



Product Service

FCC ID:
VBNFZH-01

Test Report No:
D547351042

Configuration B Antenna 4:



Figure 44 Occupied Bandwidth –QPSK (2583/ 2603 MHz) (2 X 20MHz Channel BW)

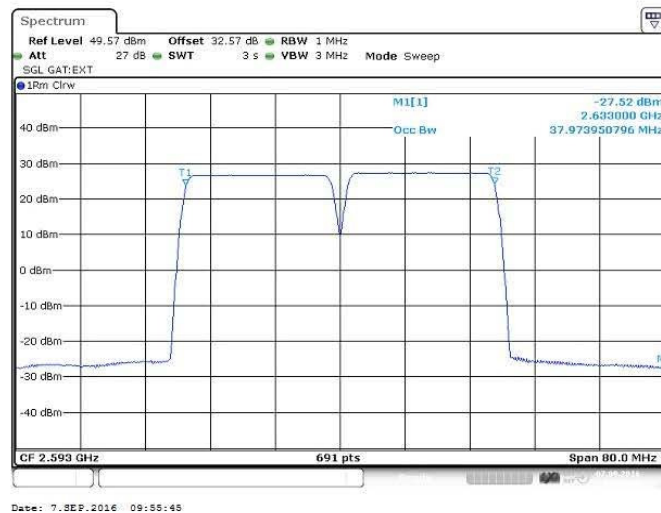


Figure 45 Occupied Bandwidth –64QAM (2583/ 2603 MHz) (2 X 20MHz Channel BW)

FCC 47 CFR part 27 (2015)
and CFR Part 2 (2015)

23. Sep 2016
Page 93 of 273



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

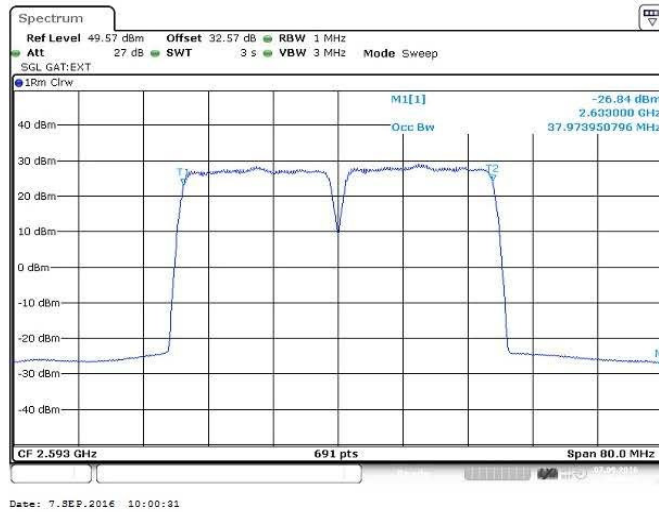


Figure 46 Occupied Bandwidth –16QAM (2583/ 2603 MHz) (2 X 20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration B Antenna 5:

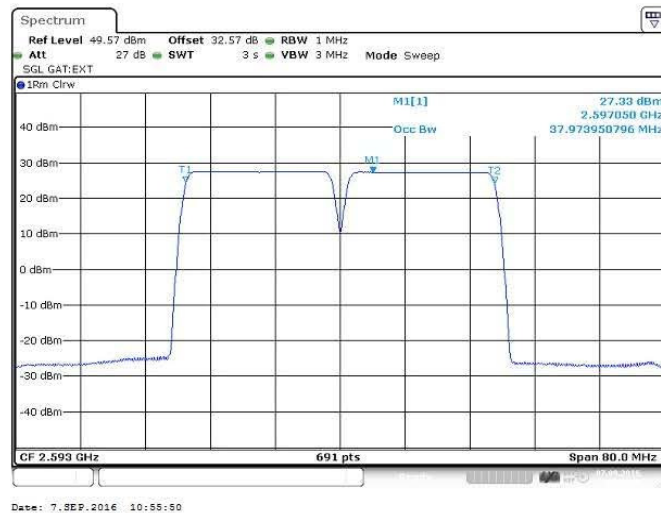


Figure 47 Occupied Bandwidth –QPSK (2583/ 2603 MHz) (2 X 20 MHz Channel BW)

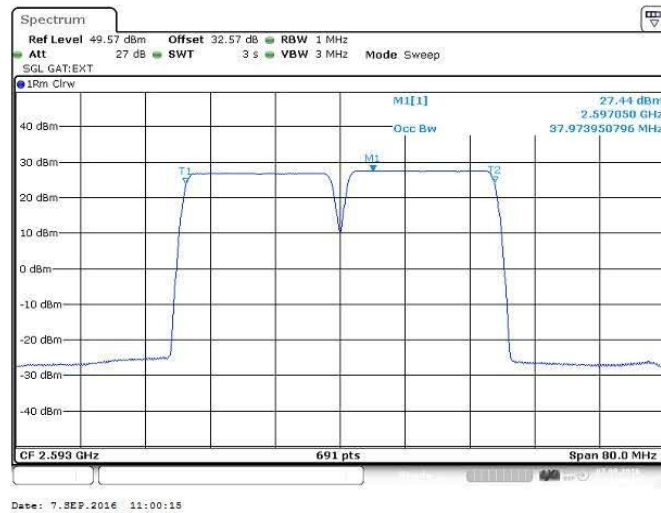


Figure 48 Occupied Bandwidth –64QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

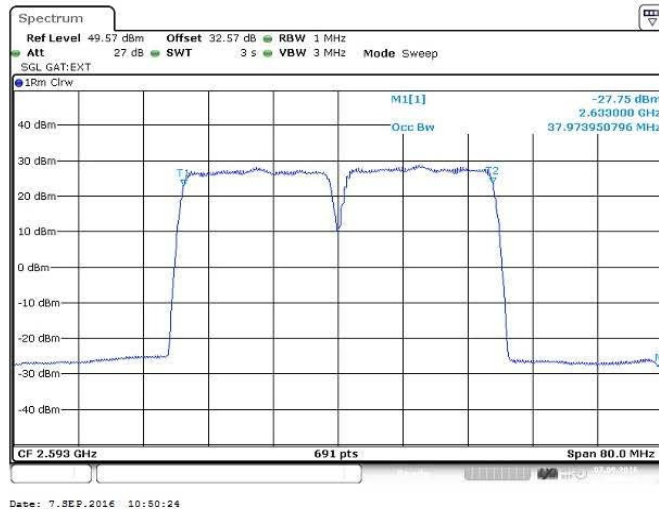


Figure 49 Occupied Bandwidth –16QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration B Antenna 6:

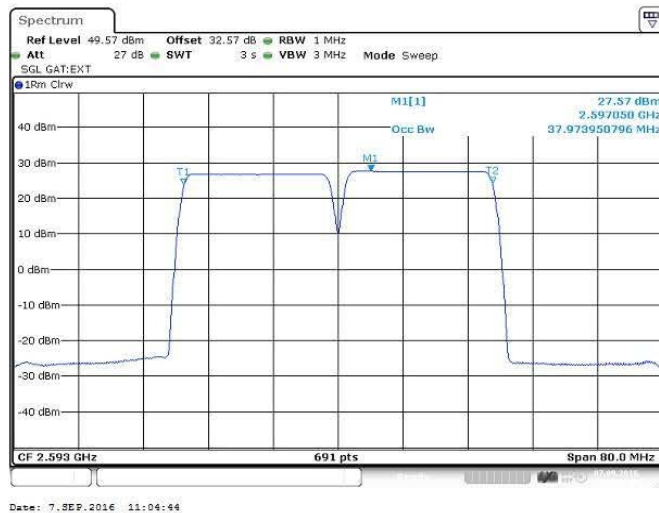


Figure 50 Occupied Bandwidth –QPSK (2583/ 2603 MHz) (2 X 20 MHz Channel BW)

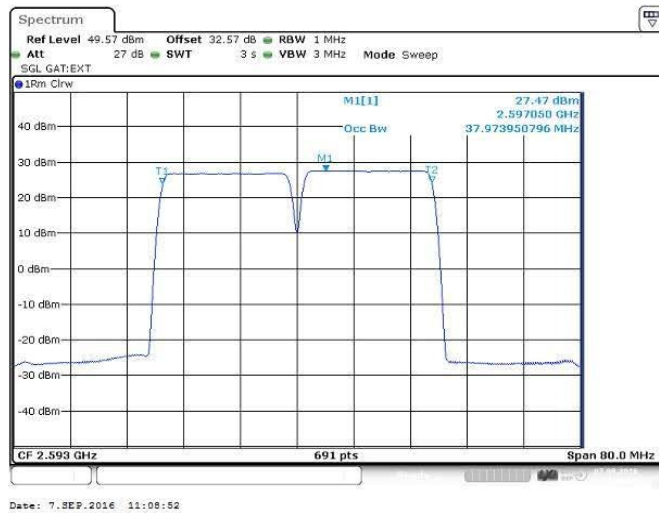


Figure 51 Occupied Bandwidth –64QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

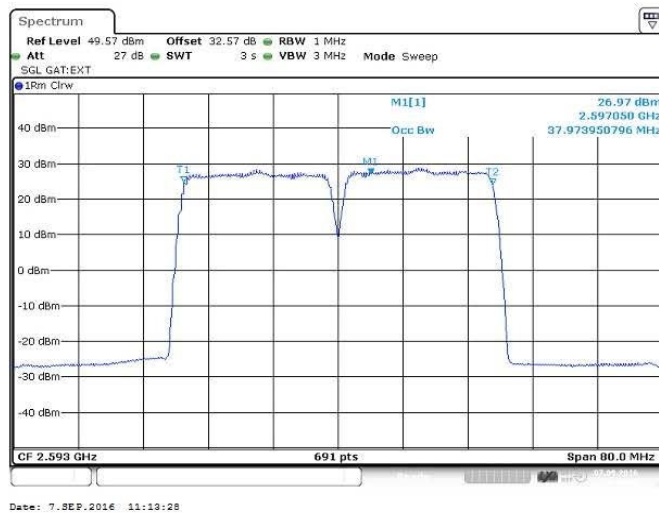


Figure 52 Occupied Bandwidth –16QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration B Antenna 7:

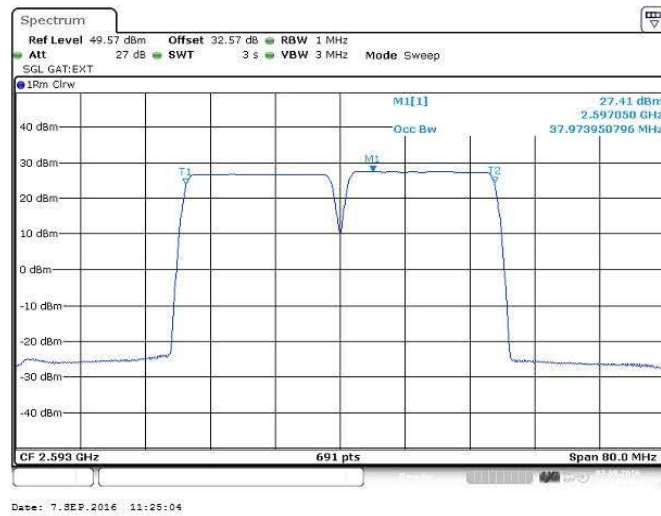


Figure 53 Occupied Bandwidth –QPSK (2583/ 2603 MHz) (2 X 20 MHz Channel BW)

