



MOTOROLA

*Mobile Devices business
iDEN Mobile Devices Operations*

RF Test Report

FCC Rule Parts: 90S and 24D

Industry Canada: RSS-Gen, RSS-119, RS-134

Product Name: i465

FCC ID: IHD T56KB1

IC ID: 1090-KB1

Date: February 16, 2009

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Test Report Details

Tests Performed by:	Motorola EMC Laboratory Plantation, Florida 8000 W. Sunrise Blvd Plantation, Florida 33322 Phone: FAX: FCC Registration Number: 91932 Industry Canada Number: IC109U-1
Product Type:	Cellular Phone
Signaling Capabilities:	iDEN 800 MHz, iDEN 900 MHz
FCC ID:	IHDT56KB1
IC ID:	109O-KB1

Applicable Standards

All tests and measurements indicated in this document were performed in accordance with the United States Code of Federal Regulations, Title 47 Part 2, Sub-part J, as well as the following parts:

<u> X </u>	Part 90 Subpart S – Private Land Mobile Radio Service.
<u> X </u>	Part 24 Subpart D – Personal Communications Services.
<u> X </u>	RSS-119 – Land Mobile and Fixed Radio Transmitters and Receivers Operating in the Frequency Range 27.41- 960 MHz.
<u> X </u>	RSS-134 – 900 MHz Narrowband Personal Communications Services.

Applicable Standards: TIA/EIA-603-A, TIA/EIA-603-B, and ANSI C63.4-2003

Exhibit 6a. Part 90/Part 24 Measured Data -- Pursuant 47 CFR. 2.1046; RSS-Gen Section 3, RSS-119 Section 5.4, RSS-134 Section 6.2.

6a.1 Land Mobile Transmitter Power

The transmitter is a variable power type used in a SMR trunking system. Output power (as defined in 47 CFR 90.7 and/or §24.132) is dynamically controlled as described in Exhibit 12.

6a.1.1 Maximum Output Power Rating -- Pursuant 47 CFR 2.1033(c)(7), §90.635(d), and §24.132(a)

Maximum output power rating: 640 milliwatts (28.06 dBm), pulse average power. Output power will vary from 0.22 to 640 milliwatts (pulse average power).

Note 1: Nominal output power rating: 600 milliwatts (27.78 dBm) (Pulse average power).

Note 2: These ratings are compliant with the FCC maximum of 100 watts (50 dBm) for Mobile stations operating under Part 90.

Note 3: These ratings are compliant with the FCC maximum of 7 watts ERP for Mobile stations operating under Part 24.

Note 4: The term pulse average power is used to specify the power that would be measured during the intervals of recurrent TDM transmission pulses by an average responding RF power meter. Power expressed in this manner is independent of the TDM duty cycle, and facilitates RF system coverage analysis.

6a.1.2 Operating output power range -- Pursuant 47 CFR 2.1033(c)(6)

Maximum tuned output power will vary over a range of 500 to 640 milliwatts (maximum pulse average power) to a minimum power of 34 dB below maximum tuned output power.

6a.1.3 DC power used by final amplifier device -- Pursuant 47 CFR 2.1033(c)(8)

In order to prevent the malfunctions that can occur due to directly measuring the DC characteristics of the final RF amplifying stage, data was obtained by measuring the entire radio DC current and is reported herein for the entire radio.

The DC current and the RF output power was measured with a special RF/DC test fixture set to supply the radio with the nominal battery voltage of 4V. The characteristics were measured during a transmission pulse and are listed in the Table below.

Characteristics	800 MHz		900 MHz		901.5 MHz	
	minimum	maximum	minimum	maximum	minimum	maximum
DC Voltage (Volts)	4.0	4.0	4.0	4.0	4.0	4.0
DC Current (A)	0.67	1.85	0.68	1.71	0.71	1.80
Output Power (mW)	0.22	640	0.22	640	0.23	639

Table 6-1 Characteristics for 800 and 900 MHz SMR bands, and NBPCS Band

6a.2. Modulation Characteristics and Necessary Bandwidth -- Pursuant 47 CFR §2.1047(d), §2.1049, §2.202, §90.210(g), §90.669(a), and §90.691; RSS-Gen Section 3, RSS-119 Section 4.2.

