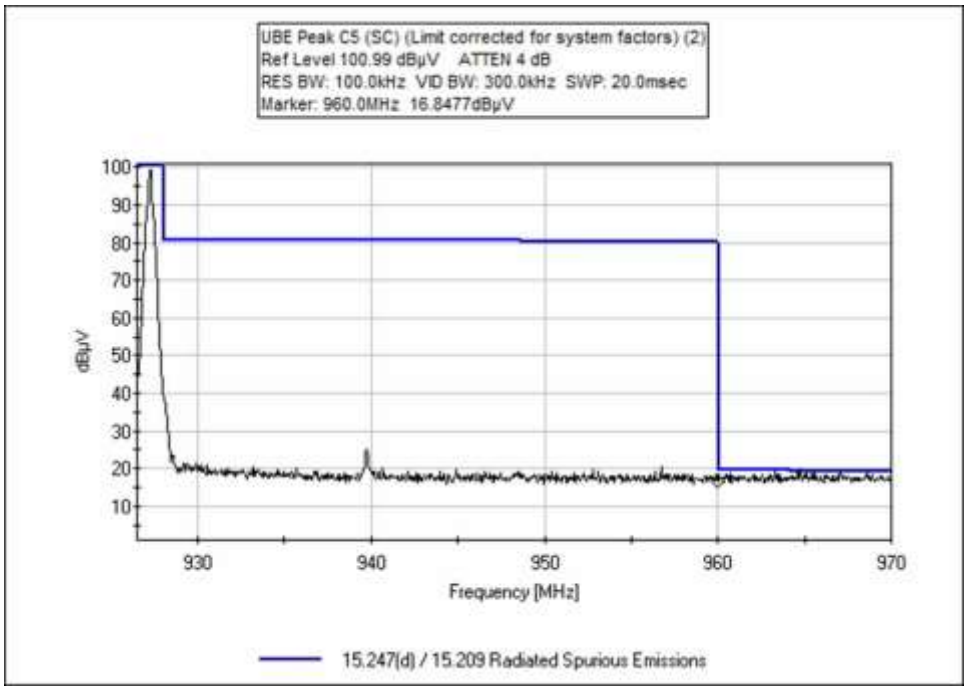
Configuration 5

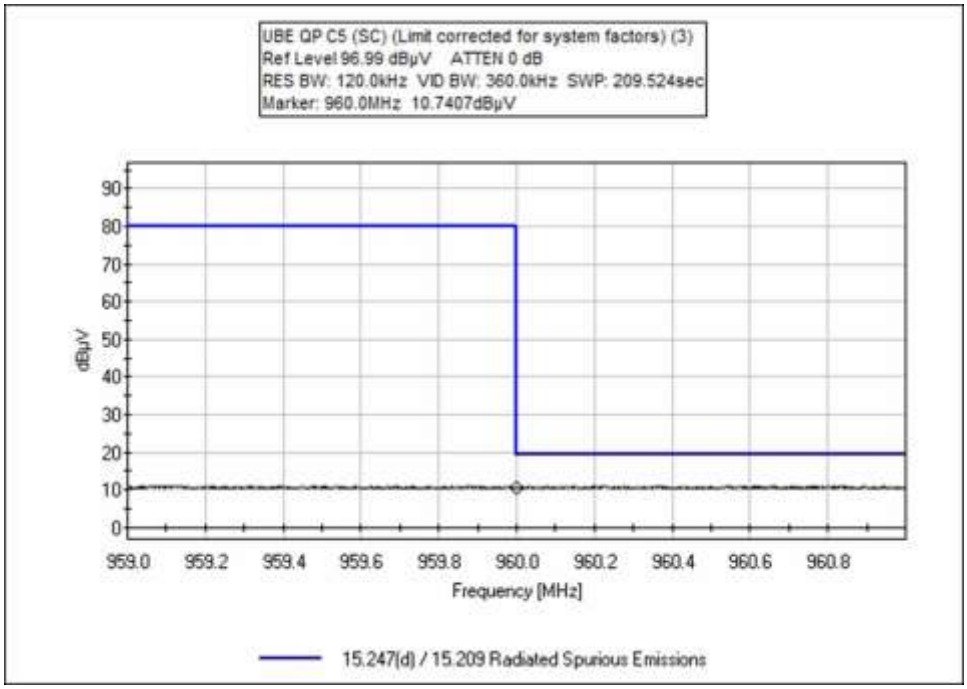


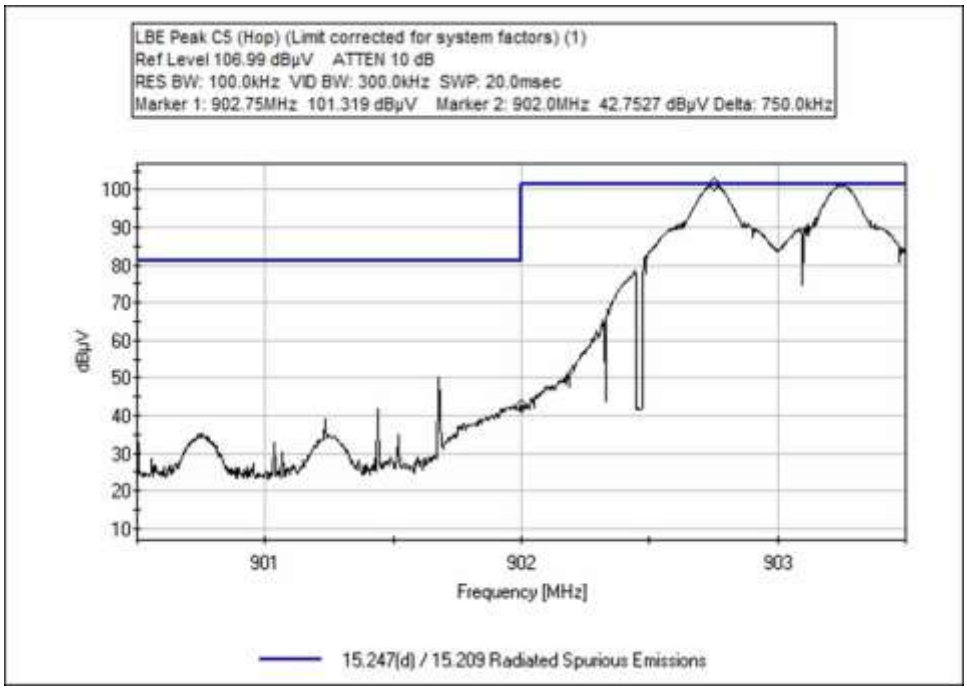


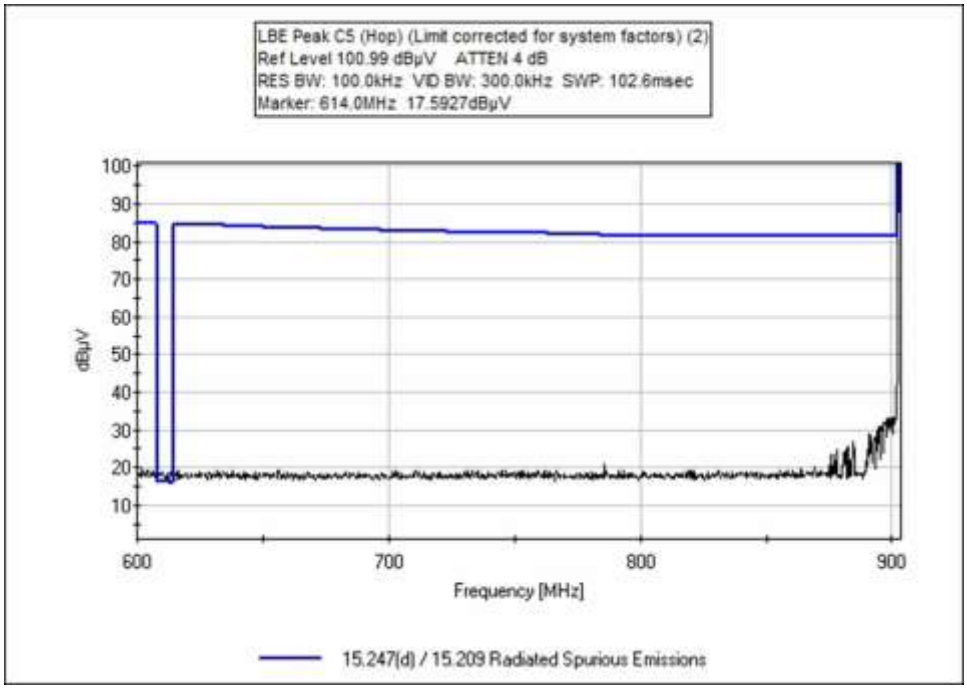

LBE QP C5 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.4827dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

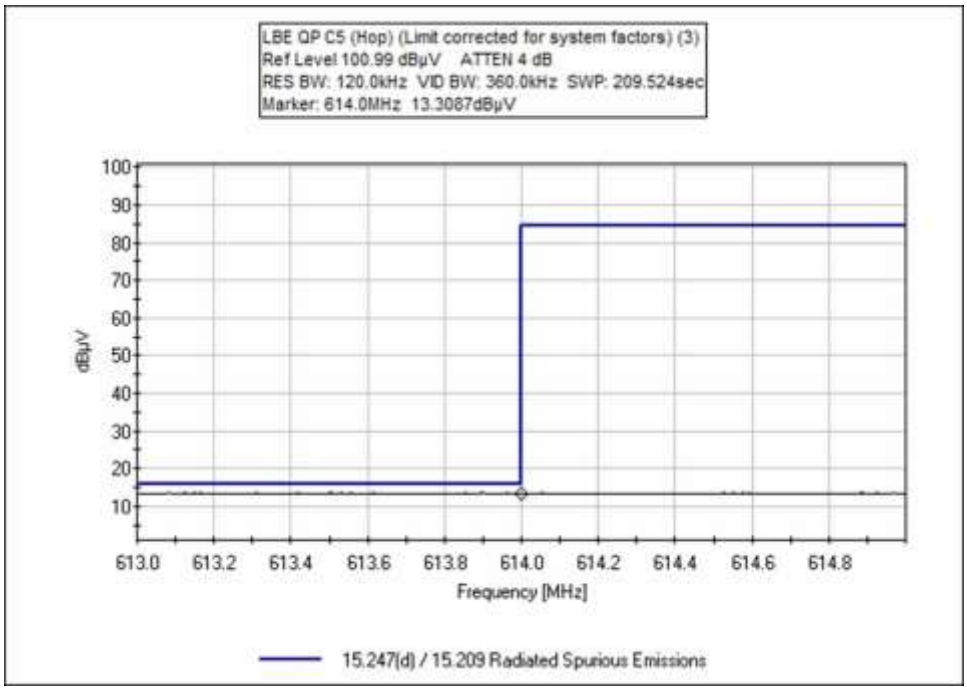

UBE Peak C5 (SC) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.25MHz 99.3817 dBµV Marker 2: 928.0MHz 38.9297 dBµV Delta: 750.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

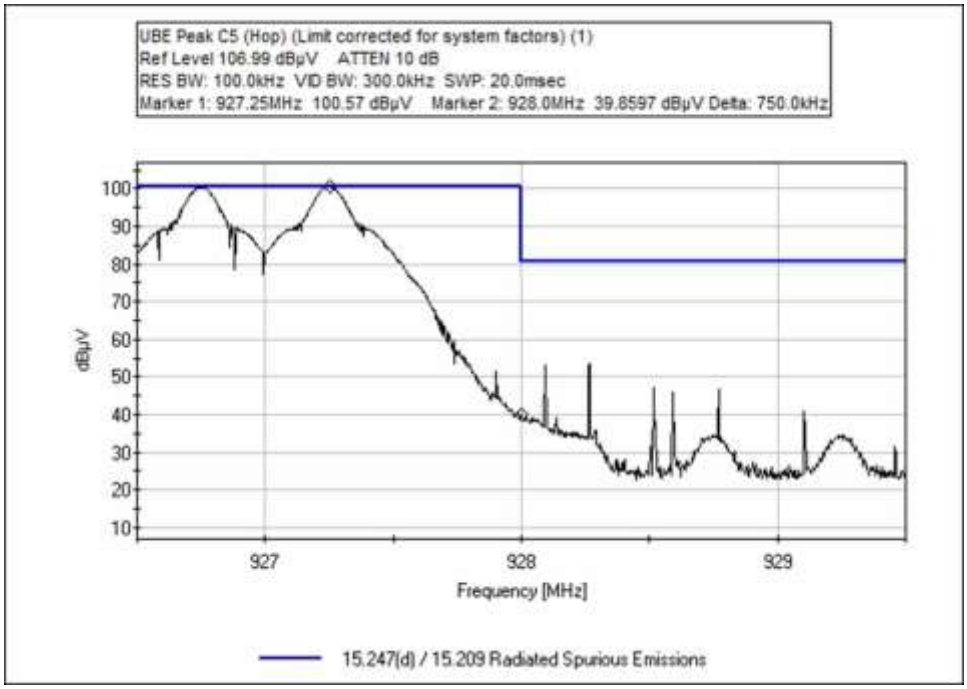

UBE Peak C5 (SC) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 16.8477dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

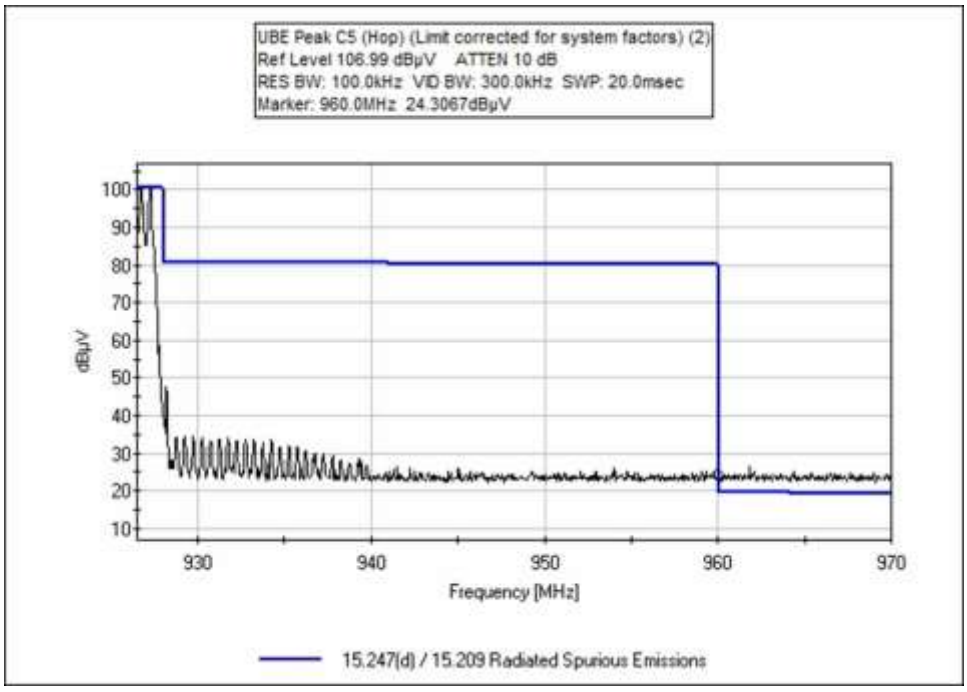

UBE QP C5 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 10.7407dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

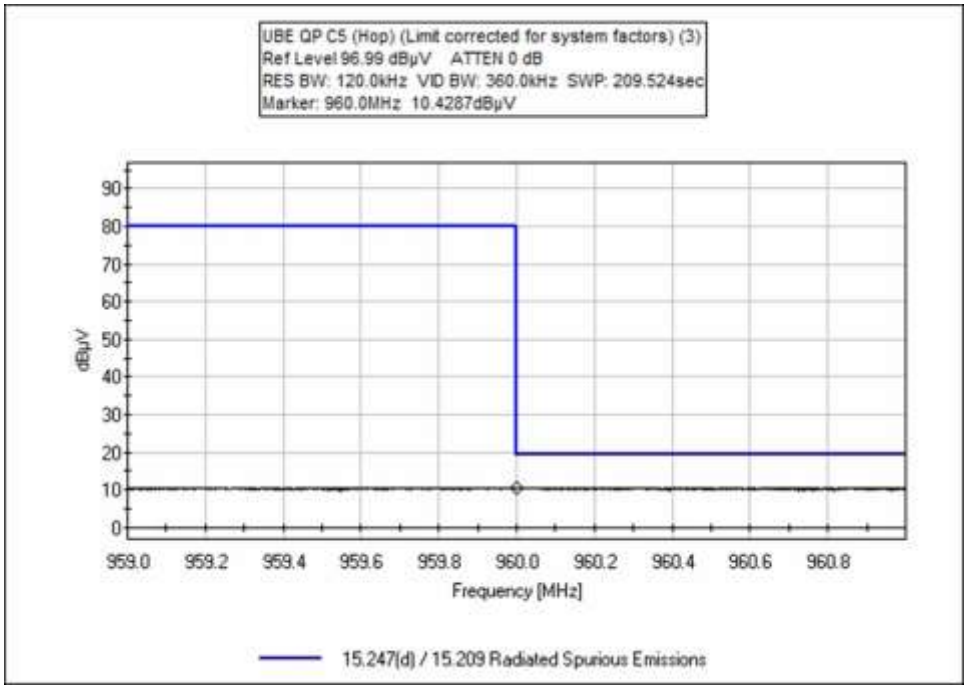

LBE Peak C5 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.75MHz 101.319 dBµV Marker 2: 902.0MHz 42.7527 dBµV Delta: 750.0kHz
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C5 (Hop) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 17.5927dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

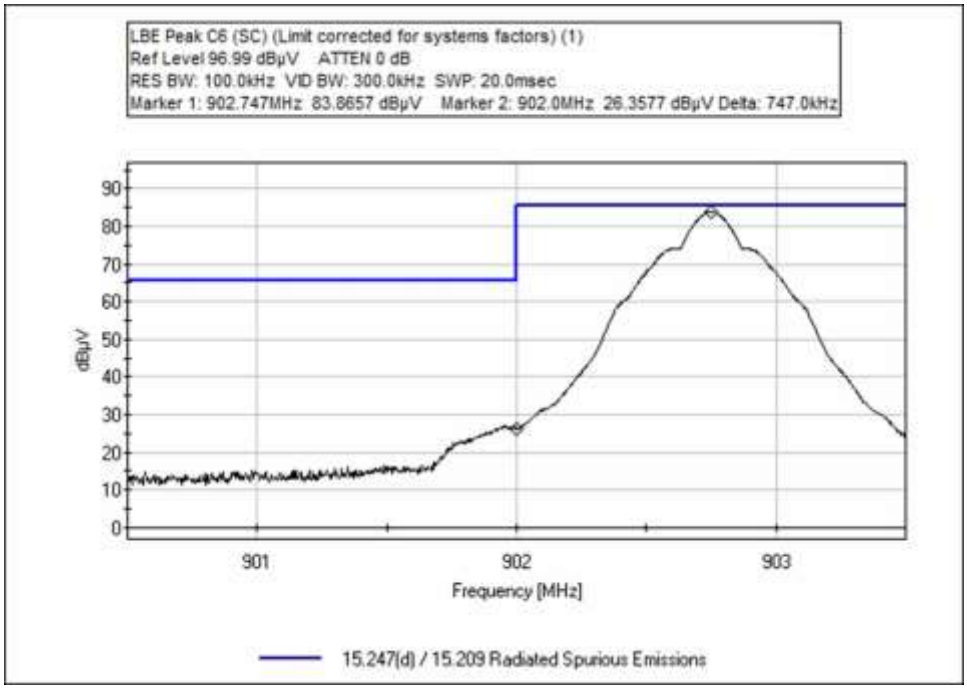

LBE QP C5 (Hop) (Limit corrected for system factors) (3)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 13.3087dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

