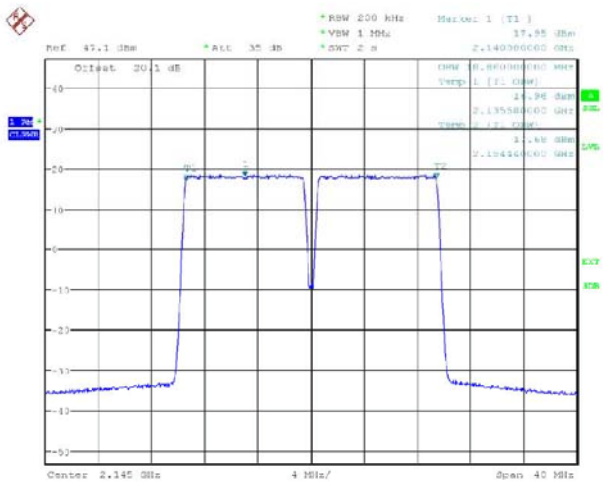




Product Service

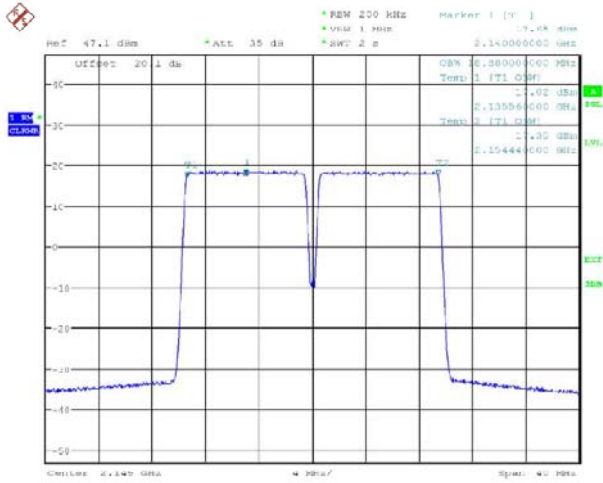
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 2.MAY.2017 14:02:16

Figure 55 Occupied Bandwidth – 64QAM (2140/2150 MHz) (10+10MHz Channel BW)



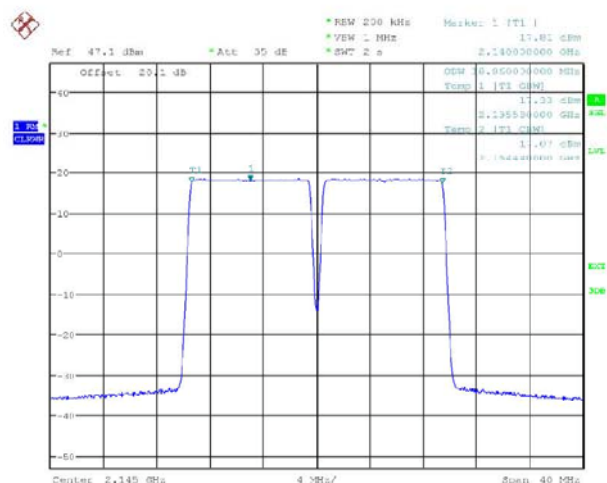
Date: 2.MAY.2017 14:06:45

Figure 56 Occupied Bandwidth – 256QAM (2140/2150 MHz) (10+10MHz Channel BW)



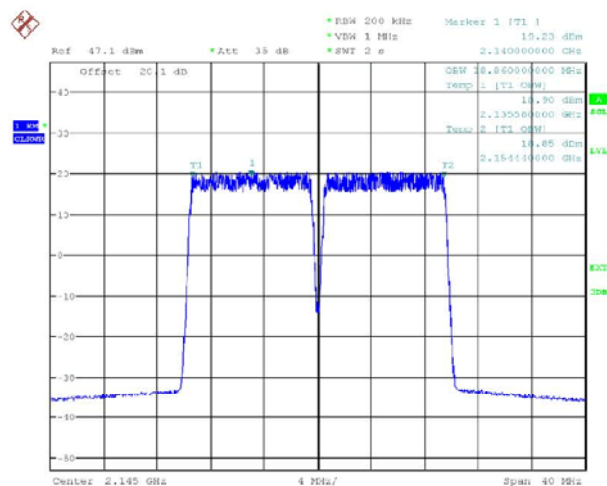
FCC ID:
VBNAHIB-

Test Report No:
D556049976

Config C ANT4:

Date: 3.MAY.2017 08:03:30

Figure 57 Occupied Bandwidth – QPSK (2140/2150 MHz) (10+10MHz Channel BW)



Date: 3.MAY.2017 06:05:29

Figure 58 Occupied Bandwidth – 16QAM (2140/2150 MHz) (10+10MHz channel BW)

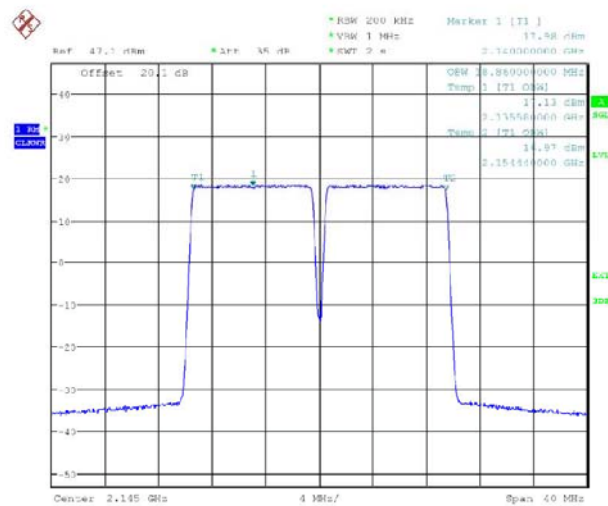
FCC 47 CFR part 27
(2016)

16. May 2017

Page 74 of 189

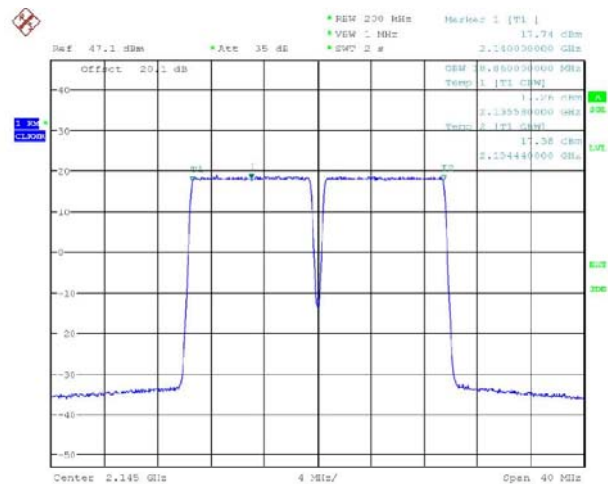


Product Service

FCC ID:
VBNAHIB-Test Report No:
D556049976

Date: 3.MAY.2017 09:09:57

Figure 59 Occupied Bandwidth – 64QAM (2140/2150 MHz) (10+10MHz Channel BW)



Date: 3.MAY.2017 09:14:00

Figure 60 Occupied Bandwidth – 256QAM (2140/2150 MHz) (10+10MHz Channel BW)



Product Service

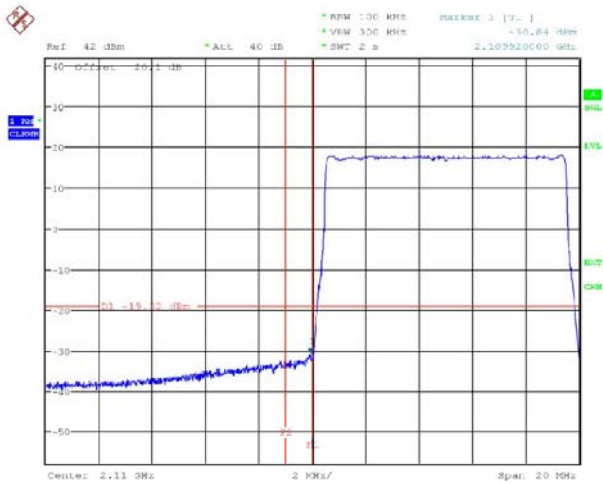
FCC ID:
VBNAHIB-

Test Report No:
D556049976

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.

Config A ANT1:



Date: 4.MAY.2017 10:10:15

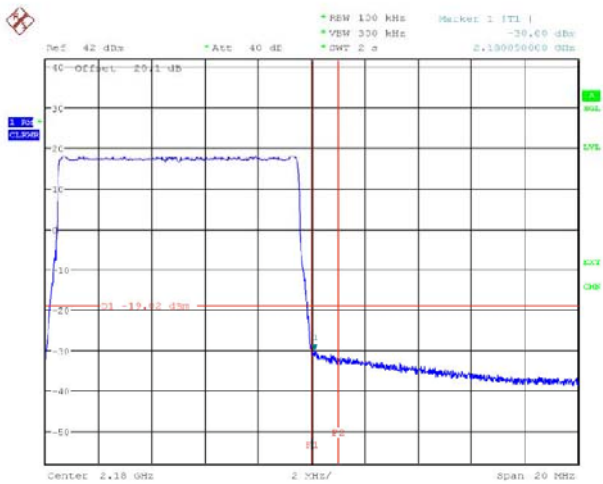
Figure 61 Spurious Emissions (Lower Band Edge) – QPSK (2115.0 MHz)
(10MHz Channel BW)



Product Service

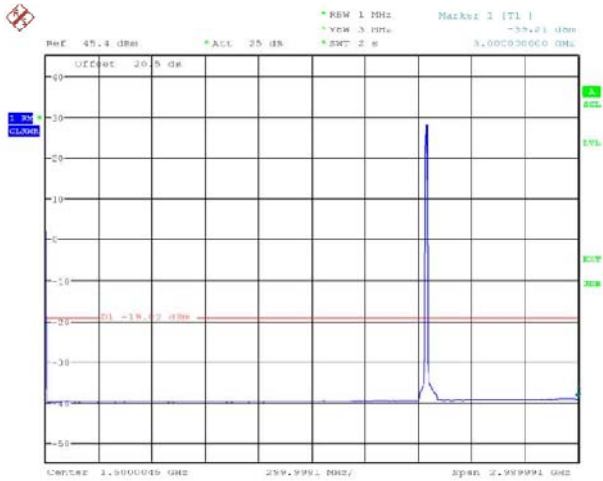
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:45:03

Figure 62 Spurious Emissions (Upper Band Edge) – QPSK (2175.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 10:29:24

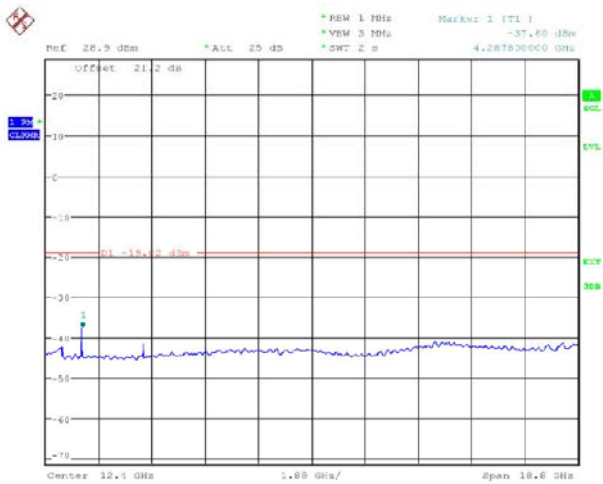
Figure 63 Spurious Emissions (9kHz – 3GHz) - QPSK (2145.0) (10MHz Channel BW)