6a.2.1 Emission Designator 18K3D7W - iDEN 800 MHz Band Measured data

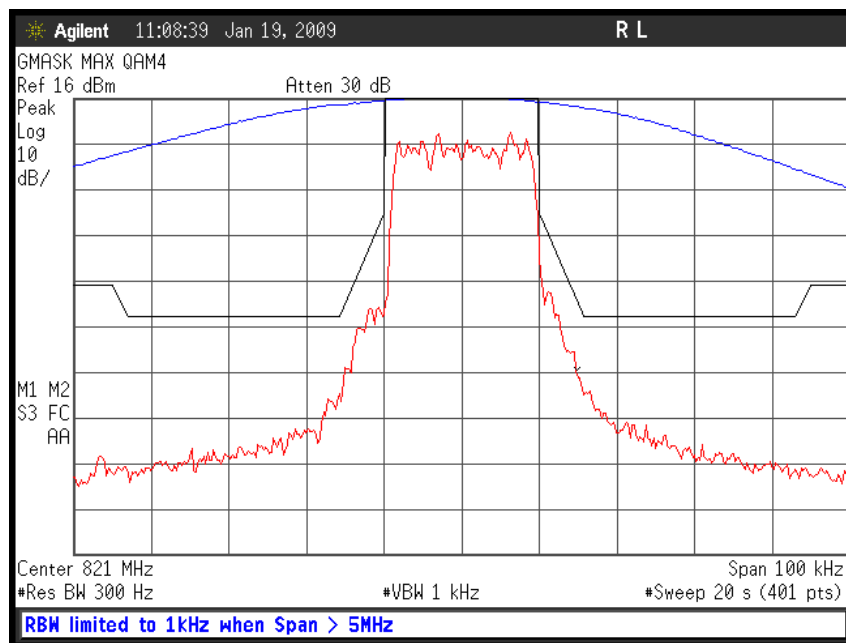


Figure 6a-2.1.1. iDEN 800 MHz Band, Quad-QPSK, Maximum Power, Emission Mask G

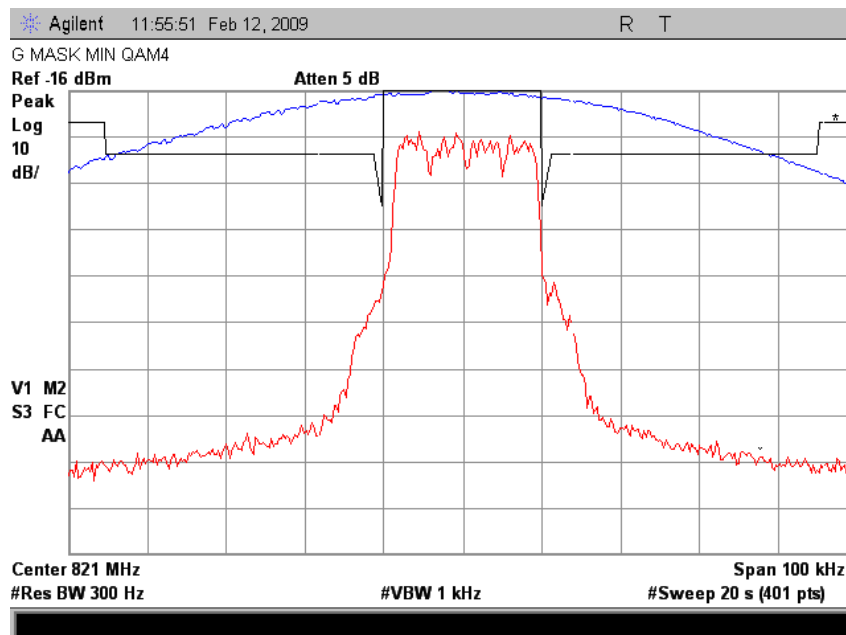


Figure 6a-2.1.2. iDEN 800 MHz Band, Quad-QPSK, Minimum Power, Emission Mask G

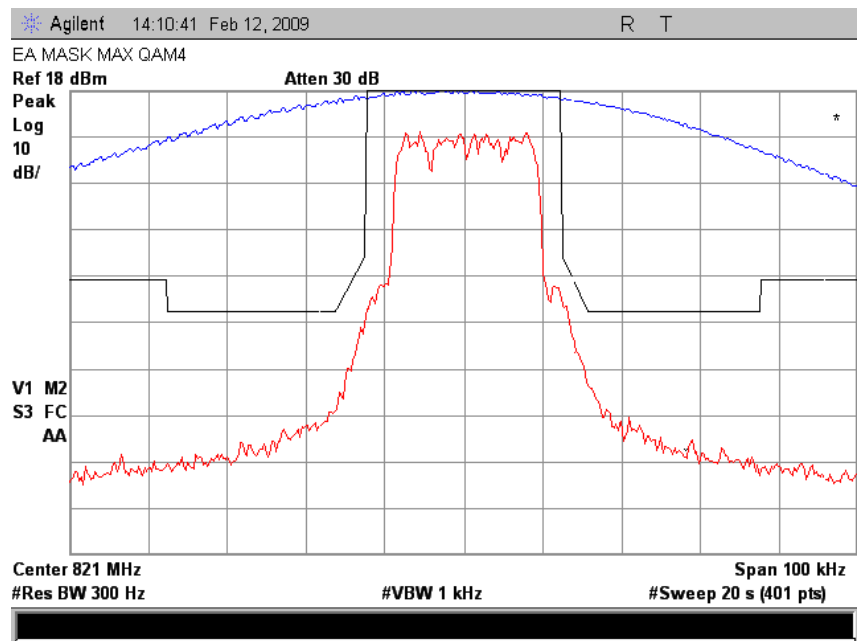


Figure 6a-2.1.3. iDEN 800 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

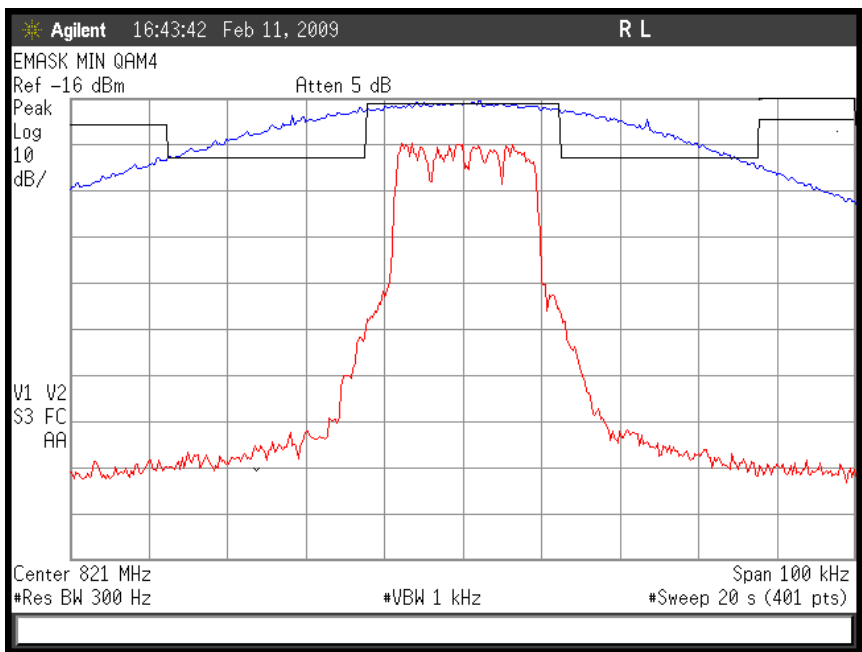


Figure 6a-2.1.4. iDEN 800 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

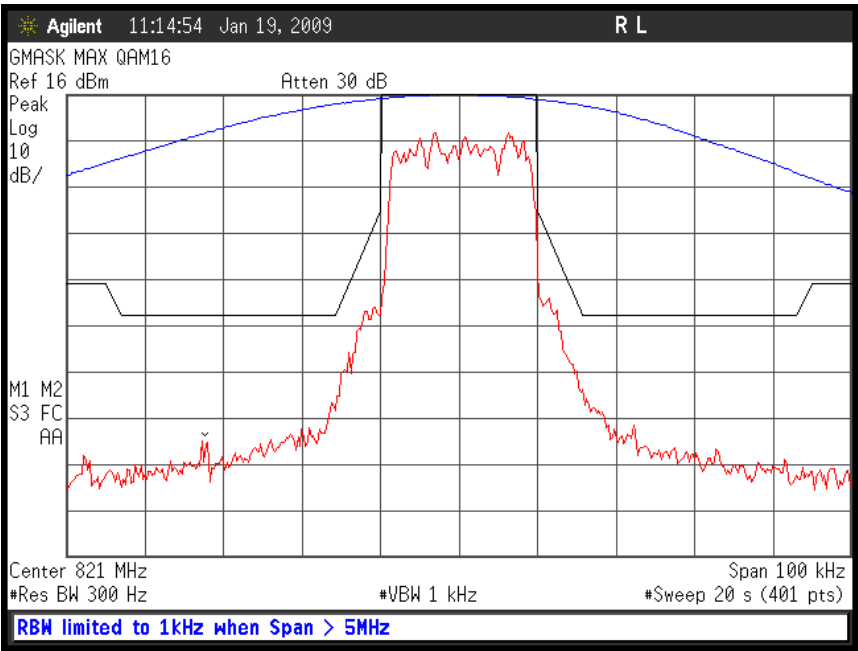


Figure 6a-2.1.5. iDEN 800 MHz Band, Quad-16QAM, Maximum Power, Emission Mask G

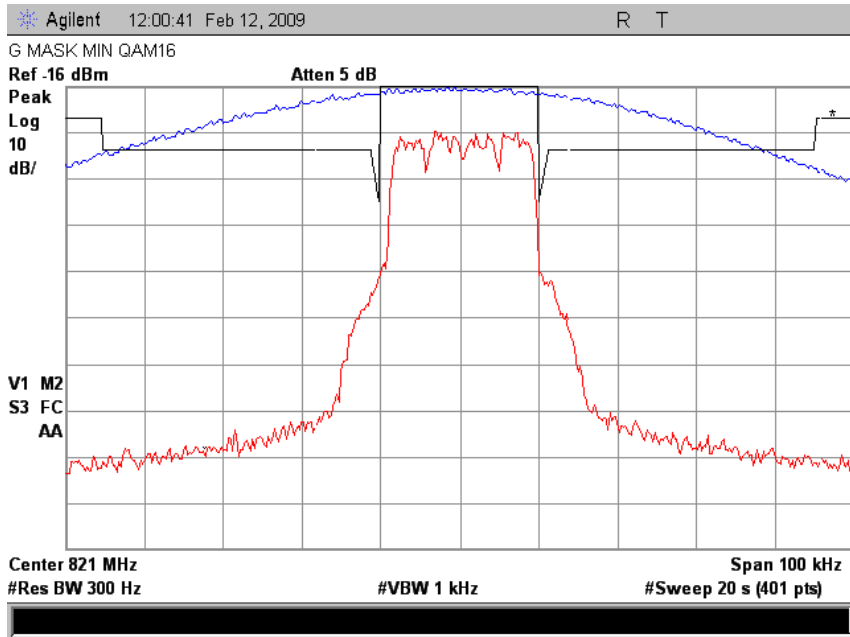


Figure 6a-2.1.6. iDEN 800 MHz Band, Quad-16QAM, Minimum Power, Emission Mask G

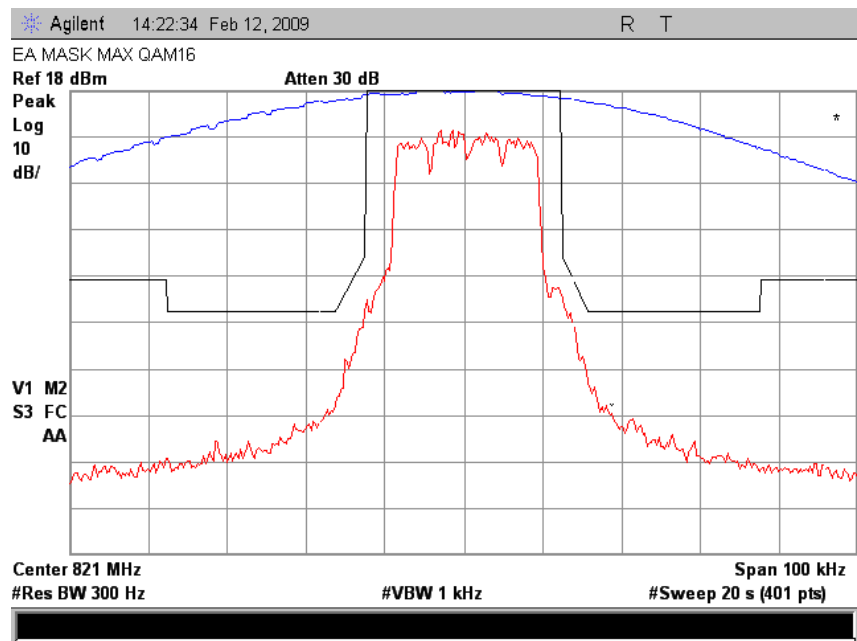


Figure 6a-2.1.7. iDEN 800 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

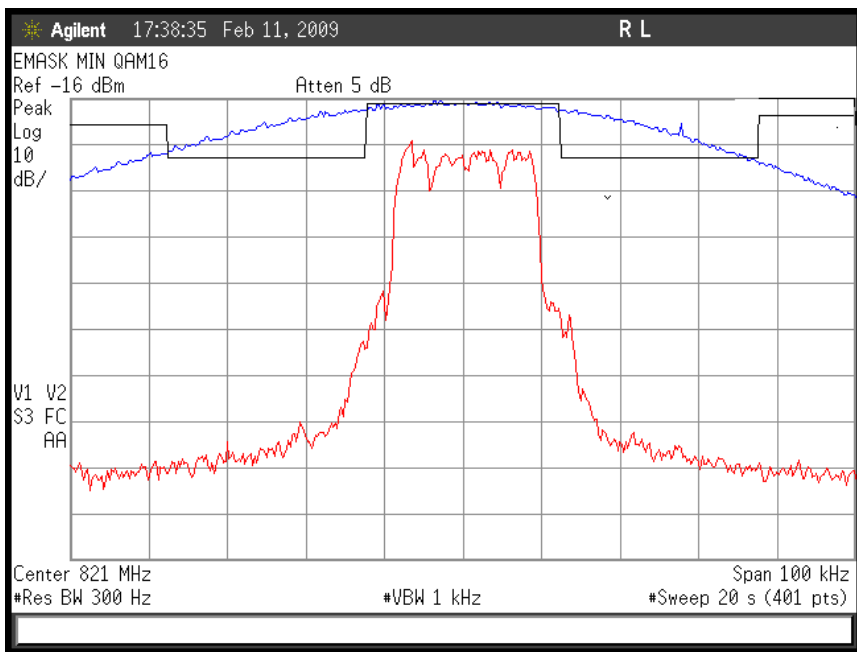


Figure 6a-2.1.8. iDEN 800 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

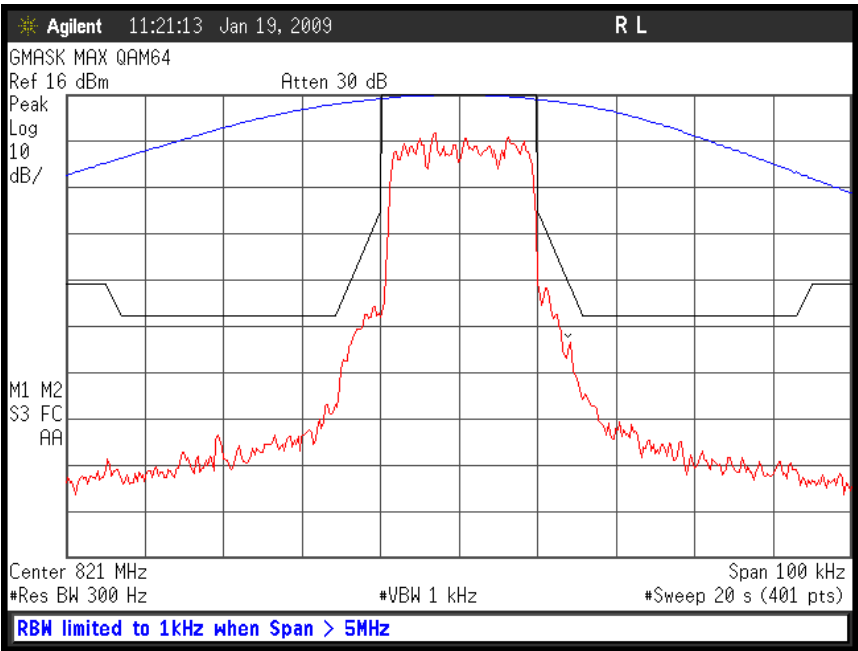


Figure 6a-2.1.9. iDEN 800 MHz Band, Quad-64QAM, Maximum Power, Emission Mask G

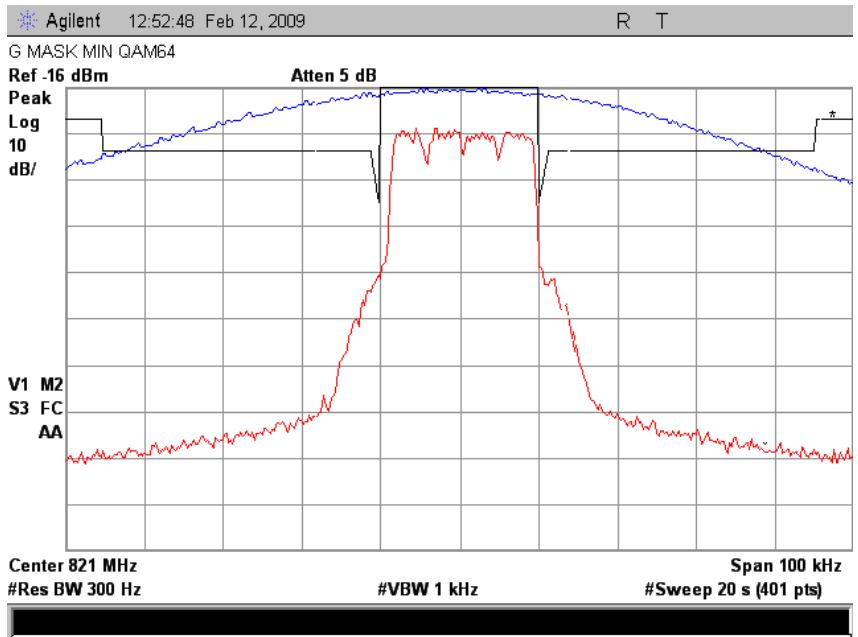


Figure 6a-2.1.10. iDEN 800 MHz Band, Quad-64QAM, Minimum Power, Emission Mask G

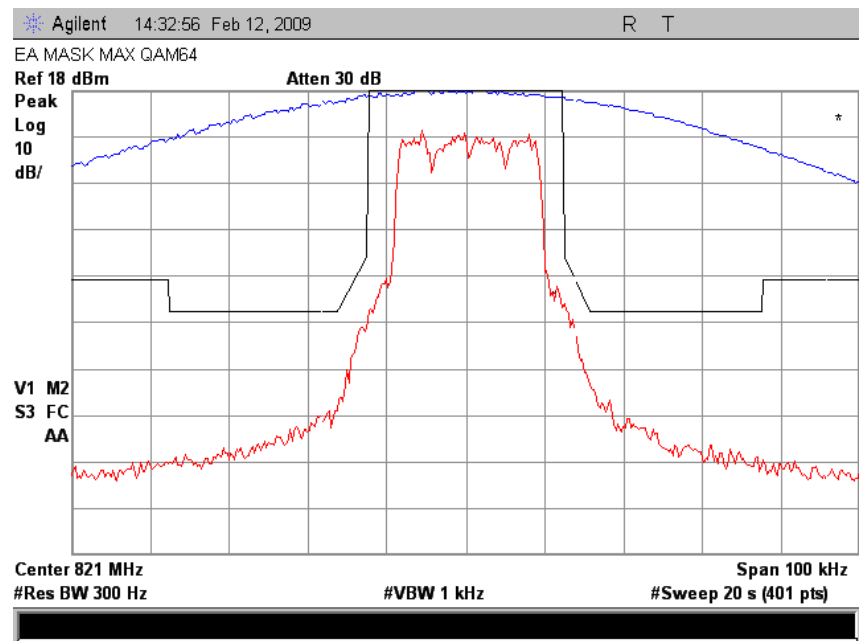


Figure 6a-2.1.11. iDEN 800 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

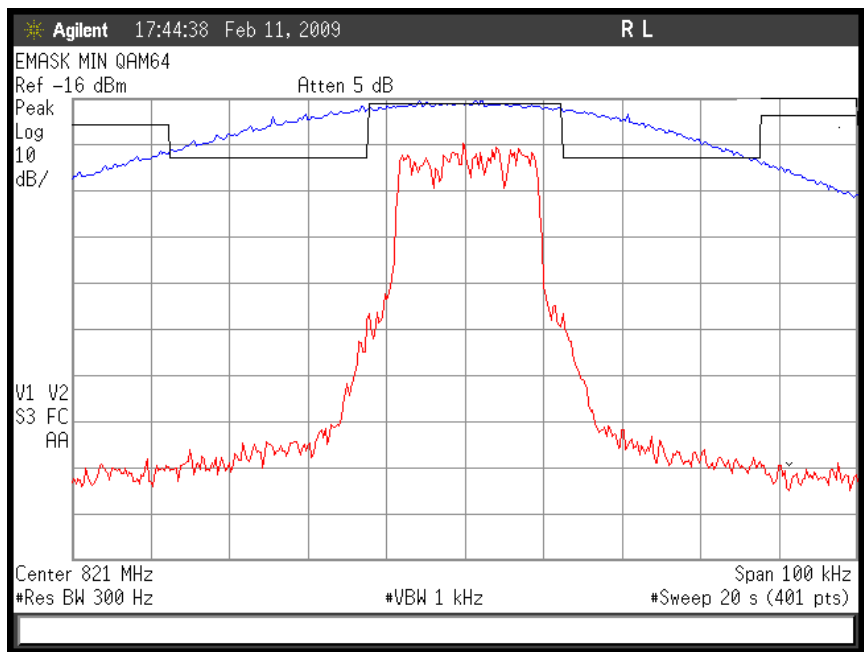


Figure 6a-2.1.12. iDEN 800 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.2. Emission Designator 18K3D7W - iDEN 900 MHz Band Measured Data