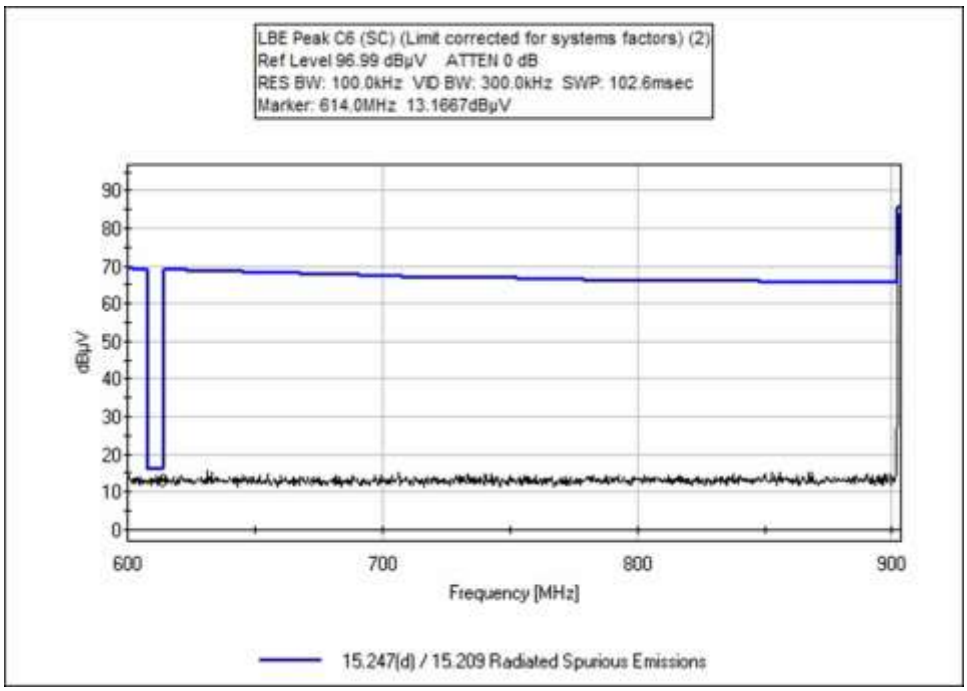

UBE Peak C5 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.25MHz 100.57 dBµV Marker 2: 928.0MHz 39.8597 dBµV Delta: 750.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

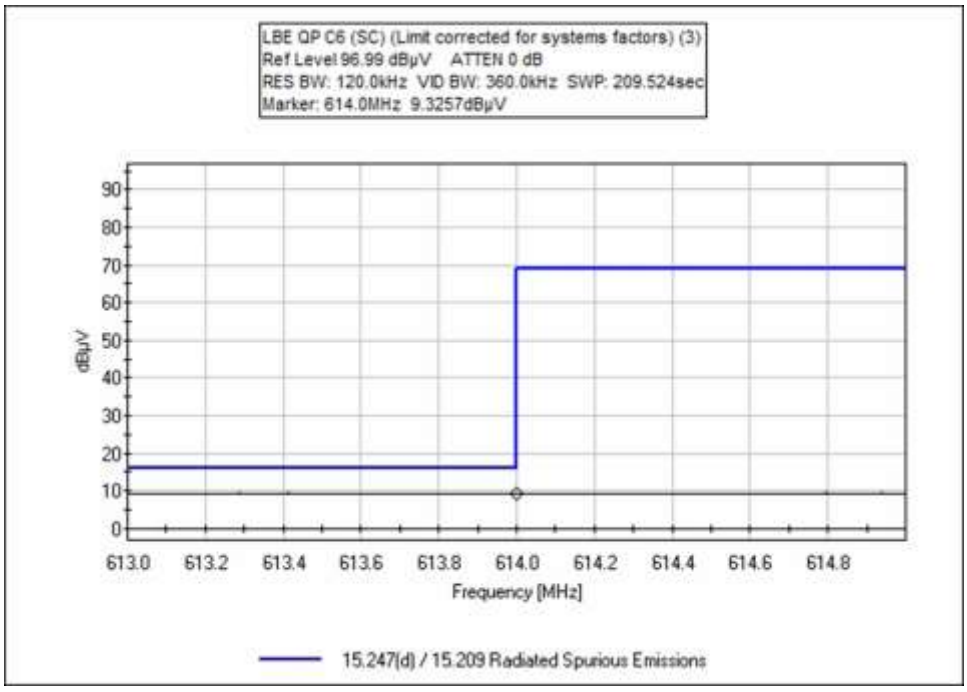

UBE Peak C5 (Hop) (Limit corrected for system factors) (2)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 24.3067dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

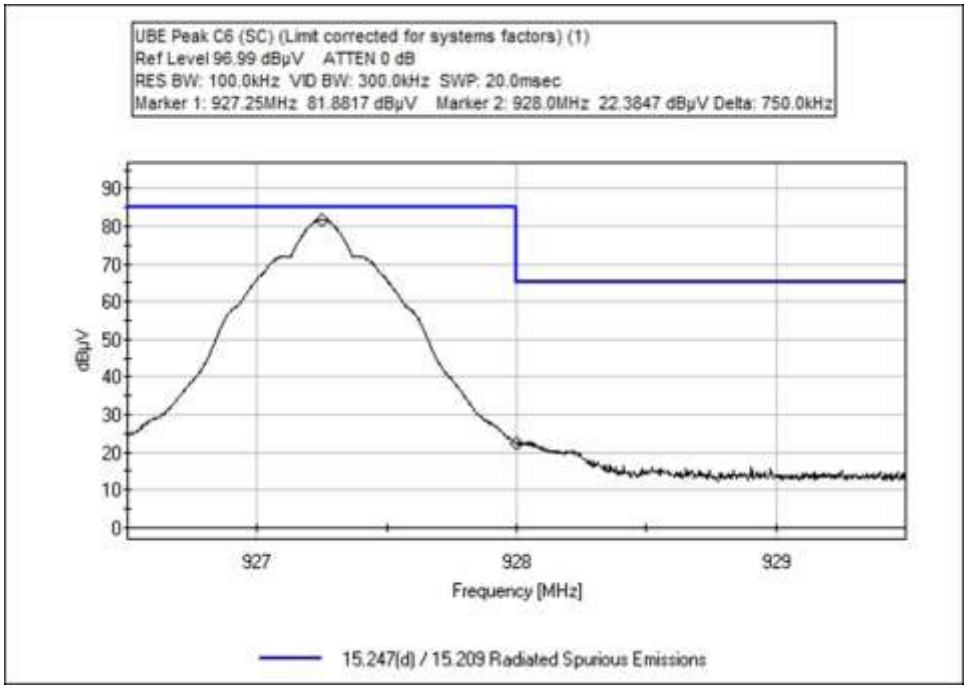

UBE QP C5 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 10.4287dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

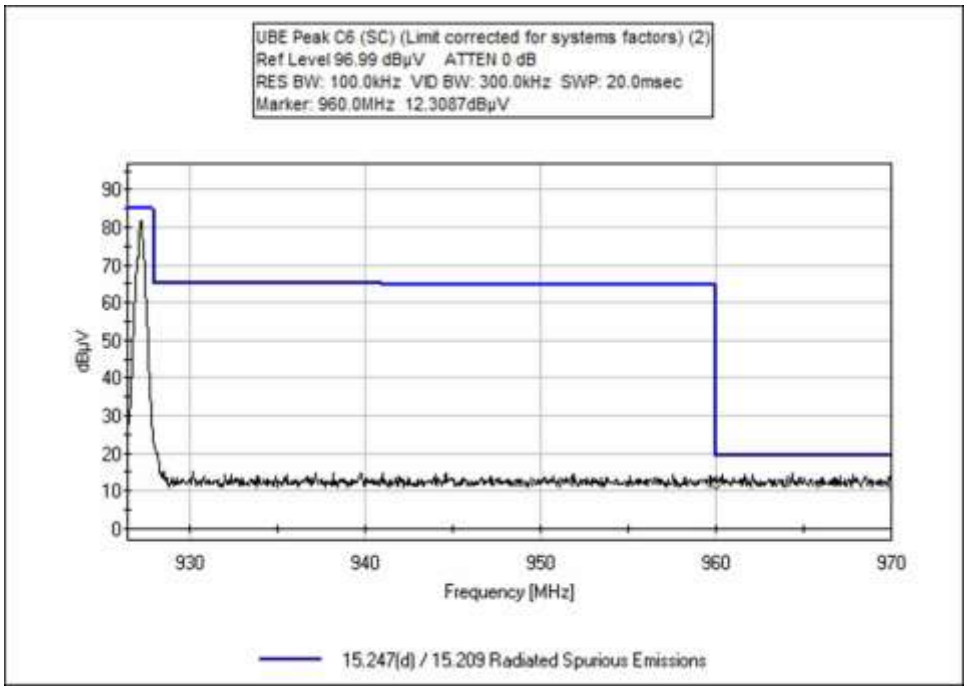
Configuration 6

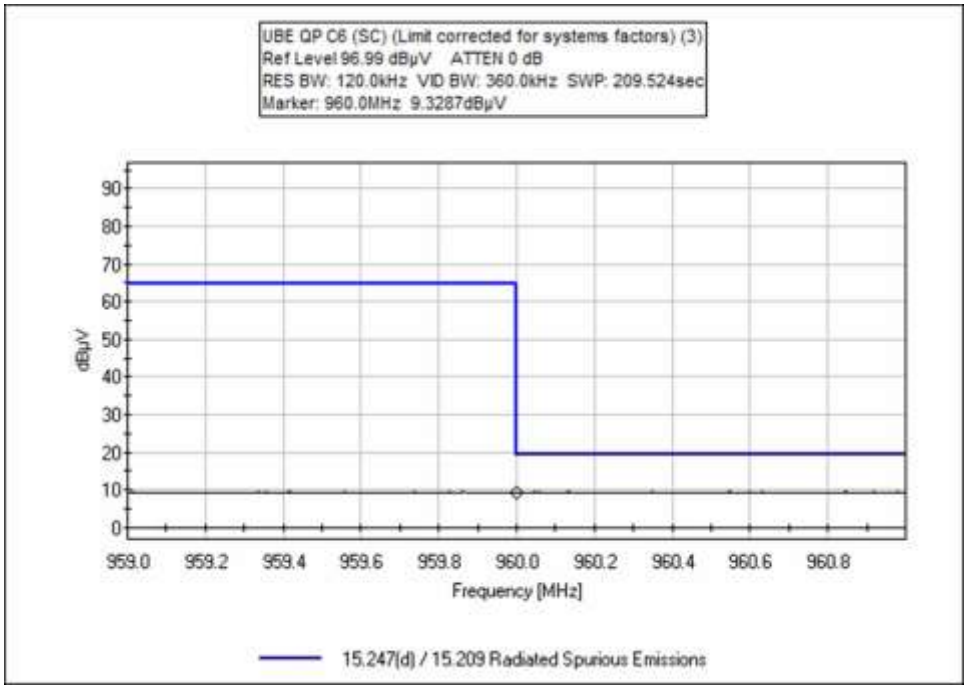


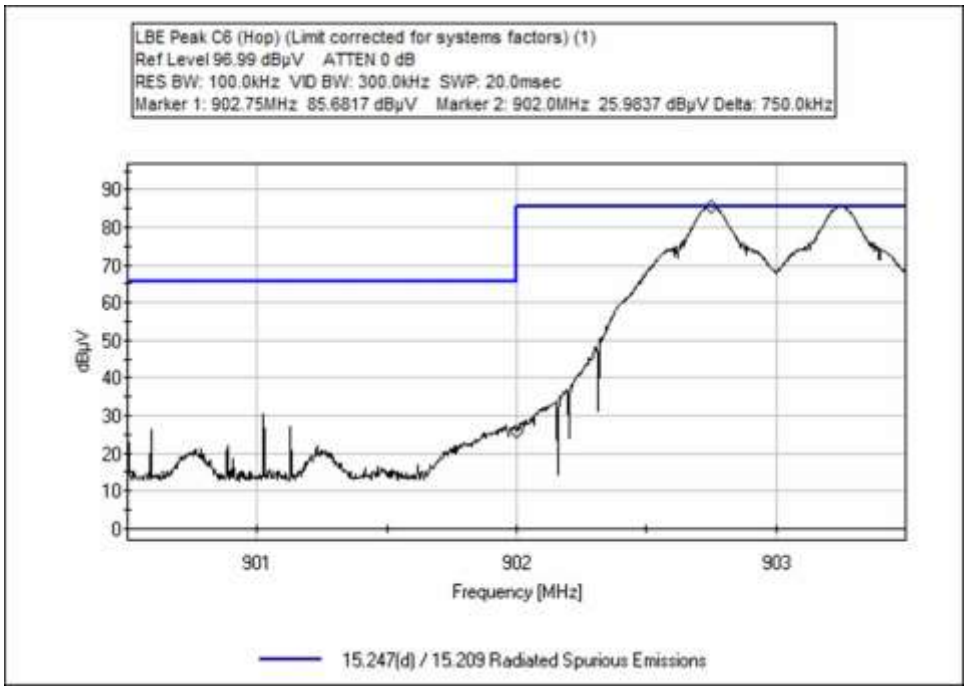


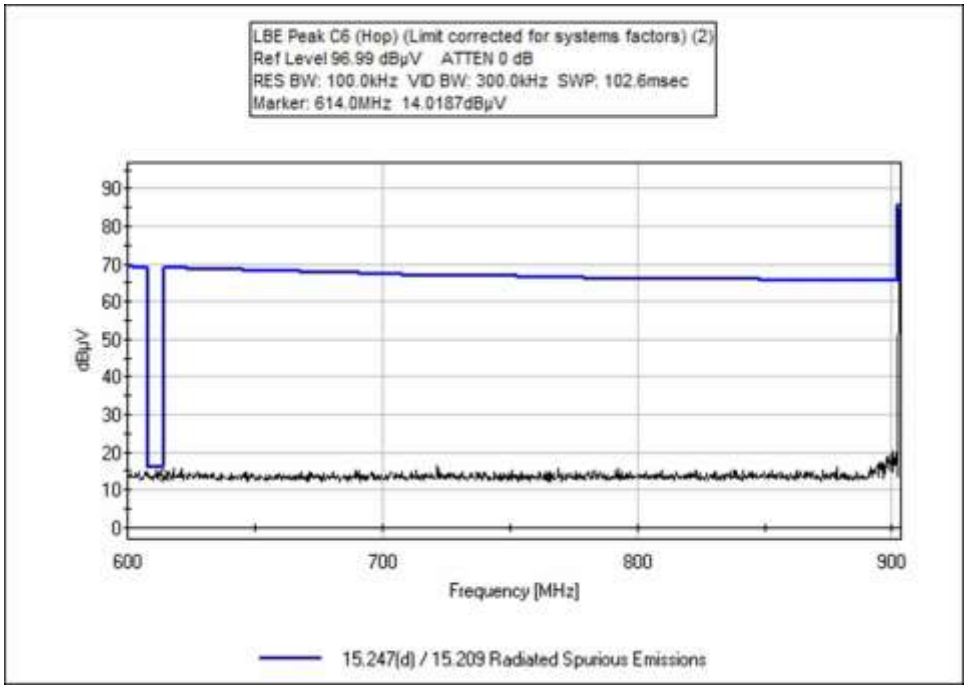

LBE QP C6 (SC) (Limit corrected for systems factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.3257dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

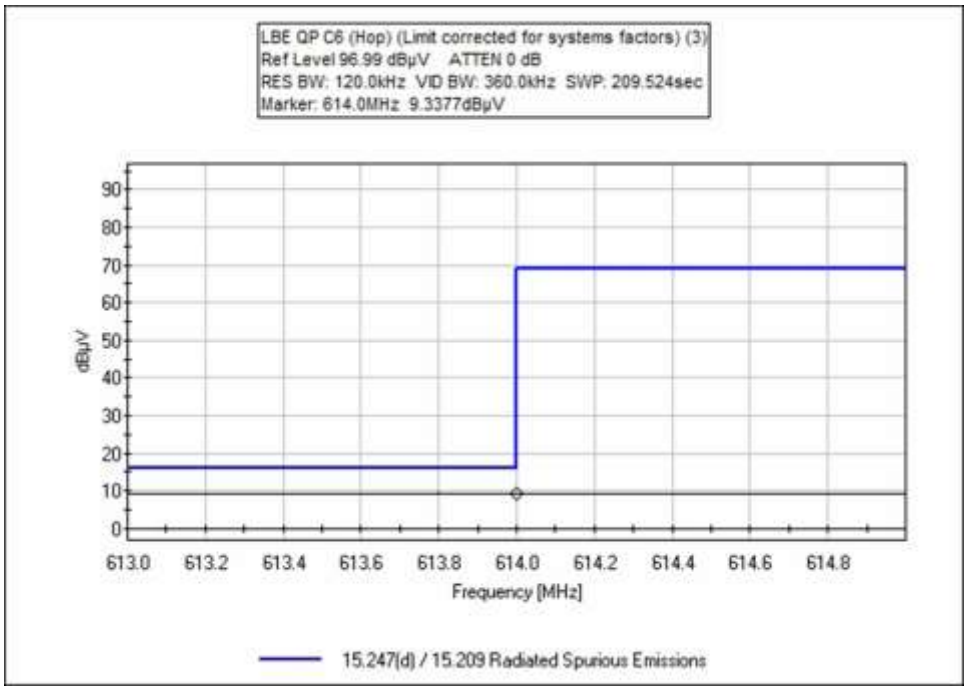

UBE Peak C6 (SC) (Limit corrected for systems factors) (1)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.25MHz 81.8817 dBµV Marker 2: 928.0MHz 22.3847 dBµV Delta: 750.0kHz
dBµV
90
80
70
60
50
40
30
20
10
0
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

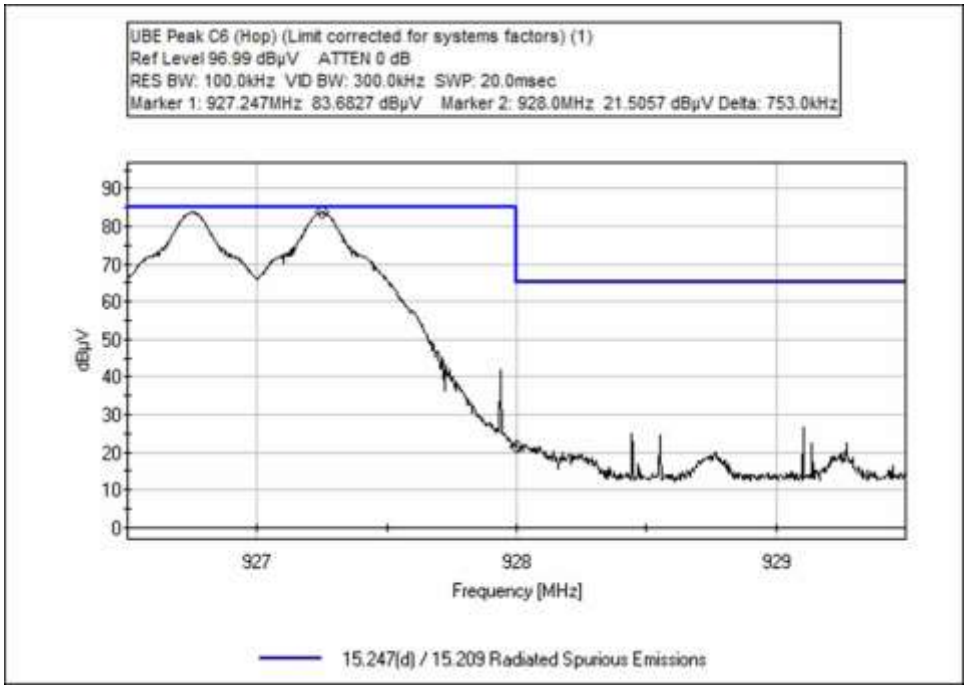

UBE Peak C6 (SC) (Limit corrected for systems factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 12.3087dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