Product Service

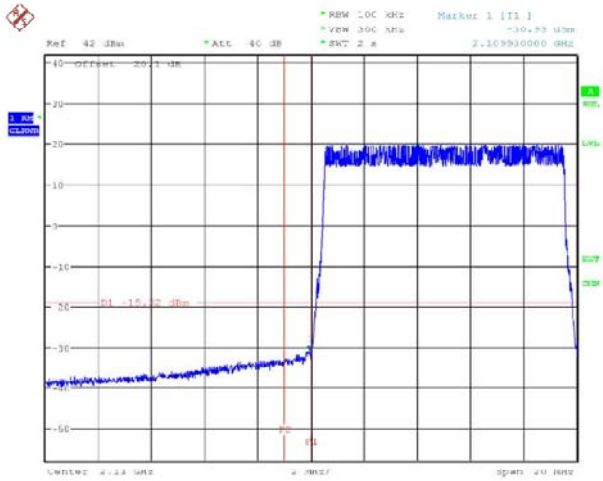
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:13:46

**Figure 64 Spurious Emissions (3GHz – 21.8GHz) – QPSK (2145.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 10:13:09

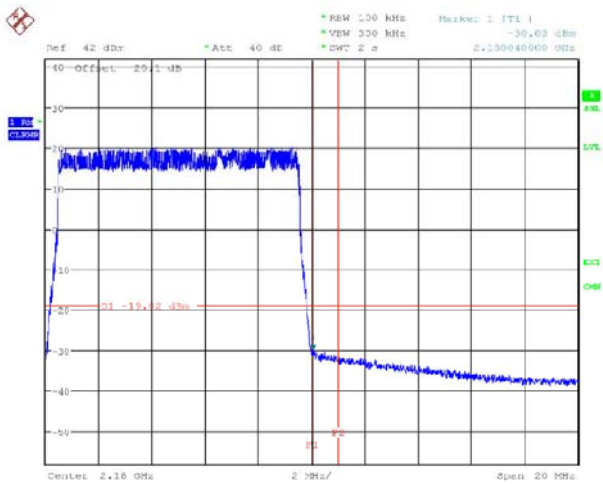
**Figure 65 Spurious Emissions (Lower Band Edge) – 16QAM (2115.0 MHz)
(10MHz Channel BW)**



Product Service

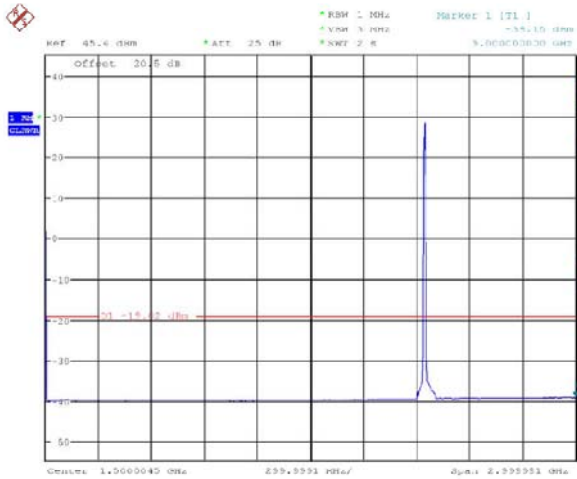
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:47:50

Figure 66 Spurious Emissions (Upper Band Edge) – 16QAM (2175.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 16:03:07

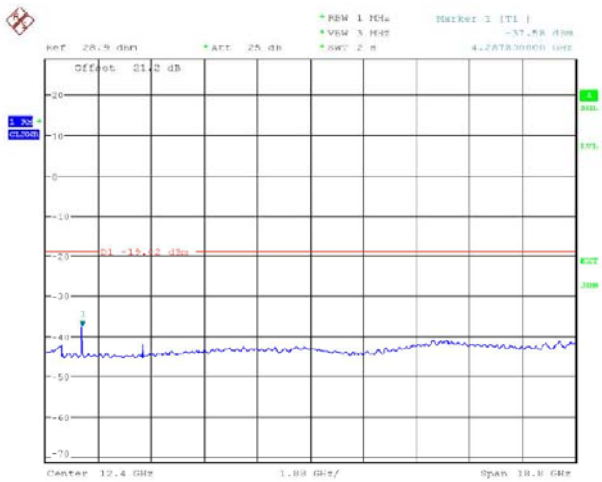
Figure 67 Spurious Emissions (9kHz – 3GHz) – 16QAM (2145.0 MHz) (10MHz Channel BW)



Product Service

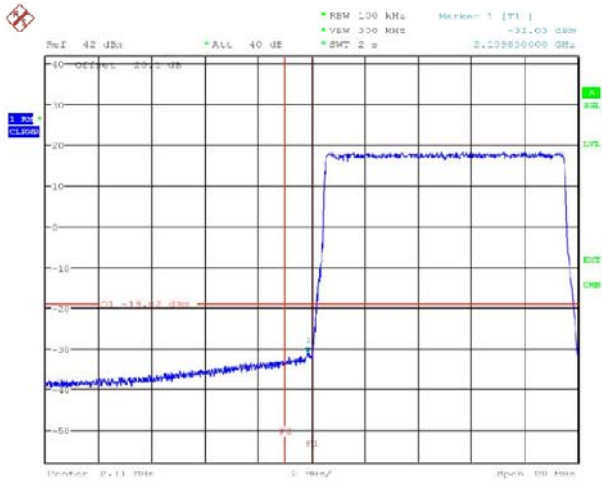
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:34:40

Figure 68 Spurious Emissions (3GHz – 21.8GHz) – 16QAM (2145.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 10:35:12

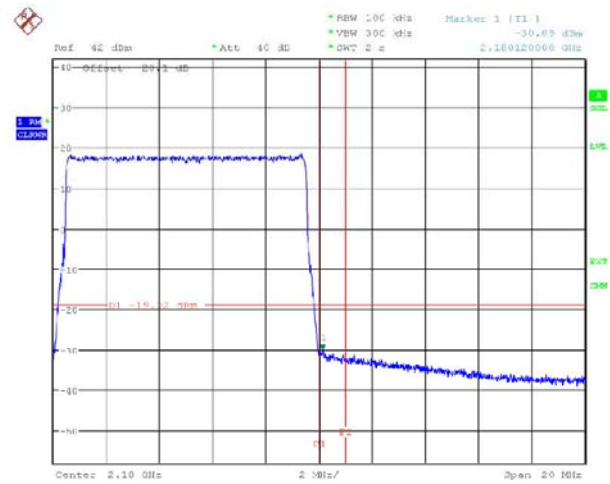
Figure 69 Spurious Emissions (Lower Band Edge) – 64QAM (2115.0 MHz) (10MHz Channel BW)



Product Service

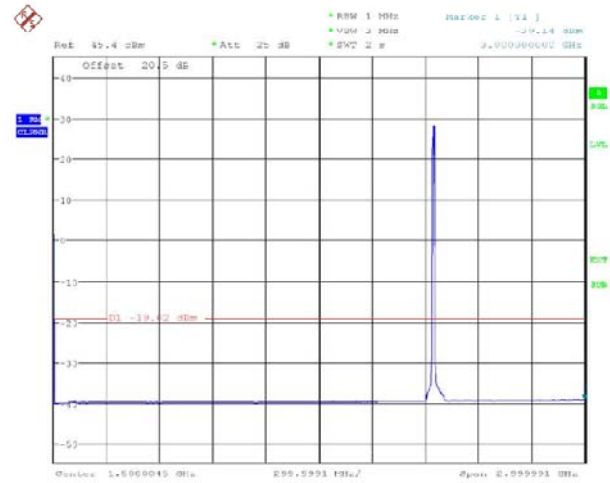
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:50:39

Figure 70 Spurious Emissions (Upper Band Edge) – 64QAM (2175.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 10:37:20

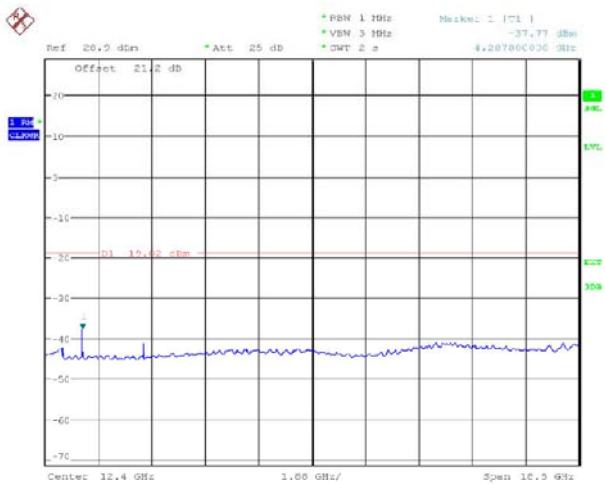
Figure 71 Spurious Emissions (9kHz – 3GHz) – 64QAM (2145.0 MHz) (10MHz Channel BW)



Product Service

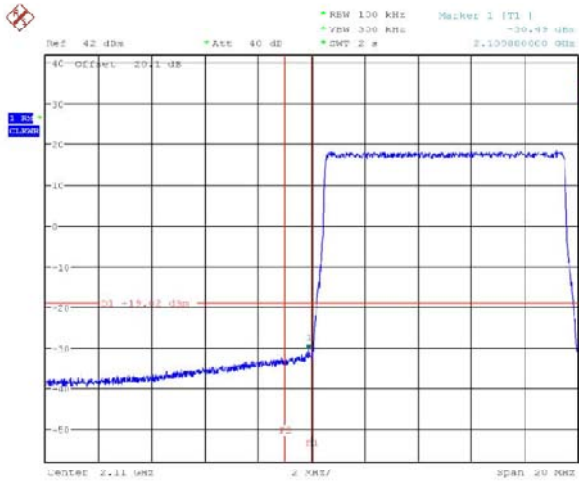
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:28:11

Figure 72 Spurious Emissions (3GHz – 21.8GHz) – 64QAM (2145.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 10:22:01

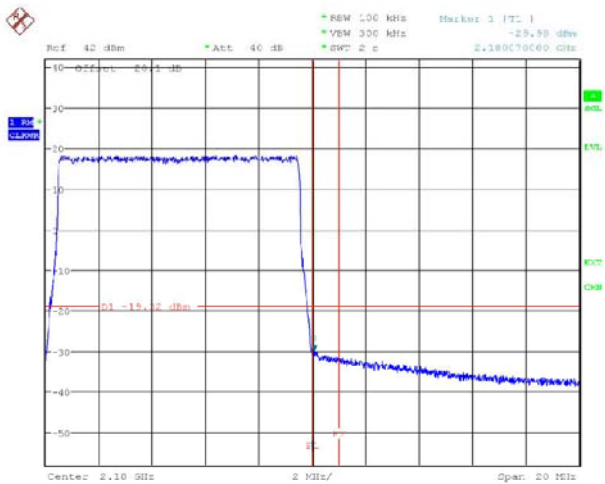
Figure 73 Spurious Emissions (Lower Band Edge) – 256QAM (2115.0 MHz) (10MHz Channel BW)



Product Service

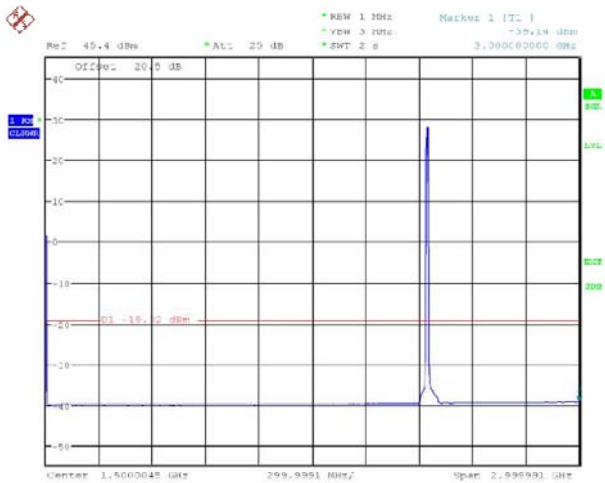
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 10:53:55

**Figure 74 Spurious Emissions (Upper Band Edge) – 256QAM (2175.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 10:40:43