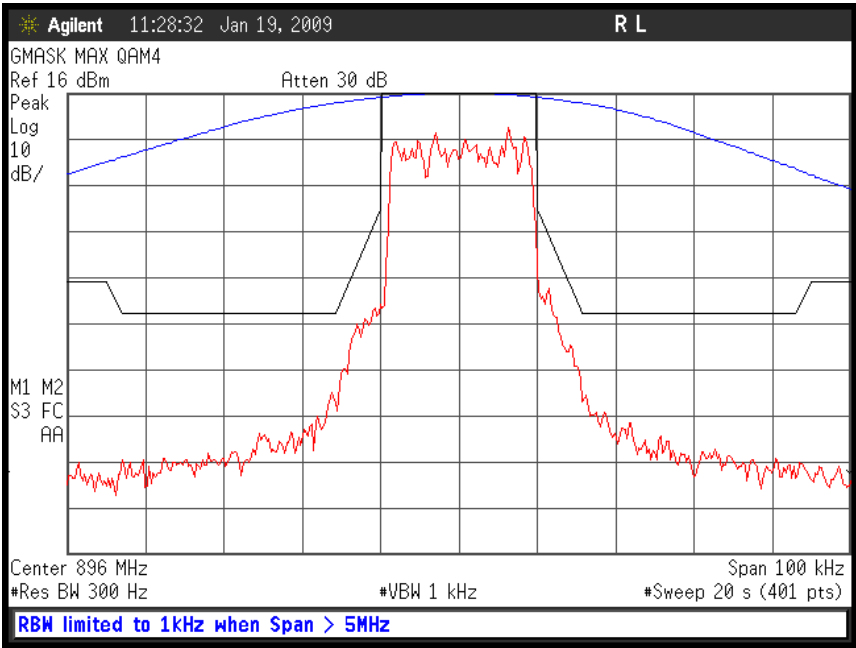


Figure 6a-2.2.1. iDEN 900 MHz Band, Quad-QPSK, Maximum Power, Emission Mask G

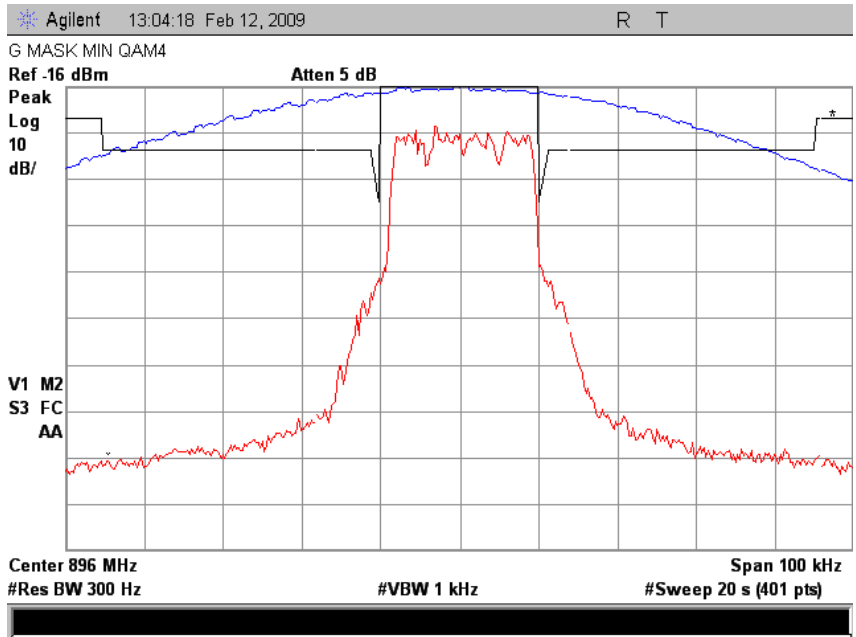


Figure 6a-2.2.2. iDEN 900 MHz Band, Quad-QPSK, Minimum Power, Emission Mask G

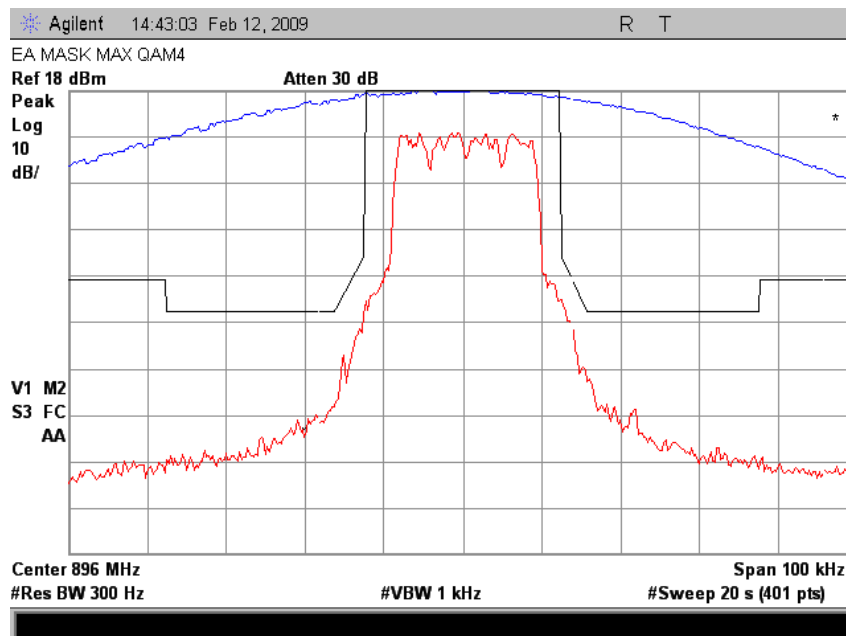


Figure 6a-2.2.3. iDEN 900 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

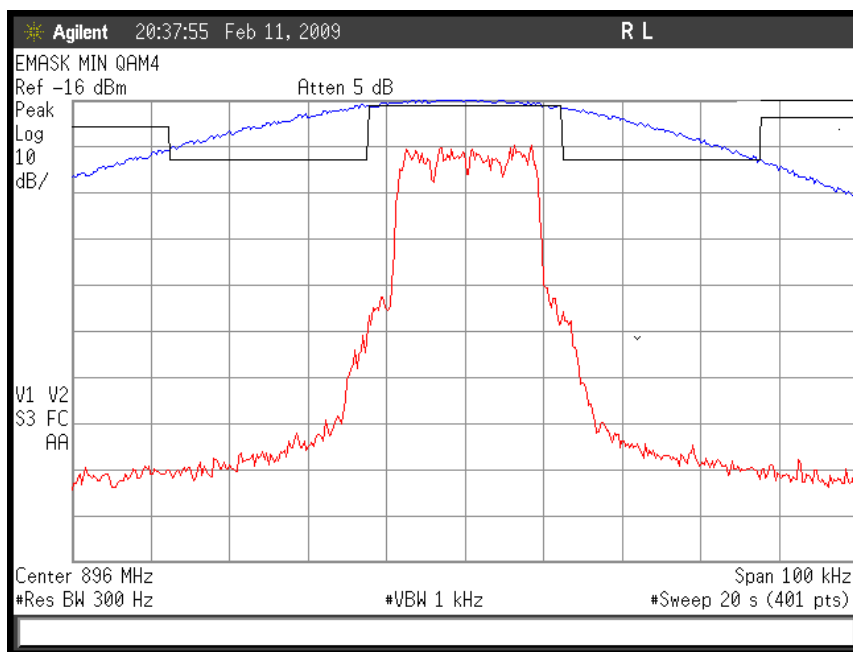


Figure 6a-2.2.4. iDEN 900 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

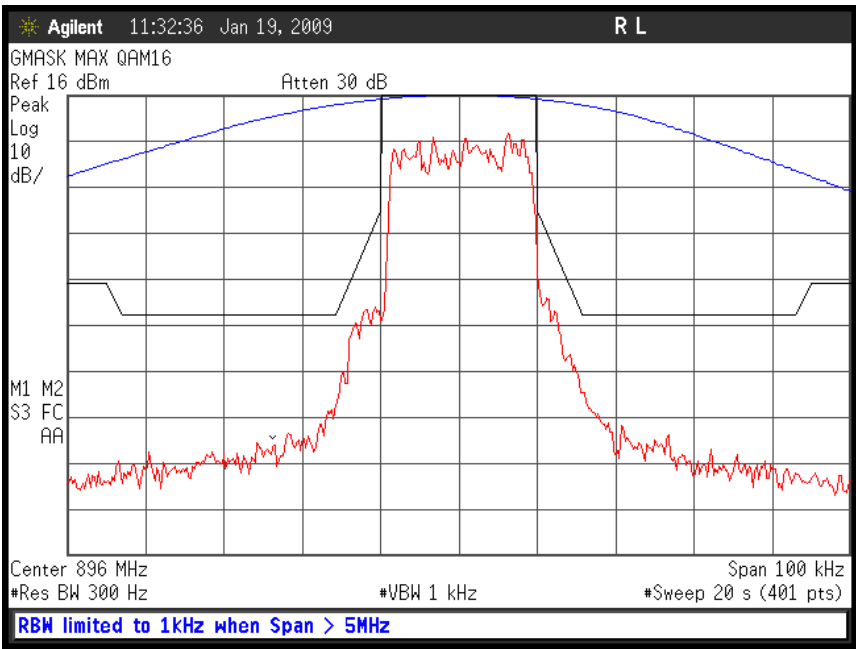


Figure 6a-2.2.5. iDEN 900 MHz Band, Quad-16QAM, Maximum Power, Emission Mask G

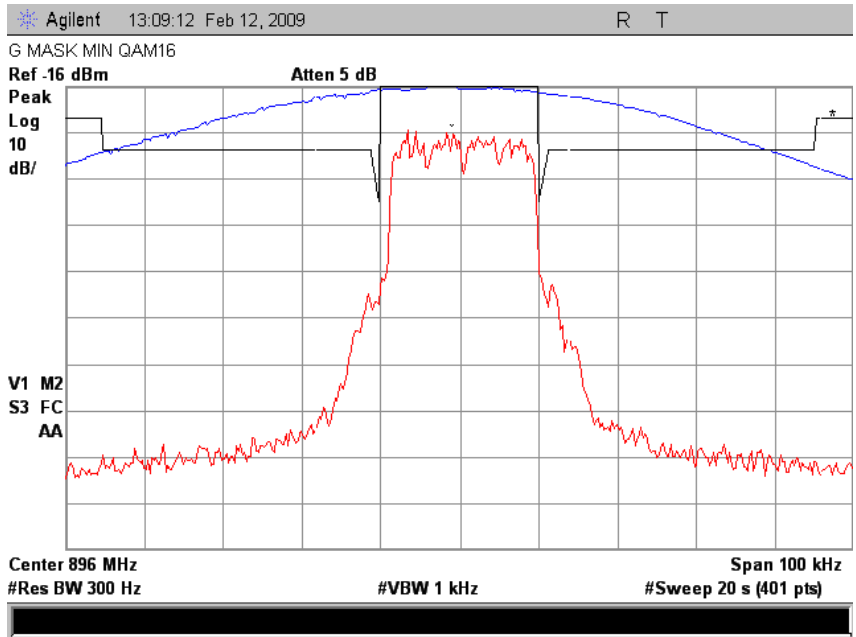


Figure 6a-2.2.6. iDEN 900 MHz Band, Quad-16QAM, Minimum Power, Emission Mask G

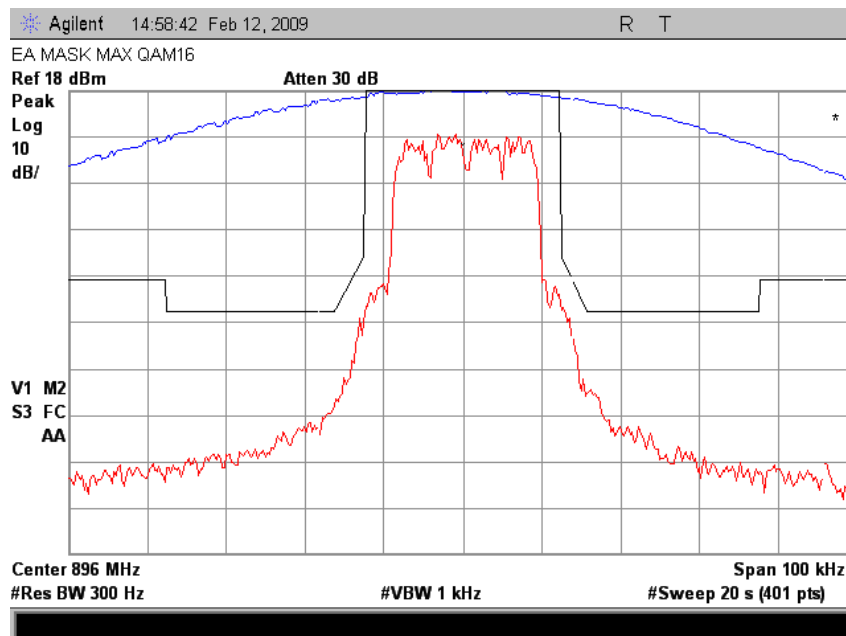


Figure 6a-2.2.7. iDEN 900 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

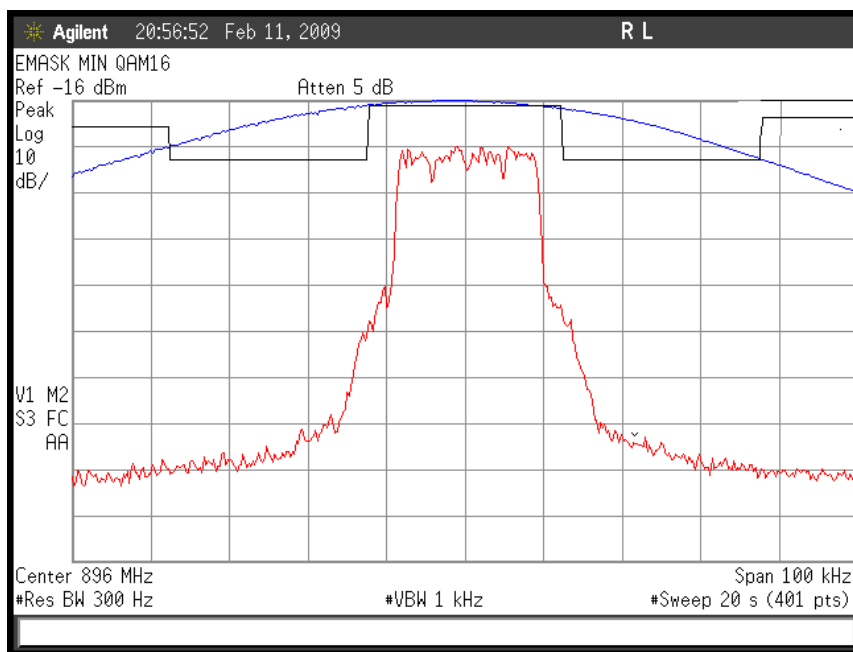


Figure 6a-2.2.8. iDEN 900 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

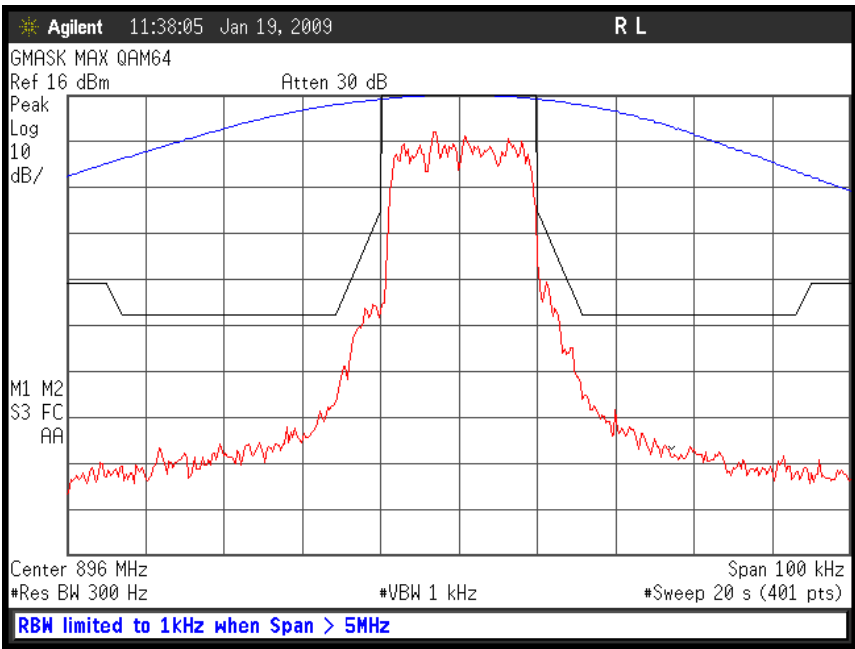