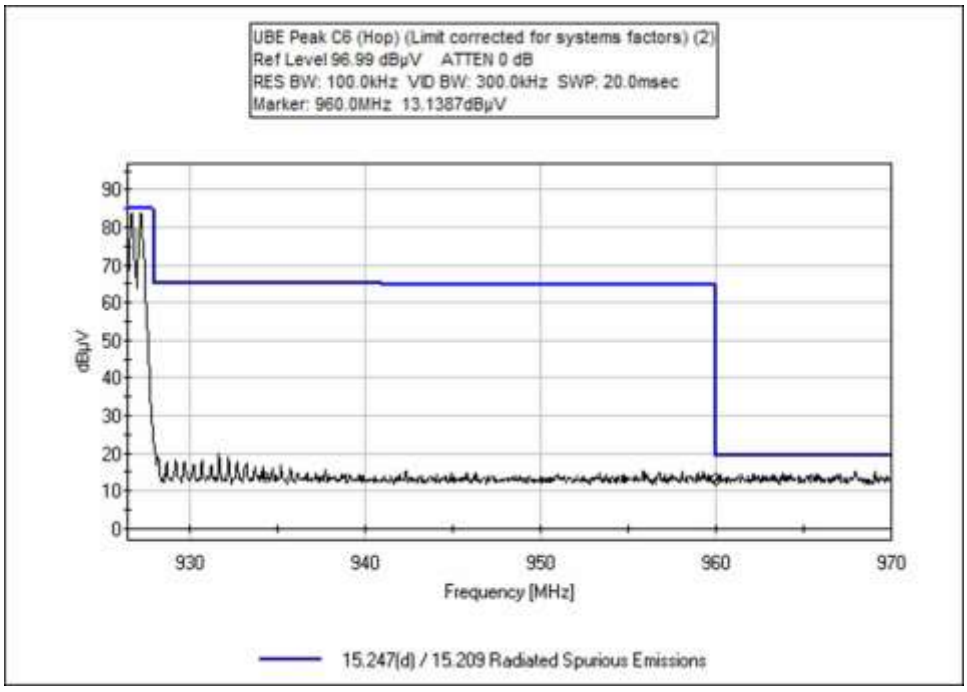

UBE QP C6 (SC) (Limit corrected for systems factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.3287dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

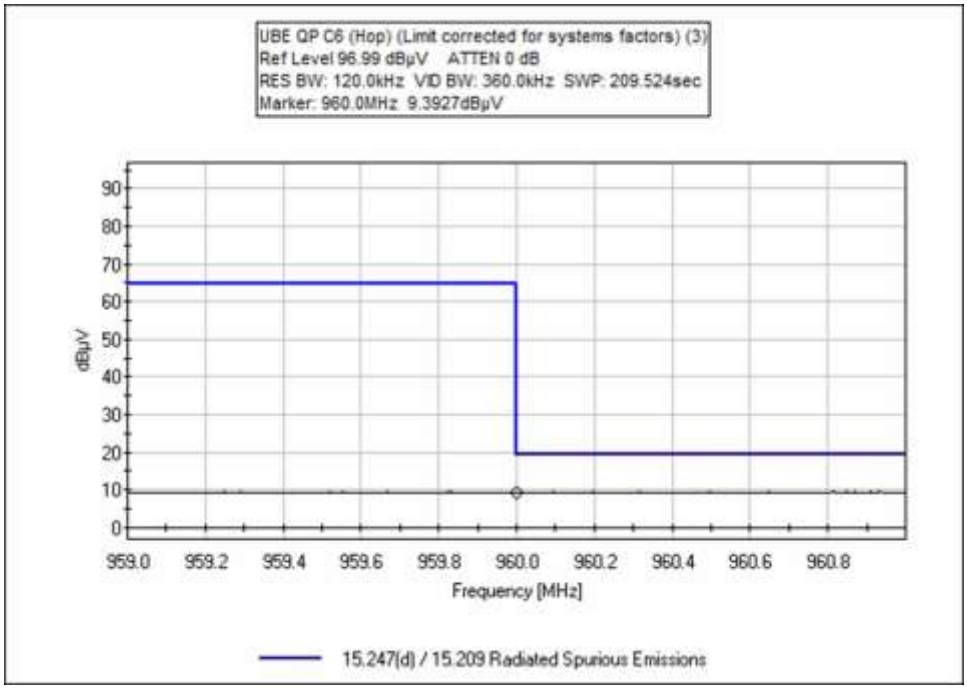

LBE Peak C6 (Hop) (Limit corrected for systems factors) (1)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.75MHz 85.6817 dBµV Marker 2: 902.0MHz 25.9837 dBµV Delta: 750.0kHz
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C6 (Hop) (Limit corrected for systems factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 14.0187dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

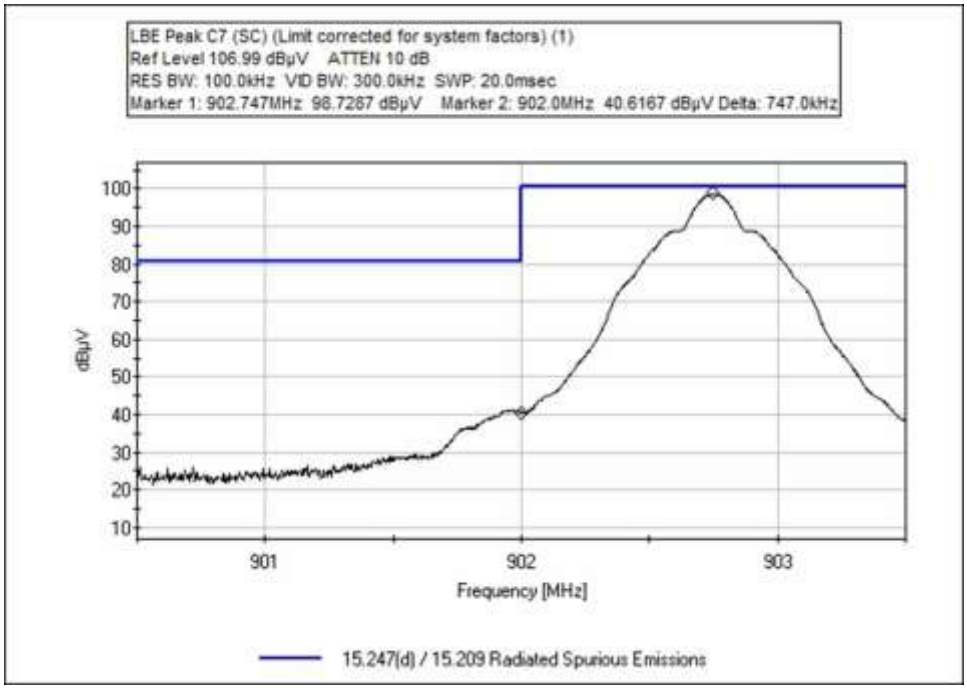

LBE QP C6 (Hop) (Limit corrected for systems factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.3377dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

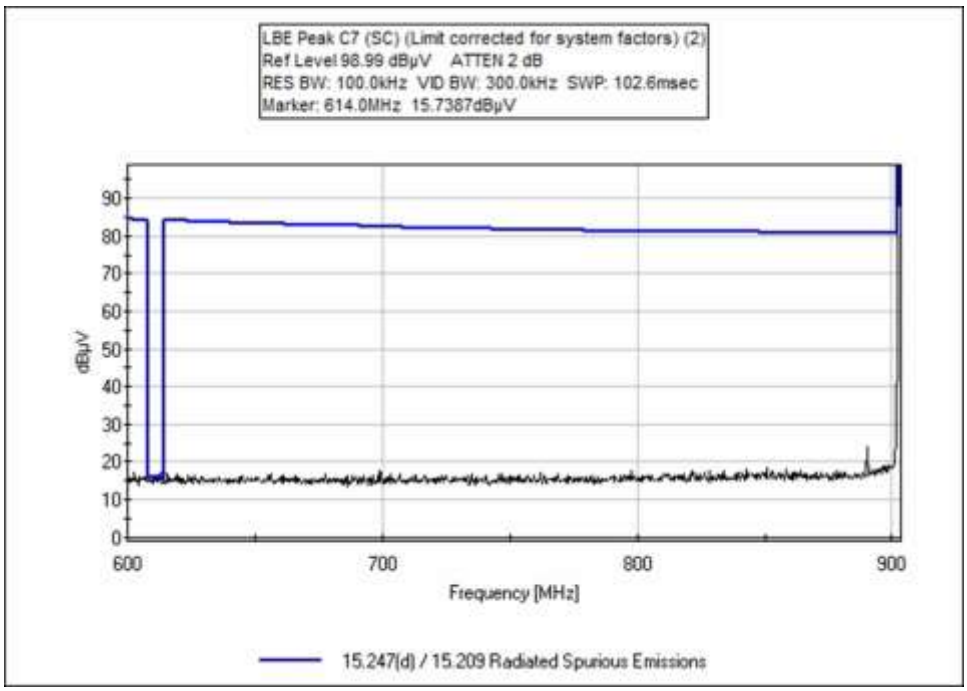

UBE Peak C6 (Hop) (Limit corrected for systems factors) (1)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 83.6827 dBµV Marker 2: 928.0MHz 21.5057 dBµV Delta: 753.0kHz
dBµV
90
80
70
60
50
40
30
20
10
0
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

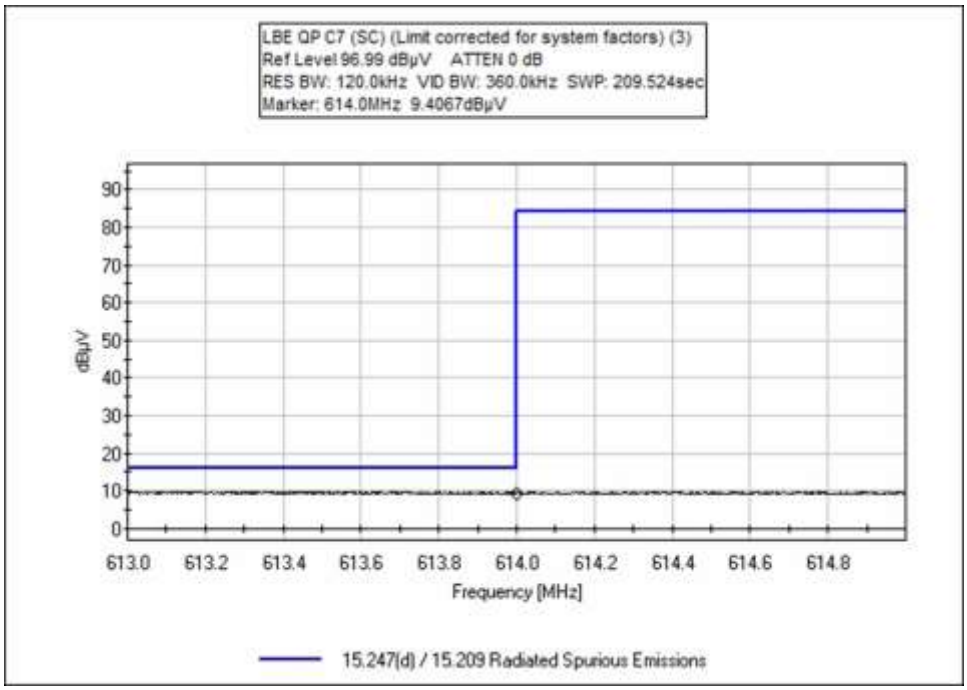

UBE Peak C6 (Hop) (Limit corrected for systems factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 13.1387dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

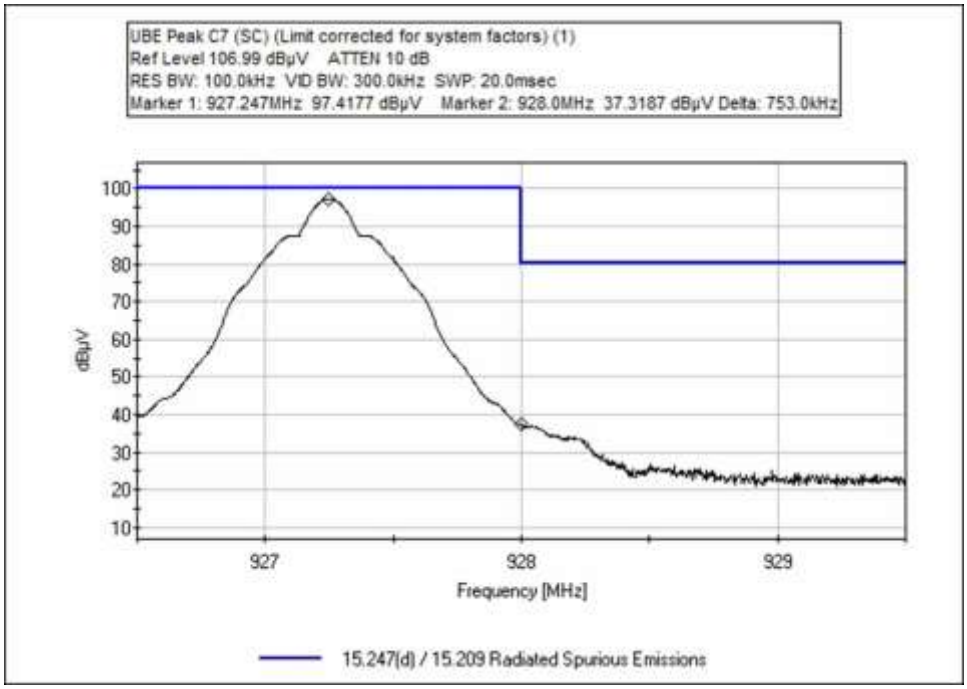

UBE QP C6 (Hop) (Limit corrected for systems factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.3927dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