**Figure 75 Spurious Emissions (9kHz – 3GHz) – 256QAM (2145.0 MHz)
(10MHz Channel BW)**

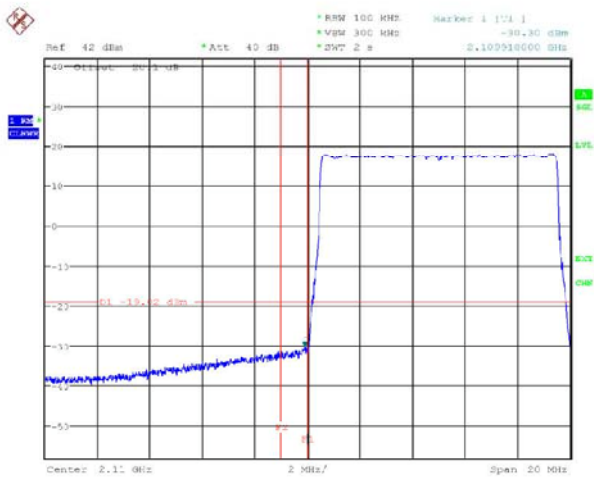


Product Service

FCC ID:
VBNAHIB-

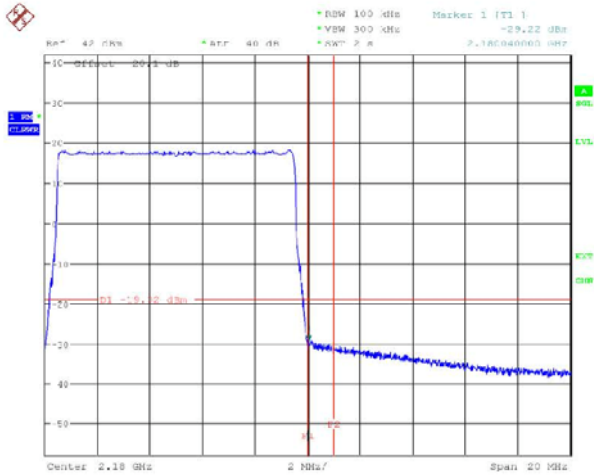
Test Report No:
D556049976

Config A ANT2:



Date: 4.MAY.2017 09:29:14

Figure 77 Spurious Emissions (Lower Band Edge) – QPSK (2115.0 MHz)
(10MHz Channel BW)



Date: 4.MAY.2017 09:57:16

Figure 78 Spurious Emissions (Upper Band Edge) – QPSK (2175.0 MHz)
(10MHz Channel BW)

FCC 47 CFR part 27
(2016)

16. May 2017

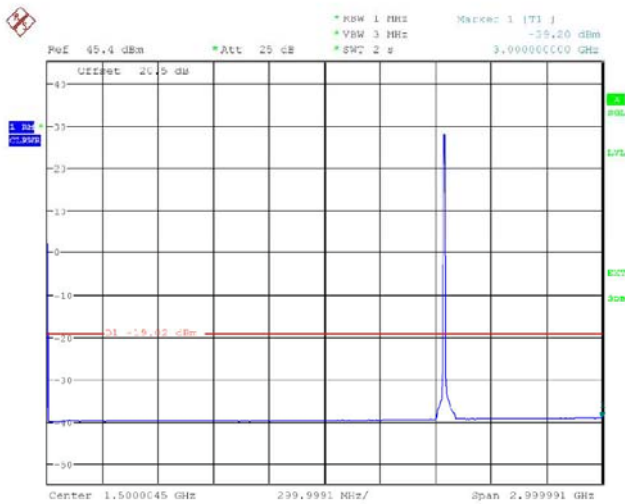
Page 85 of 189



Product Service

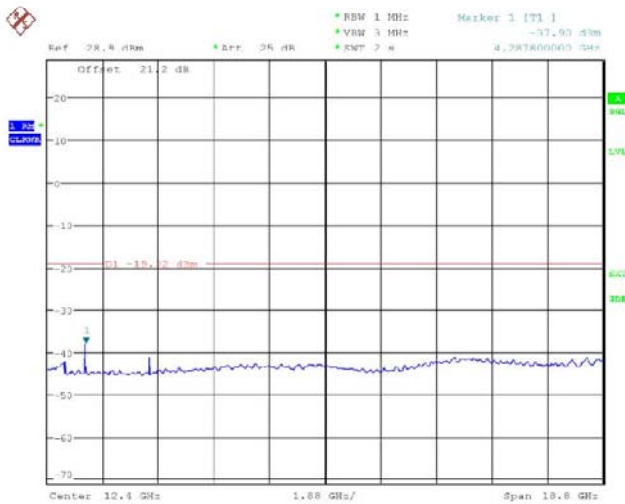
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:41:00

Figure 79 Spurious Emissions (9kHz – 3GHz) - QPSK (2145.0) (10MHz Channel BW)



Date: 4.MAY.2017 08:41:51

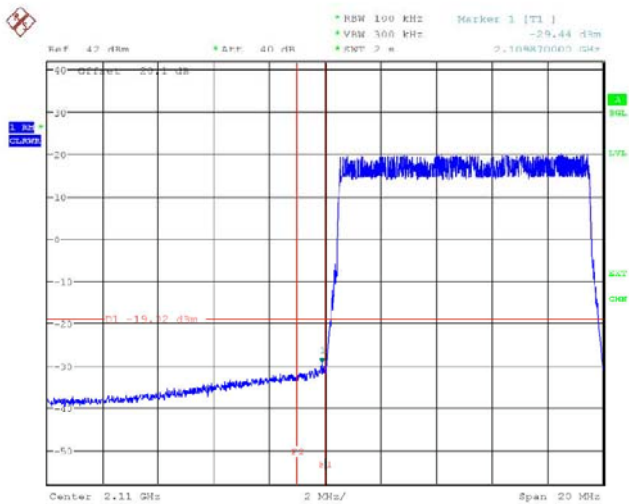
Figure 80 Spurious Emissions (3GHz – 21.8GHz) – QPSK (2145.0 MHz) (10MHz Channel BW)



Product Service

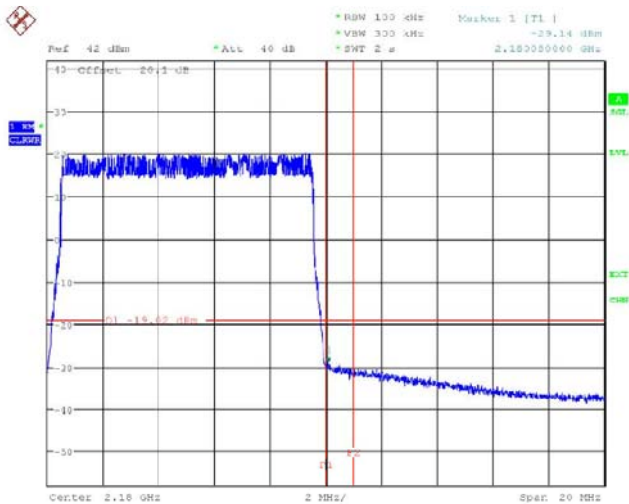
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:32:14

**Figure 81 Spurious Emissions (Lower Band Edge) – 16QAM (2115.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 08:59:55

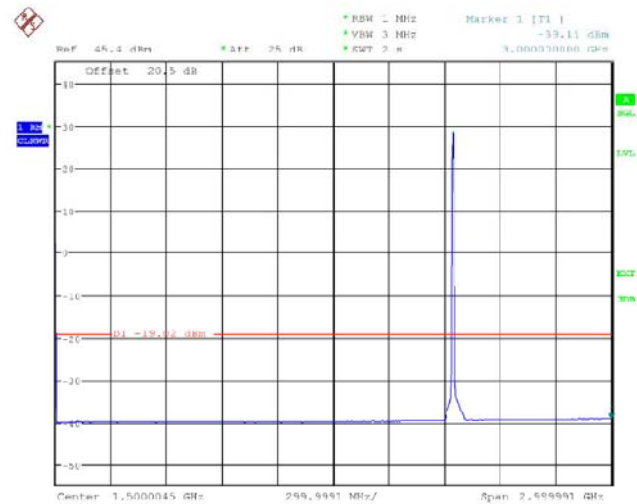
**Figure 82 Spurious Emissions (Upper Band Edge) – 16QAM (2175.0 MHz)
(10MHz Channel BW)**



Product Service

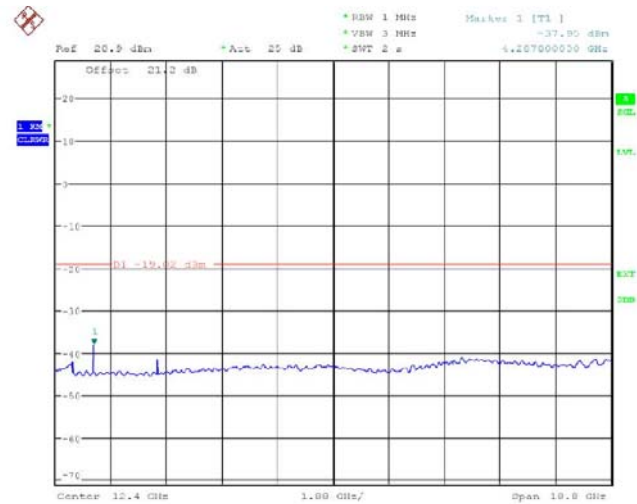
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:45:06

Figure 83 Spurious Emissions (9kHz – 3GHz) – 16QAM (2145.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 08:45:56

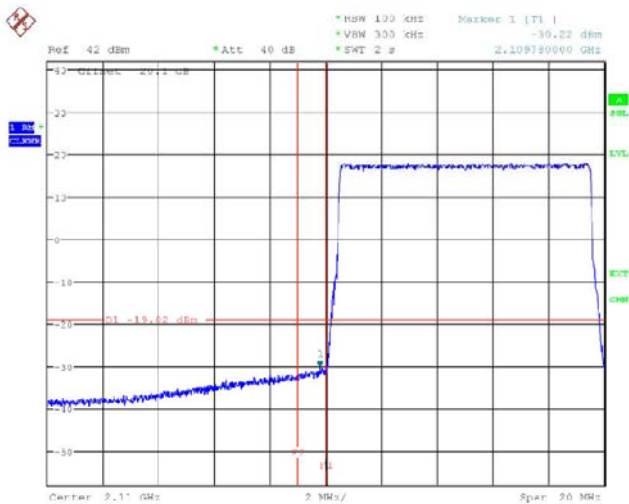
Figure 84 Spurious Emissions (3GHz – 21.8GHz) – 16QAM (2145.0 MHz) (10MHz Channel BW)



Product Service

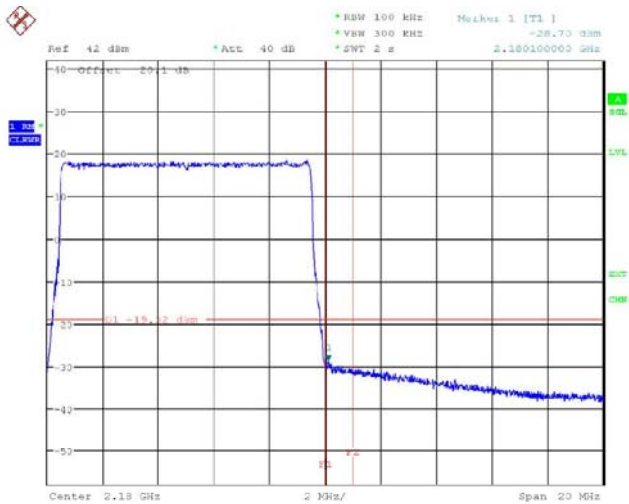
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:35:13

**Figure 85 Spurious Emissions (Lower Band Edge) – 64QAM (2115.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 09:02:54