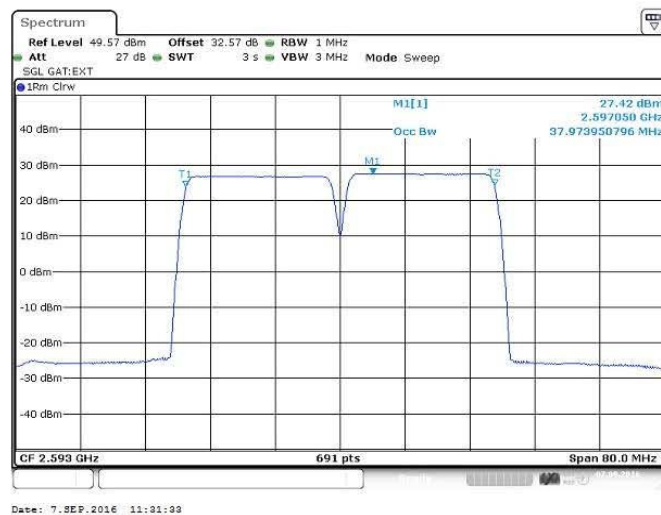


Figure 54 Occupied Bandwidth –64QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

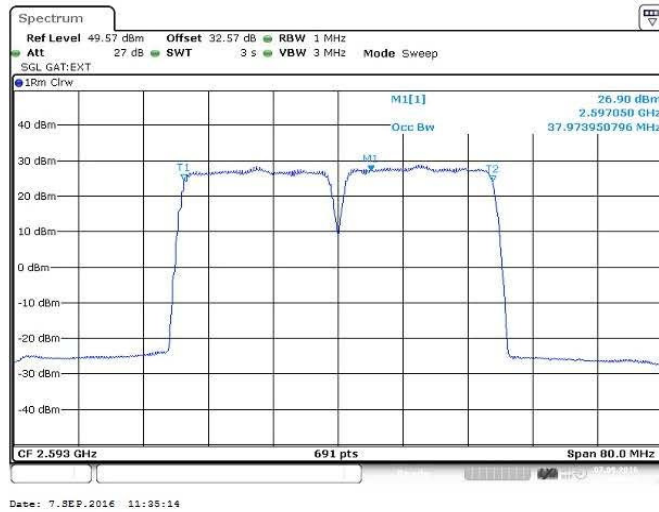


Figure 55 Occupied Bandwidth –16QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration B Antenna 8:

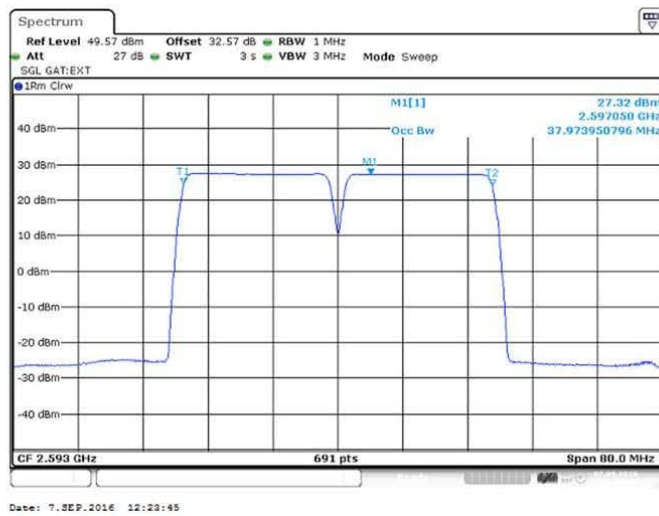
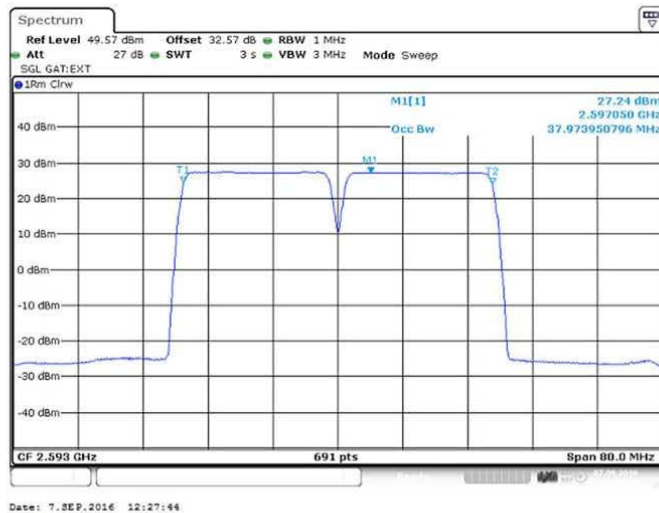


Figure 56 Occupied Bandwidth –QPSK (2583/ 2603 MHz) (2 X 20 MHz Channel BW)





Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Figure 57 Occupied Bandwidth –64QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



Figure 58 Occupied Bandwidth –16QAM (2583/ 2603 MHz) (2 X 20 MHz Channel BW)



FCC ID:
VBNFZH-01

Test Report No:
D547351042

Configuration C Antenna 1:

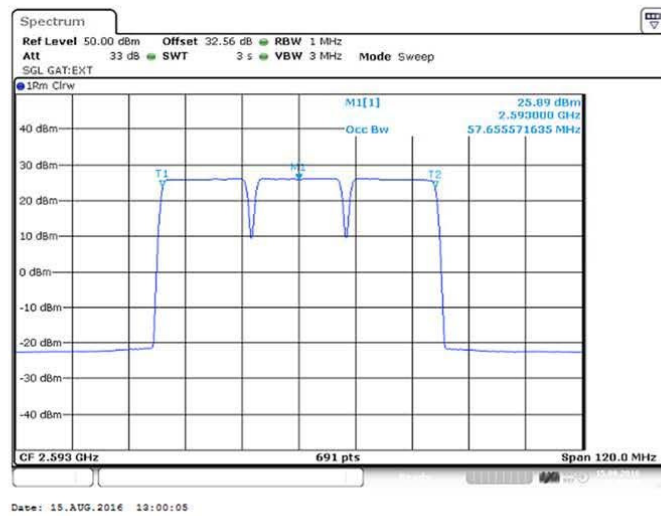


Figure 59 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

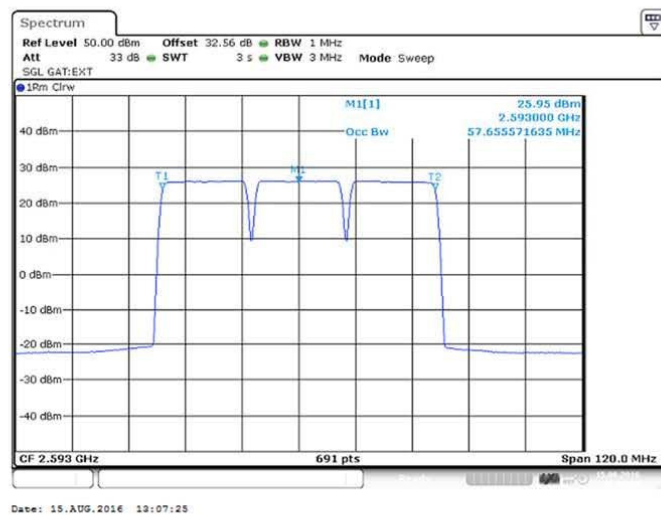


Figure 60 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

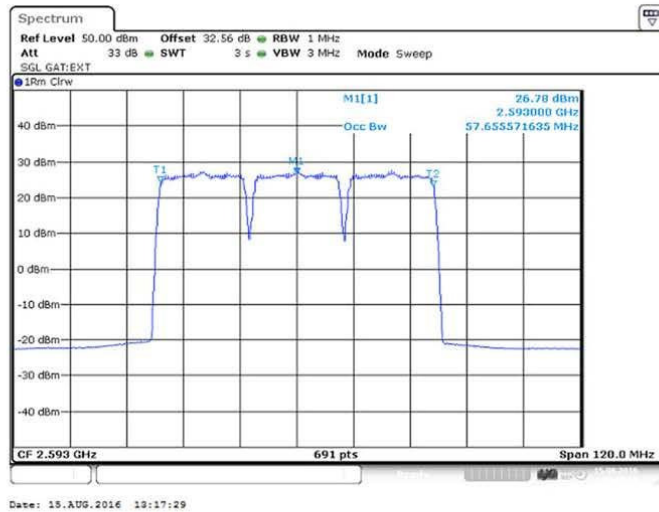


Figure 61 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 2:

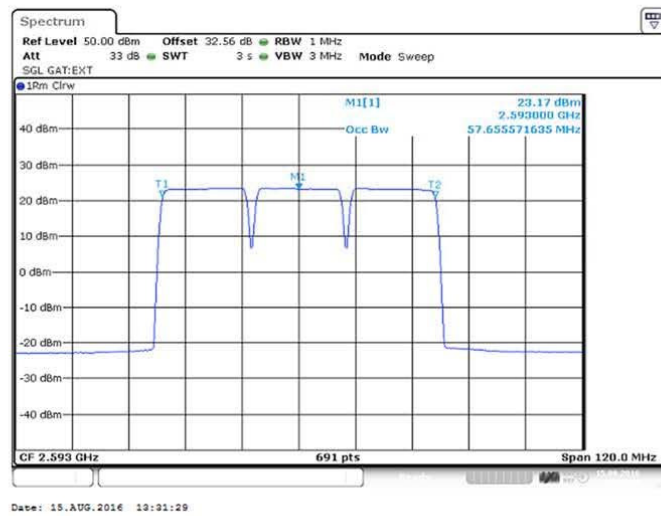


Figure 62 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

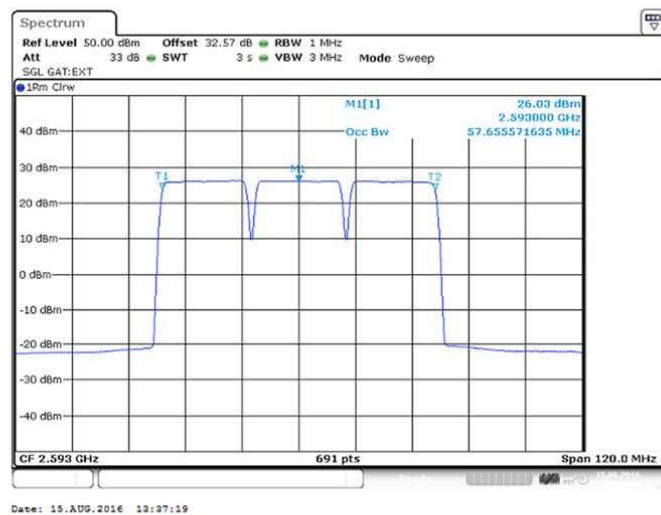


Figure 63 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

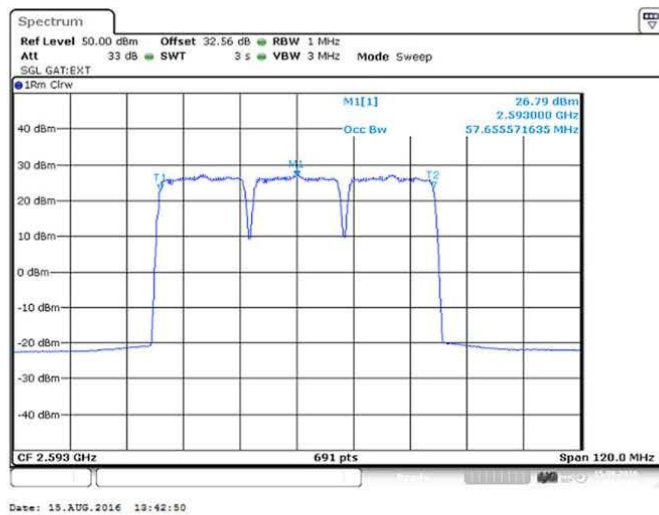


Figure 64 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 3:

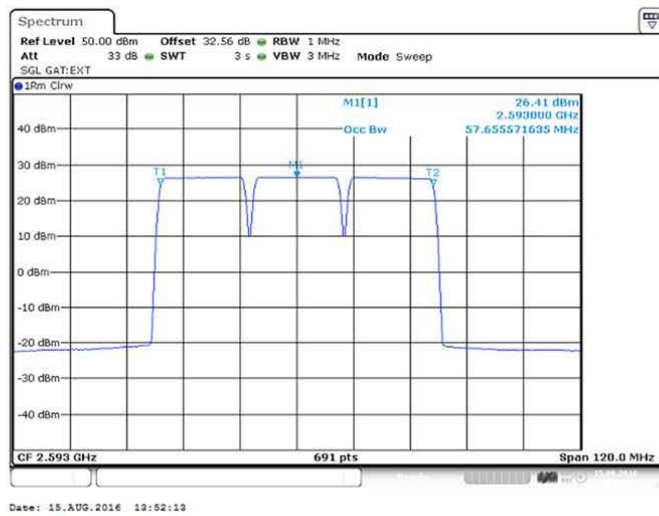


Figure 65 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

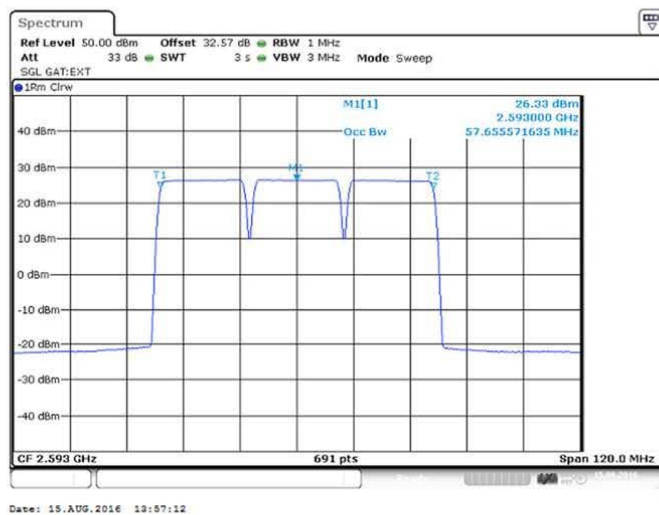


Figure 66 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

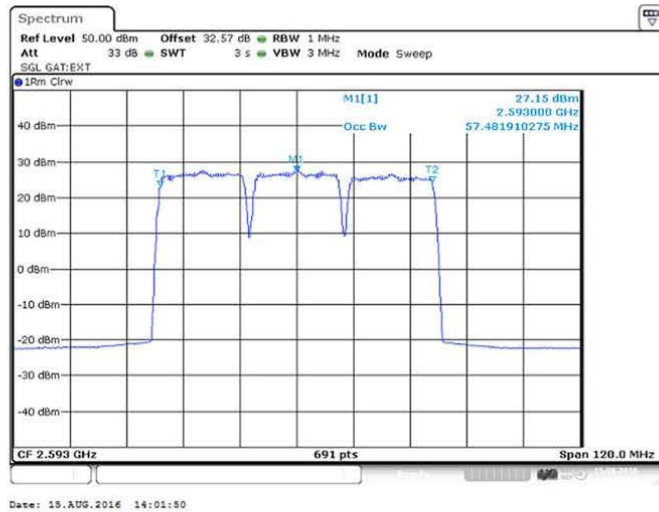


Figure 67 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 4:

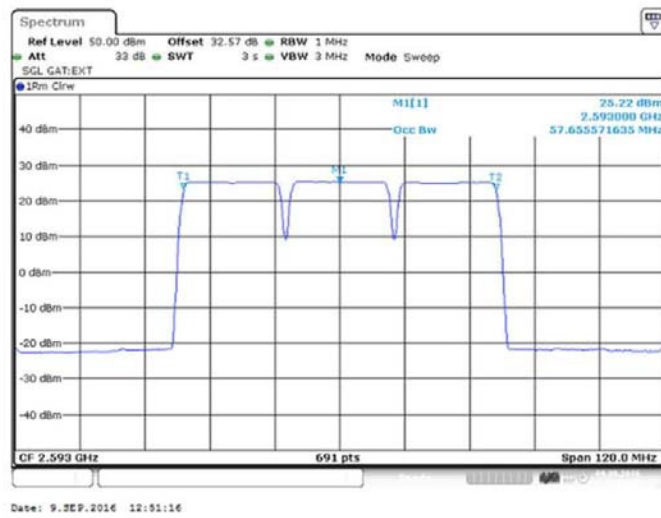


Figure 68 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

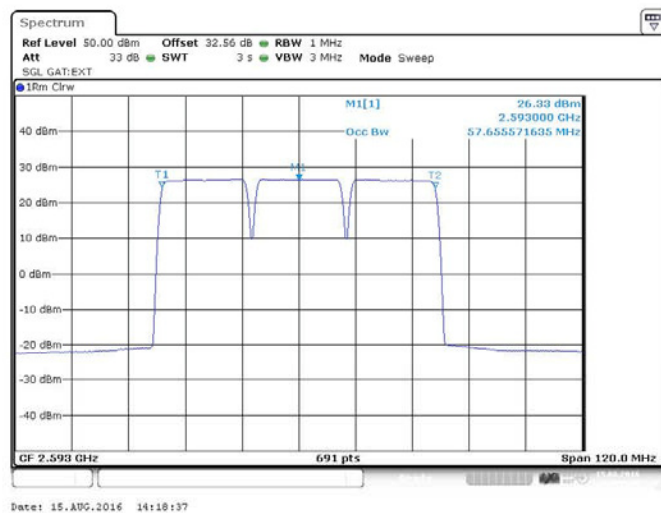


Figure 69 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

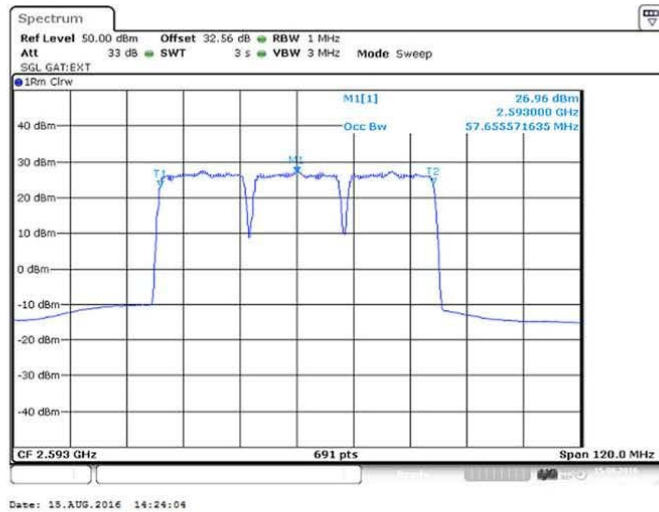


Figure 70 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW) REPLACE THIS



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 5:

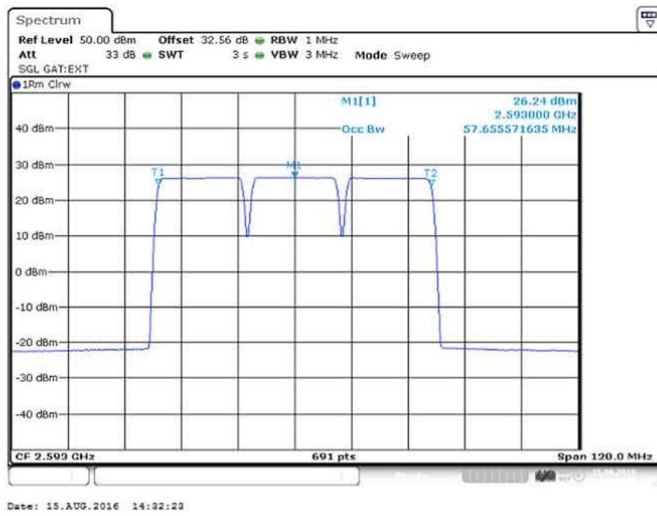


Figure 71 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

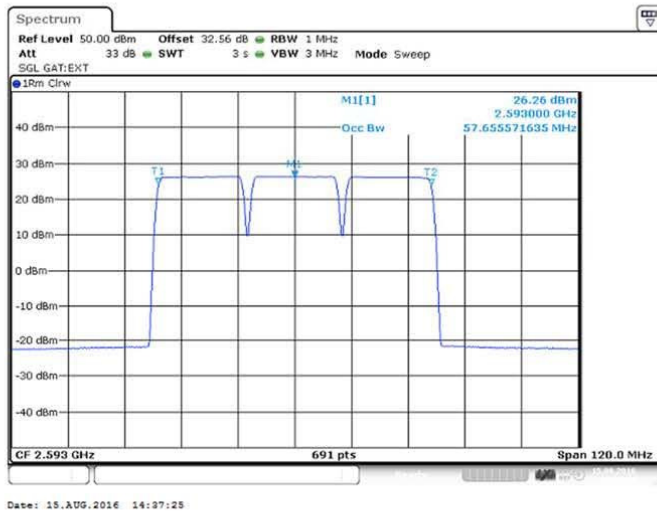


Figure 72 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

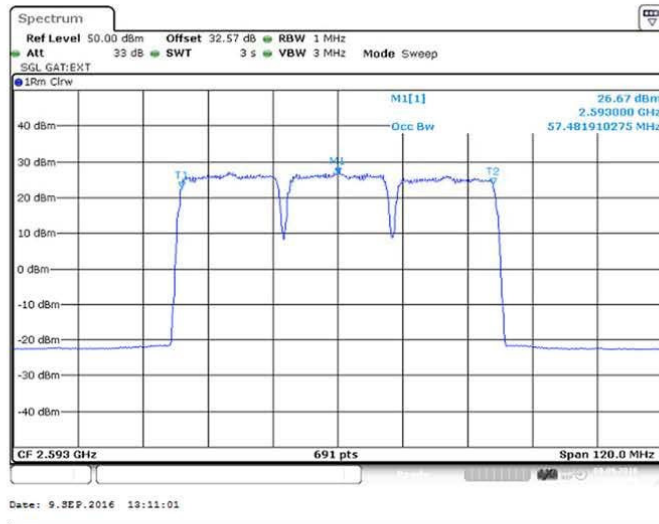


Figure 73 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 6:

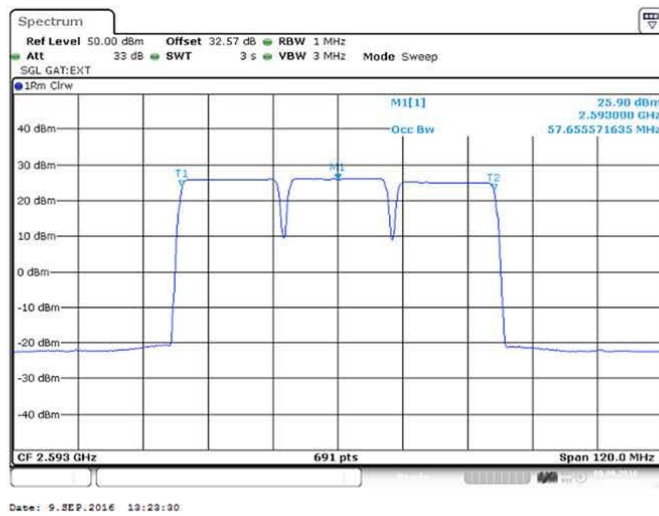


Figure 74 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

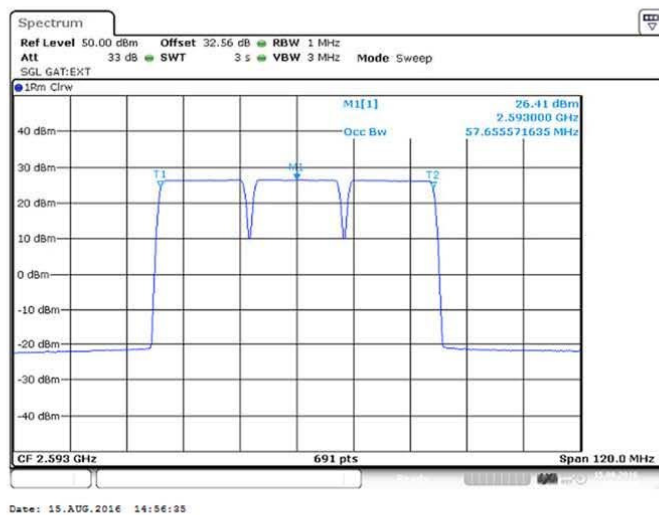


Figure 75 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

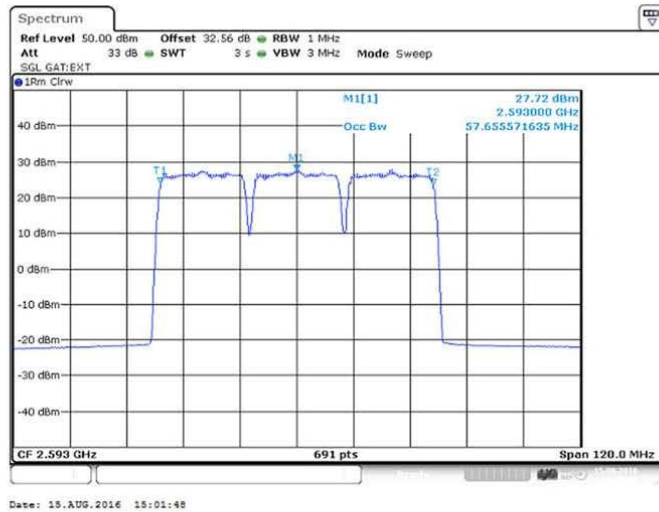


Figure 76 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 7:



Figure 77 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

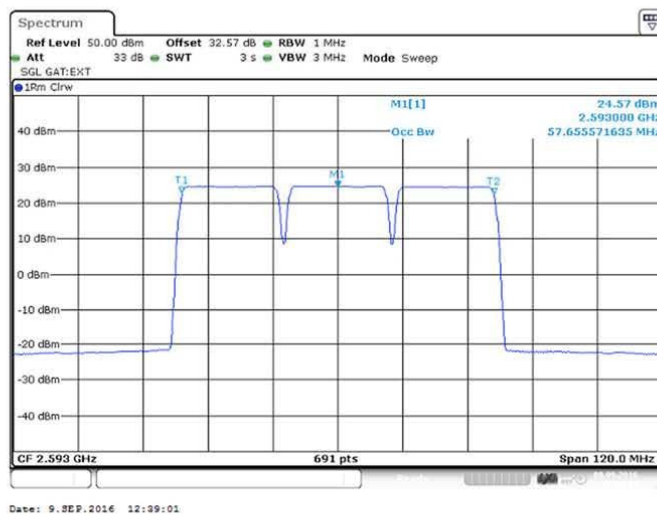


Figure 78 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

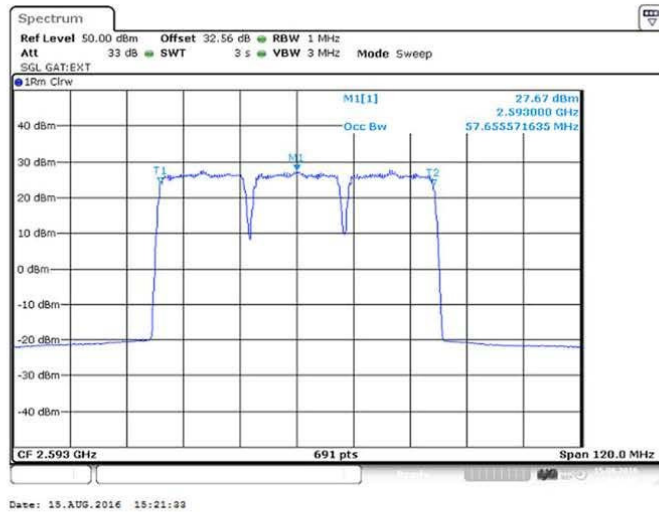


Figure 79 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration C Antenna 8:

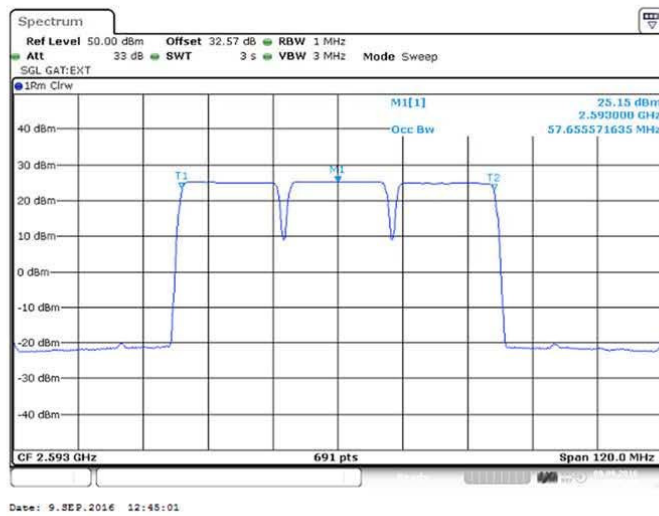


Figure 80 Occupied Bandwidth –QPSK (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)

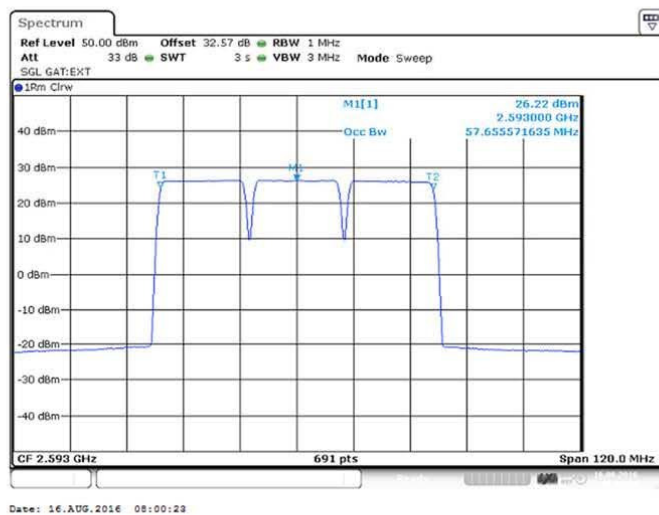


Figure 81 Occupied Bandwidth –64QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

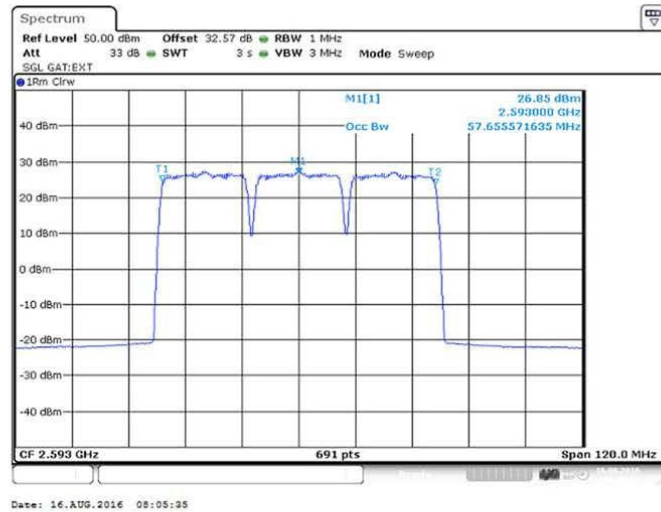


Figure 82 Occupied Bandwidth –16QAM (2573/ 2593/ 2613 MHz) (3 X 20 MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

5.2.3 Test No. 4: Spurious Emissions at the Antenna Terminals

The external attenuation (cable loss of the setup) can be seen as the 'Offset' value in the screenshots. The external attenuation is frequency dependant. Thus the various 'Offset' values in the screenshots may differ.