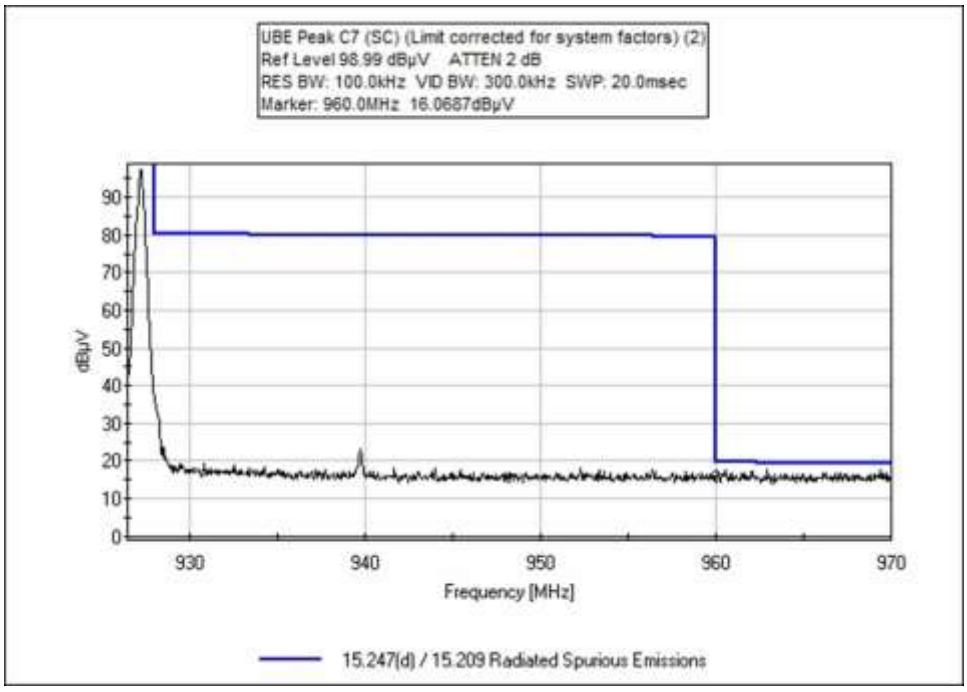
Configuration 7

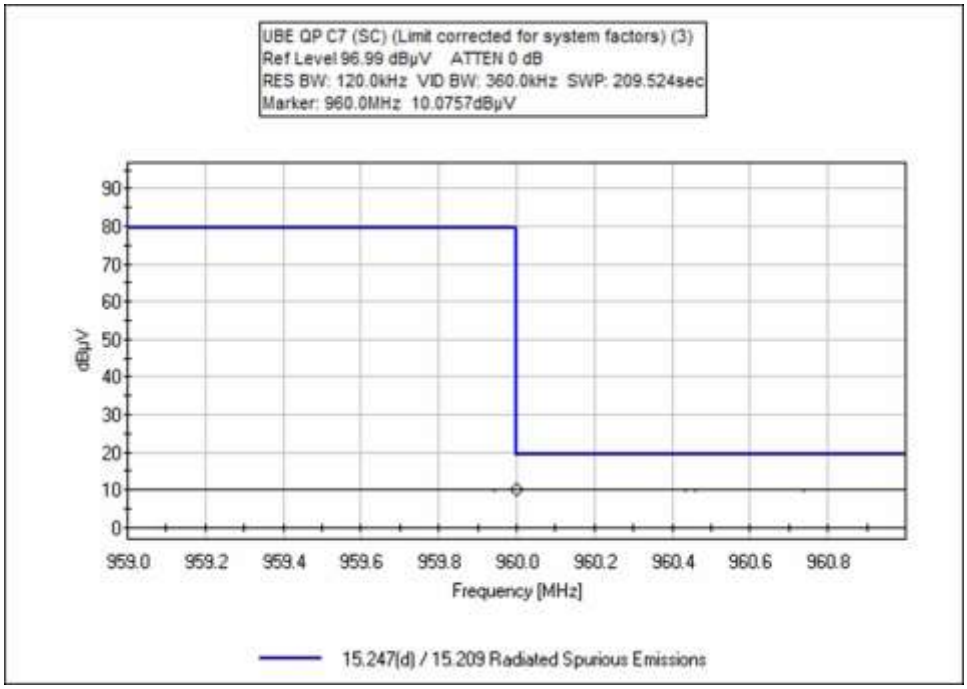


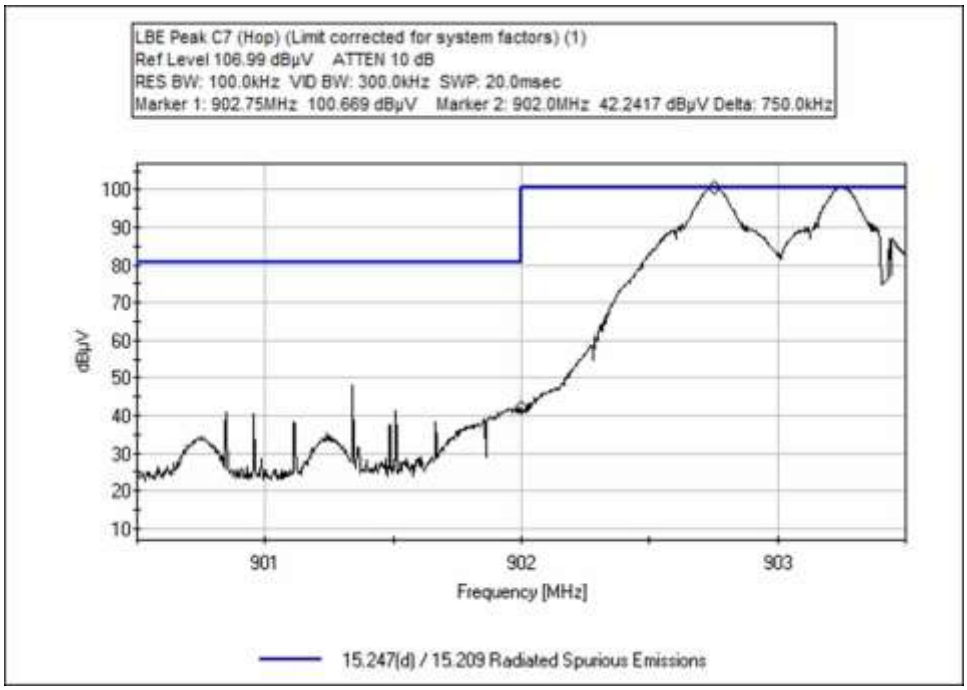


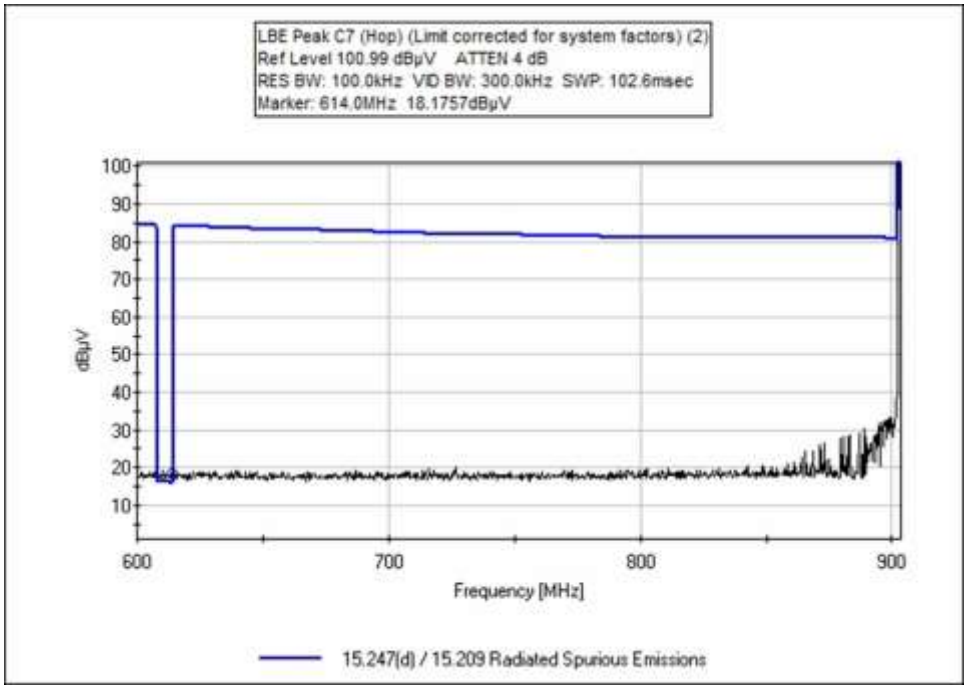

LBE QP C7 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.4067dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

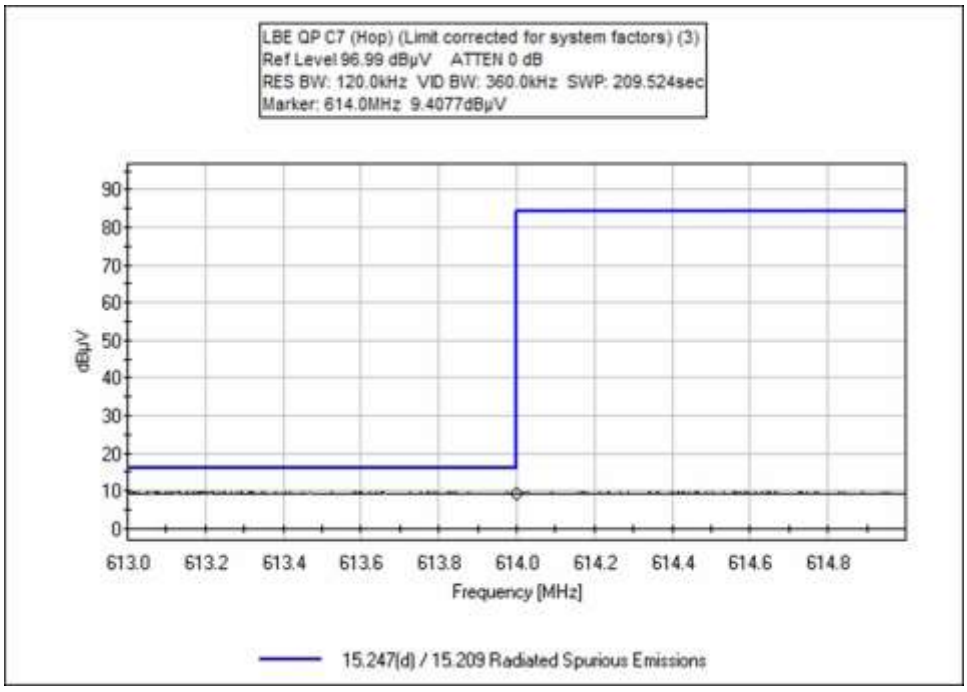

UBE Peak C7 (SC) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 97.4177 dBµV Marker 2: 928.0MHz 37.3187 dBµV Delta: 753.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

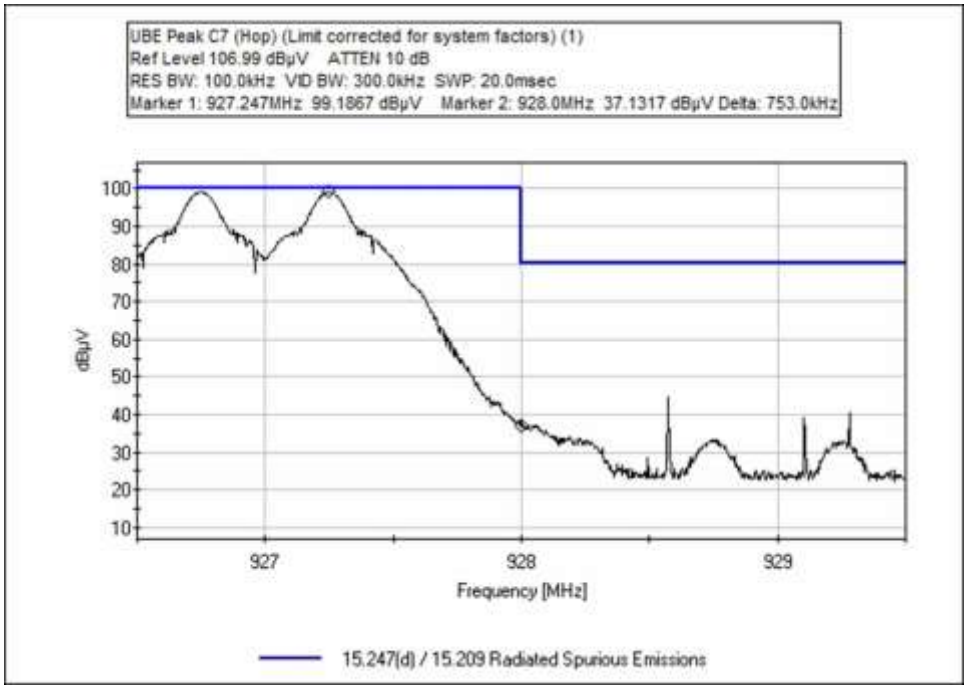

UBE Peak C7 (SC) (Limit corrected for system factors) (2)
Ref Level 98.99 dBµV ATTEN 2 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 16.0687dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

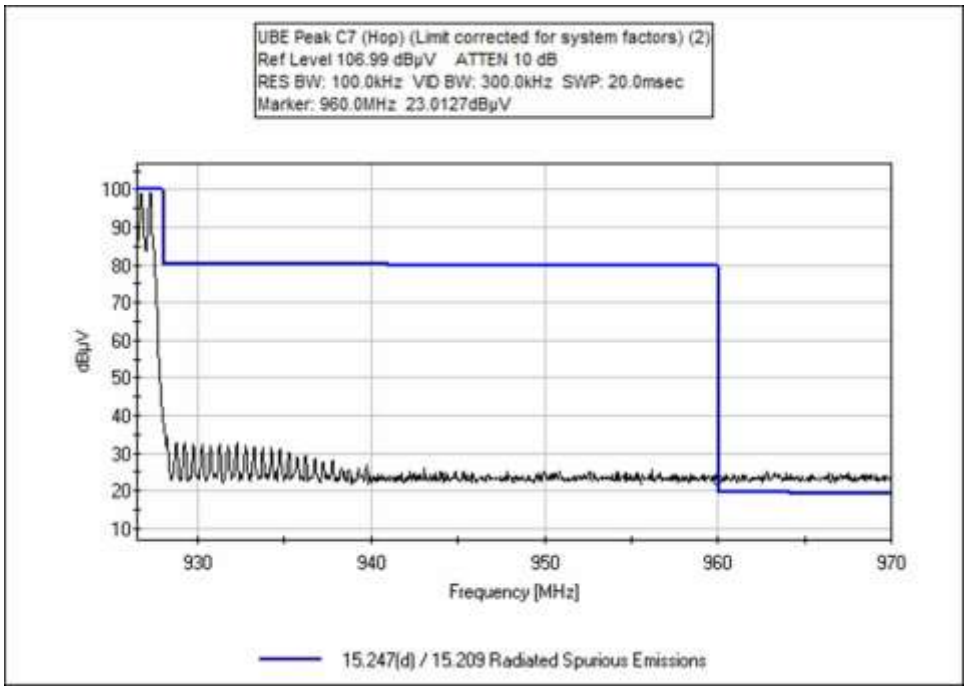

UBE QP C7 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 10.0757dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

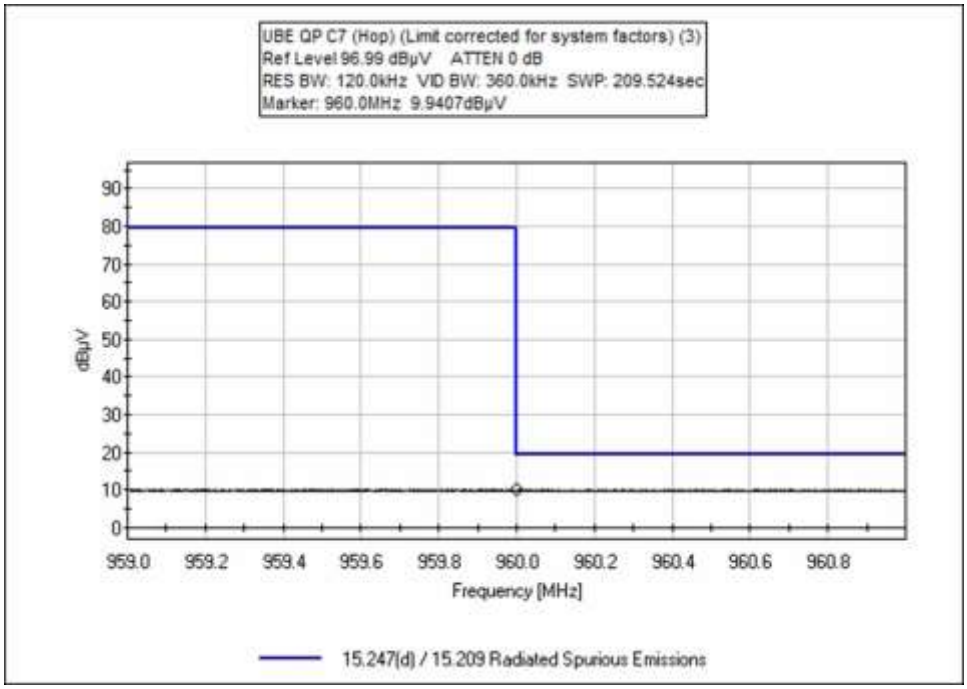

LBE Peak C7 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.75MHz 100.669 dBµV Marker 2: 902.0MHz 42.2417 dBµV Delta: 750.0kHz
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C7 (Hop) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 18.1757dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

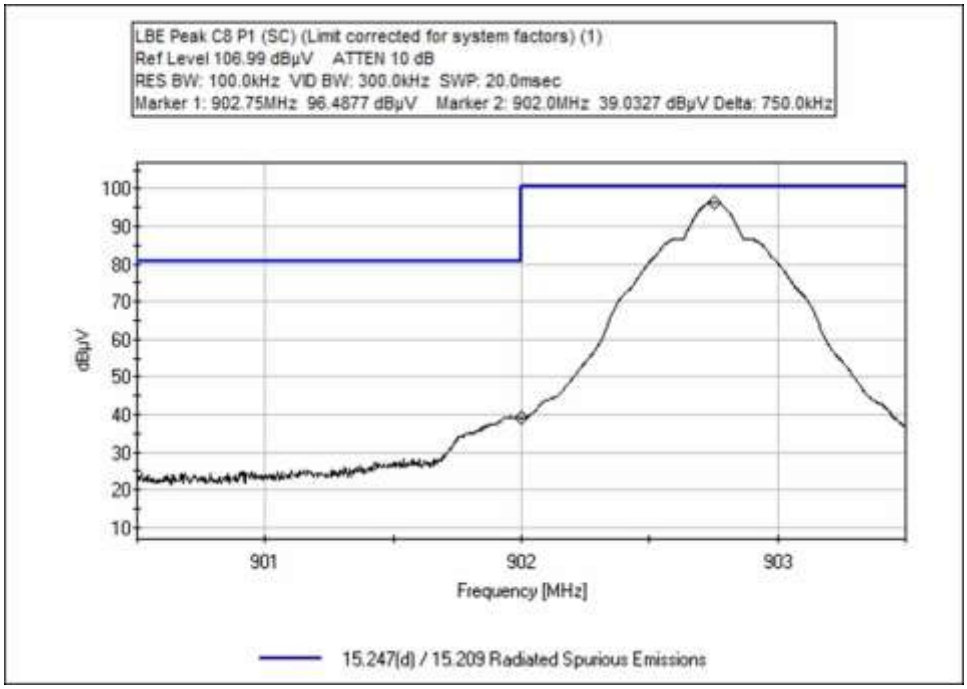

LBE QP C7 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.4077dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

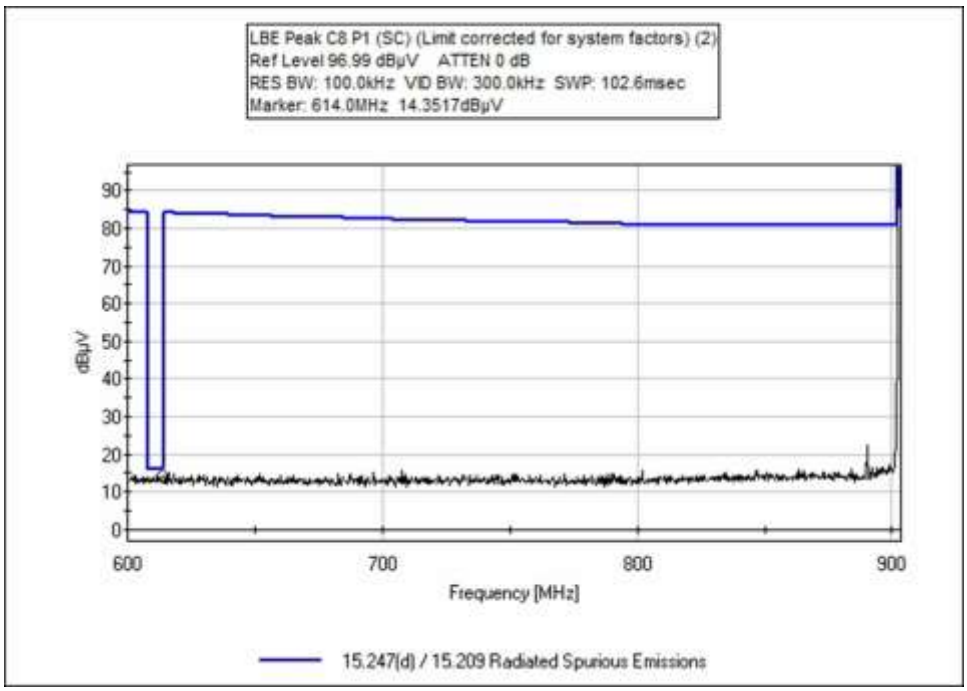

UBE Peak C7 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 99.1867 dBµV Marker 2: 928.0MHz 37.1317 dBµV Delta: 753.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

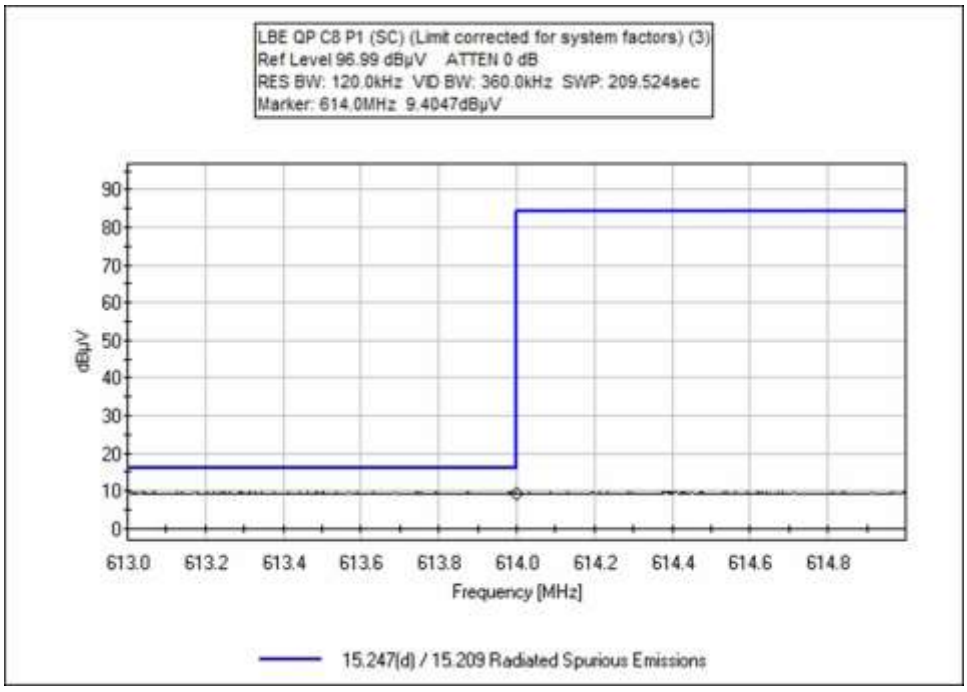

UBE Peak C7 (Hop) (Limit corrected for system factors) (2)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 23.0127dBµV
dBµV
100
90
80
70
60
50
40
30
20
10
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