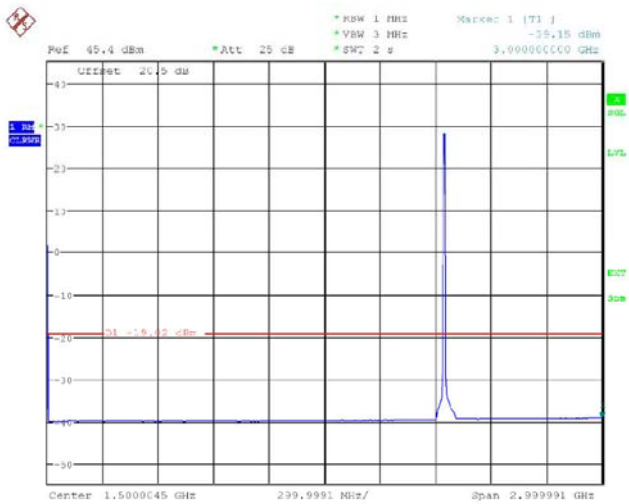
**Figure 86 Spurious Emissions (Upper Band Edge) – 64QAM (2175.0 MHz)
(10MHz Channel BW)**



Product Service

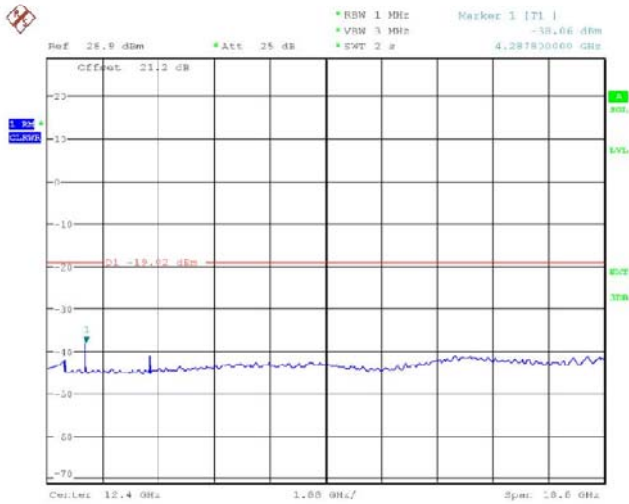
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:45:02

Figure 87 Spurious Emissions (9kHz – 3GHz) – 64QAM (2145.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 08:45:40

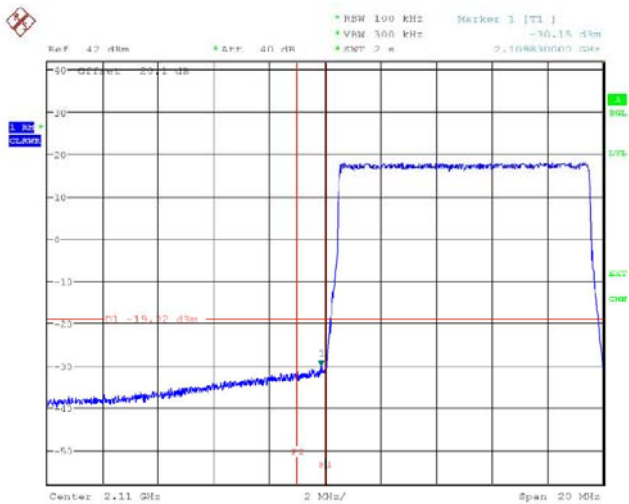
Figure 88 Spurious Emissions (3GHz – 21.8GHz) – 64QAM (2145.0 MHz) (10MHz Channel BW)



Product Service

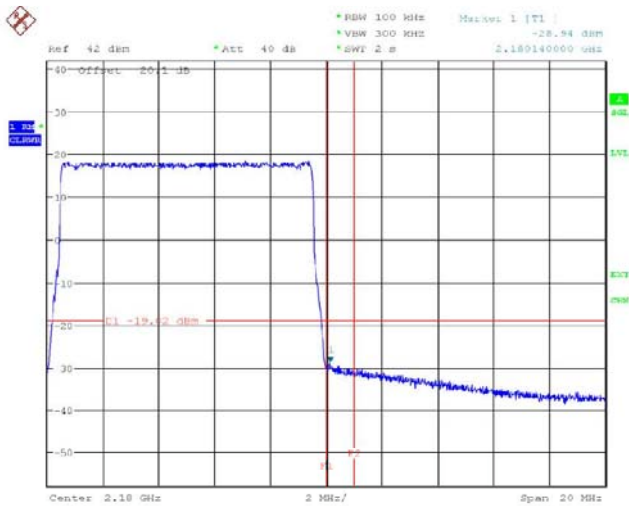
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:37:37

**Figure 89 Spurious Emissions (Lower Band Edge) – 256QAM (2115.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 09:05:11

**Figure 90 Spurious Emissions (Upper Band Edge) – 256QAM (2175.0 MHz)
(10MHz Channel BW)**

FCC 47 CFR part 27
(2016)

16. May 2017

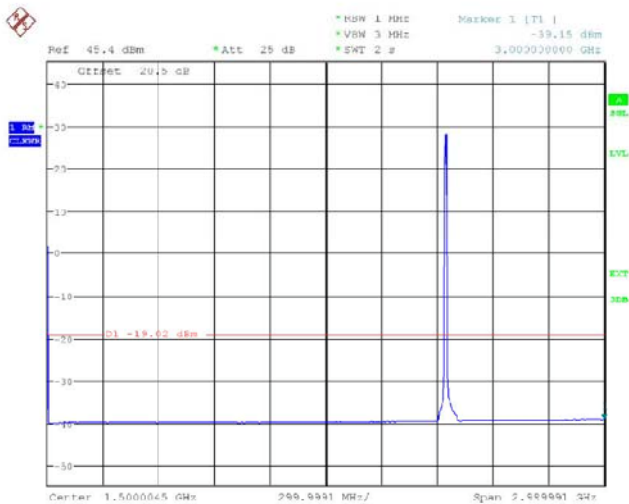
Page 91 of 189



Product Service

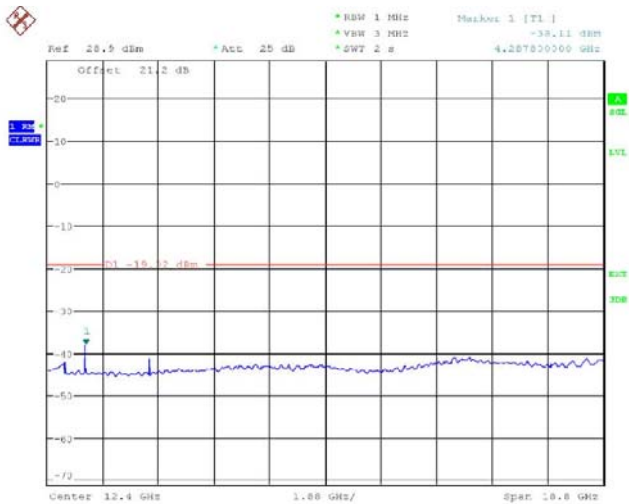
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:52:02

Figure 91 Spurious Emissions (9kHz – 3GHz) – 256QAM (2145.0 MHz) (10MHz Channel BW)



Date: 4.MAY.2017 08:53:46

Figure 92 Spurious Emissions (3GHz – 21.8GHz) – 256QAM (2145.0 MHz) (10MHz Channel BW)

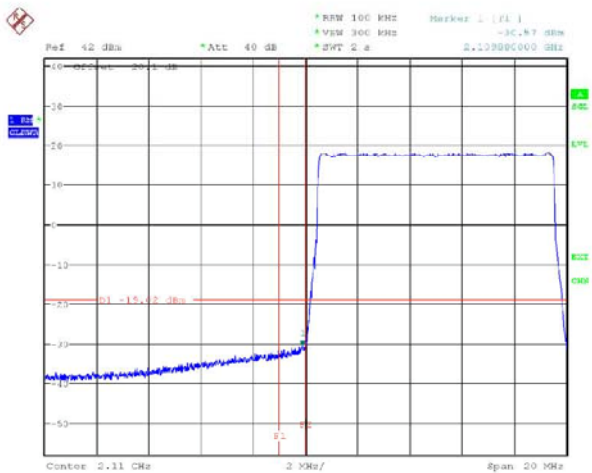


Product Service

FCC ID:
VBNAHIB-

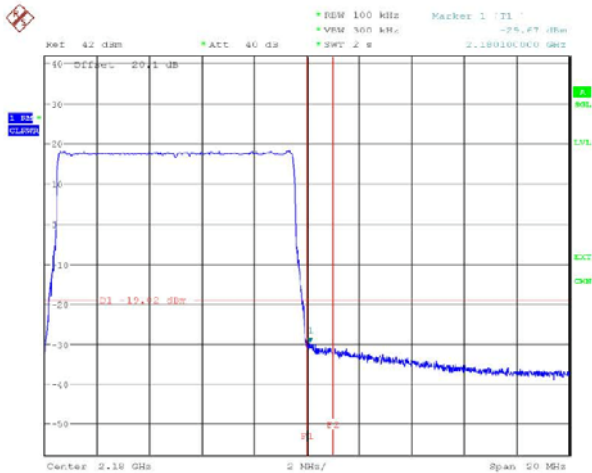
Test Report No:
D556049976

Config A ANT3:



Date: 4.NOV.2017 06:46:22

Figure 93 Spurious Emissions (Lower Band Edge) – QPSK (2115.0 MHz)
(10MHz Channel BW)



Date: 4.NOV.2017 08:11:01

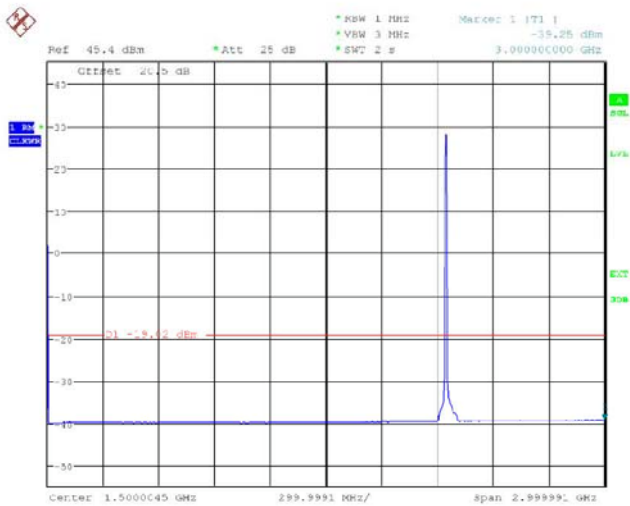
Figure 94 Spurious Emissions (Upper Band Edge) – QPSK (2175.0 MHz)
(10MHz Channel BW)



Product Service

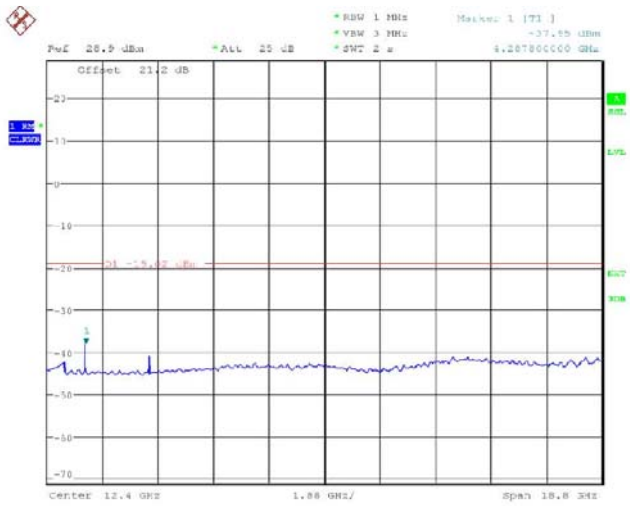
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 07:49:29

Figure 95 Spurious Emissions (9kHz – 3GHz) - QPSK (2145.0) (10MHz Channel BW)