Configuration A Antenna 1:

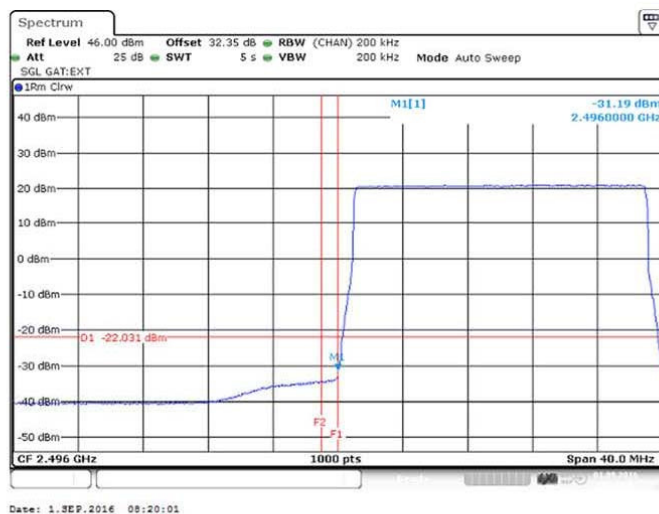


Figure 83 Spurious Emissions (Lower Band Edge) – QPSK (2506.0 MHz) (20MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

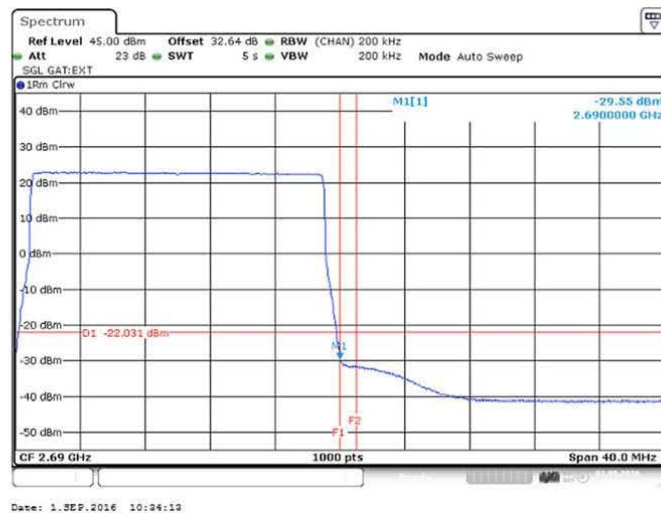


Figure 84 Spurious Emissions (UpperBand Edge) – QPSK (2680.0 MHz) (20MHz Channel BW)

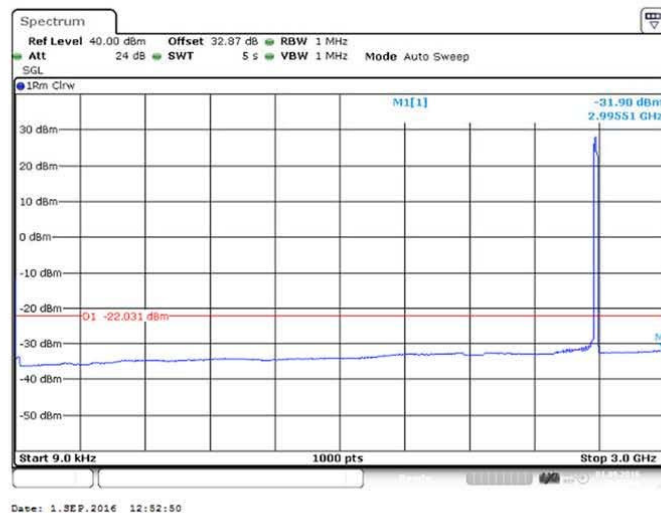


Figure 85 Spurious Emissions (9kHz – 3GHz) - QPSK (2593.0 MHz) (20MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

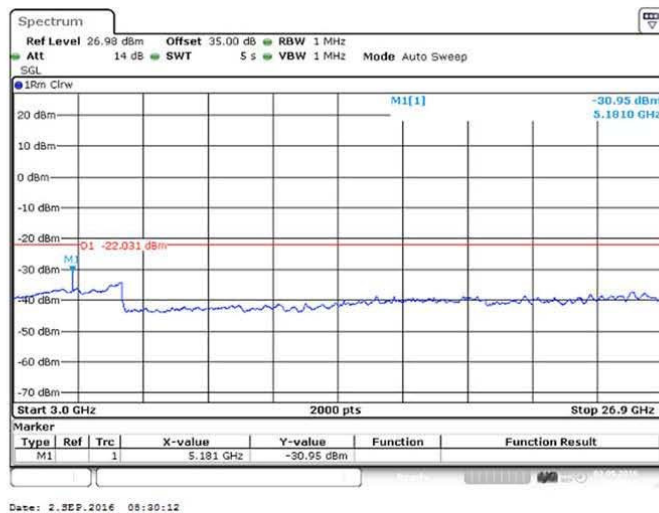


Figure 86 Spurious Emissions (3GHz – 26.900GHz) – QPSK (2593.0 MHz) (20MHz Channel BW)

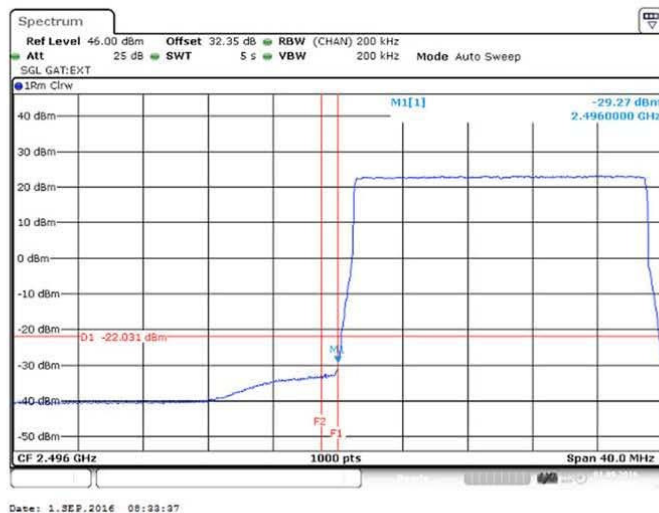


Figure 87 Spurious Emissions (Lower Band Edge) – 64QAM (2506.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

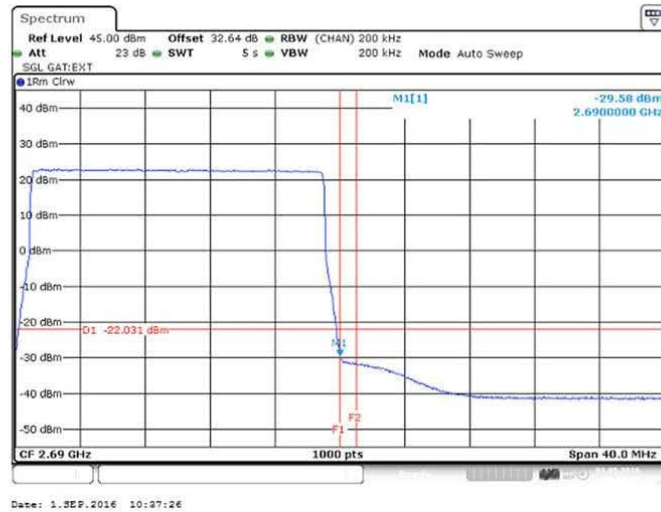


Figure 88 Spurious Emissions (Upper Band Edge) – 64QAM (2680.0 MHz) (20MHz Channel BW)



Figure 89 Spurious Emissions (9kHz – 3GHz) – 64QAM (2593.0 MHz) (20MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

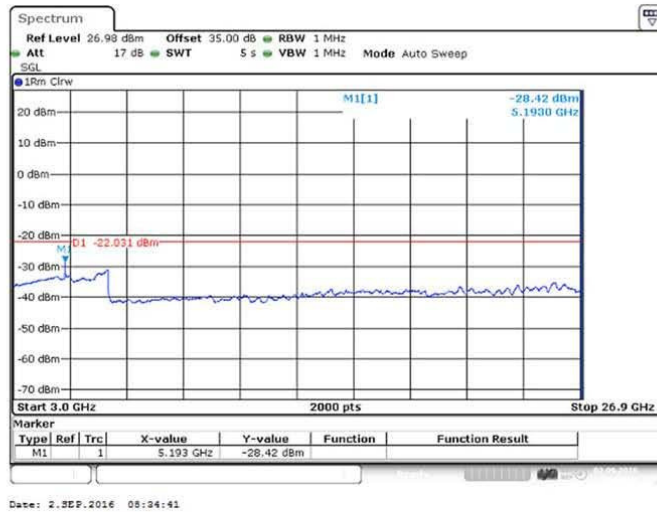


Figure 90 Spurious Emissions (3GHz – 26.900GHz) – 64QAM (2593.0 MHz) (20MHz Channel BW)

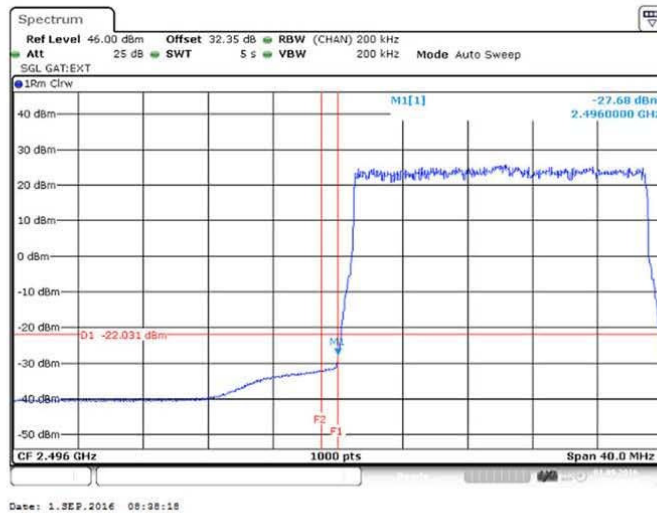


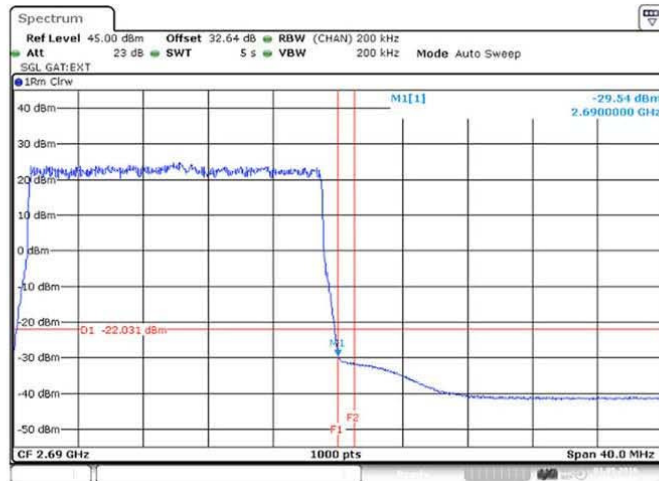
Figure 91 Spurious Emissions (Lower Band Edge) – 16QAM (2506.0 MHz) (20MHz Channel BW)