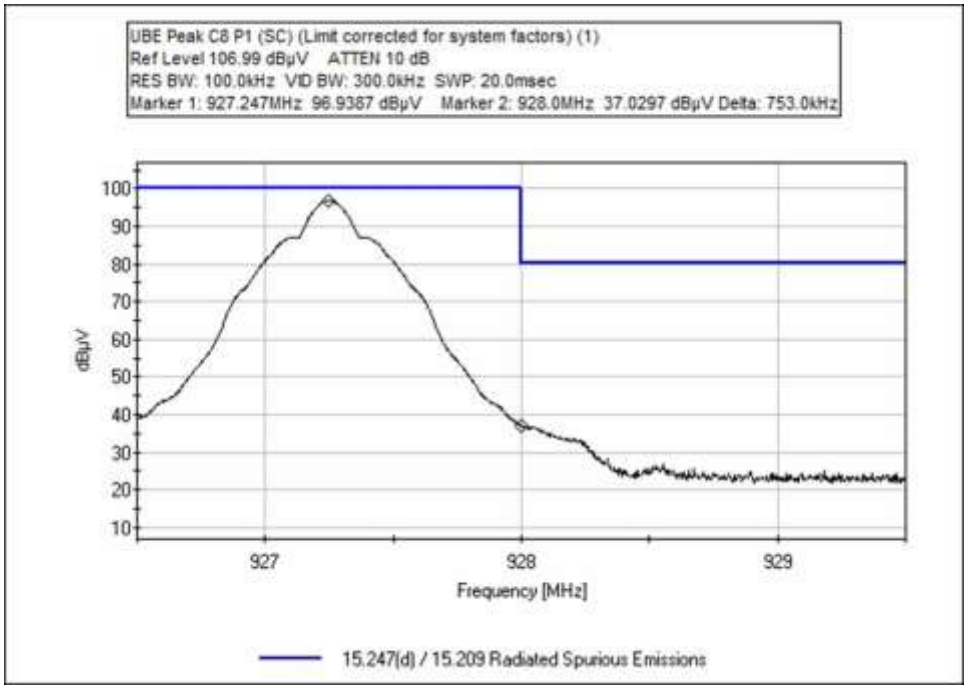

UBE QP C7 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.9407dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

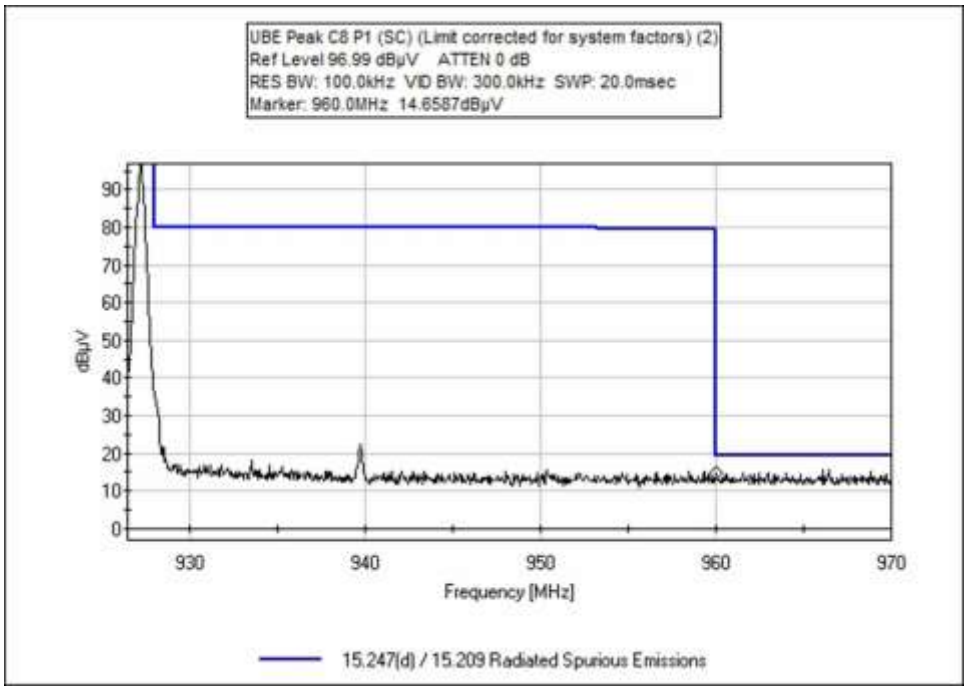
Configuration 8 Port 1

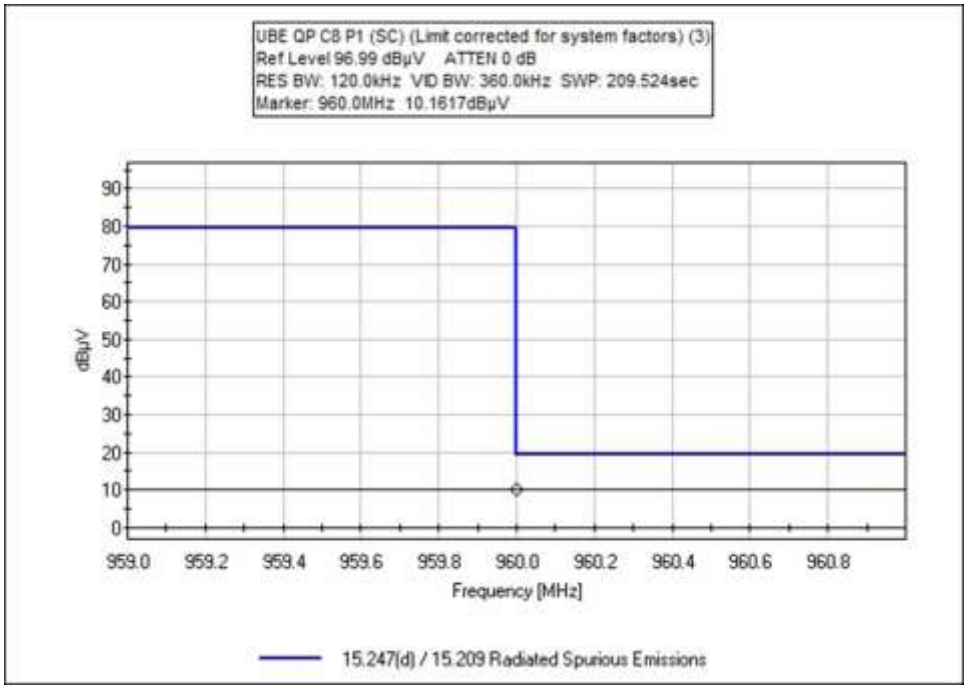


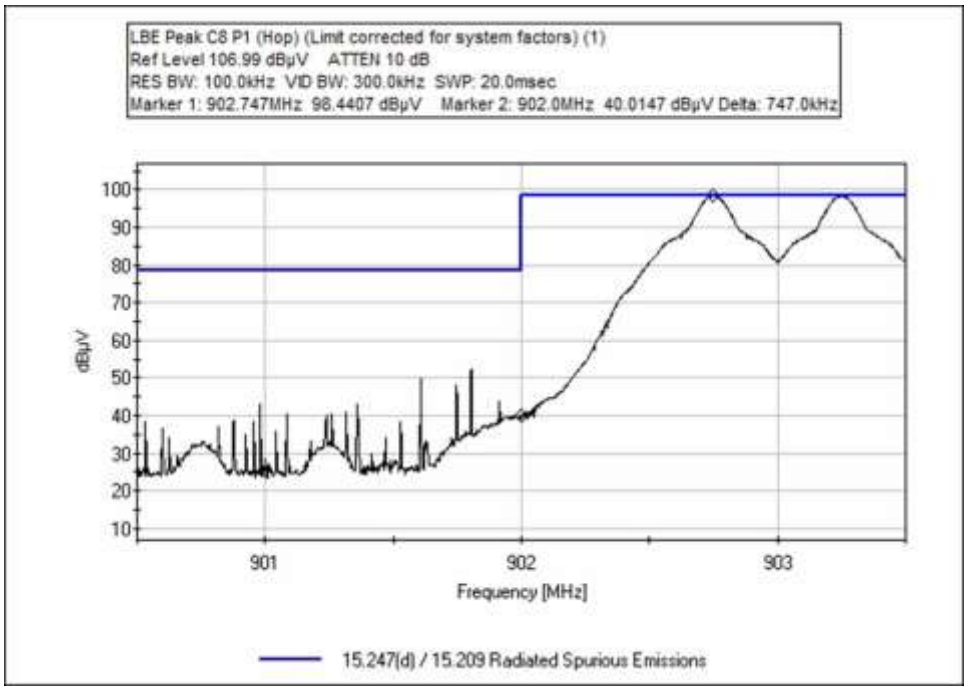


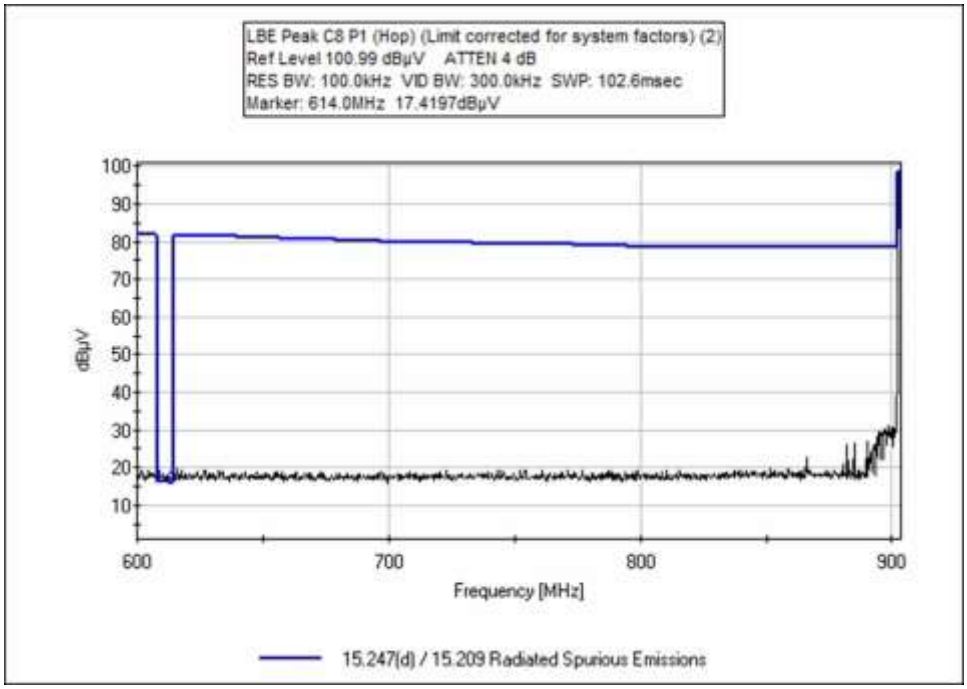

LBE QP C8 P1 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.4047dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

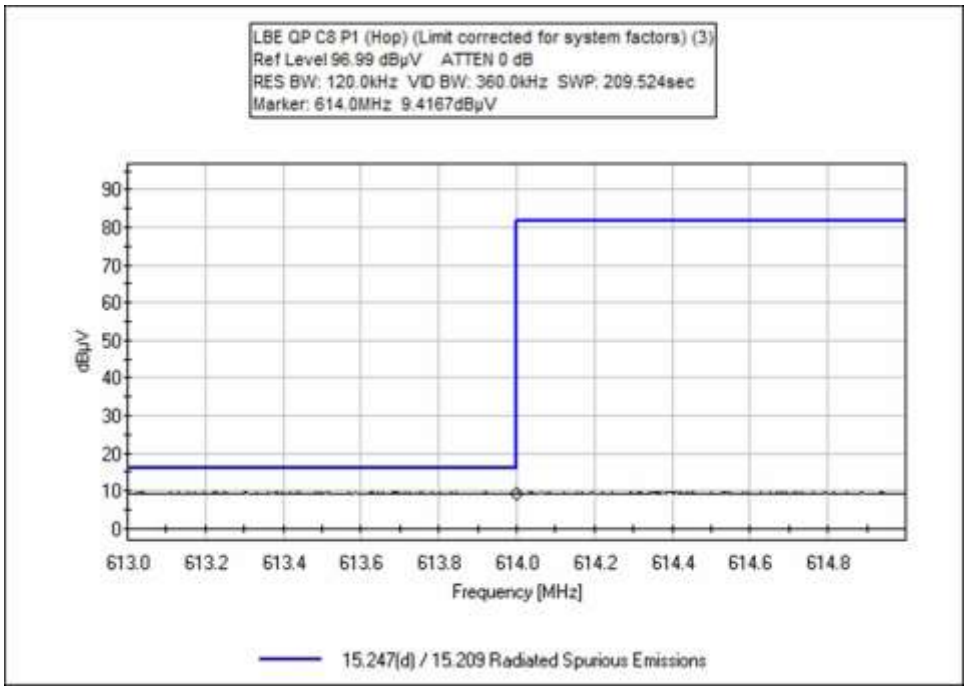

UBE Peak C8 P1 (SC) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 96.9387 dBµV Marker 2: 928.0MHz 37.0297 dBµV Delta: 753.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

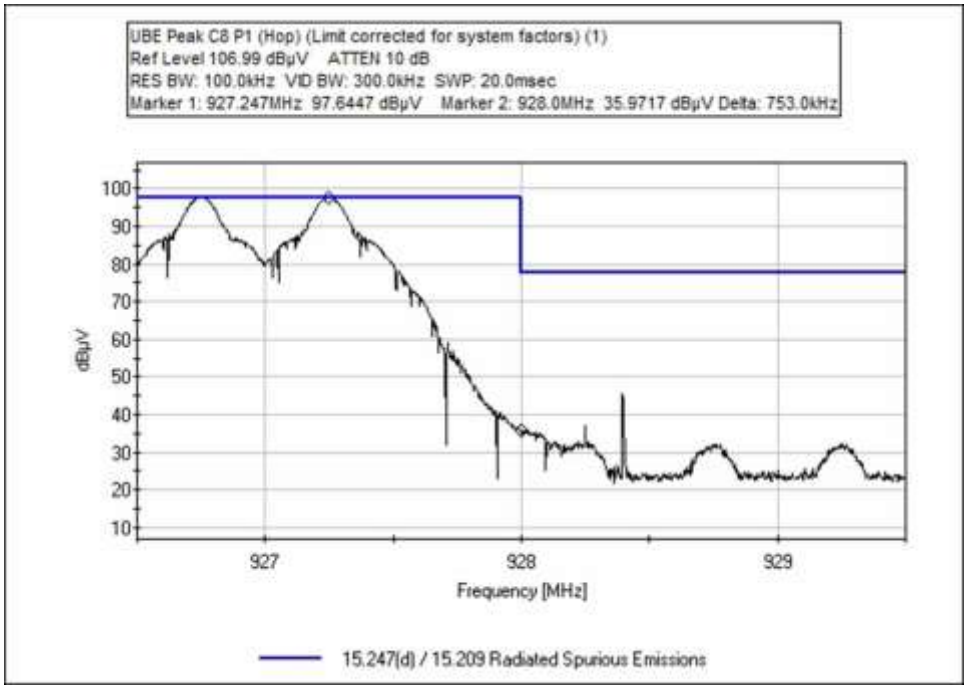

UBE Peak C8 P1 (SC) (Limit corrected for system factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 14.6587dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

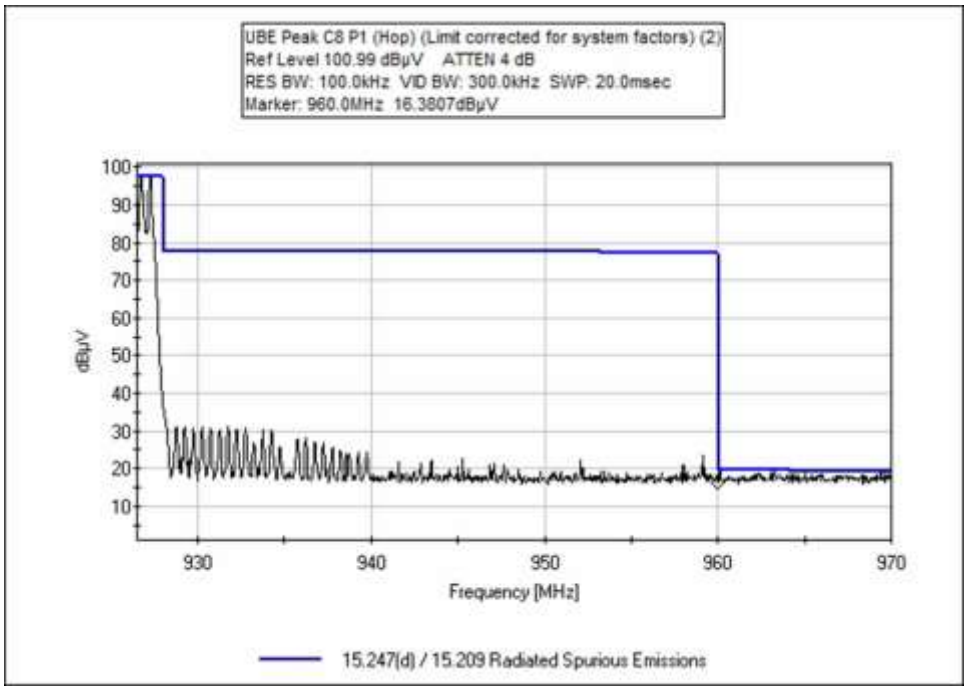

UBE QP C8 P1 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 10.1617dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

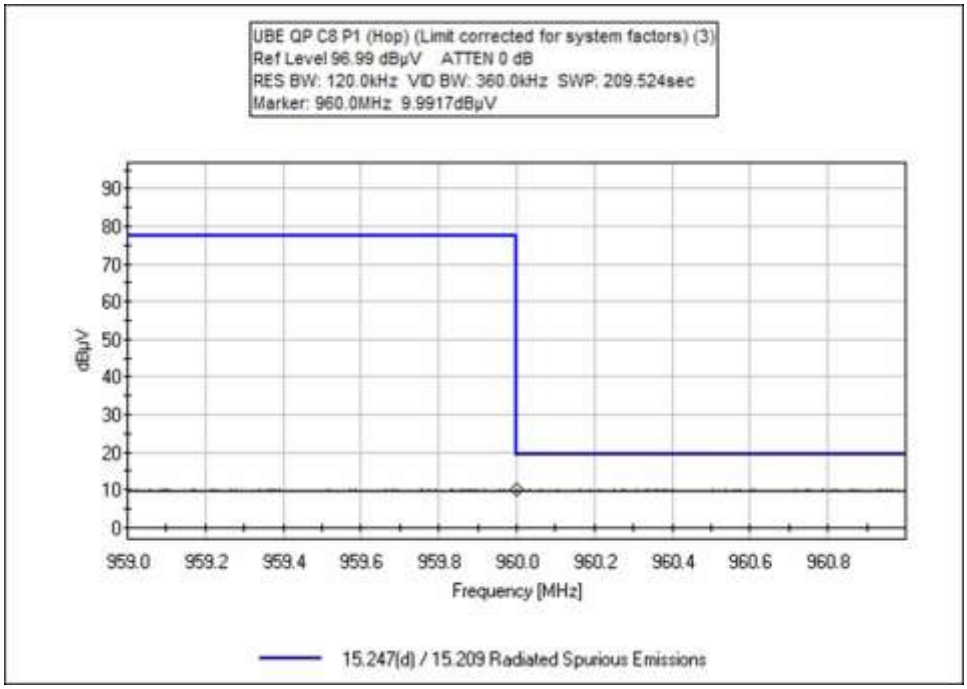

LBE Peak C8 P1 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.747MHz 98.4407 dBµV Marker 2: 902.0MHz 40.0147 dBµV Delta: 747.0kHz
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C8 P1 (Hop) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 17.4197dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