Date: 4.MAY.2017 07:56:47

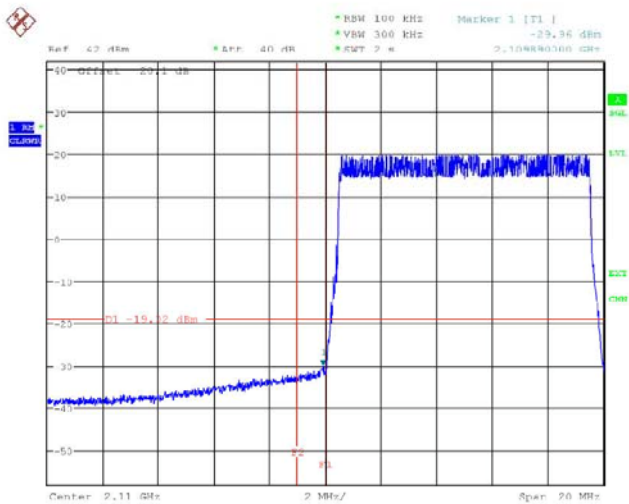
Figure 96 Spurious Emissions (3GHz – 21.8GHz) – QPSK (2145.0 MHz) (10MHz Channel BW)



Product Service

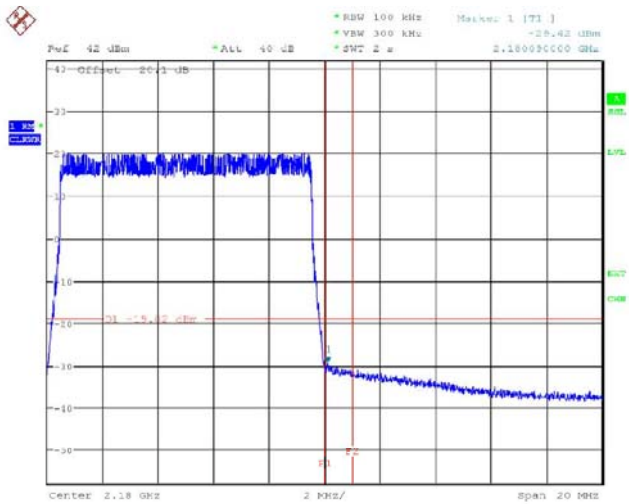
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 06:53:52

**Figure 97 Spurious Emissions (Lower Band Edge) – 16QAM (2115.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 08:14:51

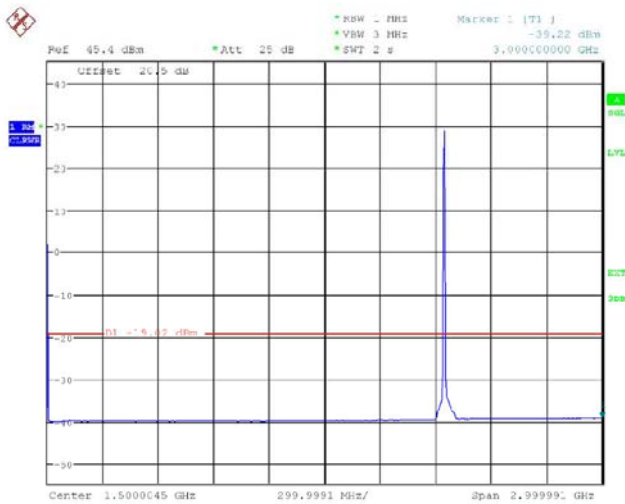
**Figure 98 Spurious Emissions (Upper Band Edge) – 16QAM (2175.0 MHz)
(10MHz Channel BW)**



Product Service

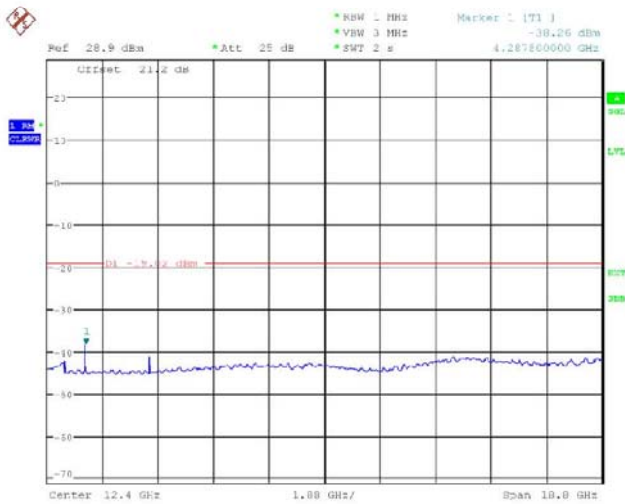
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 07:56:41

Figure 99 Spurious Emissions (9kHz – 3GHz) – 16QAM (2145.0 MHz) (10MHz Channel BW)



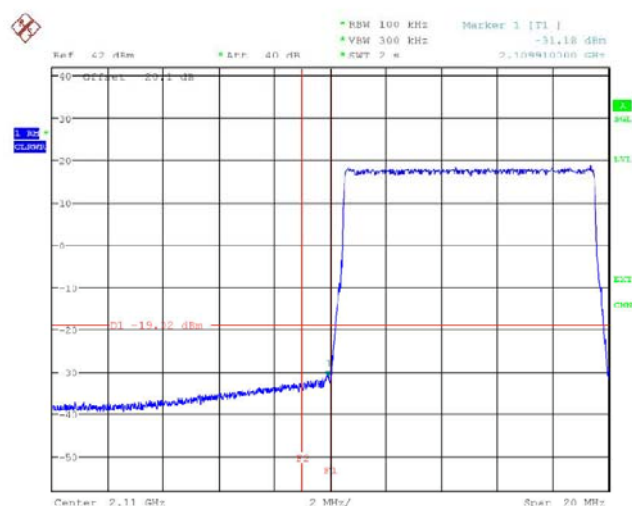
Date: 4.MAY.2017 07:57:36

Figure 100 Spurious Emissions (3GHz – 21.8GHz) – 16QAM (2145.0 MHz) (10MHz Channel BW)



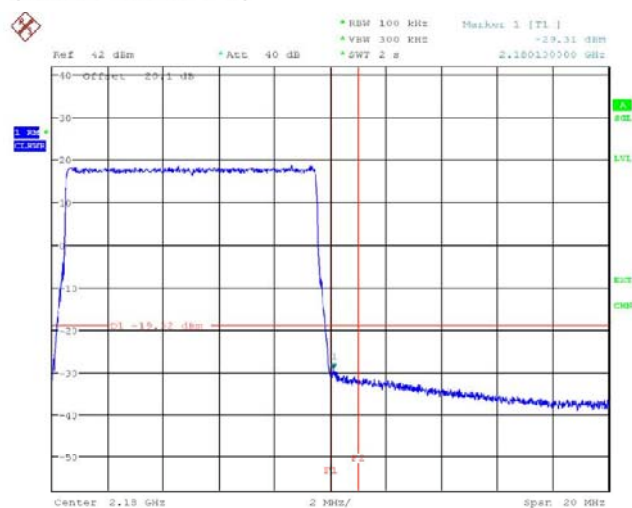
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 07:41:52

**Figure 101 Spurious Emissions (Lower Band Edge) – 64QAM (2115.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 08:19:00

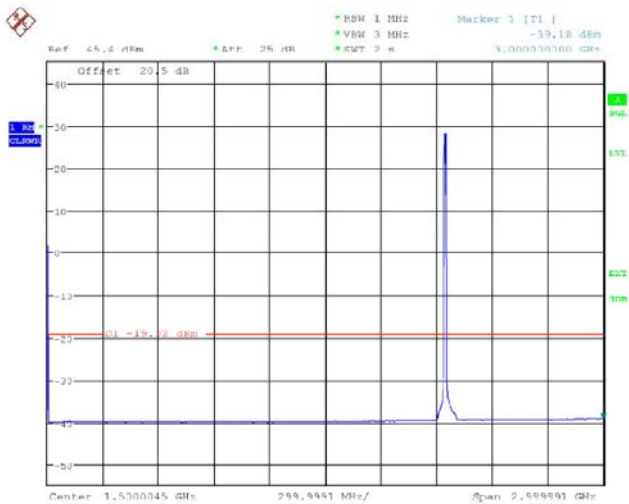
**Figure 102 Spurious Emissions (Upper Band Edge) – 64QAM (2175.0 MHz)
(10MHz Channel BW)**



Product Service

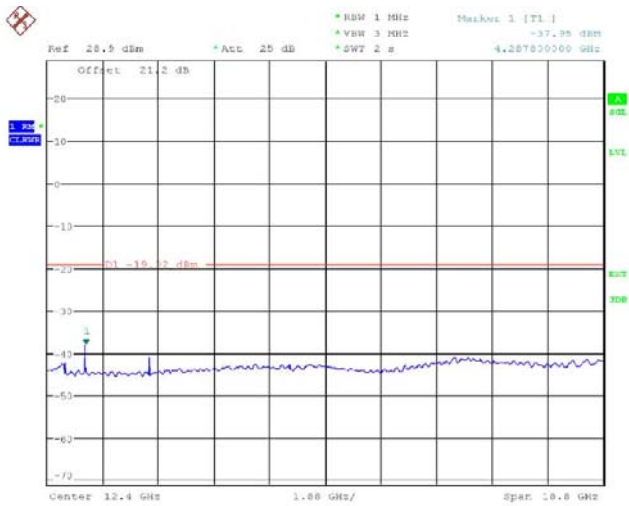
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:02:09

**Figure 103 Spurious Emissions (9kHz – 3GHz) – 64QAM (2145.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 08:02:59

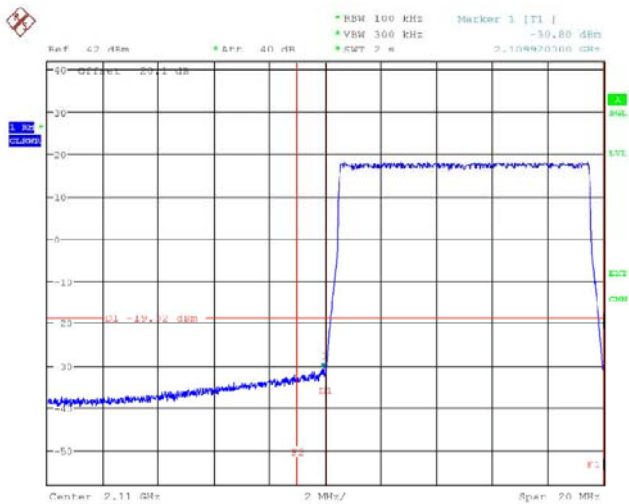
**Figure 104 Spurious Emissions (3GHz – 21.8GHz) – 64QAM (2145.0 MHz)
(10MHz Channel BW)**



Product Service

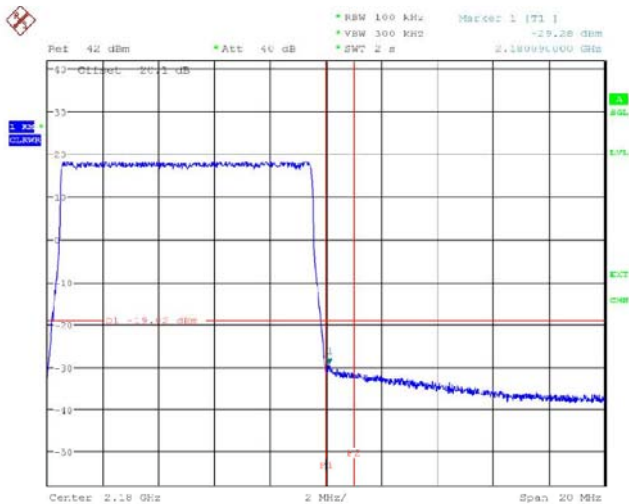
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 07:43:40

**Figure 105 Spurious Emissions (Lower Band Edge) – 256QAM (2115.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 08:21:39