Figure 6a-2.2.9. iDEN 900 MHz Band, Quad-64QAM, Maximum Power, Emission Mask G

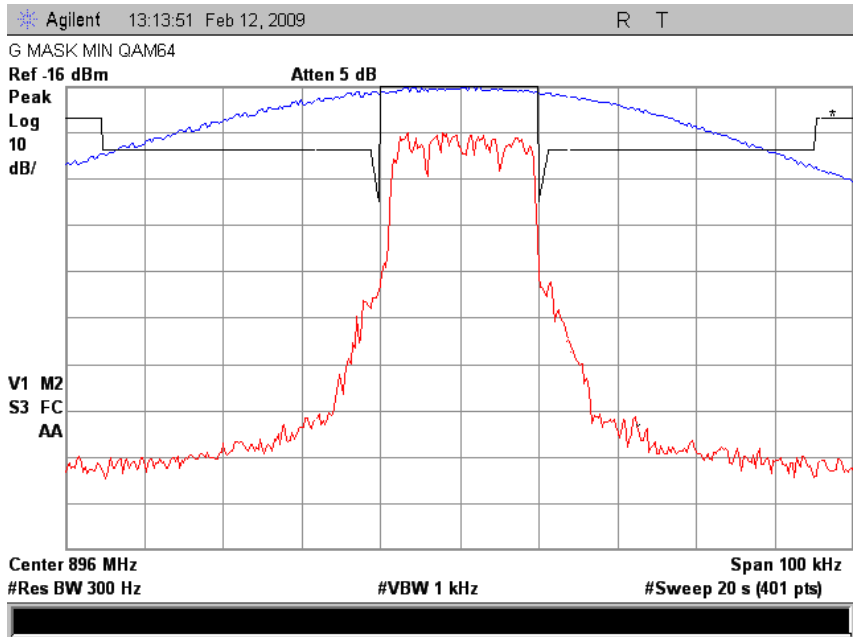


Figure 6a-2.2.10. iDEN 900 MHz Band, Quad-64QAM, Minimum Power, Emission Mask G

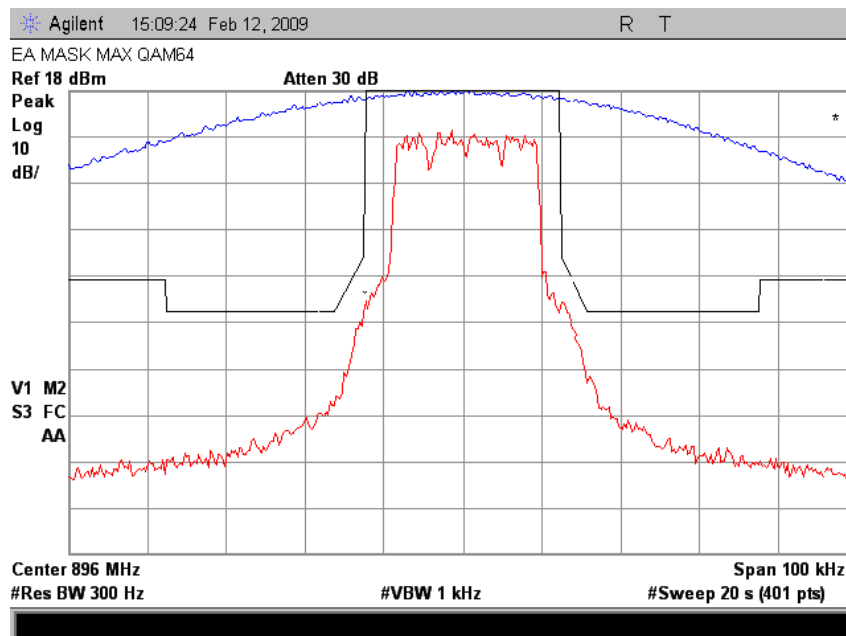


Figure 6a-2.2.11. iDEN 900 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

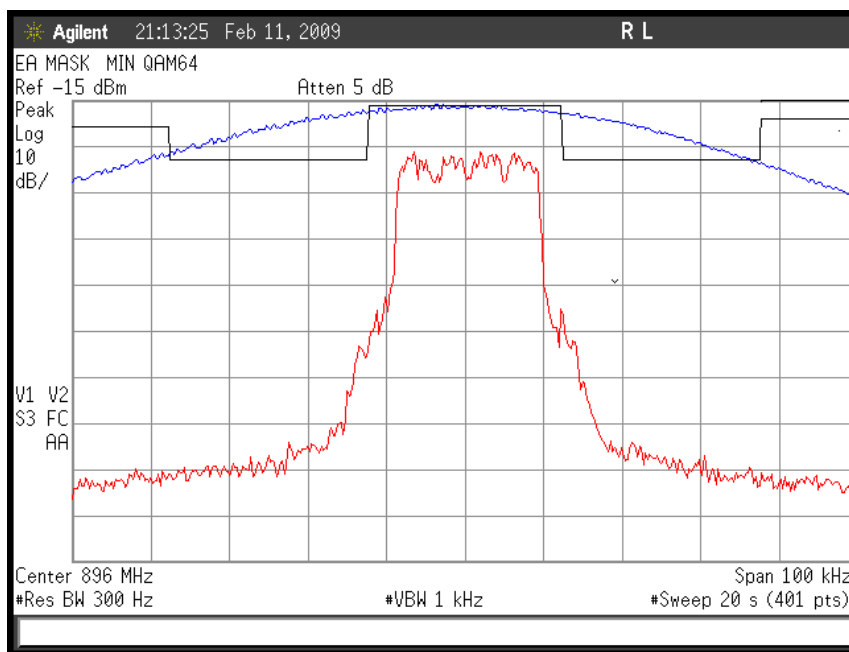


Figure 6a-2.2.12. iDEN 900 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.3 Emission Designator 18K3D7D - WiDEN25 800 MHz Band

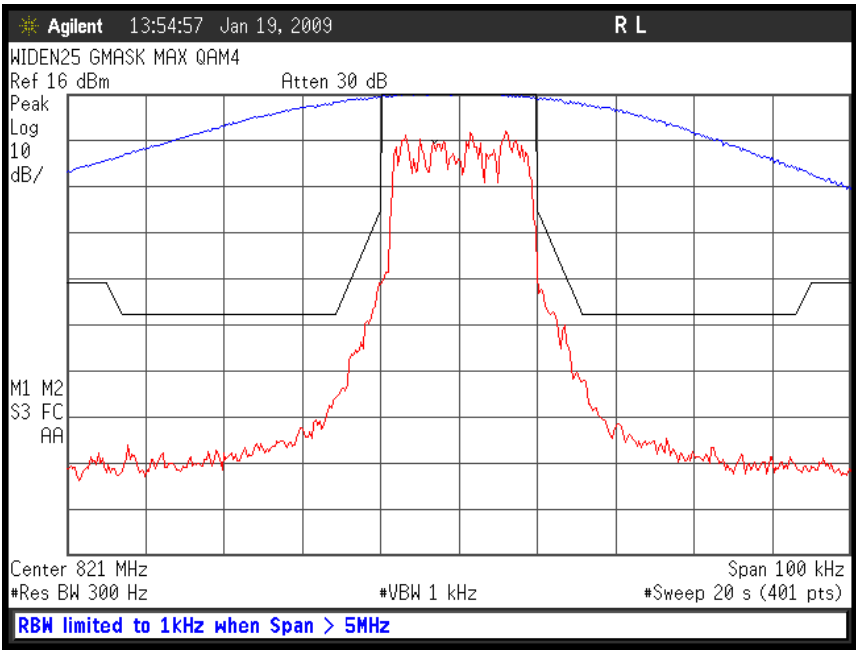


Figure 6a-2.3.1. WiDEN25 800 MHz Band, Quad-QPSK, Maximum Power, Emission Mask G

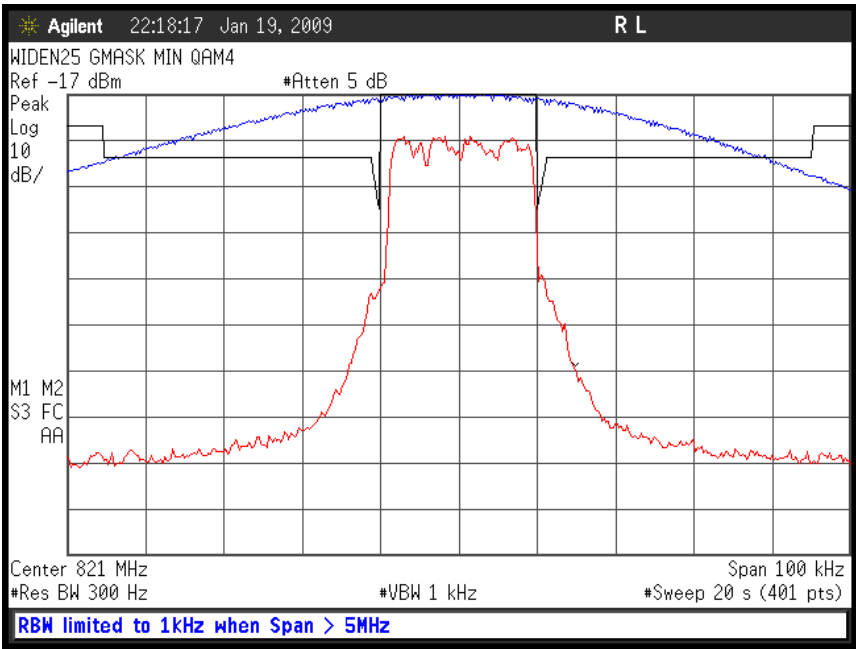


Figure 6a-2.3.2. WiDEN25 800 MHz Band, Quad-QPSK, Minimum Power, Emission Mask G

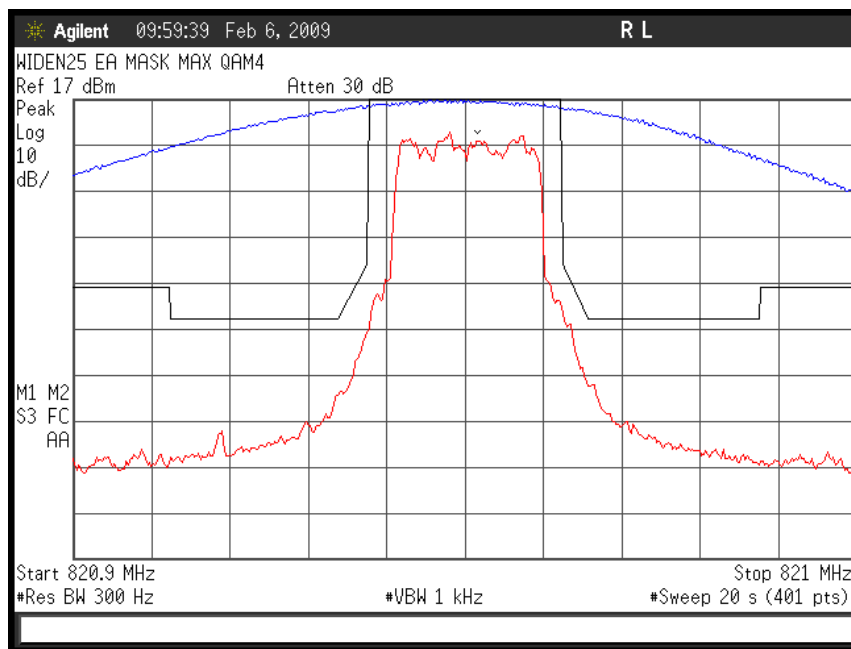


Figure 6a-2.3.3. WiDEN25 800 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

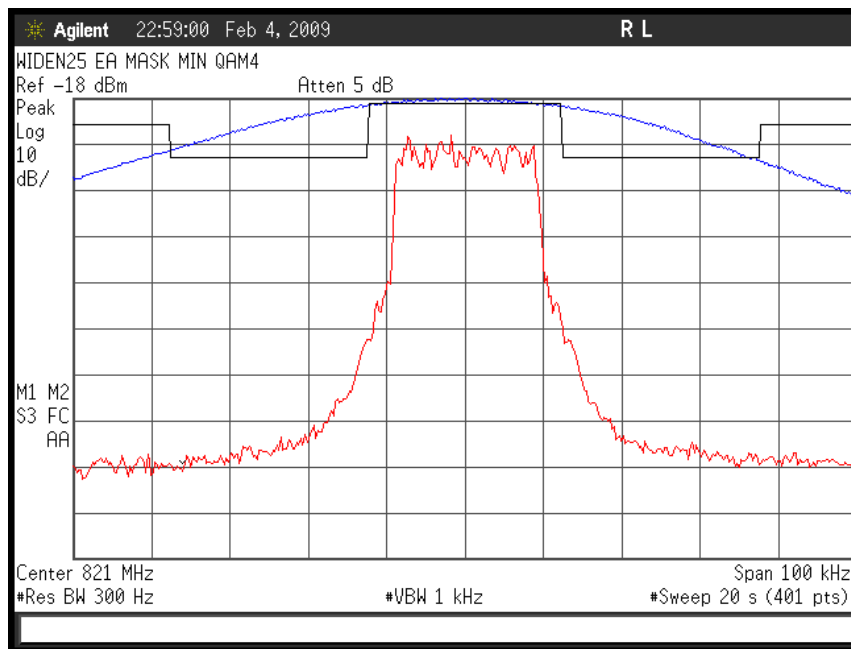


Figure 6a-2.3.4. WiDEN25 800 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