Product Service

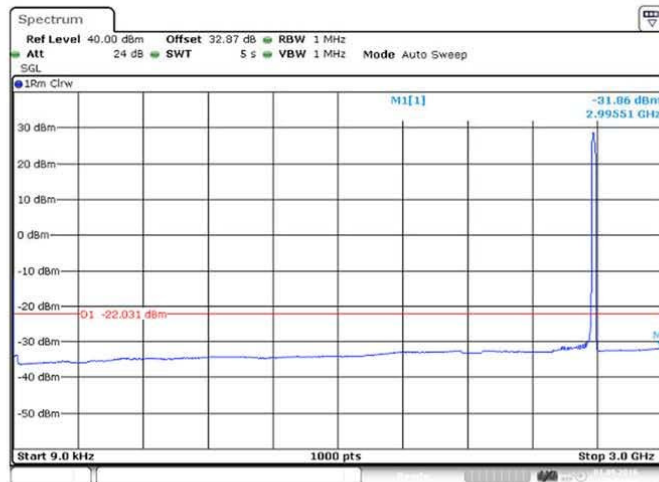
FCC ID:
VBNFZHN-01

Test Report No:
D547351042



Date: 1.SEP.2016 10:40:17

Figure 92 Spurious Emissions (Upper Band Edge) – 16QAM (2680.0 MHz) (20MHz Channel BW)



Date: 1.SEP.2016 10:02:05

Figure 93 Spurious Emissions (9kHz – 3GHz) – 16QAM (2593.0 MHz) (20MHz Channel BW)



Product Service

FCC ID:
VBNFZHN-01

Test Report No:
D547351042

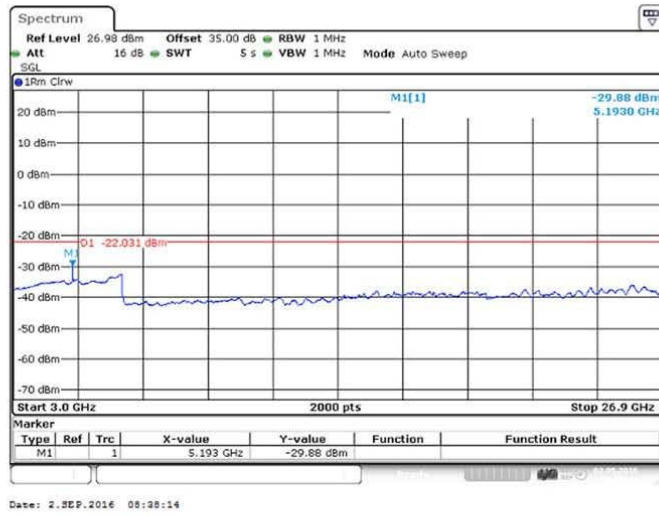


Figure 94 Spurious Emissions (3GHz – 26.900GHz) – 16QAM (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration A Antenna 2:

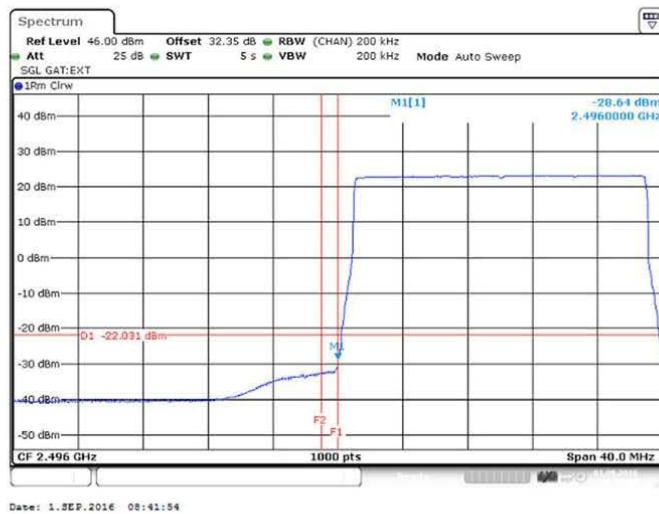


Figure 95 Spurious Emissions (Lower Band Edge) – QPSK (2506.0 MHz) (20MHz Channel BW)

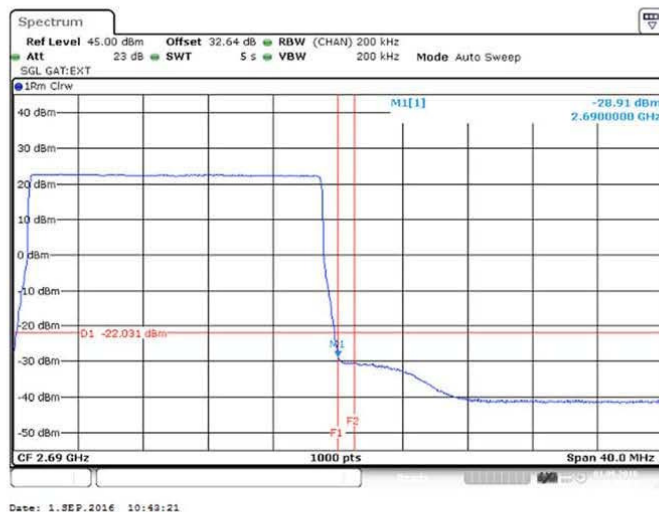


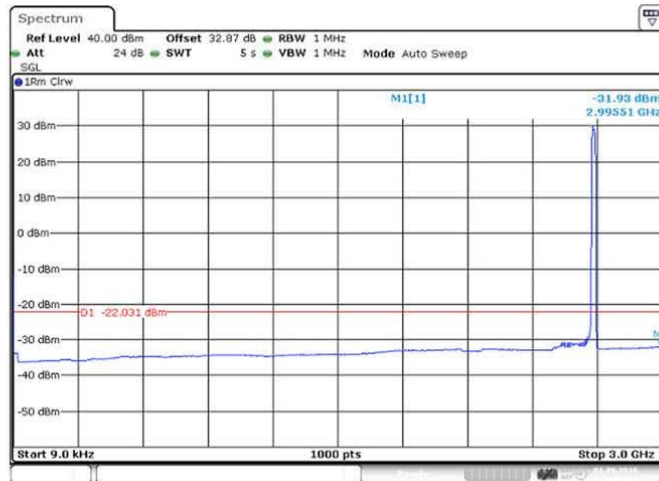
Figure 96 Spurious Emissions (Upper Band Edge) – QPSK (2680.0 MHz) (20MHz Channel BW)



Product Service

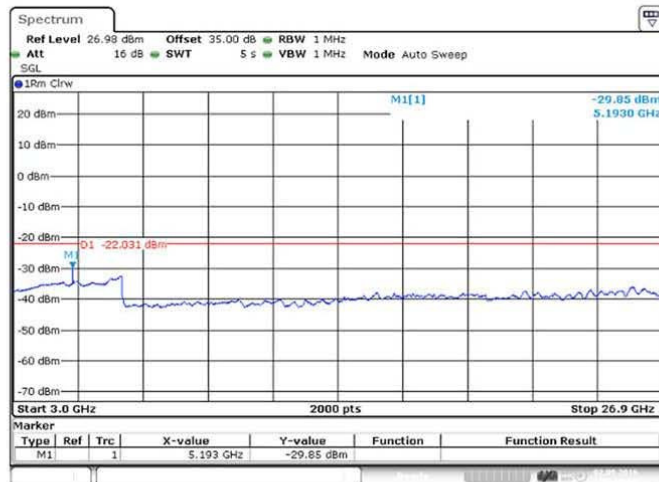
FCC ID:
VBNFZH-01

Test Report No:
D547351042



Date: 1.SEP.2016 19:07:22

Figure 97 Spurious Emissions (9kHz – 3GHz) - QPSK (2593.0 MHz) (20MHz Channel BW)



Date: 2.SEP.2016 08:42:04

Figure 98 Spurious Emissions (3GHz – 26.900GHz) – QPSK (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

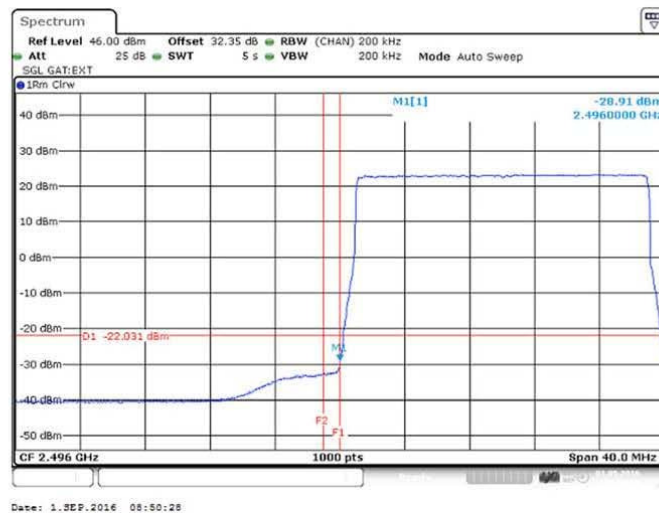


Figure 99 Spurious Emissions (Lower Band Edge) – 64AM (2506.0 MHz) (20MHz Channel BW)

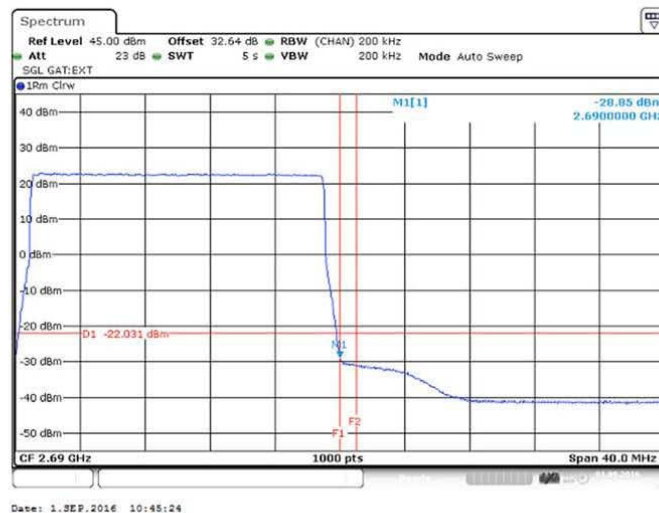


Figure 100 Spurious Emissions (Upper Band Edge) – 64QAM (2680.0 MHz) (20MHz Channel BW)



Product Service

FCC ID:
VBNFZH-01

Test Report No:
D547351042



Figure 101 Spurious Emissions (9kHz – 3GHz) – 64QAM (2593.0 MHz) (20MHz Channel BW)