**Figure 106 Spurious Emissions (Upper Band Edge) – 256QAM (2175.0 MHz)
(10MHz Channel BW)**

FCC 47 CFR part 27
(2016)

16. May 2017

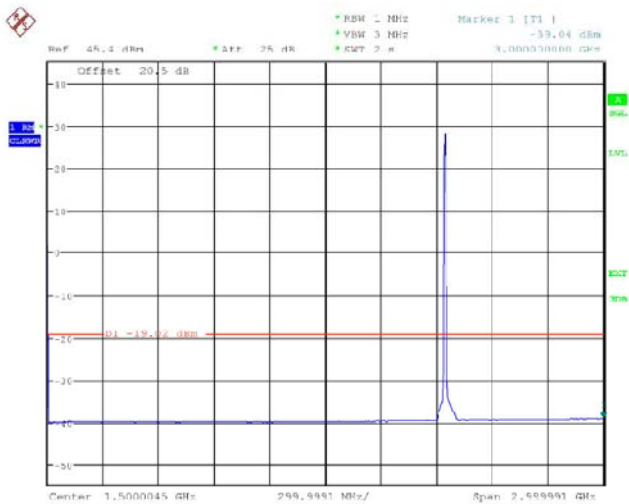
Page 99 of 189



Product Service

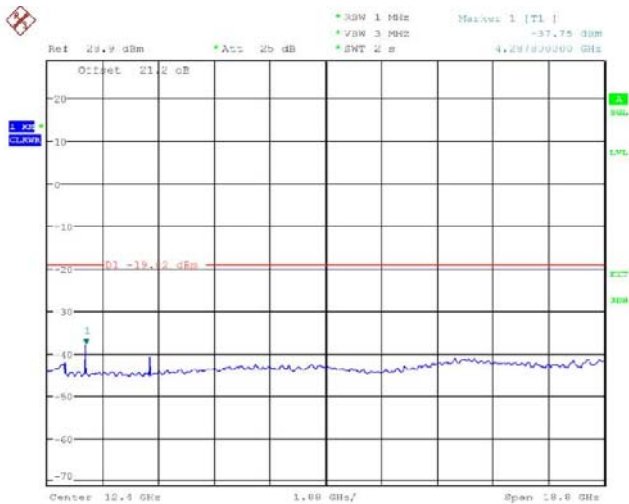
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 08:05:27

**Figure 107 Spurious Emissions (9kHz – 3GHz) – 256QAM (2145.0 MHz)
(10MHz Channel BW)**



Date: 4.MAY.2017 08:06:11

**Figure 108 Spurious Emissions (3GHz – 21.8GHz) – 256QAM (2145.0 MHz)
(10MHz Channel BW)**

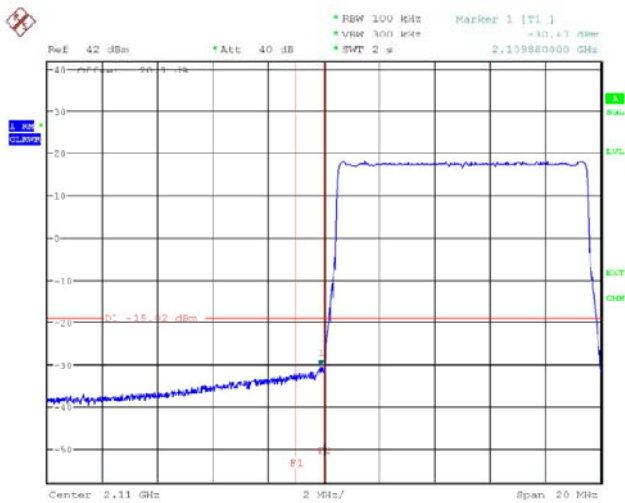


Product Service

FCC ID:
VBNAHIB-

Test Report No:
D556049976

Config A ANT4:



Date: 3.MAY.2017 11:16:46

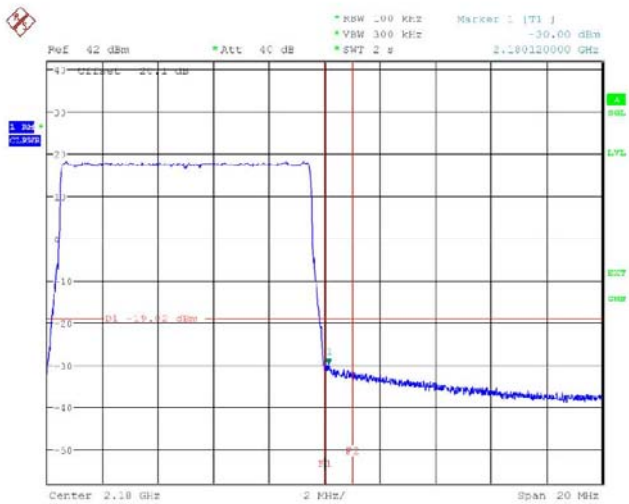
Figure 109 Spurious Emissions (Lower Band Edge) – QPSK (2115.0 MHz)
(10MHz Channel BW)



Product Service

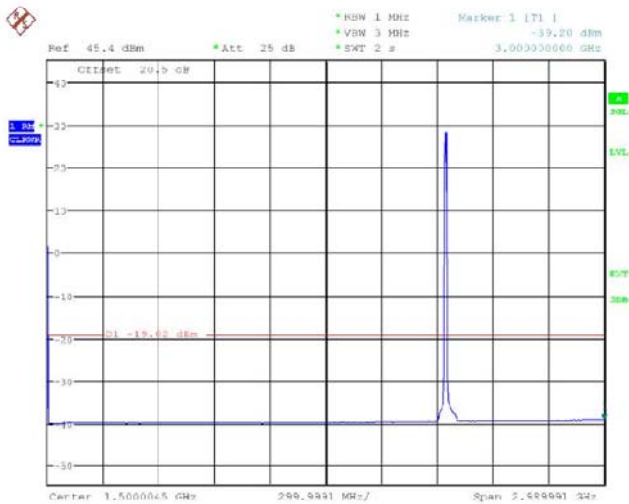
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 06:20:51

Figure 110 Spurious Emissions (Upper Band Edge) – QPSK (2175.0 MHz) (10MHz Channel BW)



Date: 3.MAY.2017 13:21:52

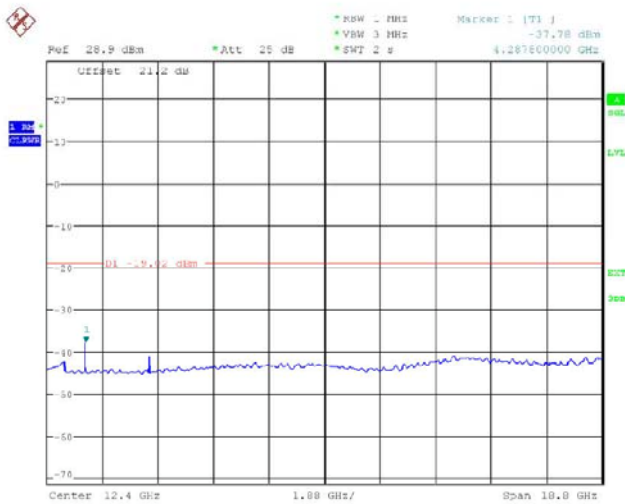
Figure 111 Spurious Emissions (9kHz – 3GHz) - QPSK (2145.0) (10MHz Channel BW)



Product Service

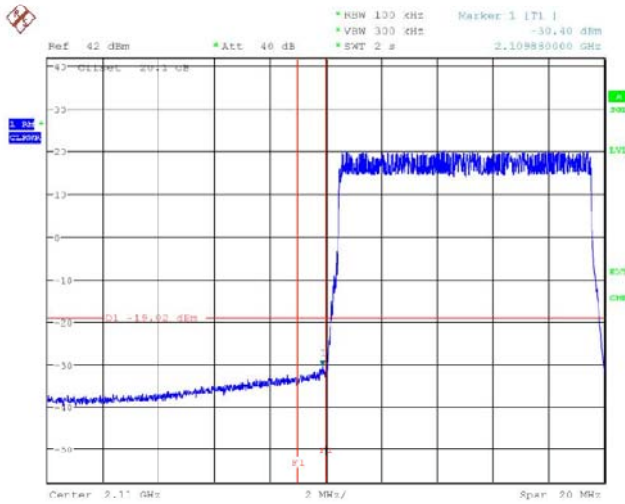
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 3.MAY.2017 13:22:36

**Figure 112 Spurious Emissions (3GHz – 21.8GHz) – QPSK (2145.0 MHz)
(10MHz Channel BW)**



Date: 3.MAY.2017 11:44:40

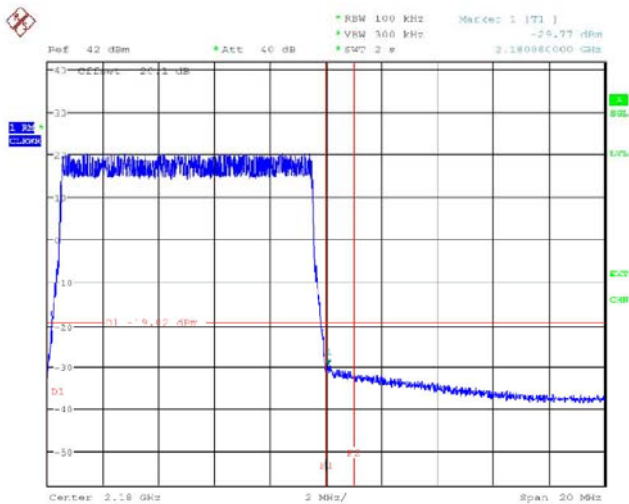
**Figure 113 Spurious Emissions (Lower Band Edge) – 16QAM (2115.0 MHz)
(10MHz Channel BW)**



Product Service

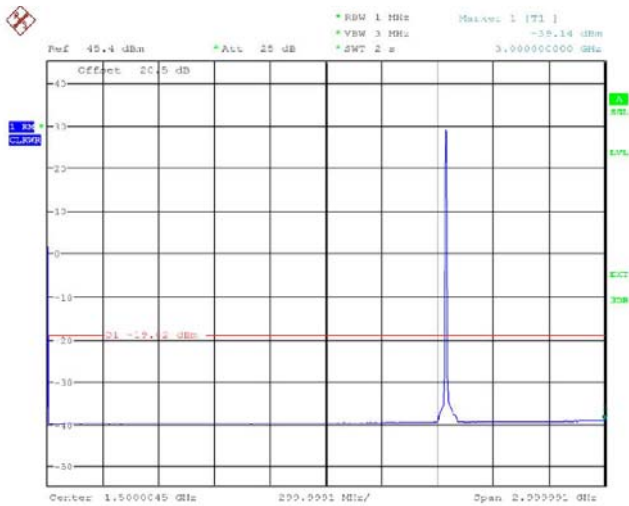
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 06:25:25

**Figure 114 Spurious Emissions (Upper Band Edge) – 16QAM (2175.0 MHz)
(10MHz Channel BW)**



Date: 3.MAY.2017 13:25:21

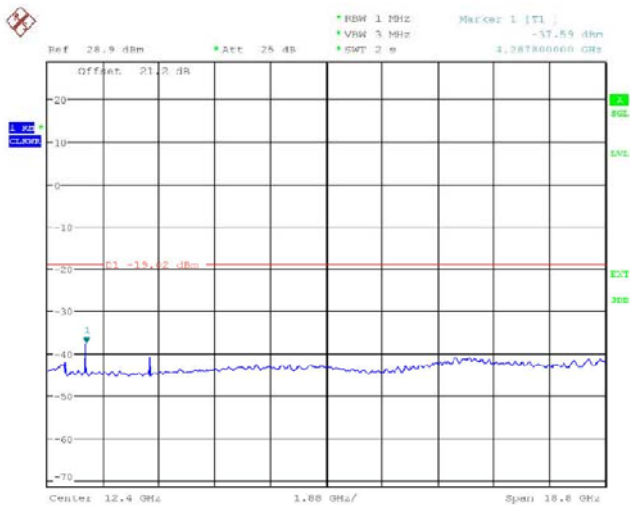
**Figure 115 Spurious Emissions (9kHz – 3GHz) – 16QAM (2145.0 MHz)
(10MHz Channel BW)**