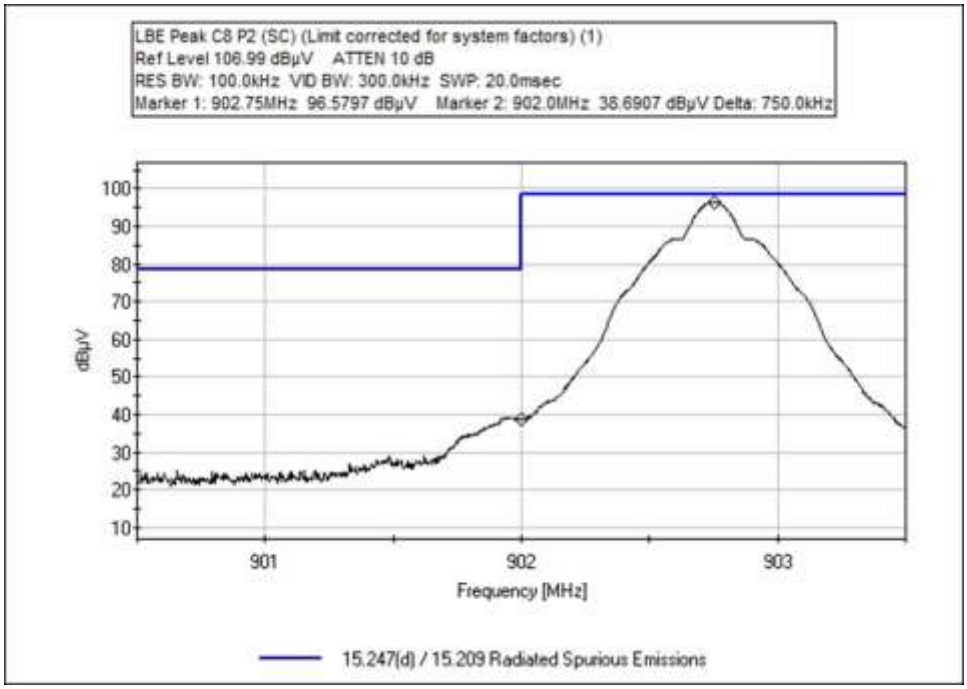

LBE QP C8 P1 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.4167dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

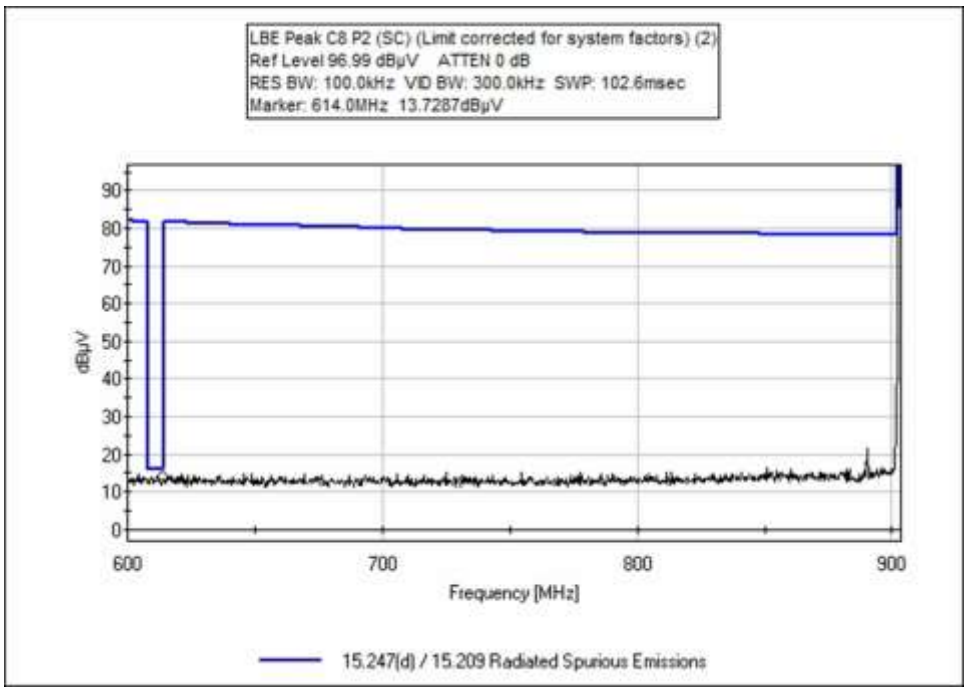

UBE Peak C8 P1 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.247MHz 97.6447 dBµV Marker 2: 928.0MHz 35.9717 dBµV Delta: 753.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

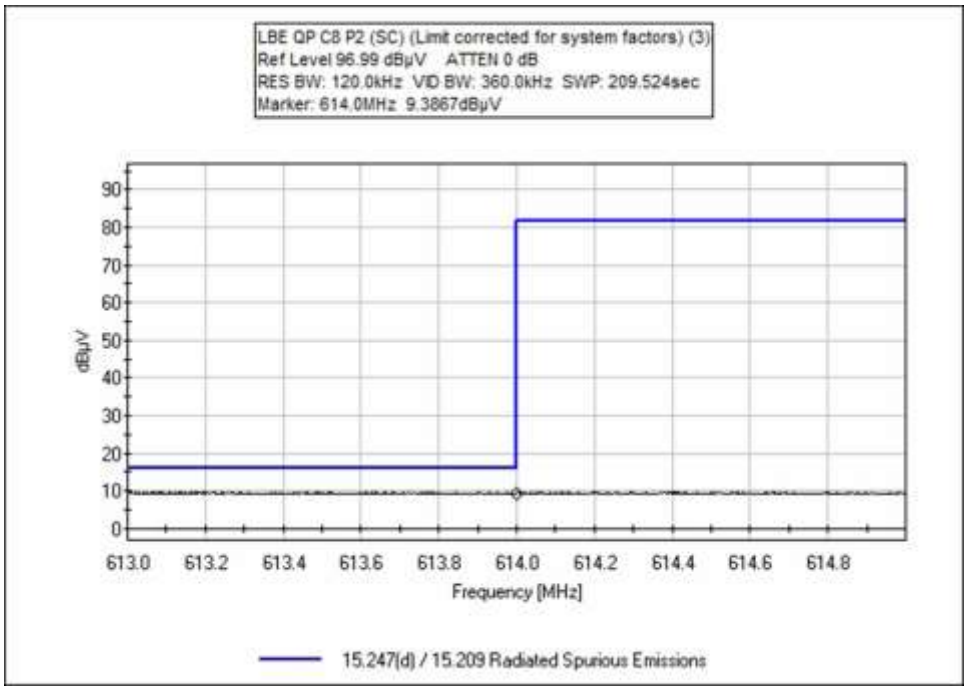

UBE Peak C8 P1 (Hop) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 16.3807dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

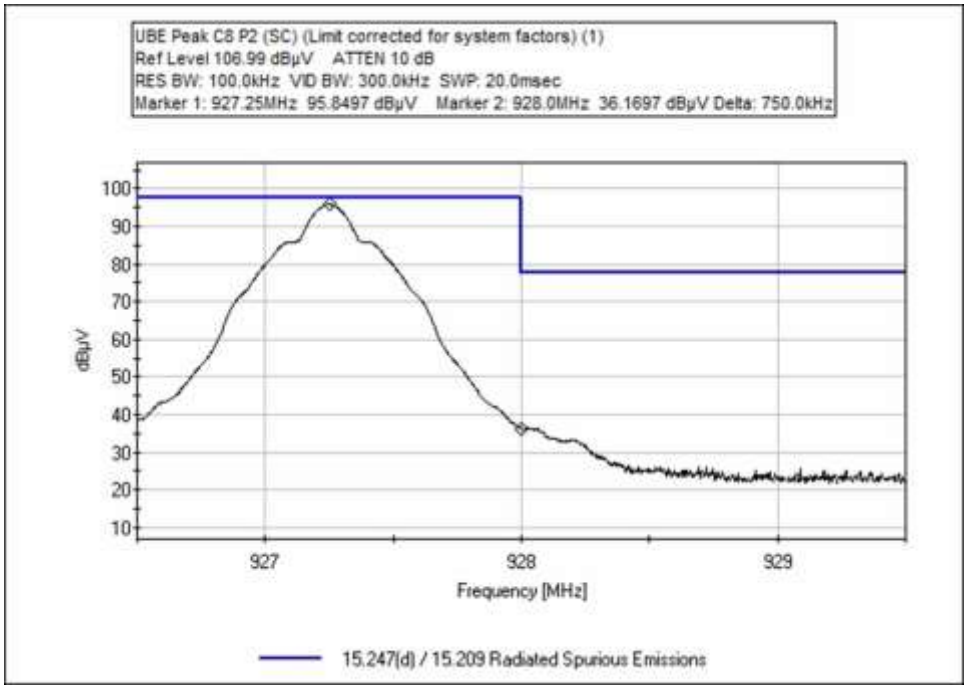

UBE QP C8 P1 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.9917dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

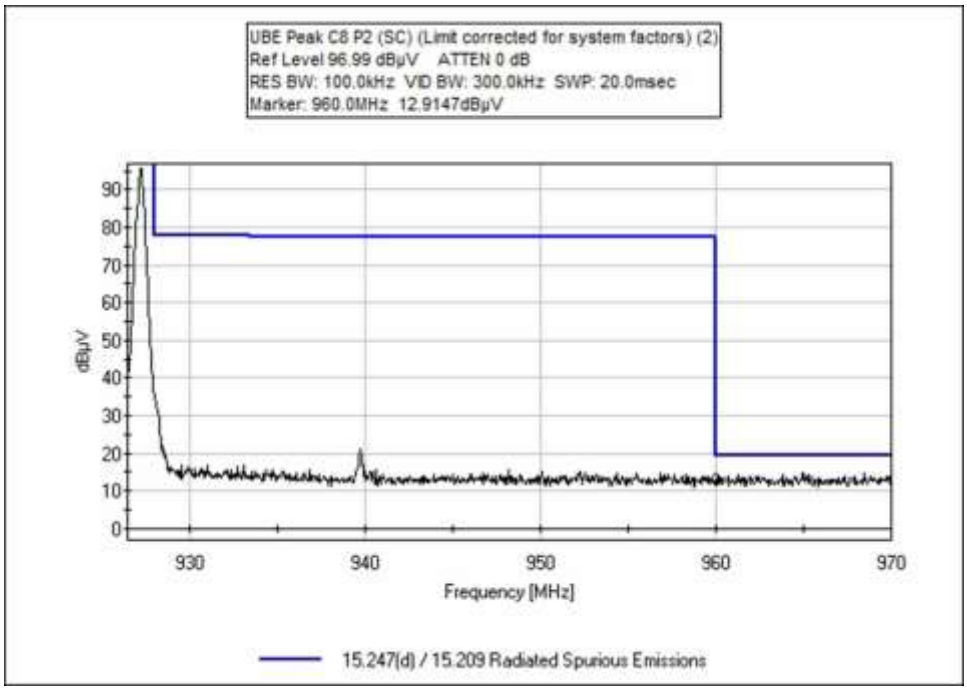
Configuration 8 Port 2

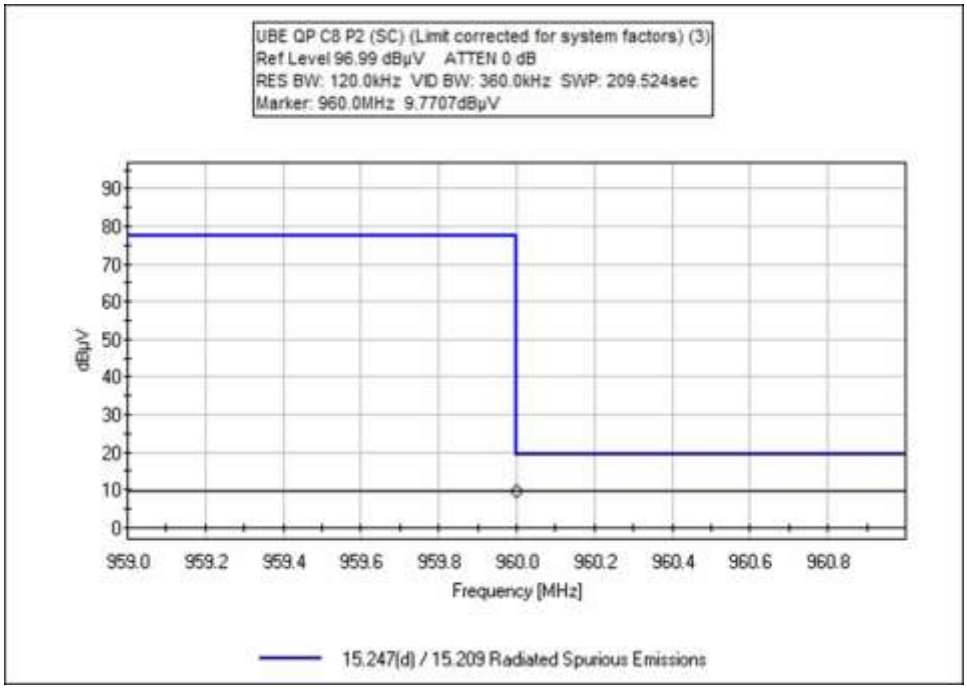


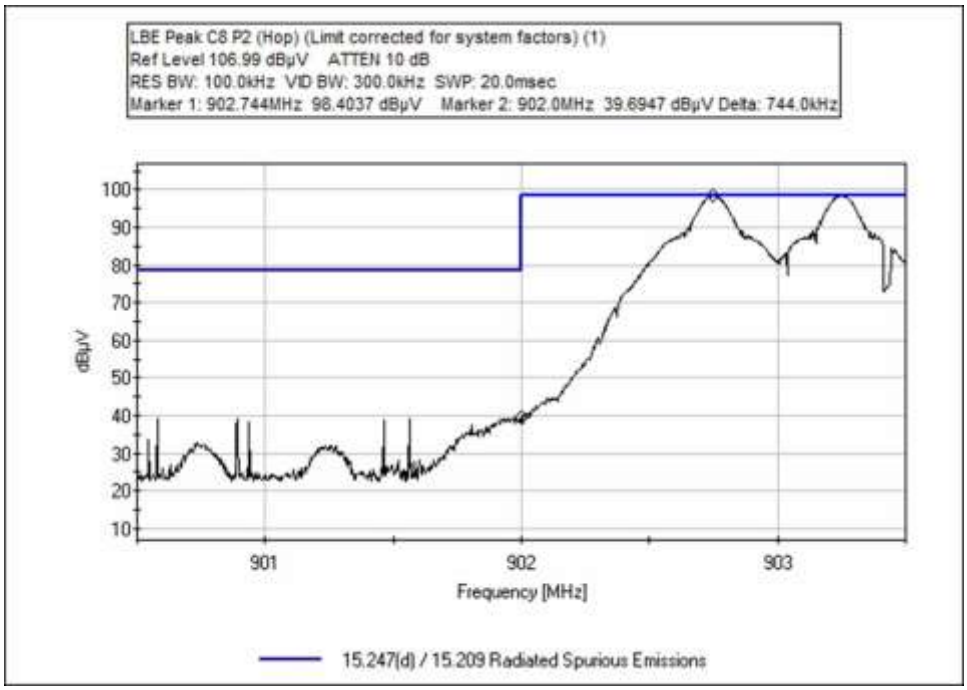


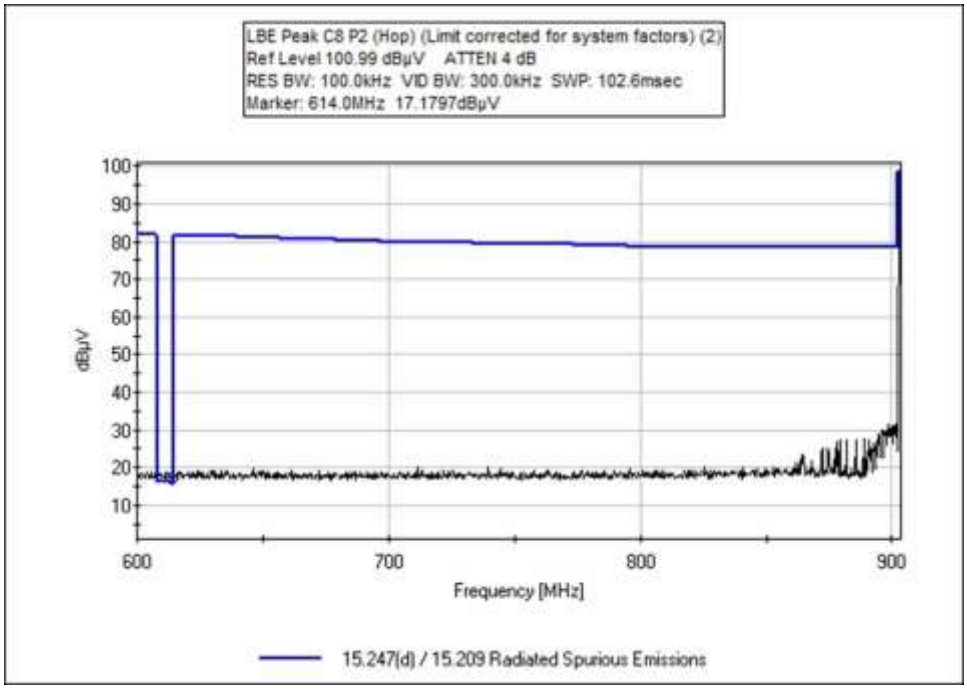

LBE QP C8 P2 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.3867dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

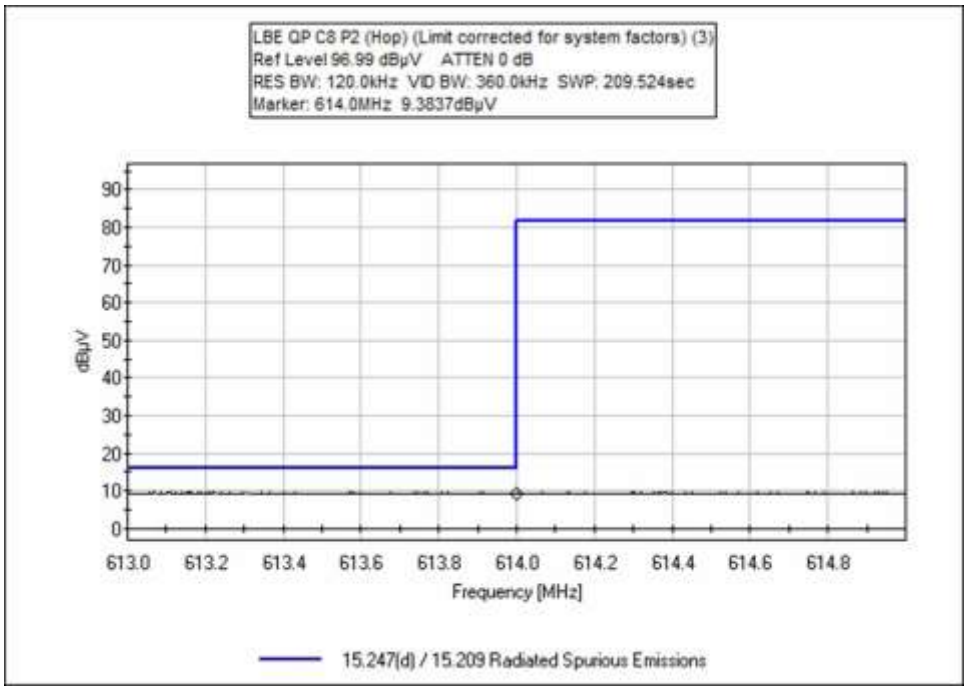

UBE Peak C8 P2 (SC) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.25MHz 95.8497 dBµV Marker 2: 928.0MHz 36.1697 dBµV Delta: 750.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