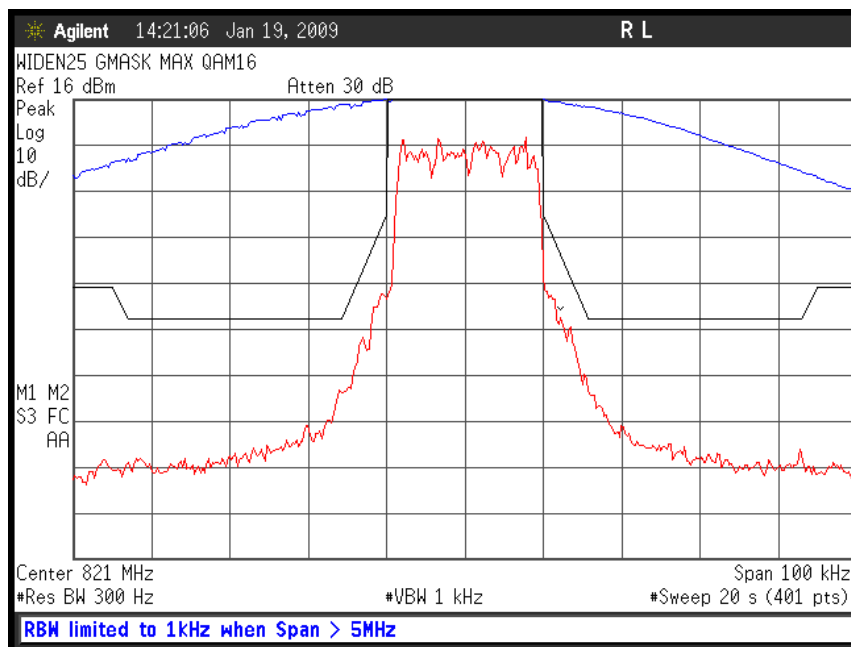


Figure 6a-2.3.5. WiDEN25 800 MHz Band, Quad-16QAM, Maximum Power, Emission Mask G

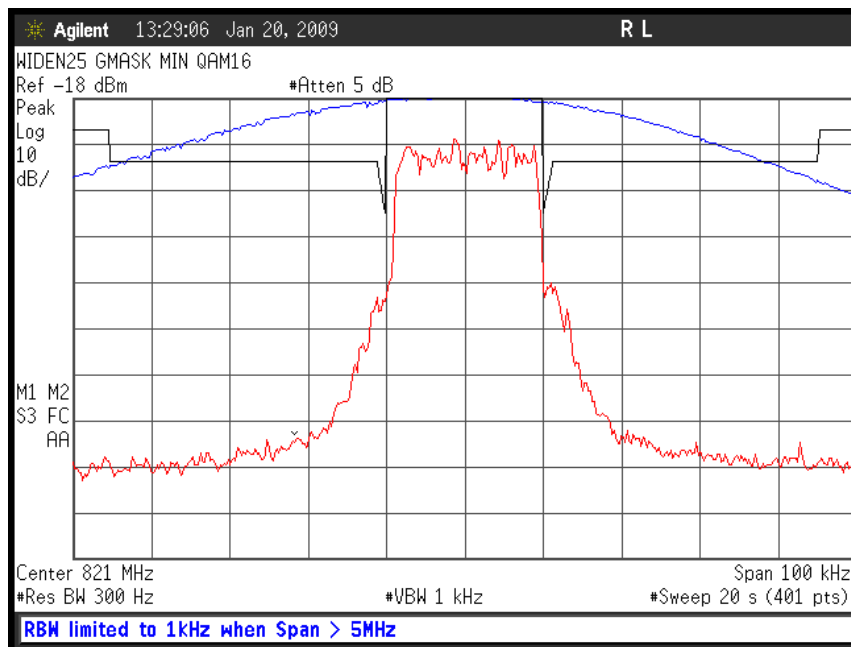


Figure 6a-2.3.6. WiDEN25 800 MHz Band, Quad-16QAM, Minimum Power, Emission Mask G

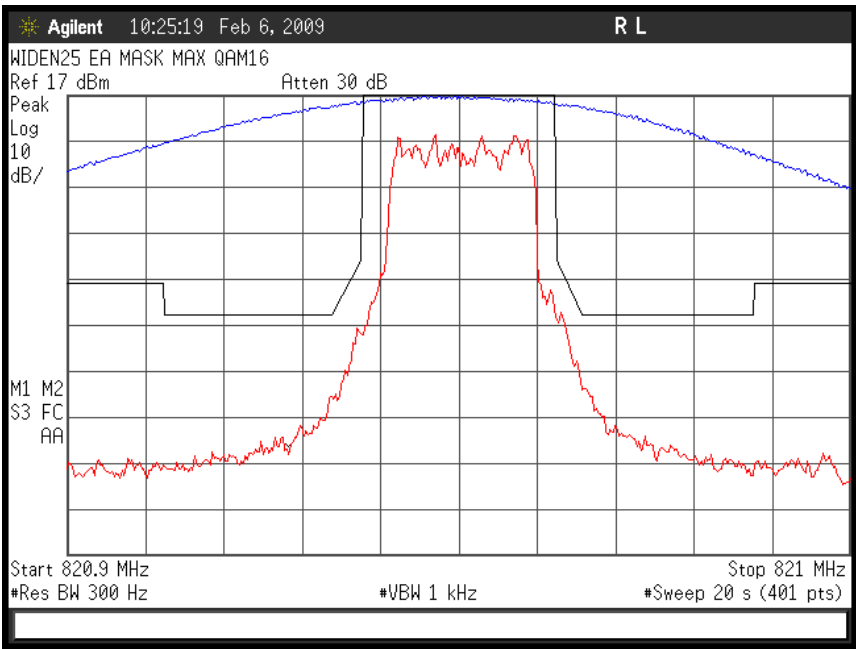


Figure 6a-2.3.7. WiDEN25 800 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

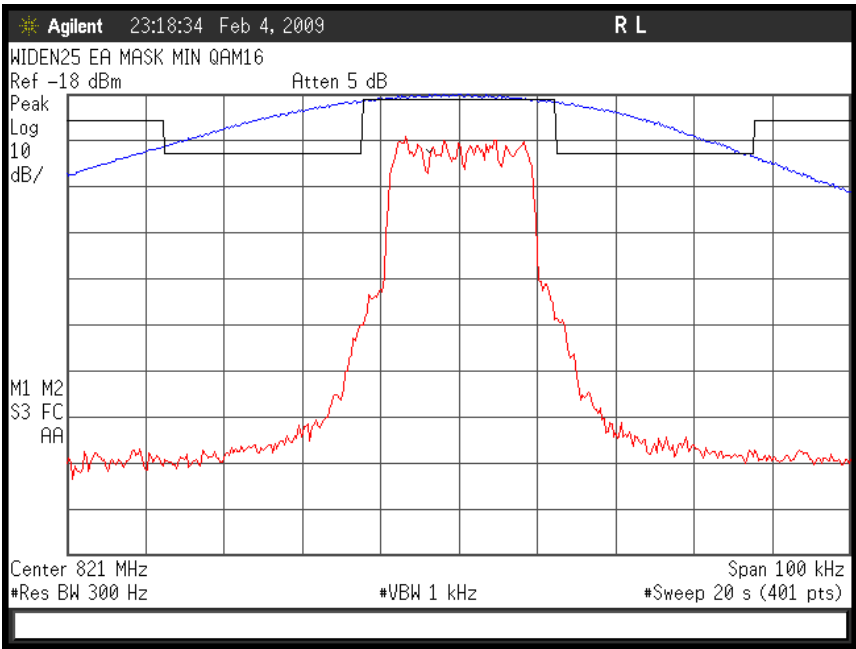


Figure 6a-2.3.8. WiDEN25 800 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

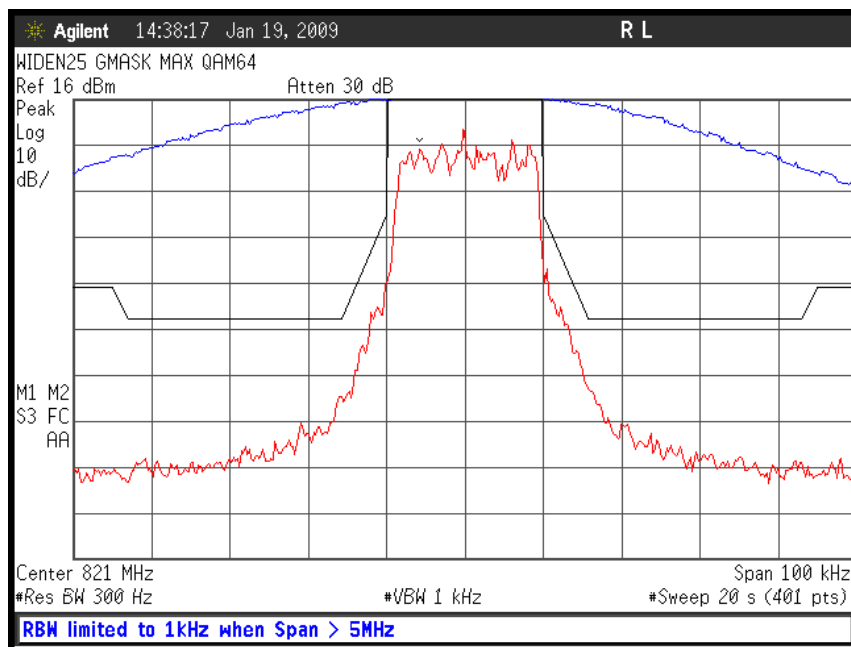


Figure 6a-2.3.9. WiDEN25 800 MHz Band, Quad-64QAM, Maximum Power, Emission Mask G

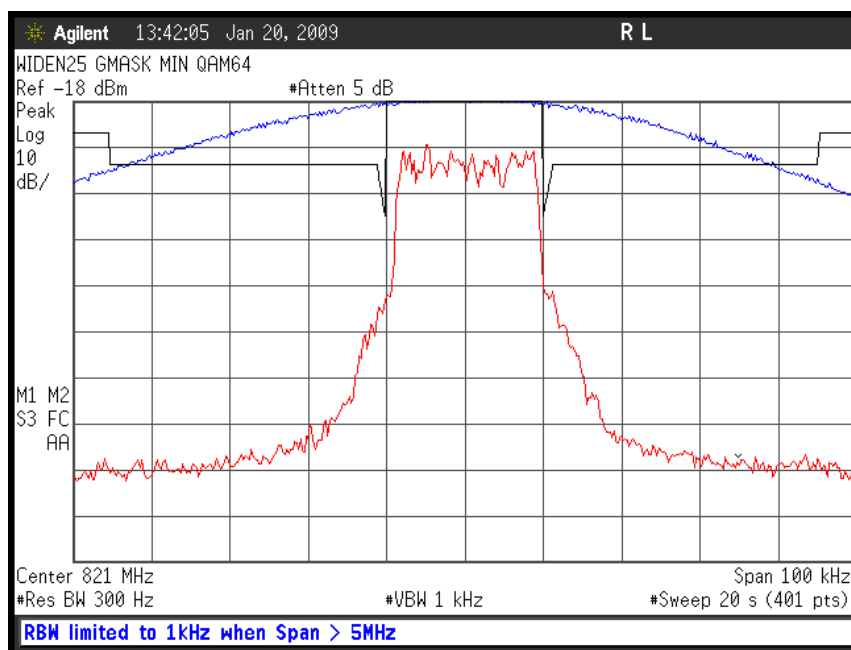


Figure 6a-2.3.10. WiDEN25 800 MHz Band, Quad-64QAM, Minimum Power, Emission Mask G

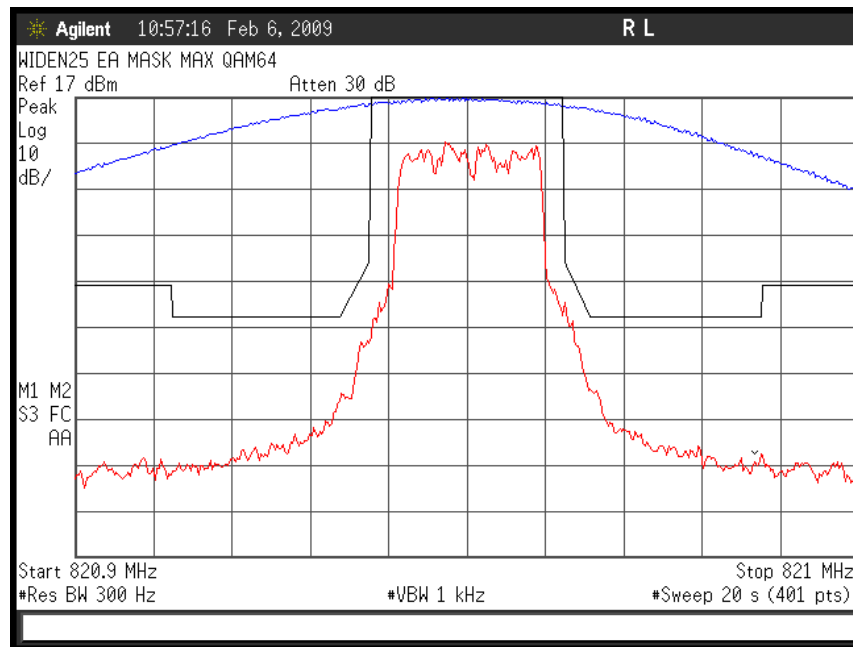


Figure 6a-2.3.11. WiDEN25 800 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