Product Service

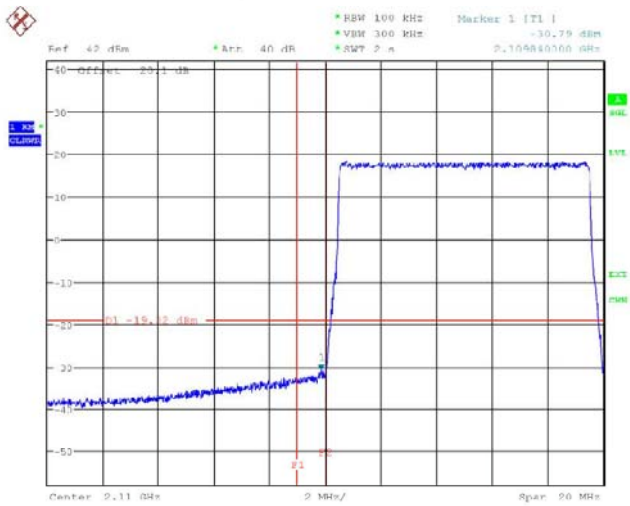
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 3.MAY.2017 13:26:18

**Figure 116 Spurious Emissions (3GHz – 21.8GHz) – 16QAM (2145.0 MHz)
(10MHz Channel BW)**



Date: 3.MAY.2017 11:47:20

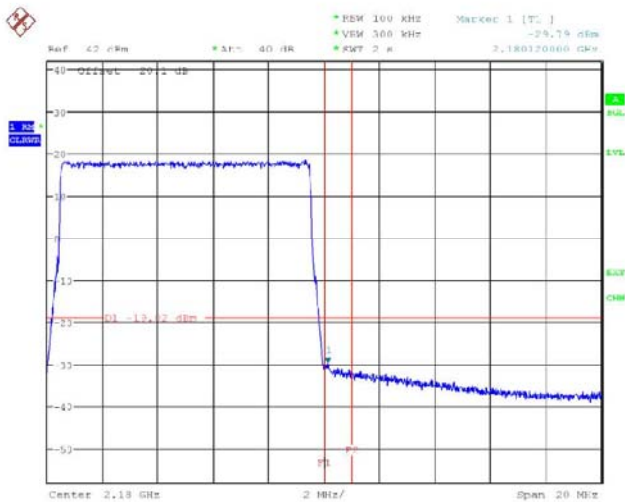
**Figure 117 Spurious Emissions (Lower Band Edge) – 64QAM (2115.0 MHz)
(10MHz Channel BW)**



Product Service

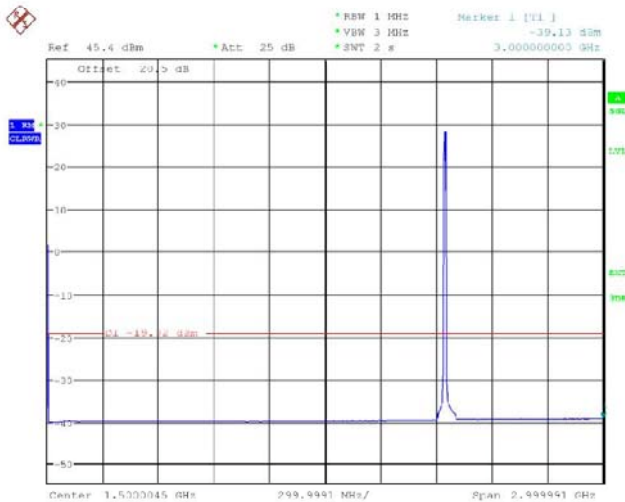
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 06:55:51

**Figure 118 Spurious Emissions (Upper Band Edge) – 64QAM (2175.0 MHz)
(10MHz Channel BW)**



Date: 3.MAY.2017 13:28:46

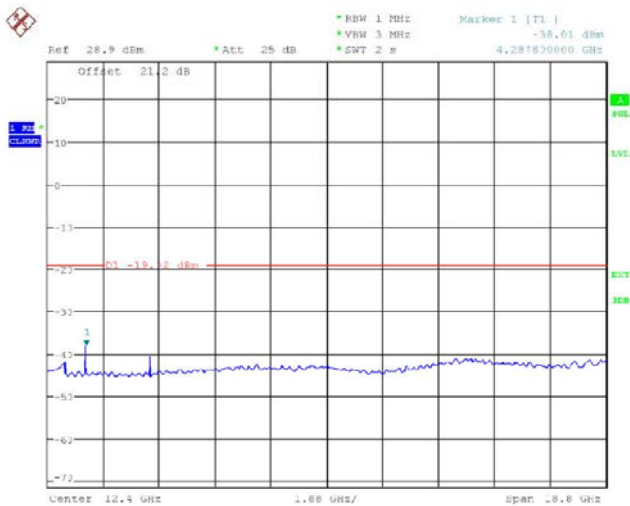
**Figure 119 Spurious Emissions (9kHz – 3GHz) – 64QAM (2145.0 MHz)
(10MHz Channel BW)**



Product Service

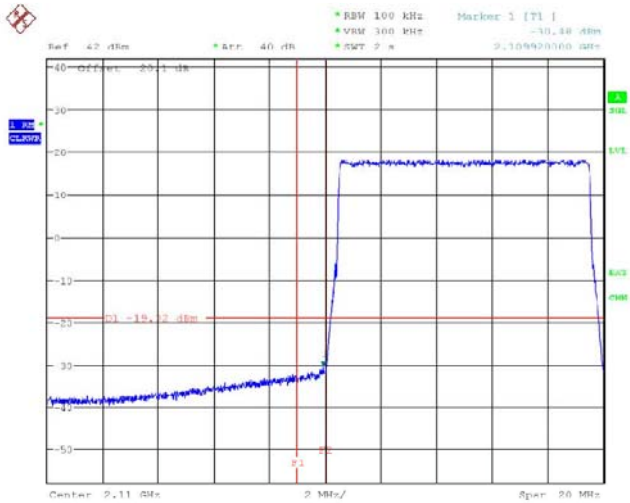
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 3.MAY.2017 13:29:35

**Figure 120 Spurious Emissions (3GHz – 21.8GHz) – 64QAM (2145.0 MHz)
(10MHz Channel BW)**



Date: 3.MAY.2017 11:52:12

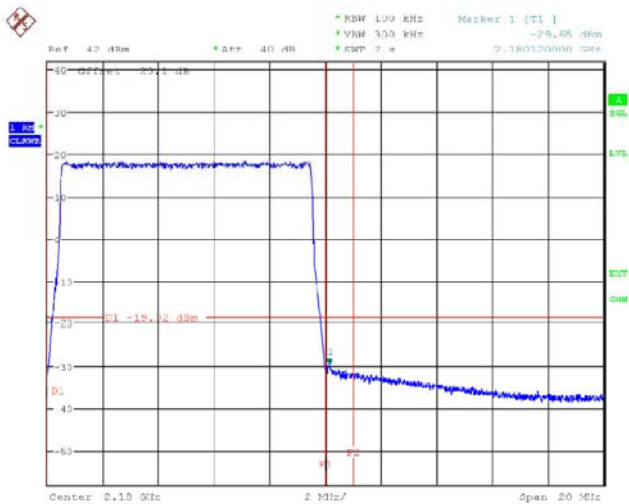
**Figure 121 Spurious Emissions (Lower Band Edge) – 256QAM (2115.0 MHz)
(10MHz Channel BW)**



Product Service

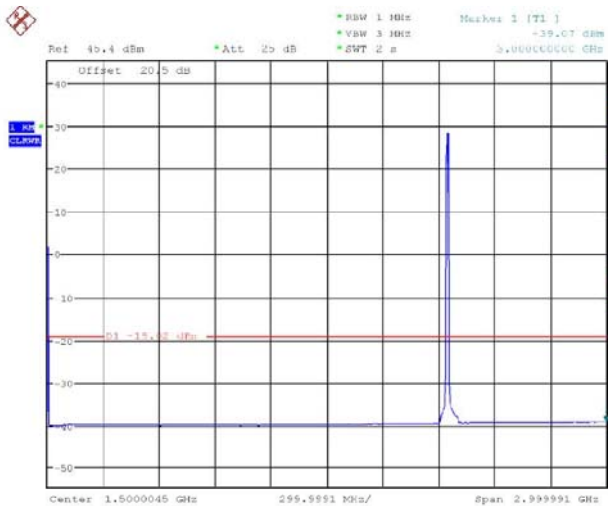
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 06:37:41

Figure 122 Spurious Emissions (Upper Band Edge) – 256QAM (2175.0 MHz) (10MHz Channel BW)



Date: 3.MAY.2017 13:52:01

Figure 123 Spurious Emissions (9kHz – 3GHz) – 256QAM (2145.0 MHz) (10MHz Channel BW)

FCC 47 CFR part 27
(2016)

16. May 2017

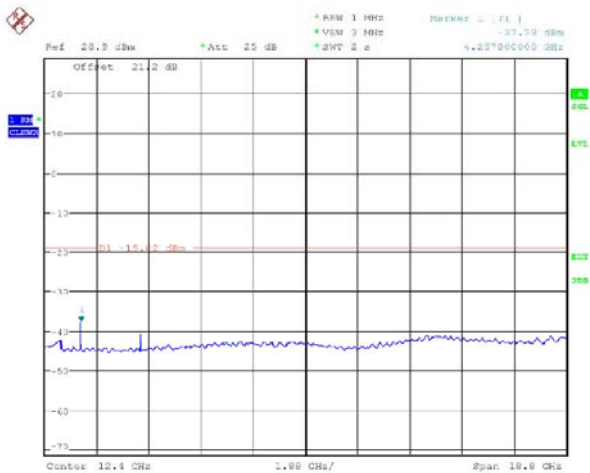
Page 108 of 189



Product Service

FCC ID:
VBNAHIB-

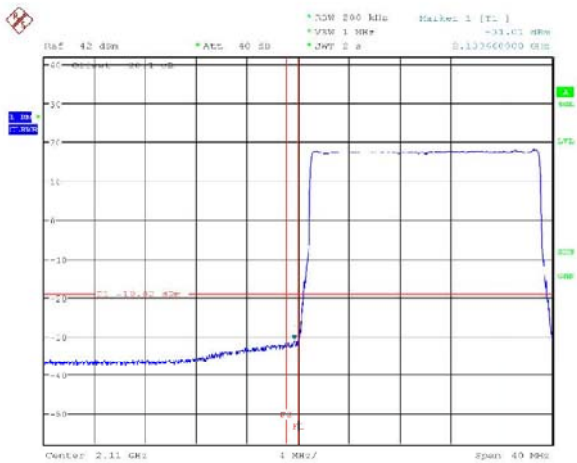
Test Report No:
D556049976



Date: 3.MAY.2017 13:52:50

**Figure 124 Spurious Emissions (3GHz – 21.8GHz) – 256QAM (2145.0 MHz)
(10MHz Channel BW)**

Config B ANT1:



Date: 4.MAY.2017 11:18:27

**Figure 125 Spurious Emissions (Lower Band Edge) – QPSK (2120.0 MHz)
(20MHz Channel BW)**

FCC 47 CFR part 27
(2016)