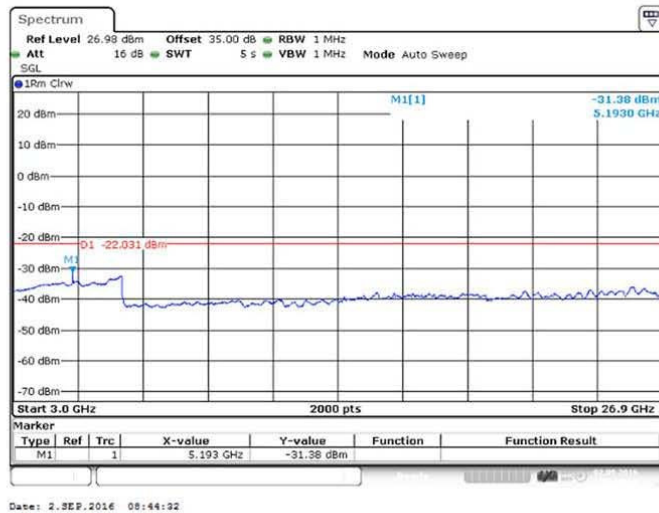


Figure 102 Spurious Emissions (3GHz – 26.900GHz) – 64QAM (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

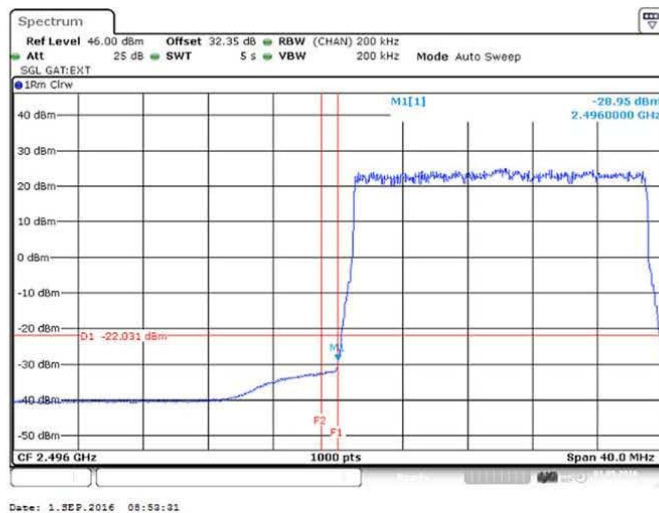


Figure 40 Spurious Emissions (Lower Band Edge) – 16QAM (2506.0 MHz) (20MHz Channel BW)

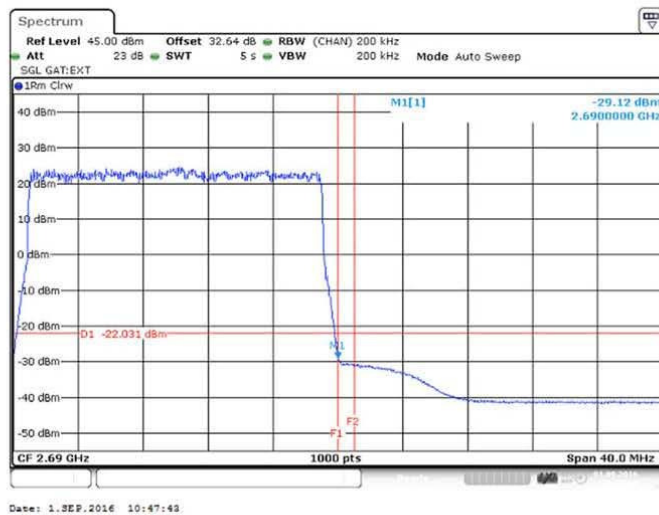


Figure 104 Spurious Emissions (Upper Band Edge) – 16QAM (2680.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZH-01

Test Report No:
D547351042



Figure 105 Spurious Emissions (9kHz – 3GHz) – 16QAM (2593.0 MHz) (20MHz Channel BW)

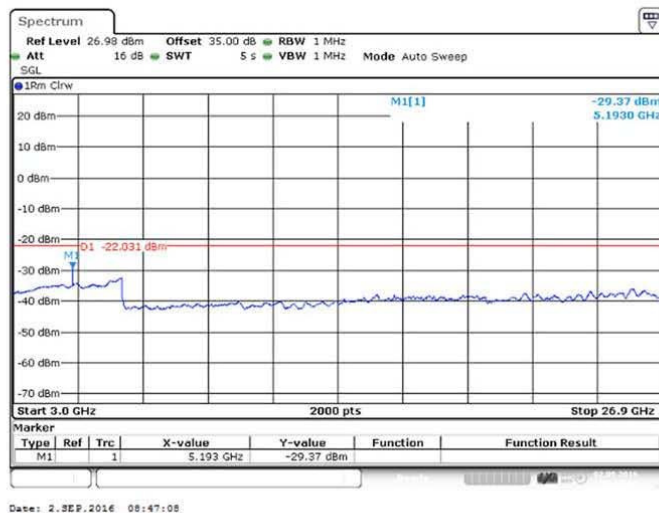


Figure 106 Spurious Emissions (3GHz – 26.900GHz) – 16QAM (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration A Antenna 3:

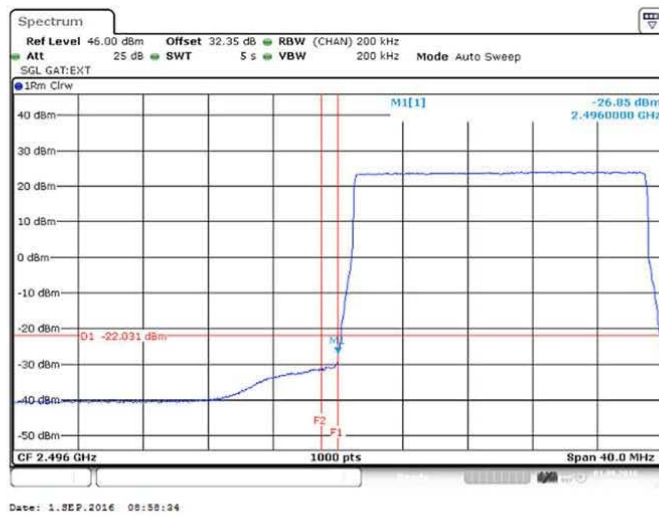


Figure 107 Spurious Emissions (Lower Band Edge) – QPSK (2506.0 MHz) (20MHz Channel BW)

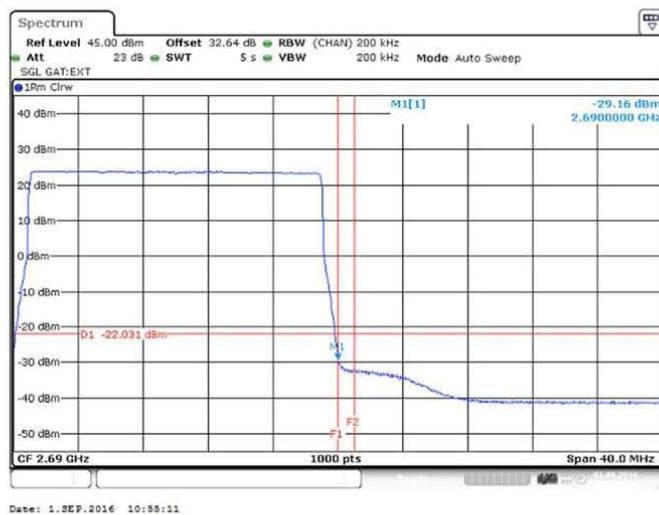


Figure 108 Spurious Emissions (Upper Band Edge) – QPSK (2680.0 MHz) (20MHz Channel BW)



Product Service

FCC ID:
VBNFZH-01

Test Report No:
D547351042



Date: 1.SEP.2016 19:27:18

Figure 109 Spurious Emissions (9kHz – 3GHz) - QPSK (2593.0 MHz) (20MHz Channel BW)

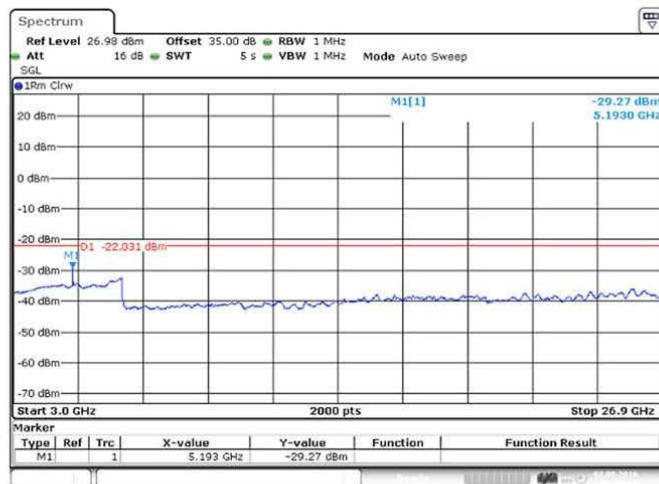


Figure 110 Spurious Emissions (3GHz – 26.900GHz) – QPSK (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

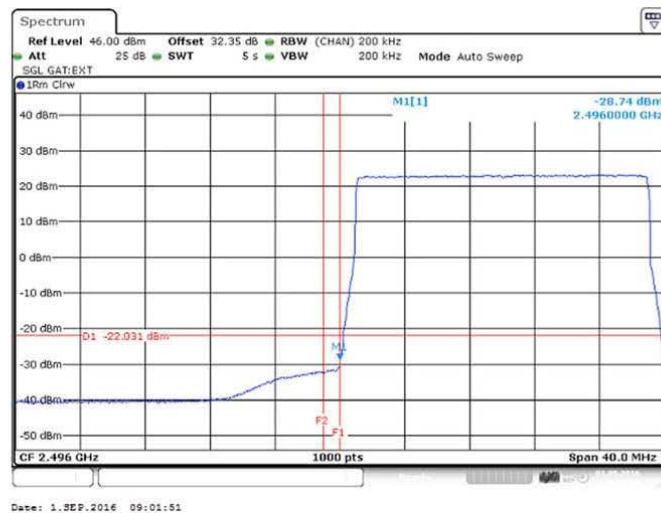


Figure 111 Spurious Emissions (Lower Band Edge) – 64QAM (2506.0 MHz) (20MHz Channel BW)

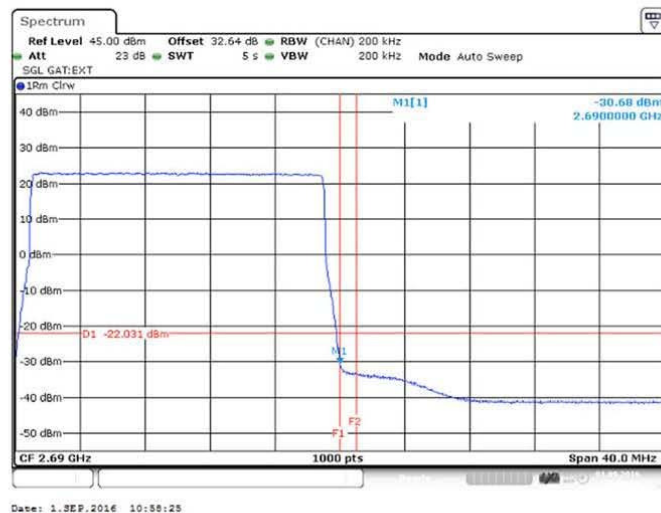


Figure 112 Spurious Emissions (Upper Band Edge) – 64QAM (2680.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZH-01