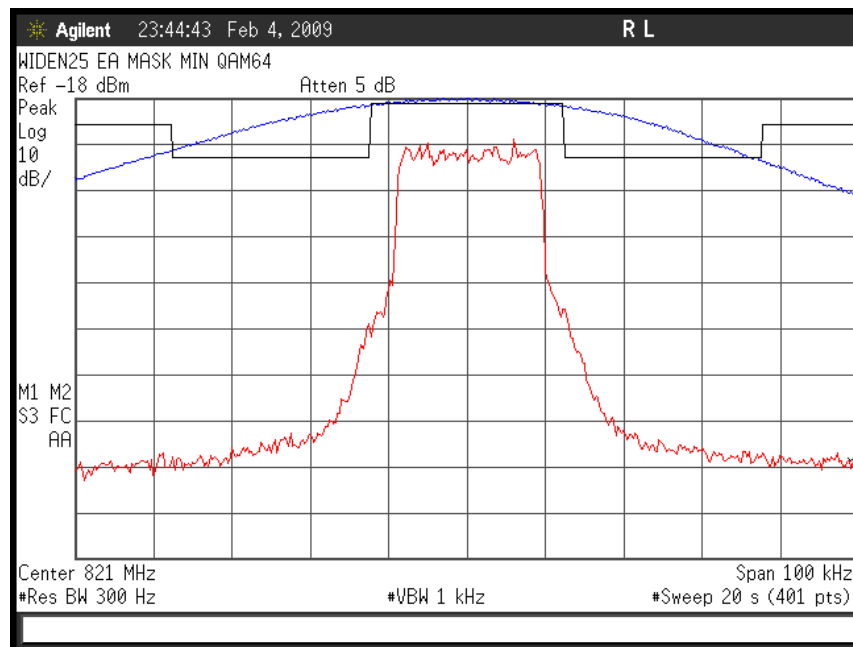


Figure 6a-2.3.12. WiDEN25 800 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.4 Emission Designator 43K3D7D - WiDEN50 800 MHz Band

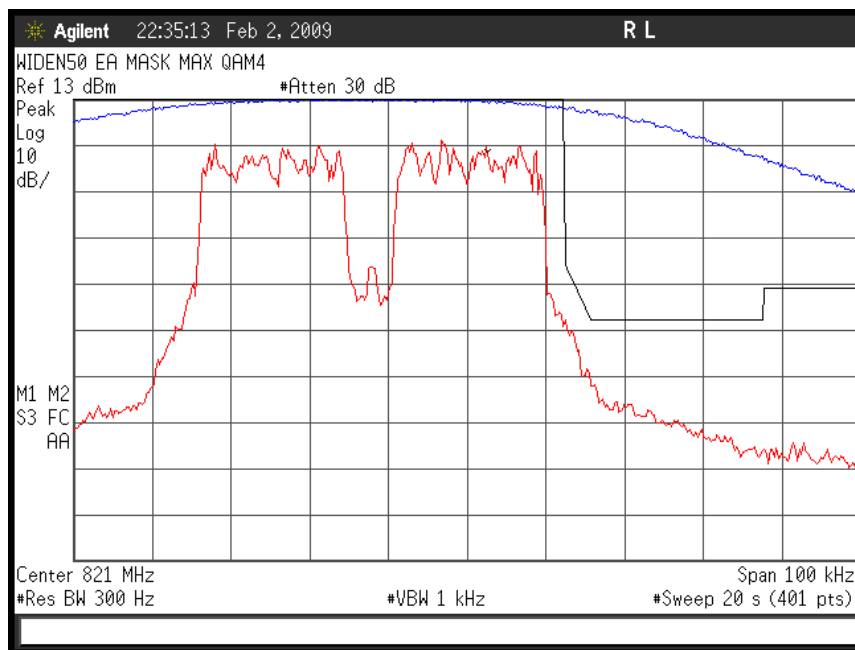


Figure 6a-2.4.1. WiDEN50 800 MHz Band, Continuous Quad-QPSK, Maximum Power, EA Emission Mask

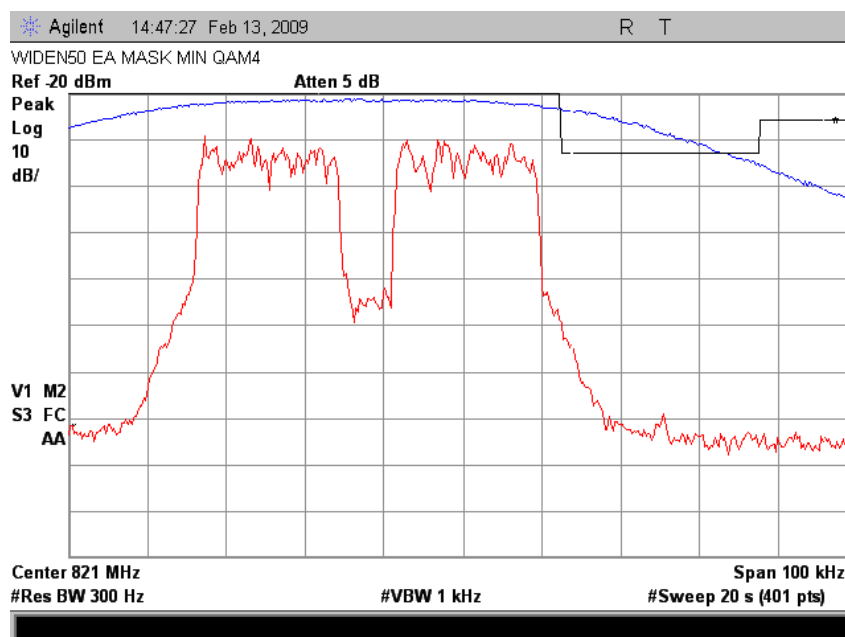


Figure 6a-2.4.2. WiDEN50 800 MHz Band, Continuous Quad-QPSK, Minimum Power, EA Emission Mask

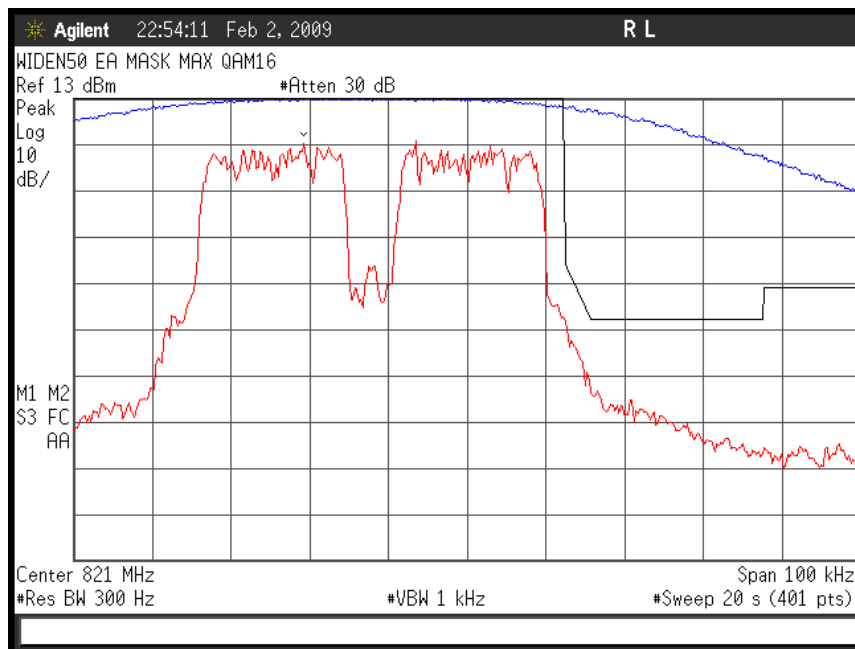


Figure 6a-2.4.3. WiDEN50 800 MHz Band, Continuous Quad-16QAM, Maximum Power, EA Emission Mask

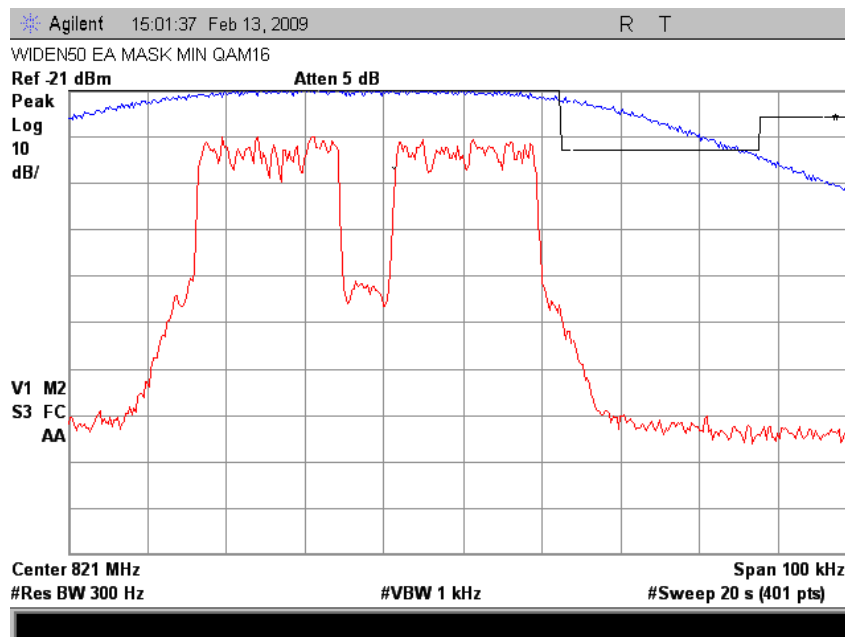


Figure 6a-2.4.4. WiDEN50 800 MHz Band, Continuous Quad-16QAM, Minimum Power, EA Emission Mask

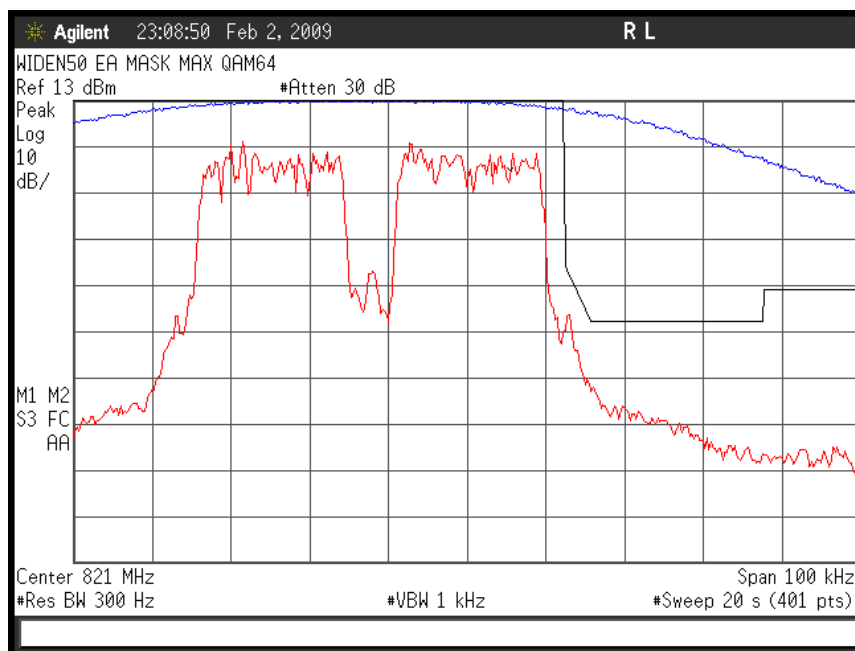


Figure 6a-2.4.5. WiDEN50 800 MHz Band, Continuous Quad-64QAM, Maximum Power, EA Emission Mask

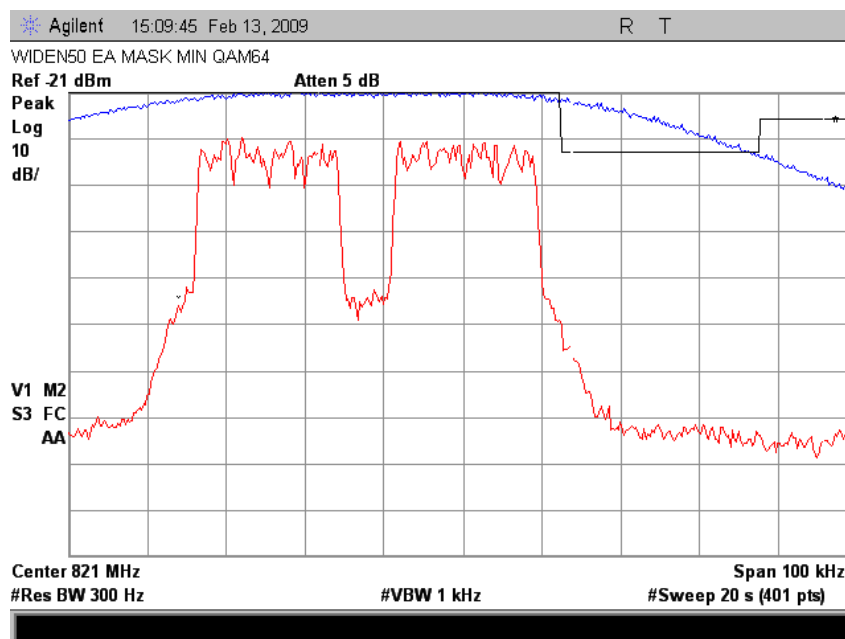


Figure 6a-2.4.6. WiDEN50 800 MHz Band, Continuous Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.5 Emission Designator 68K3D7D - WiDEN75 800 MHz Band

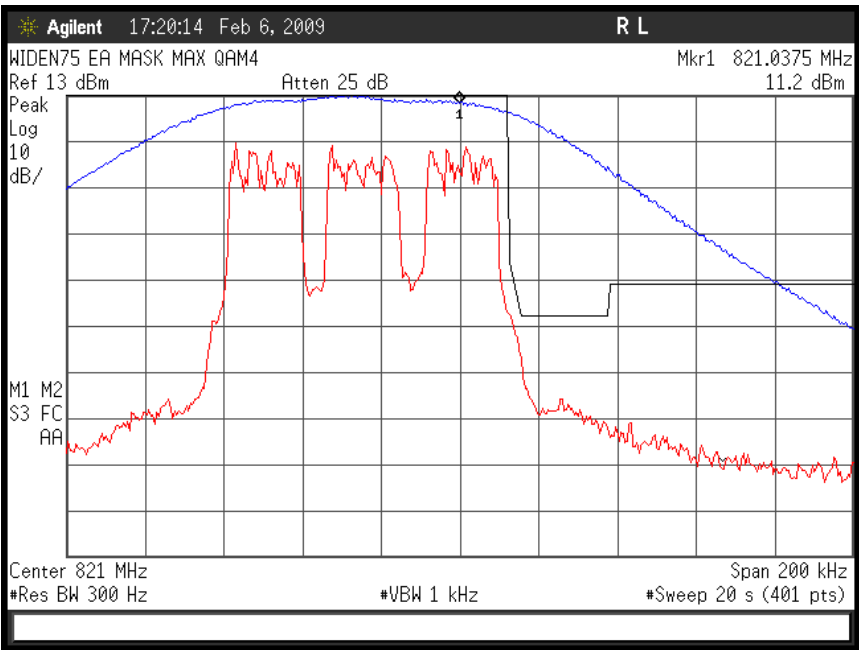


Figure 6a-2.5.1. WiDEN75 800 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