16. May 2017

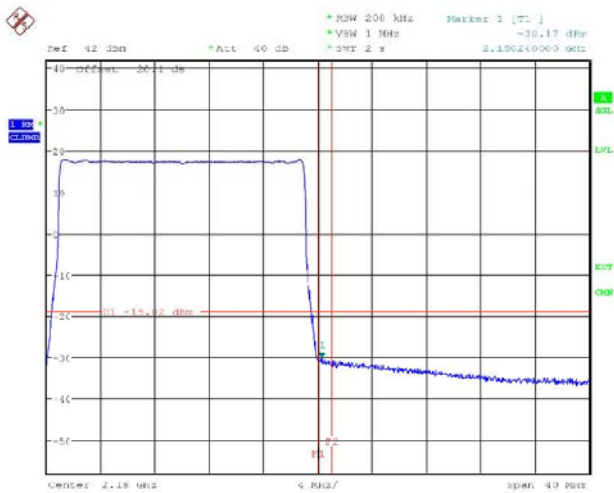
Page 109 of 189



Product Service

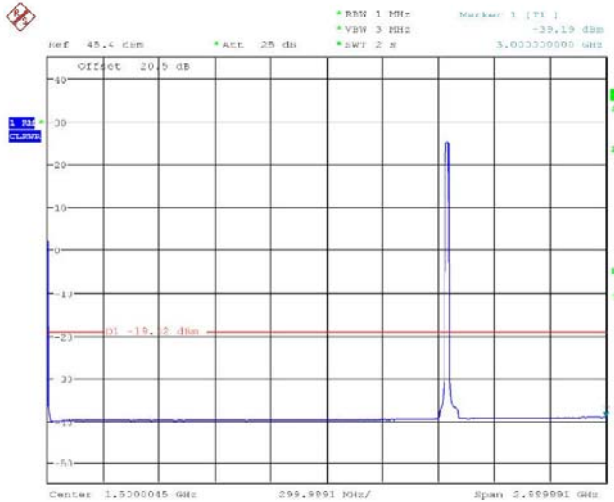
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 13:11:00

Figure 126 Spurious Emissions (Upper Band Edge) – QPSK (2170.0 MHz) (20MHz Channel BW)



Date: 4.MAY.2017 12:35:40

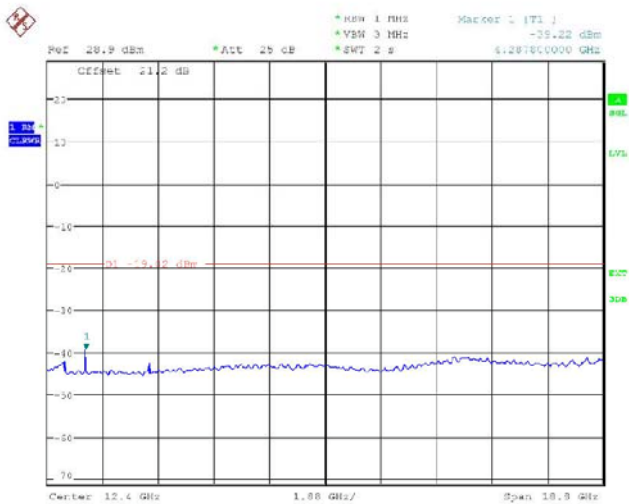
Figure 127 Spurious Emissions (9kHz – 3GHz) - QPSK (2145.0 MHz) (20MHz Channel BW)



Product Service

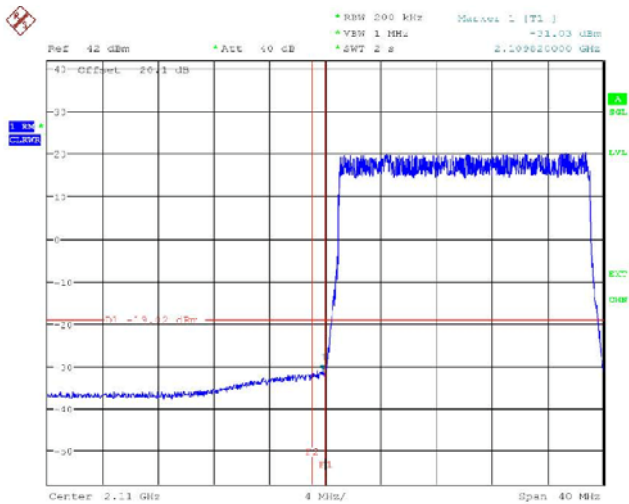
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 12:37:21

Figure 128 Spurious Emissions (3GHz – 21.8GHz) – QPSK (2145.0 MHz) (20MHz Channel BW)



Date: 4.MAY.2017 11:33:41

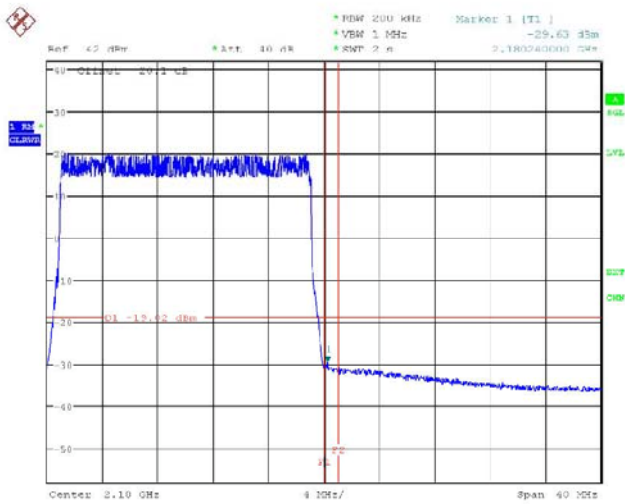
Figure 129 Spurious Emissions (Lower Band Edge) – 16QAM (2120.0 MHz) (20MHz Channel BW)



Product Service

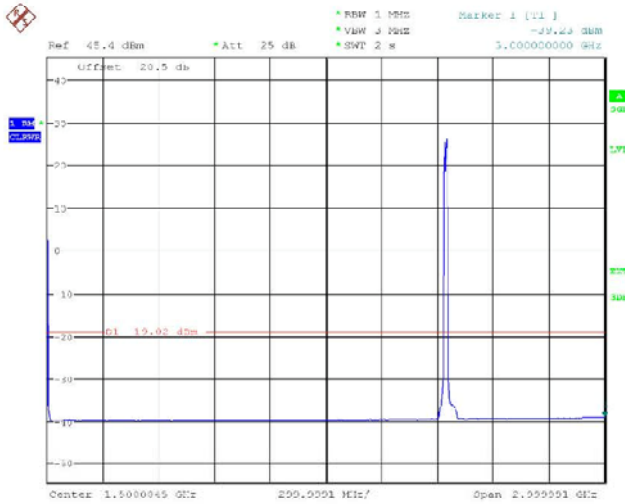
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 13:31:55

**Figure 130 Spurious Emissions (Upper Band Edge) – 16QAM (2170.0 MHz)
(20MHz Channel BW)**



Date: 4.MAY.2017 12:50:05

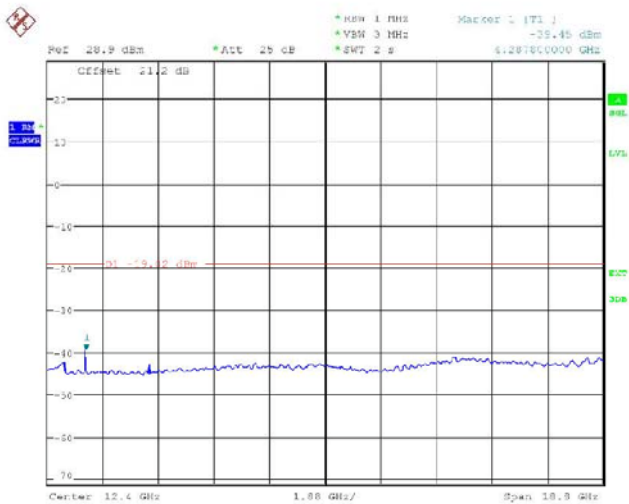
**Figure 131 Spurious Emissions (9kHz – 3GHz) – 16QAM (2145.0 MHz)
(20MHz Channel BW)**



Product Service

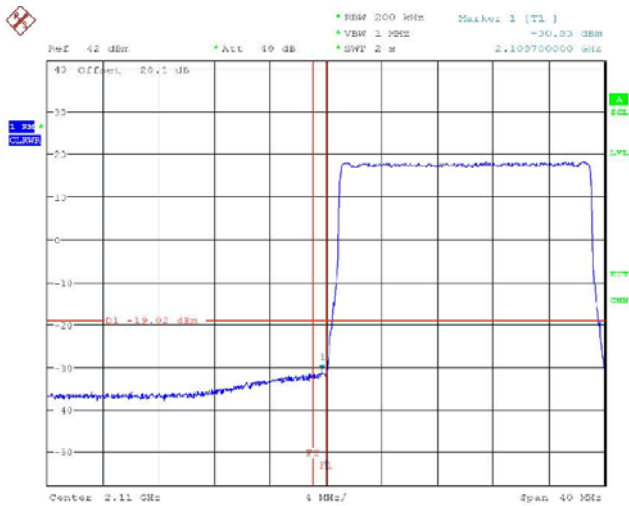
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 12:50:53

**Figure 132 Spurious Emissions (3GHz – 21.8GHz) – 16QAM (2145.0 MHz)
(20MHz Channel BW)**



Date: 4.MAY.2017 11:37:41

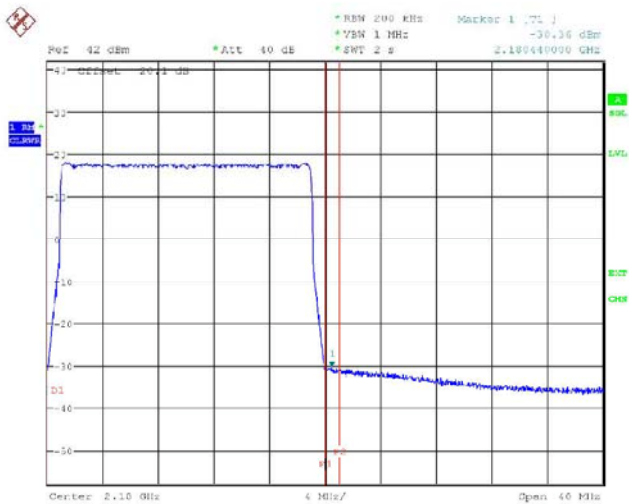
**Figure 133 Spurious Emissions (Lower Band Edge) – 64QAM (2120.0 MHz)
(20MHz Channel BW)**



Product Service

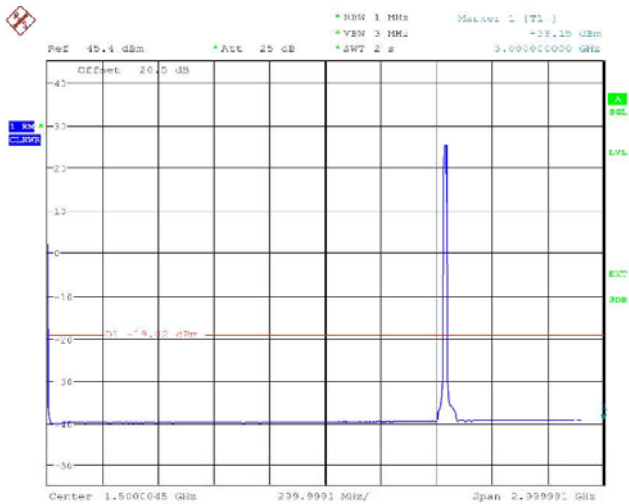
FCC ID:
VBNAHIB-

Test Report No:
D556049976



Date: 4.MAY.2017 13:32:58

**Figure 134 Spurious Emissions (Upper Band Edge) – 64QAM (2170.0 MHz)
(20MHz Channel BW)**



Date: 4.MAY.2017 12:54:00

**Figure 135 Spurious Emissions (9kHz – 3GHz) – 64QAM (2145.0 MHz)
(20MHz Channel BW)**

FCC 47 CFR part 27
(2016)

16. May 2017

Page 114 of 189