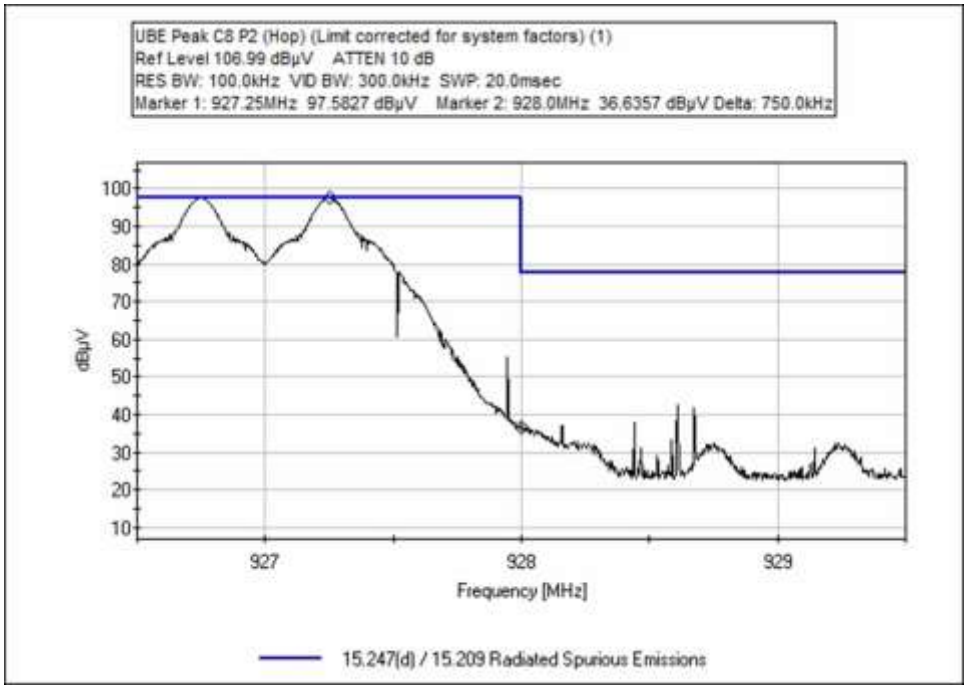

UBE Peak C8 P2 (SC) (Limit corrected for system factors) (2)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 12.9147dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
930
940
950
960
970
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

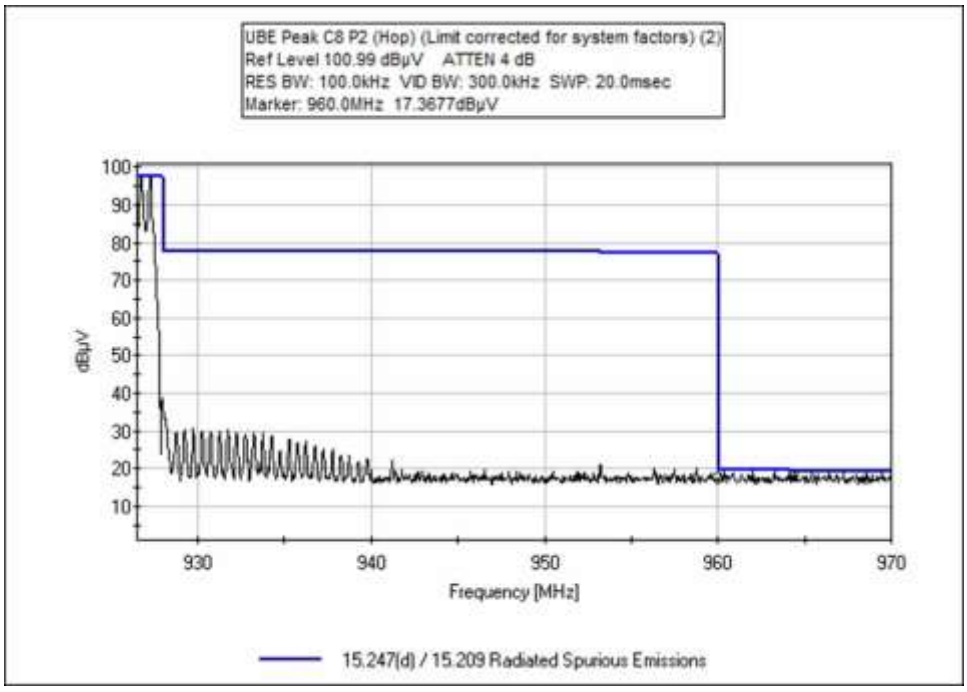

UBE QP C8 P2 (SC) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.7707dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
959.0
959.2
959.4
959.6
959.8
960.0
960.2
960.4
960.6
960.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

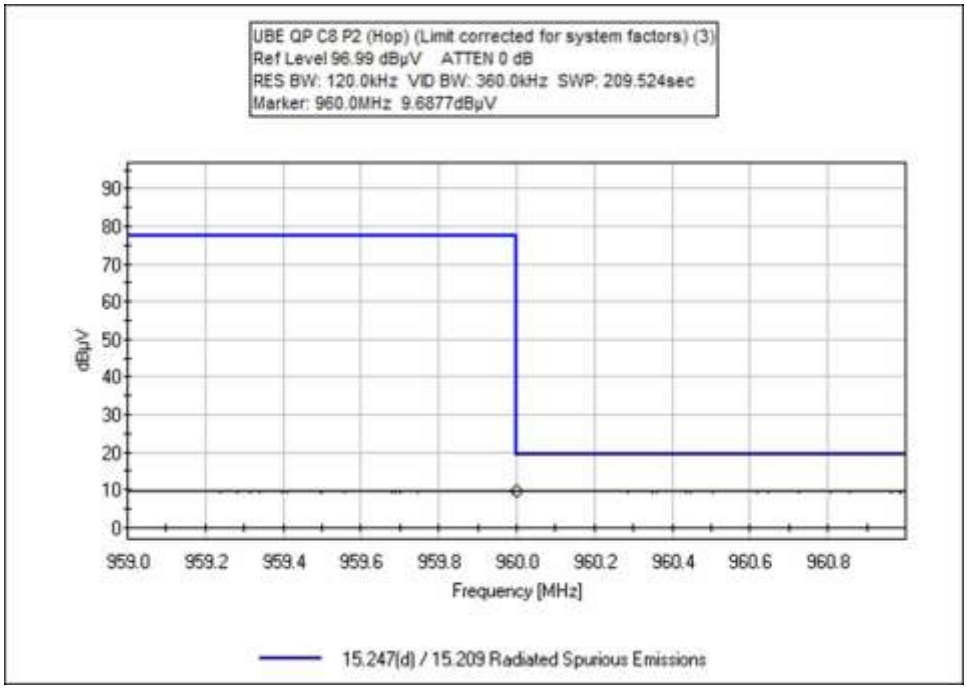

LBE Peak C8 P2 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 902.744MHz 98.4037 dBµV Marker 2: 902.0MHz 39.6947 dBµV Delta: 744.0kHz
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE Peak C8 P2 (Hop) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 102.6msec
Marker: 614.0MHz 17.1797dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


LBE QP C8 P2 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 614.0MHz 9.3837dBµV
dBµV
90
80
70
60
50
40
30
20
10
0
613.0
613.2
613.4
613.6
613.8
614.0
614.2
614.4
614.6
614.8
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


UBE Peak C8 P2 (Hop) (Limit corrected for system factors) (1)
Ref Level 106.99 dBµV ATTEN 10 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker 1: 927.25MHz 97.5827 dBµV Marker 2: 928.0MHz 36.6357 dBµV Delta: 750.0kHz
dBµV
100
90
80
70
60
50
40
30
20
10
927
928
929
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


UBE Peak C8 P2 (Hop) (Limit corrected for system factors) (2)
Ref Level 100.99 dBµV ATTEN 4 dB
RES BW: 100.0kHz VID BW: 300.0kHz SWP: 20.0msec
Marker: 960.0MHz 17.3677dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions


UBE QP C8 P2 (Hop) (Limit corrected for system factors) (3)
Ref Level 96.99 dBµV ATTEN 0 dB
RES BW: 120.0kHz VID BW: 360.0kHz SWP: 209.524sec
Marker: 960.0MHz 9.6877dBµV
dBµV
Frequency [MHz]
15.247(d) / 15.209 Radiated Spurious Emissions

Test Setup / Conditions / Data

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/20/2019
Test Type:	**Maximized Emissions**	Time:	13:29:28
Tested By:	Matthew Harrison	Sequence#:	39
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Mini-Guardrail Antenna
Antenna Gain: -20dBi
antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.751M	71.3	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	104.6	106.0	-1.4	Vert
2	927.247M	69.1	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	103.0	106.0	-3.0	Vert
3	614.000M QP	9.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.3	46.0	-6.7	Vert
^	614.000M	13.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	43.4	46.0	-2.6	Vert
5	960.000M QP	9.3	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.7	54.0	-10.3	Vert
^	960.000M	12.5	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	46.9	54.0	-7.1	Vert
7	902.000M	16.6	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	49.9	86.0	-36.1	Vert
8	928.000M	15.5	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	49.4	86.0	-36.6	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	08:16:10
Tested By:	Matthew Harrison	Sequence#:	40
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 2			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 2			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Mini-Guardrail Antenna
Antenna Gain: -20dBi
antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.748M	72.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	106.0	106.0	+0.0	Vert
2	927.250M	71.2	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	105.1	106.0	-0.9	Vert
3	614.000M QP	9.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.3	46.0	-6.7	Vert
^	614.000M	14.5	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	44.5	46.0	-1.5	Vert
5	960.000M QP	9.3	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.7	54.0	-10.3	Vert
^	960.000M	14.0	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	48.4	54.0	-5.6	Vert
7	928.000M	15.8	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	49.7	86.0	-36.3	Vert
8	902.000M	15.5	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	48.8	86.0	-37.2	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	09:57:12
Tested By:	Matthew Harrison	Sequence#:	41
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: High Gain CP Antenna
Antenna Gain: +8.5dBiC
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.750M	97.2	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	130.5	132.7	-2.2	Vert
2	927.250M	93.8	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	127.7	132.7	-5.0	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	22.6	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	52.6	46.0	+6.6	Vert
5	960.000M QP	9.4	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.8	54.0	-10.2	Vert
^	960.000M	12.7	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	47.1	54.0	-6.9	Vert
7	902.000M	38.4	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	71.7	112.7	-41.0	Vert
8	928.000M	34.1	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	68.0	112.7	-44.7	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	10:14:35
Tested By:	Matthew Harrison	Sequence#:	42
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 3			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 3			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: High Gain CP Antenna
Antenna Gain: +8.5dBiC
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.747M	99.4	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	132.7	132.7	+0.0	Vert
2	927.250M	95.6	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	129.5	132.7	-3.2	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	23.7	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	53.7	46.0	+7.7	Vert
5	960.000M QP	9.5	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.9	54.0	-10.1	Vert
^	960.000M	12.4	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	46.8	54.0	-7.2	Vert
7	902.000M	38.3	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	71.6	112.7	-41.1	Vert
8	928.000M	36.1	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	70.0	112.7	-42.7	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	11:29:48
Tested By:	Matthew Harrison	Sequence#:	43
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Slimline CP Antenna
Antenna Gain: +5.5dBiC
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	927.247M	93.4	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	127.3	129.1	-1.8	Vert
2	902.750M	93.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	127.0	129.1	-2.1	Vert
3	614.000M QP	9.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.3	46.0	-6.7	Vert
^	614.000M	14.2	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	44.2	46.0	-1.8	Vert
5	960.000M QP	9.5	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.9	54.0	-10.1	Vert
^	960.000M	13.1	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	47.5	54.0	-6.5	Vert
7	902.000M	34.4	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	67.7	109.1	-41.4	Vert
8	928.000M	33.3	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	67.2	109.1	-41.9	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	11:50:21
Tested By:	Matthew Harrison	Sequence#:	44
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 4			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 4			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Slimline CP Antenna
Antenna Gain: +5.5dBiC
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
T6	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	927.247M	95.2	+24.2 +0.4	+5.8 +0.0	+1.5	+2.0	+0.0	129.1	129.1	+0.0	Vert
2	902.747M	95.7	+23.8 +0.3	+5.8 +0.0	+1.4	+2.0	+0.0	129.0	129.1	-0.1	Vert
3	614.000M QP	9.3	+21.2 +0.3	+5.8 +0.0	+1.2	+1.5	+0.0	39.3	46.0	-6.7	Vert
^	614.000M	14.2	+21.2 +0.3	+5.8 +0.0	+1.2	+1.5	+0.0	44.2	46.0	-1.8	Vert
5	960.000M QP	9.3	+24.6 +0.4	+5.8 +0.0	+1.5	+2.1	+0.0	43.7	54.0	-10.3	Vert
^	960.000M	13.8	+24.6 +0.4	+5.8 +0.0	+1.5	+2.1	+0.0	48.2	54.0	-5.8	Vert
7	902.000M	37.7	+23.8 +0.3	+5.8 +0.0	+1.4	+2.0	+0.0	71.0	109.1	-38.1	Vert
8	928.000M	34.6	+24.2 +0.4	+5.8 +0.0	+1.5	+2.0	+0.0	68.5	109.1	-40.6	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	13:03:45
Tested By:	Matthew Harrison	Sequence#:	45
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 5			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 5			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Brickyard
Antenna Gain: +2dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	927.250M	99.4	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	133.3	134.6	-1.3	Vert
2	902.750M	99.1	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	132.4	134.6	-2.2	Vert
3	614.000M QP	9.5	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.5	46.0	-6.5	Vert
^	614.000M	15.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	45.3	46.0	-0.7	Vert
5	960.000M QP	10.7	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	45.1	54.0	-8.9	Vert
^	960.000M	16.8	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	51.2	54.0	-2.8	Vert
7	902.000M	41.1	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	74.4	114.6	-40.2	Vert
8	928.000M	38.9	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	72.8	114.6	-41.8	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	13:23:22
Tested By:	Matthew Harrison	Sequence#:	46
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 5			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 5			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Brickyard
Antenna Gain: +2dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter RG058 cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.750M	101.3	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	134.6	134.6	+0.0	Vert
2	927.250M	100.6	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	134.5	134.6	-0.1	Vert
3	614.000M QP	13.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	43.3	46.0	-2.7	Vert
^	614.000M	17.6	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	47.6	46.0	+1.6	Vert
5	960.000M QP	10.4	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.8	54.0	-9.2	Vert
^	960.000M	23.9	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	58.3	54.0	+4.3	Vert
7	902.000M	42.8	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	76.1	114.6	-38.5	Vert
8	928.000M	39.9	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	73.8	114.6	-40.8	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	14:30:43
Tested By:	Matthew Harrison	Sequence#:	47
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 6			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 6			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Matchbox Antenna
Antenna Gain: -20dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 0.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.747M	83.9	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	117.2	119.0	-1.8	Horiz
2	927.250M	81.9	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	115.8	119.0	-3.2	Horiz
3	614.000M QP	9.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.3	46.0	-6.7	Horiz
^	614.000M	13.2	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	43.2	46.0	-2.8	Horiz
5	960.000M QP	9.3	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.7	54.0	-10.3	Horiz
^	960.000M	12.3	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	46.7	54.0	-7.3	Horiz
7	902.000M	26.4	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	59.7	99.0	-39.3	Horiz
8	928.000M	22.4	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	56.3	99.0	-42.7	Horiz

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/23/2019
Test Type:	**Maximized Emissions**	Time:	14:40:33
Tested By:	Matthew Harrison	Sequence#:	48
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 6			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 6			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Matchbox Antenna
Antenna Gain: -20dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 0.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.750M	85.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	119.0	119.0	+0.0	Horiz
2	927.247M	83.7	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	117.6	119.0	-1.4	Horiz
3	614.000M QP	9.3	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.3	46.0	-6.7	Horiz
^	614.000M	14.0	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	44.0	46.0	-2.0	Horiz
5	960.000M QP	9.4	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	43.8	54.0	-10.2	Horiz
^	960.000M	13.1	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	47.5	54.0	-6.5	Horiz
7	902.000M	26.0	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	59.3	99.0	-39.7	Horiz
8	928.000M	21.5	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	55.4	99.0	-43.6	Horiz

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/30/2019
Test Type:	**Maximized Emissions**	Time:	13:00:51
Tested By:	Matthew Harrison	Sequence#:	49
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 7			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 7			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Threshold Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.747M	98.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	132.0	134.1	-2.1	Vert
2	927.247M	97.4	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	131.3	134.1	-2.8	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	15.7	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	45.7	46.0	-0.3	Vert
5	960.000M QP	10.1	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.5	54.0	-9.5	Vert
^	960.000M	16.1	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	50.5	54.0	-3.5	Vert
7	2708.250M Ave	25.9	+0.0 +0.7	+5.9	+2.6	+0.0	+0.0	35.1	54.0	-18.9	Vert
^	2708.250M	38.0	+0.0 +0.7	+5.9	+2.6	+0.0	+0.0	47.2	54.0	-6.8	Vert
9	902.000M	40.6	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	73.9	114.1	-40.2	Vert
10	928.000M	37.3	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	71.2	114.1	-42.9	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/24/2019
Test Type:	**Maximized Emissions**	Time:	09:25:27
Tested By:	Matthew Harrison	Sequence#:	50
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 7			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 7			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Threshold Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.750M	100.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	134.0	134.1	-0.1	Vert
2	927.247M	99.2	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	133.1	134.1	-1.0	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	18.2	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	48.2	46.0	+2.2	Vert
5	960.000M QP	9.9	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.3	54.0	-9.7	Vert
^	960.000M	23.0	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	57.4	54.0	+3.4	Vert
^	960.000M	23.0	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	57.4	54.0	+3.4	Vert
8	902.000M	42.2	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	75.5	114.1	-38.6	Vert
9	928.000M	37.1	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	71.0	114.1	-43.1	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/24/2019
Test Type:	**Maximized Emissions**	Time:	11:09:45
Tested By:	Matthew Harrison	Sequence#:	51
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 8			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 8			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Guardwall Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 2-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	927.247M	96.9	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	130.8	131.7	-0.9	Vert
2	902.750M	96.5	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	129.8	131.7	-1.9	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	14.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	44.4	46.0	-1.6	Vert
5	960.000M QP	10.2	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.6	54.0	-9.4	Vert
^	960.000M	14.7	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	49.1	54.0	-4.9	Vert
7	902.000M	39.0	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	72.3	111.7	-39.4	Vert
8	928.000M	37.0	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	70.9	111.7	-40.8	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/24/2019
Test Type:	**Maximized Emissions**	Time:	11:24:12
Tested By:	Matthew Harrison	Sequence#:	52
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 8			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 8			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Guardwall Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.747M	98.4	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	131.7	131.7	+0.0	Vert
2	927.247M	97.6	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	131.5	131.7	-0.2	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	17.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	47.4	46.0	+1.4	Vert
5	960.000M QP	10.0	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.4	54.0	-9.6	Vert
^	960.000M	16.4	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	50.8	54.0	-3.2	Vert
7	902.000M	40.0	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	73.3	111.7	-38.4	Vert
8	928.000M	36.0	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	69.9	111.7	-41.8	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/24/2019
Test Type:	**Maximized Emissions**	Time:	12:02:23
Tested By:	Matthew Harrison	Sequence#:	53
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 8			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 8			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Guardwall Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 2 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.750M	96.6	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	129.9	131.7	-1.8	Vert
2	927.250M	95.8	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	129.7	131.7	-2.0	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	13.7	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	43.7	46.0	-2.3	Vert
5	960.000M QP	9.8	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.2	54.0	-9.8	Vert
^	960.000M	12.9	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	47.3	54.0	-6.7	Vert
7	902.000M	38.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	72.0	111.7	-39.7	Vert
8	928.000M	36.2	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	70.1	111.7	-41.6	Vert