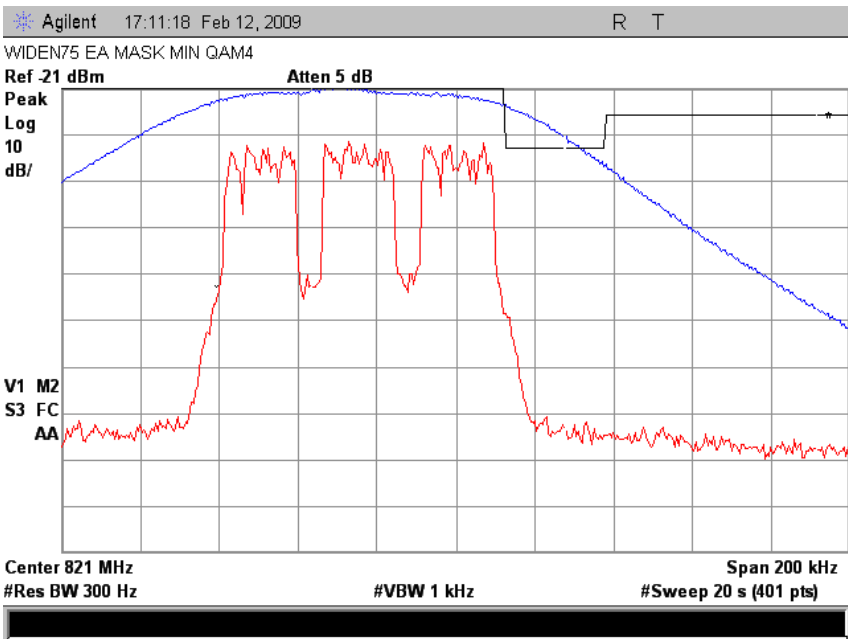


Figure 6a-2.5.2. WiDEN75 800 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

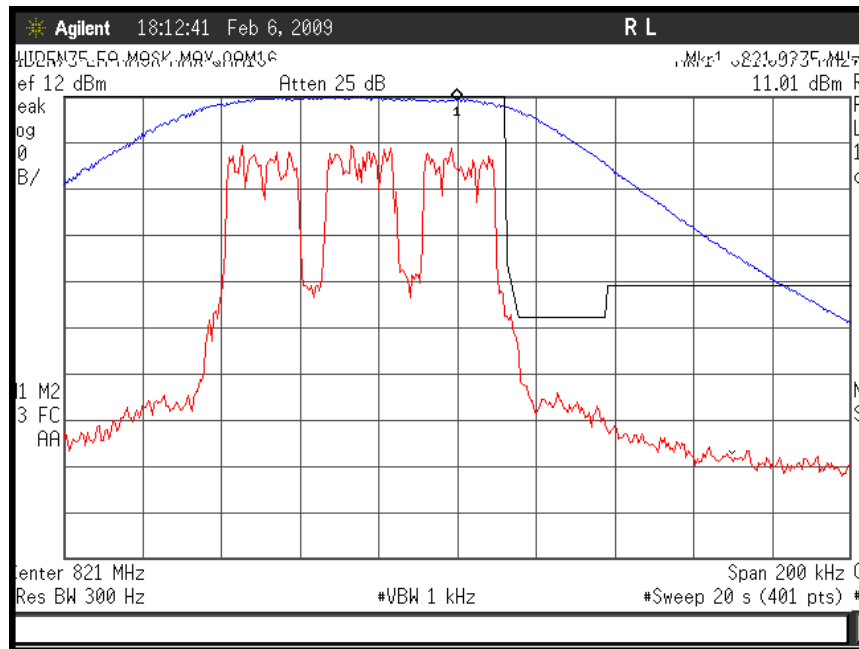


Figure 6a-2.5.3. WiDEN75 800 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

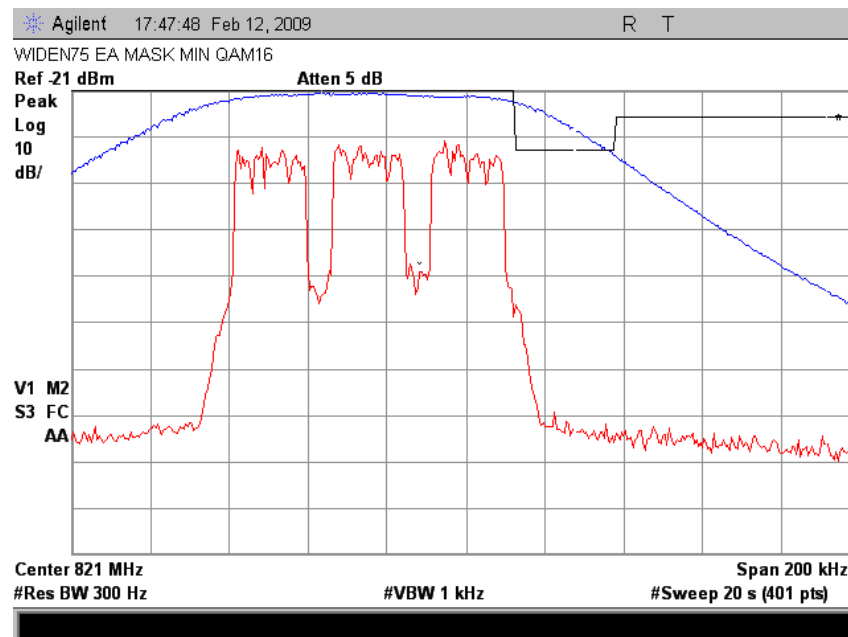


Figure 6a-2.5.4. WiDEN75 800 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

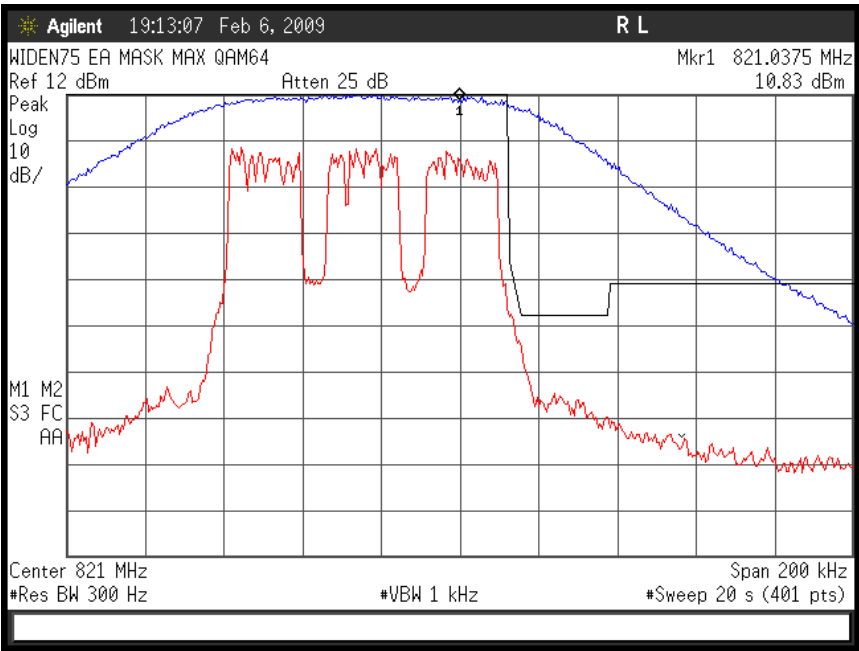


Figure 6a-2.5.5. WiDEN75 800 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

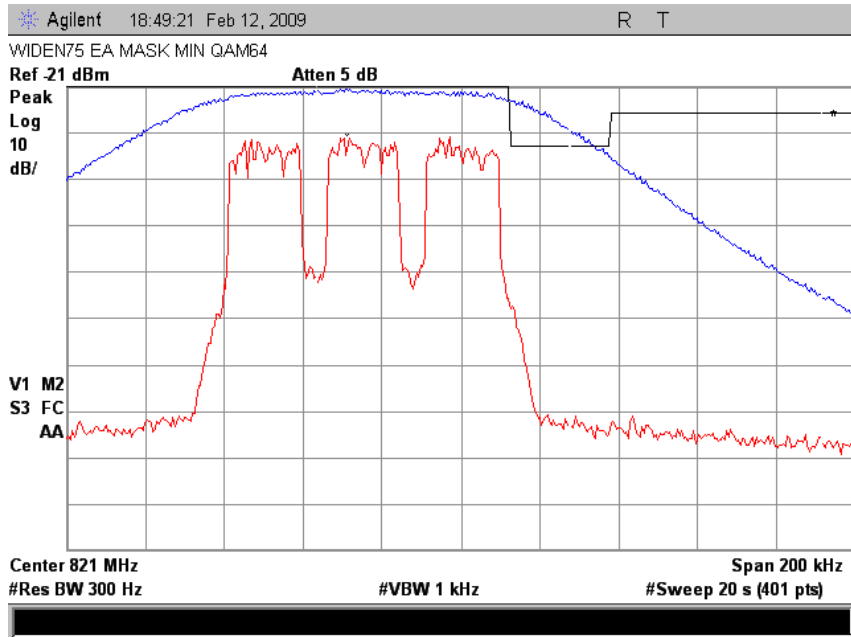


Figure 6a-2.5.6. WiDEN75 800 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.6 Emission Designator 93K3D7D - WiDEN100 800 MHz Band

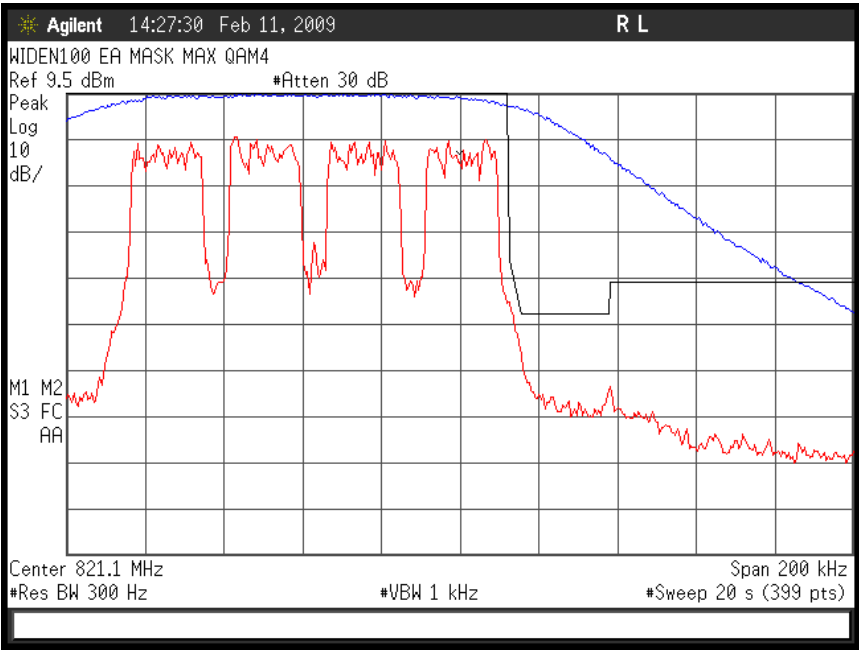


Figure 6a-2.6.1. WiDEN100 800 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

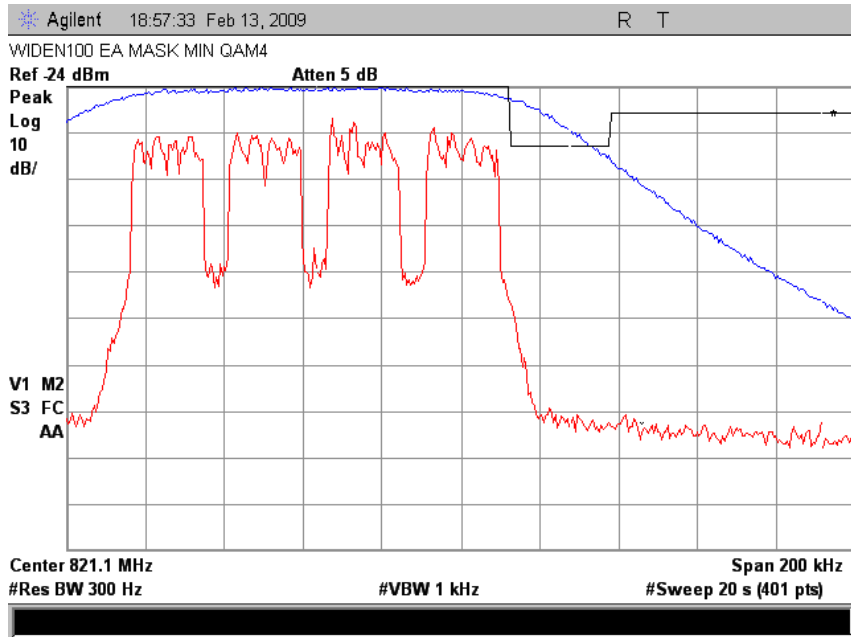


Figure 6a-2.6.2. WiDEN100 800 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