Test Report No:
D547351042



Figure 113 Spurious Emissions (9kHz – 3GHz) – 64QAM (2593.0 MHz) (20MHz Channel BW)

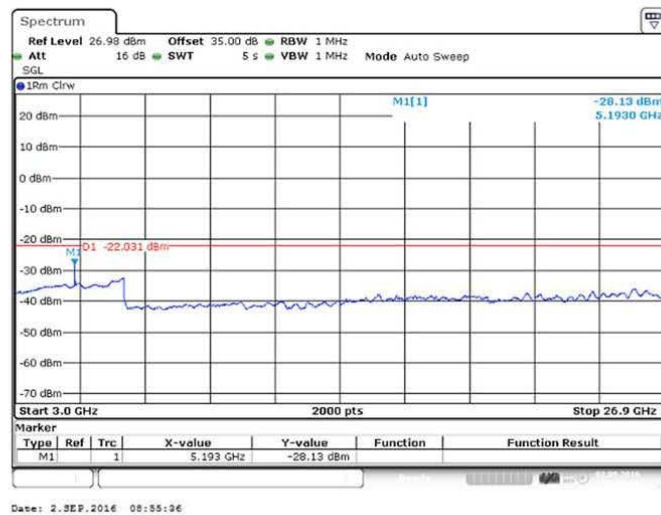
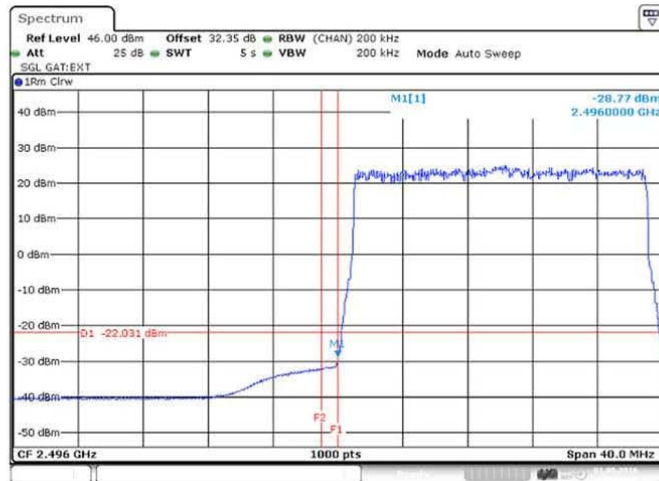


Figure 41 Spurious Emissions (3GHz – 26.900GHz) – 64QAM (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042



**Figure 115 Spurious Emissions (LowerBand Edge) – 16QAM (2506.0 MHz)
(20MHz Channel BW)**



**Figure 116 Spurious Emissions (Upper Band Edge) – 16QAM (2680.0 MHz)
(20MHz Channel BW)**



Product Service

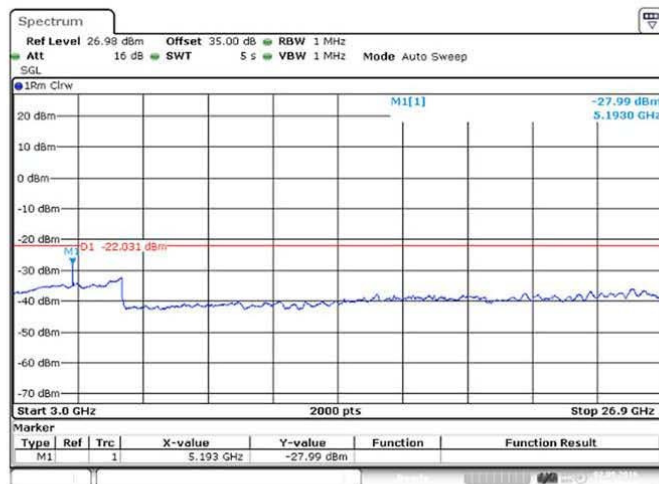
FCC ID:
VBNFZHN-01

Test Report No:
D547351042



Date: 1.SEP.2016 19:37:56

Figure 117 Spurious Emissions (9kHz – 3GHz) – 16QAM (2593.0 MHz) (20MHz Channel BW)



Date: 2.SEP.2016 08:59:44

Figure 11842 Spurious Emissions (3GHz – 26.900GHz) – 16QAM (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

Configuration A Antenna 4:

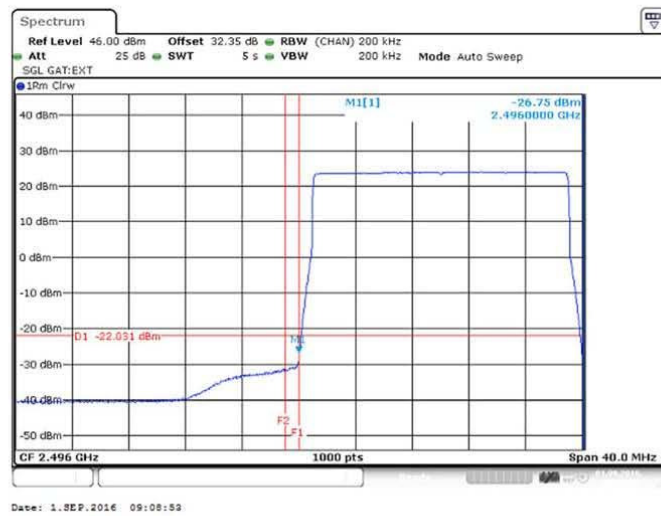


Figure 119 Spurious Emissions (Lower Band Edge) – QPSK (2506.0 MHz) (20MHz Channel BW)

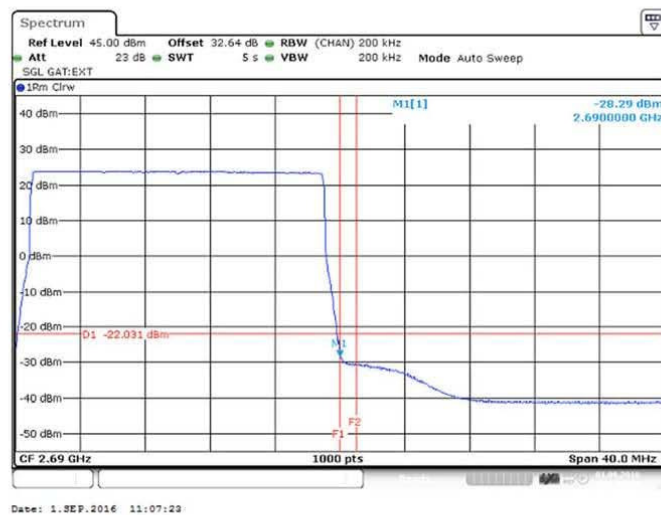


Figure 120 Spurious Emissions (Upper Band Edge) – QPSK (2680.0 MHz) (20MHz Channel BW)



Product Service

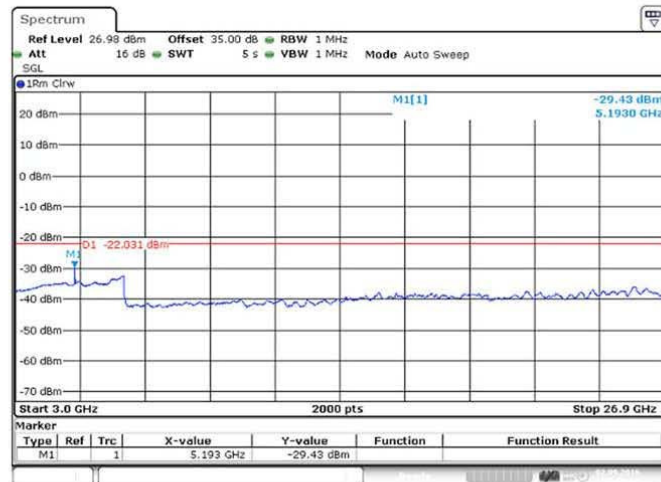
FCC ID:
VBNFZHN-01

Test Report No:
D547351042



Date: 1.SEP.2016 19:42:46

Figure 121 Spurious Emissions (9kHz – 3GHz) - QPSK (2593.0 MHz) (20MHz Channel BW)



Date: 2.SEP.2016 09:05:08

Figure 122 Spurious Emissions (3GHz – 26.900GHz) – QPSK (2593.0 MHz) (20MHz Channel BW)



FCC ID:
VBNFZHN-01

Test Report No:
D547351042

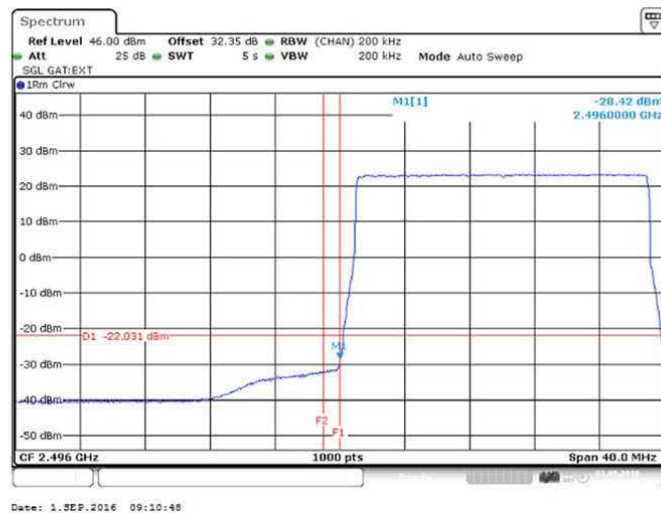


Figure 123 Spurious Emissions (Lower Band Edge) – 64QAM (2506.0 MHz) (20MHz Channel BW)

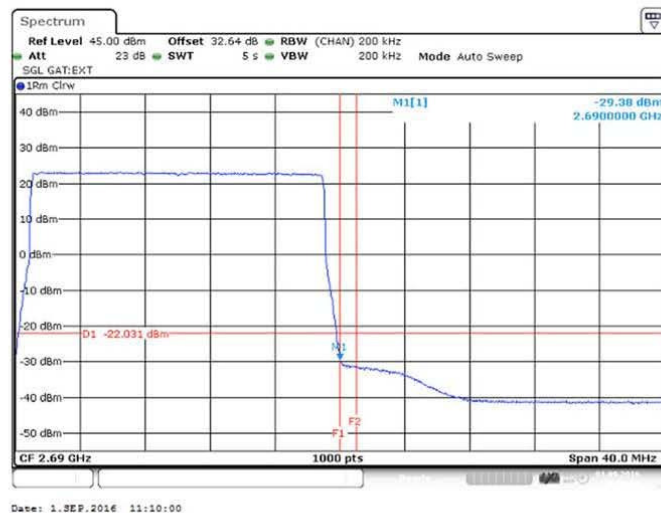


Figure 124 Spurious Emissions (Upper Band Edge) – 64QAM (2680.0 MHz) (20MHz Channel BW)