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.247(d) / 15.209 Radiated Spurious Emissions**		
Work Order #:	**103052**	Date:	9/24/2019
Test Type:	**Maximized Emissions**	Time:	12:11:47
Tested By:	Matthew Harrison	Sequence#:	54
Software:	EMITest 5.03.12		

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 8			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 8			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 30-1000MHz
Frequency tested: 902.75, 927.25 **Hopping**

Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Guardwall Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 2 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03628	Biconilog Antenna	3142E	6/11/2019	6/11/2021
T2	ANP06123	Attenuator	18N-6	4/5/2019	4/5/2021
T3	ANP05305	Cable	ETSI-50T	9/6/2019	9/6/2021
T4	ANP05360	Cable	RG214	1/31/2018	1/31/2020
T5	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	902.744M	98.4	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	131.7	131.7	+0.0	Vert
2	927.250M	97.6	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	131.5	131.7	-0.2	Vert
3	614.000M QP	9.4	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	39.4	46.0	-6.6	Vert
^	614.000M	17.2	+21.2 +0.3	+5.8	+1.2	+1.5	+0.0	47.2	46.0	+1.2	Vert
5	960.000M QP	9.7	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	44.1	54.0	-9.9	Vert
^	960.000M	17.4	+24.6 +0.4	+5.8	+1.5	+2.1	+0.0	51.8	54.0	-2.2	Vert
7	902.000M	39.7	+23.8 +0.3	+5.8	+1.4	+2.0	+0.0	73.0	111.7	-38.7	Vert
8	928.000M	36.6	+24.2 +0.4	+5.8	+1.5	+2.0	+0.0	70.5	111.7	-41.2	Vert

Test Setup Photo(s)

Configuration 2

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

Configuration 3

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

Configuration 4

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

Configuration 5

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

Configuration 6

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

Configuration 7

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

Configuration 8

Below 1GHz

Below 1GHz

Above 1GHz

Above 1GHz

X Axis

Y Axis

Z Axis

15.207 AC Conducted Emissions

Test Setup / Conditions / Data

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.207 AC Mains - Quasi-peak**		
Work Order #:	**103052**	Date:	9/30/2019
Test Type:	**Conducted Emissions**	Time:	15:31:25
Tested By:	Matthew Harrison	Sequence#:	63
Software:	EMITest 5.03.12		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 8			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 8			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 150k-30MHz
Frequency tested: 902.75, 914.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Guardwall Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

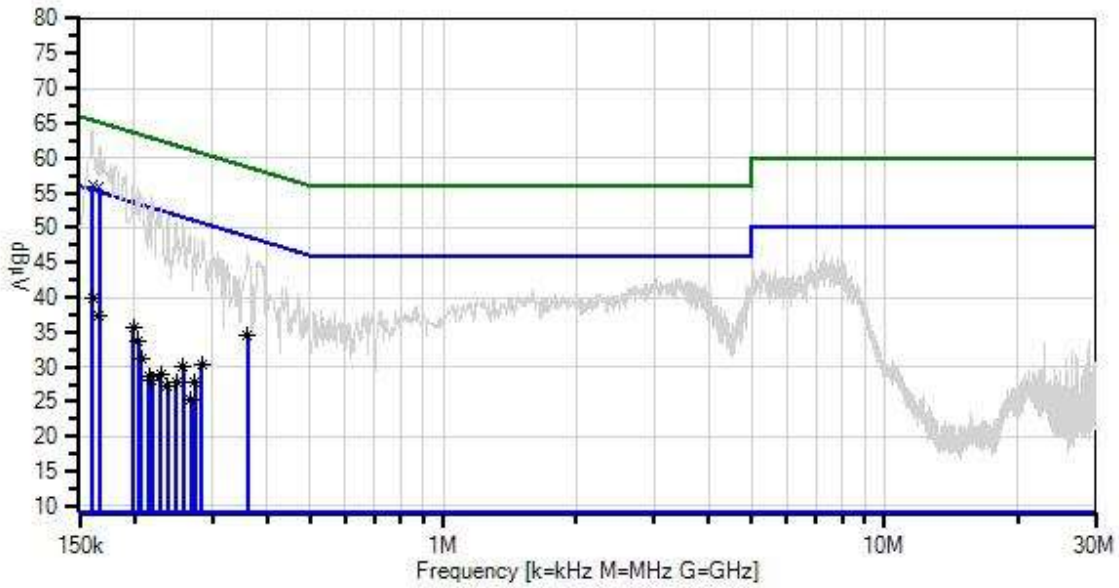
Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Other modes were checked, and worst case provided.

Impinj, Inc. WO#: 103052 Sequence#: 63 Date: 9/30/2019
15.207 AC Mains - Quasi-peak Test Lead: 120V 60Hz Line



Sweep Data
× QP Readings
Software Version: 5.03.12
Readings
Average Readings
1 - 15.207 AC Mains - Average
Peak Readings
Ambient
2 - 15.207 AC Mains - Quasi-peak

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06219	Attenuator	768-10	4/13/2018	4/13/2020
T2	ANP06515	Cable	Heliax	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
T4	AN01311	50uH LISN-Line1 (L)	3816/2	3/16/2018	3/16/2020
	AN01311	50uH LISN-Line2 (N)	3816/2	3/16/2018	3/16/2020
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
T5	AN02611	High Pass Filter	HE9615-150K-50-720B	1/15/2018	1/15/2020

Measurement Data: Reading listed by margin. Test Lead: Line

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	166.726k	44.6	+9.1 +0.5	+0.0	+0.0	+1.6	+0.0	55.8	65.1	-9.3	Line
	QP										
2	160.908k	44.7	+9.1 +0.6	+0.0	+0.0	+1.6	+0.0	56.0	65.4	-9.4	Line
	QP										
3	360.890k	24.7	+9.1 +0.1	+0.0	+0.0	+0.6	+0.0	34.5	48.7	-14.2	Line
	Ave										
^	360.889k	36.6	+9.1 +0.1	+0.0	+0.0	+0.6	+0.0	46.4	48.7	-2.3	Line
5	160.908k	28.6	+9.1 +0.6	+0.0	+0.0	+1.6	+0.0	39.9	55.4	-15.5	Line
	Ave										
^	160.908k	52.8	+9.1 +0.6	+0.0	+0.0	+1.6	+0.0	64.1	55.4	+8.7	Line
7	166.726k	26.2	+9.1 +0.5	+0.0	+0.0	+1.6	+0.0	37.4	55.1	-17.7	Line
	Ave										
^	166.725k	50.4	+9.1 +0.5	+0.0	+0.0	+1.6	+0.0	61.6	55.1	+6.5	Line
9	198.723k	25.3	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	35.8	53.7	-17.9	Line
	Ave										
^	198.722k	45.7	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	56.2	53.7	+2.5	Line
11	203.813k	23.3	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	33.8	53.5	-19.7	Line
	Ave										
12	284.533k	20.5	+9.1 +0.1	+0.0	+0.0	+0.7	+0.0	30.4	50.7	-20.3	Line
	Ave										
^	284.533k	38.4	+9.1 +0.1	+0.0	+0.0	+0.7	+0.0	48.3	50.7	-2.4	Line
14	257.626k	20.0	+9.1 +0.2	+0.0	+0.0	+0.8	+0.0	30.1	51.5	-21.4	Line
	Ave										
^	257.626k	40.5	+9.1 +0.2	+0.0	+0.0	+0.8	+0.0	50.6	51.5	-0.9	Line
16	206.722k	20.9	+9.1 +0.2	+0.0	+0.0	+1.1	+0.0	31.3	53.3	-22.0	Line
	Ave										
^	203.813k	45.1	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	55.6	53.5	+2.1	Line

^	206.722k	44.2	+9.1 +0.2	+0.0	+0.0	+1.1	+0.0	54.6	53.3	+1.3	Line
19	274.352k Ave	17.9	+9.1 +0.1	+0.0	+0.0	+0.8	+0.0	27.9	51.0	-23.1	Line
^	274.352k	38.6	+9.1 +0.1	+0.0	+0.0	+0.8	+0.0	48.6	51.0	-2.4	Line
21	229.265k Ave	18.7	+9.1 +0.2	+0.0	+0.0	+1.0	+0.0	29.0	52.5	-23.5	Line
^	229.265k	42.8	+9.1 +0.2	+0.0	+0.0	+1.0	+0.0	53.1	52.5	+0.6	Line
23	248.900k Ave	17.5	+9.1 +0.2	+0.0	+0.0	+0.9	+0.0	27.7	51.8	-24.1	Line
^	248.900k	40.6	+9.1 +0.2	+0.0	+0.0	+0.9	+0.0	50.8	51.8	-1.0	Line
25	215.449k Ave	18.3	+9.1 +0.2	+0.0	+0.0	+1.1	+0.0	28.7	53.0	-24.3	Line
26	219.085k Ave	17.8	+9.1 +0.2	+0.0	+0.0	+1.1	+0.0	28.2	52.9	-24.7	Line
^	219.084k	44.2	+9.1 +0.2	+0.0	+0.0	+1.1	+0.0	54.6	52.9	+1.7	Line
^	215.448k	42.5	+9.1 +0.2	+0.0	+0.0	+1.1	+0.0	52.9	53.0	-0.1	Line
29	237.992k Ave	17.0	+9.1 +0.2	+0.0	+0.0	+0.9	+0.0	27.2	52.2	-25.0	Line
^	237.991k	41.9	+9.1 +0.2	+0.0	+0.0	+0.9	+0.0	52.1	52.2	-0.1	Line
31	268.535k Ave	15.3	+9.1 +0.2	+0.0	+0.0	+0.8	+0.0	25.4	51.2	-25.8	Line
^	268.534k	39.1	+9.1 +0.2	+0.0	+0.0	+0.8	+0.0	49.2	51.2	-2.0	Line

Test Location:	CKC Laboratories Inc. • 22116 23rd Dr SE • Bothell, WA 98021 • 800-500-4362		
Customer:	**Impinj, Inc.**		
Specification:	**15.207 AC Mains - Quasi-peak**		
Work Order #:	**103052**	Date:	9/30/2019
Test Type:	**Conducted Emissions**	Time:	15:47:12
Tested By:	Matthew Harrison	Sequence#:	64
Software:	EMITest 5.03.12		120V 60Hz

Equipment Tested:

Device	Manufacturer	Model #	S/N
Configuration 8			

Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 8			

Test Conditions / Notes:

Temperature: 22° C
Humidity: 45%
Pressure: 101.3 kPa

Frequency Range: 150k-30MHz
Frequency tested: 902.75, 914.75, 927.25
Firmware power setting; 30dBm
Protocol /MCS/Modulation: Continuously modulated

Antenna type: Guardwall Antenna
Antenna Gain: +6dBi
Antenna in X, Y & Z axis investigated

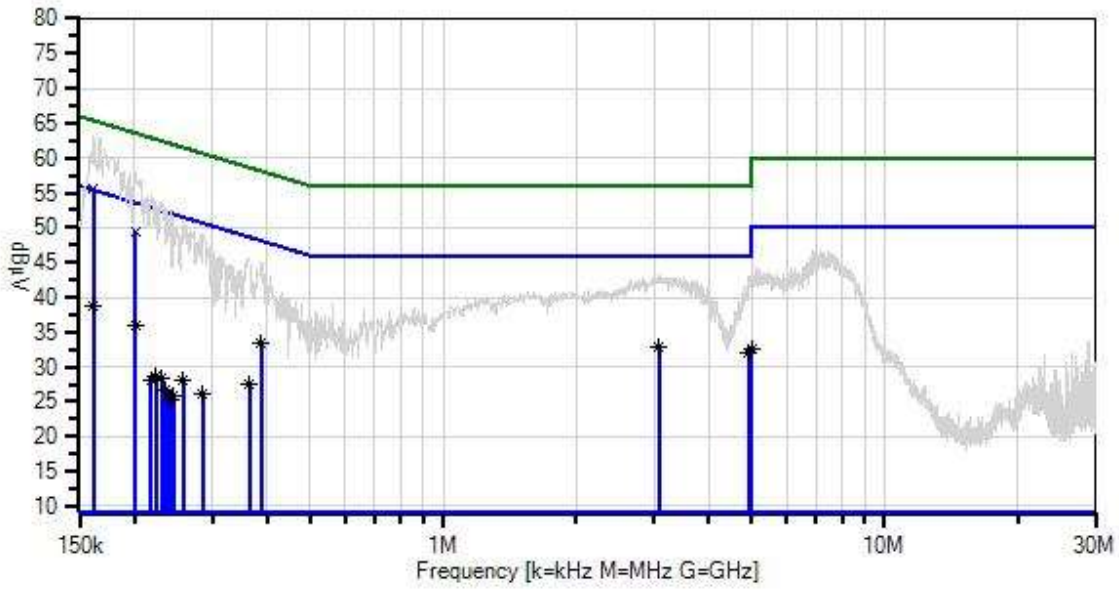
Duty Cycle: 100%

Test Method: ANSI 63.10 (2013)

Setup: The EUT is set on a foam test table.
The antenna is connected to antenna port 1 via a 1.5-meter cable
3x USB Cables and 1 GPIO Cable connected
A shielded Cat5e is run from the EUT to a POE injector which is connected to a Wireless Router which is connected to the support laptop all located outside the chamber.

Other modes were checked, and worst case provided.

Impinj, Inc. WO#: 103052 Sequence#: 64 Date: 9/30/2019
15.207 AC Mains - Quasi-peak Test Lead: 120V 60Hz Neutral



Sweep Data
× QP Readings
Software Version: 5.03.12
Readings
Average Readings
1 - 15.207 AC Mains - Average
Peak Readings
Ambient
2 - 15.207 AC Mains - Quasi-peak

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP06219	Attenuator	768-10	4/13/2018	4/13/2020
T2	ANP06515	Cable	Heliax	6/29/2018	6/29/2020
T3	ANP06540	Cable	Heliax	8/23/2019	8/23/2021
	AN01311	50uH LISN-Line1 (L)	3816/2	3/16/2018	3/16/2020
T4	AN01311	50uH LISN-Line2 (N)	3816/2	3/16/2018	3/16/2020
	AN02673	Spectrum Analyzer	E4446A	2/22/2019	2/22/2021
T5	AN02611	High Pass Filter	HE9615-150K-50-720B	1/15/2018	1/15/2020

Measurement Data: Reading listed by margin. Test Lead: Neutral

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	161.635k	44.2	+9.1 +0.6	+0.0	+0.0	+1.6	+0.0	55.5	65.4	-9.9	Neutr
	QP										
2	3.089M	23.3	+9.1 +0.1	+0.1	+0.0	+0.3	+0.0	32.9	46.0	-13.1	Neutr
	Ave										
^	3.089M	33.6	+9.1 +0.1	+0.1	+0.0	+0.3	+0.0	43.2	46.0	-2.8	Neutr
4	4.998M	23.1	+9.1 +0.1	+0.1	+0.0	+0.3	+0.0	32.7	46.0	-13.3	Neutr
	Ave										
^	4.998M	33.7	+9.1 +0.1	+0.1	+0.0	+0.3	+0.0	43.3	46.0	-2.7	Neutr
6	4.930M	22.4	+9.1 +0.1	+0.1	+0.0	+0.3	+0.0	32.0	46.0	-14.0	Neutr
	Ave										
^	4.930M	33.6	+9.1 +0.1	+0.1	+0.0	+0.3	+0.0	43.2	46.0	-2.8	Neutr
8	200.904k	39.0	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	49.5	63.6	-14.1	Neutr
	QP										
9	387.796k	23.6	+9.1 +0.1	+0.0	+0.0	+0.5	+0.0	33.3	48.1	-14.8	Neutr
	Ave										
^	387.796k	35.5	+9.1 +0.1	+0.0	+0.0	+0.5	+0.0	45.2	48.1	-2.9	Neutr
11	161.635k	27.5	+9.1 +0.6	+0.0	+0.0	+1.6	+0.0	38.8	55.4	-16.6	Neutr
	Ave										
^	161.635k	52.0	+9.1 +0.6	+0.0	+0.0	+1.6	+0.0	63.3	55.4	+7.9	Neutr
13	200.904k	25.5	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	36.0	53.6	-17.6	Neutr
	Ave										
^	200.904k	47.5	+9.1 +0.2	+0.0	+0.0	+1.2	+0.0	58.0	53.6	+4.4	Neutr
15	363.799k	17.8	+9.1 +0.1	+0.0	+0.0	+0.5	+0.0	27.5	48.6	-21.1	Neutr
	Ave										
^	363.798k	35.9	+9.1 +0.1	+0.0	+0.0	+0.5	+0.0	45.6	48.6	-3.0	Neutr
17	257.626k	18.0	+9.1 +0.2	+0.0	+0.0	+0.8	+0.0	28.1	51.5	-23.4	Neutr
	Ave										
^	257.626k	40.9	+9.1 +0.2	+0.0	+0.0	+0.8	+0.0	51.0	51.5	-0.5	Neutr

19	223.448k	18.4	+9.1	+0.0	+0.0	+1.0	+0.0	28.7	52.7	-24.0	Neutr
	Ave		+0.2								
^	223.447k	43.7	+9.1	+0.0	+0.0	+1.0	+0.0	54.0	52.7	+1.3	Neutr
			+0.2								
21	230.720k	18.1	+9.1	+0.0	+0.0	+1.0	+0.0	28.4	52.4	-24.0	Neutr
	Ave		+0.2								
^	230.719k	43.4	+9.1	+0.0	+0.0	+1.0	+0.0	53.7	52.4	+1.3	Neutr
			+0.2								
23	285.988k	16.1	+9.1	+0.0	+0.0	+0.7	+0.0	26.0	50.6	-24.6	Neutr
	Ave		+0.1								
^	285.987k	39.3	+9.1	+0.0	+0.0	+0.7	+0.0	49.2	50.6	-1.4	Neutr
			+0.1								
25	217.630k	17.7	+9.1	+0.0	+0.0	+1.0	+0.0	28.0	52.9	-24.9	Neutr
	Ave		+0.2								
^	217.630k	44.7	+9.1	+0.0	+0.0	+1.0	+0.0	55.0	52.9	+2.1	Neutr
			+0.2								
27	235.810k	16.5	+9.1	+0.0	+0.0	+0.9	+0.0	26.7	52.2	-25.5	Neutr
	Ave		+0.2								
^	235.810k	42.8	+9.1	+0.0	+0.0	+0.9	+0.0	53.0	52.2	+0.8	Neutr
			+0.2								
29	244.537k	15.5	+9.1	+0.0	+0.0	+0.9	+0.0	25.7	51.9	-26.2	Neutr
	Ave		+0.2								
30	241.628k	15.0	+9.1	+0.0	+0.0	+0.9	+0.0	25.2	52.0	-26.8	Neutr
	Ave		+0.2								
^	241.627k	42.2	+9.1	+0.0	+0.0	+0.9	+0.0	52.4	52.0	+0.4	Neutr
			+0.2								
^	244.536k	41.4	+9.1	+0.0	+0.0	+0.9	+0.0	51.6	51.9	-0.3	Neutr
			+0.2								

Test Setup Photo(s)

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

Uncertainties reported are worst case for all CKC Laboratories' sites and represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit. Individual measurements were compared with the displayed limit value in the margin column. The margin was calculated based on subtracting the limit value from the corrected measurement value; a positive margin represents a measurement exceeding the limit, while a negative margin represents a measurement less than the limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB/m)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or caret (“^”) was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point, the measuring device is set into the linear mode and the scan time is reduced.