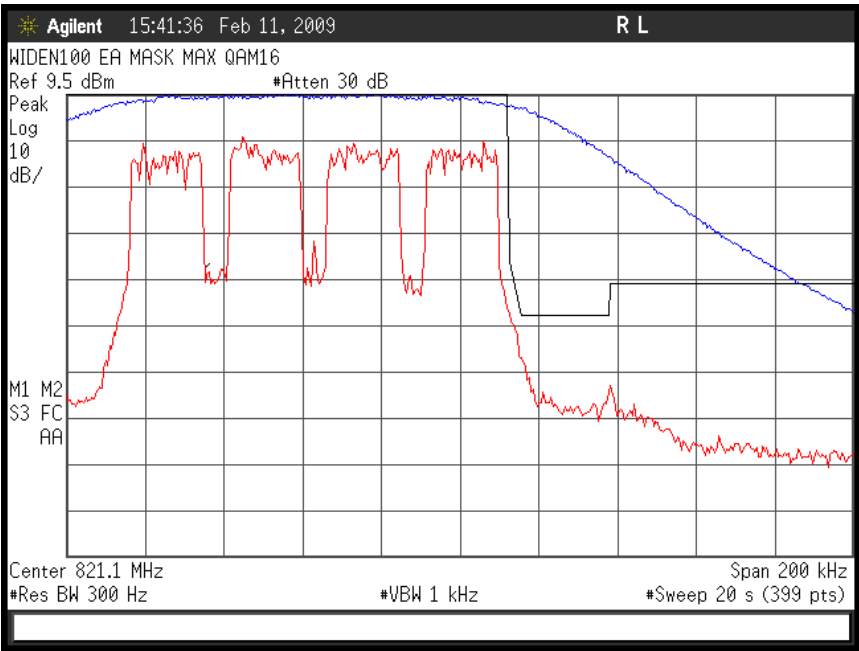


Figure 6a-2.6.3. WiDEN100 800 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

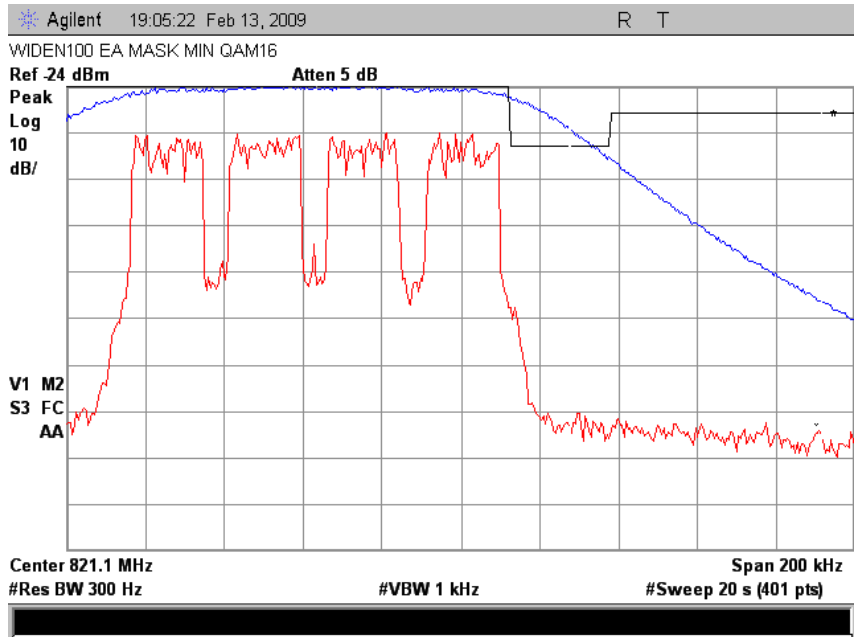


Figure 6a-2.6.4. WiDEN100 800 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

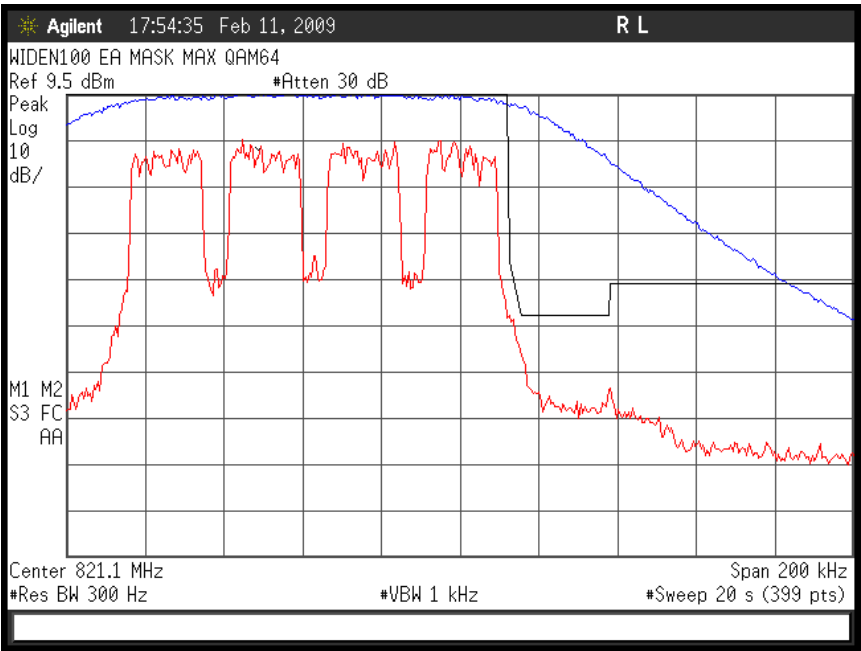


Figure 6a-2.6.5. WiDEN100 800 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

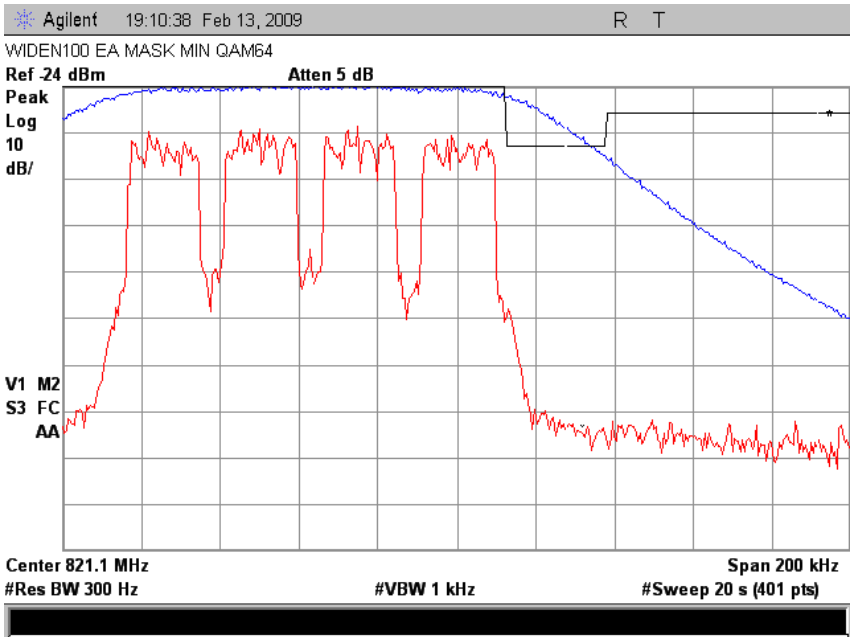


Figure 6a-2.6.6. WiDEN100 800 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.7 Emission Designator 93K3D7D – WiDEN 50 Split 800 MHz Band

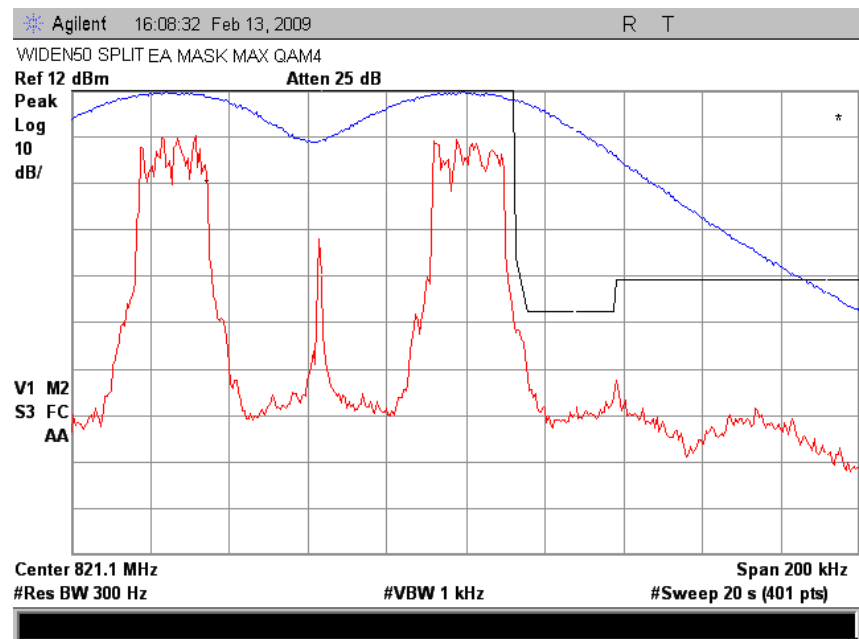


Figure 6a-2.7.1. WiDEN50 Split 800 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

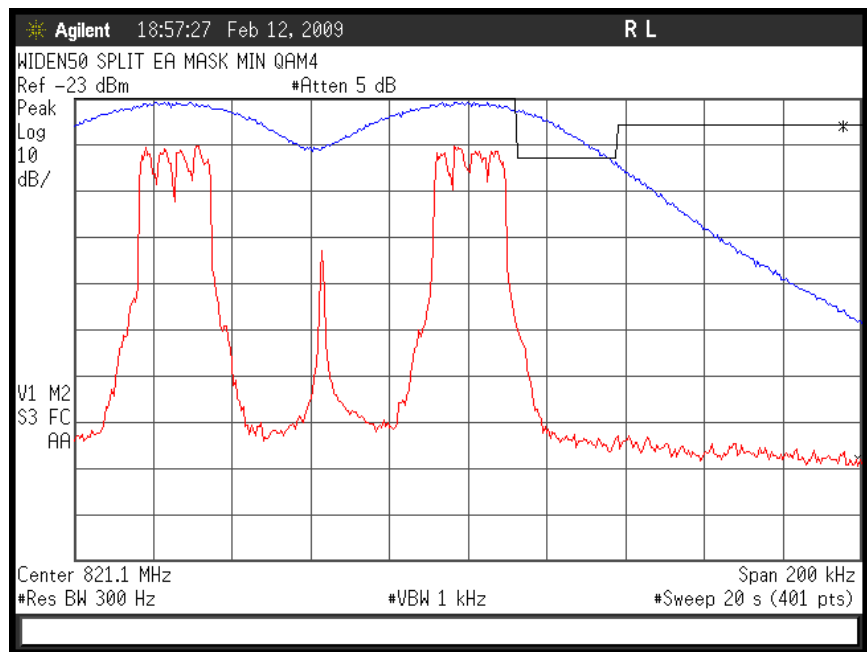


Figure 6a-2.7.2. WiDEN50 Split 800 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

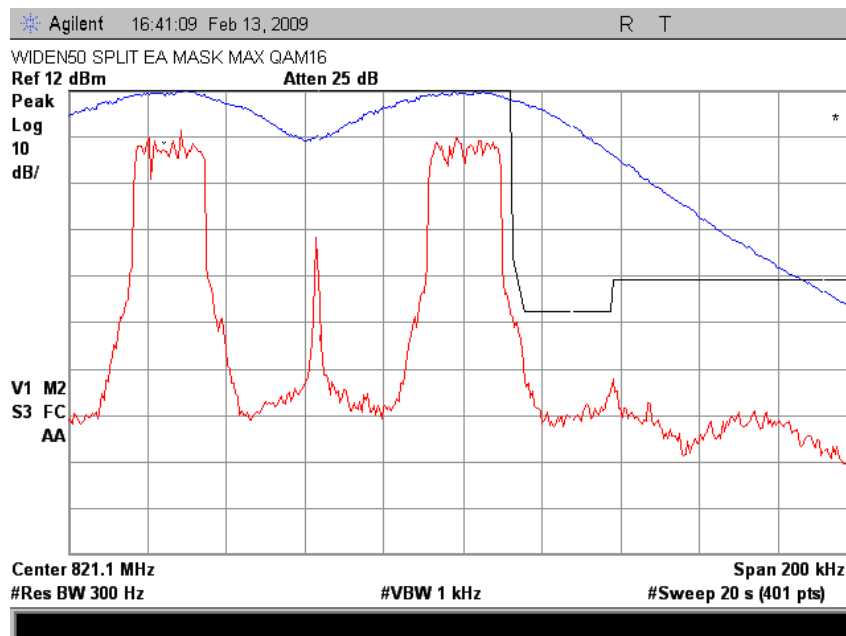


Figure 6a-2.7.3. WiDEN50 Split 800 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

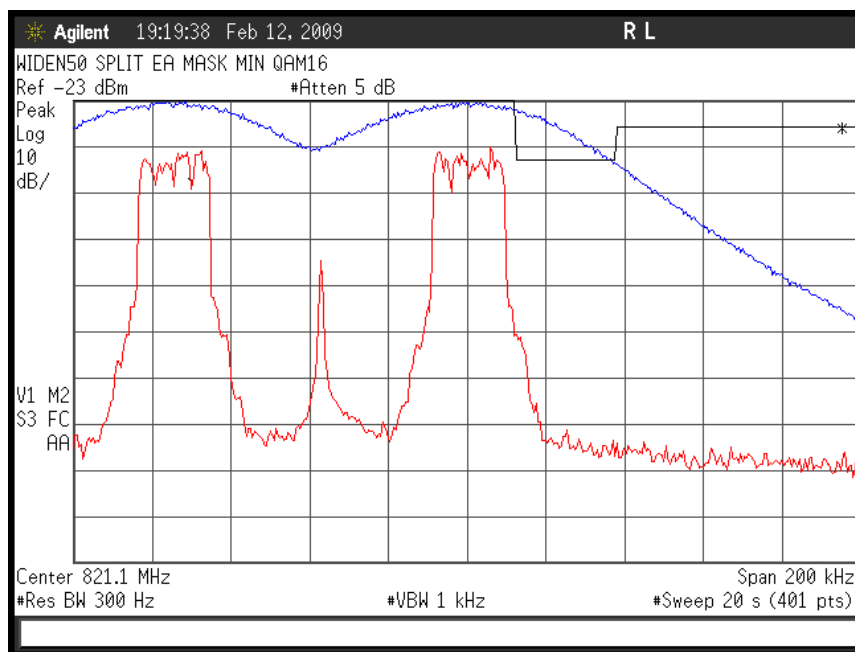


Figure 6a-2.7.4. WiDEN50 Split 800 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

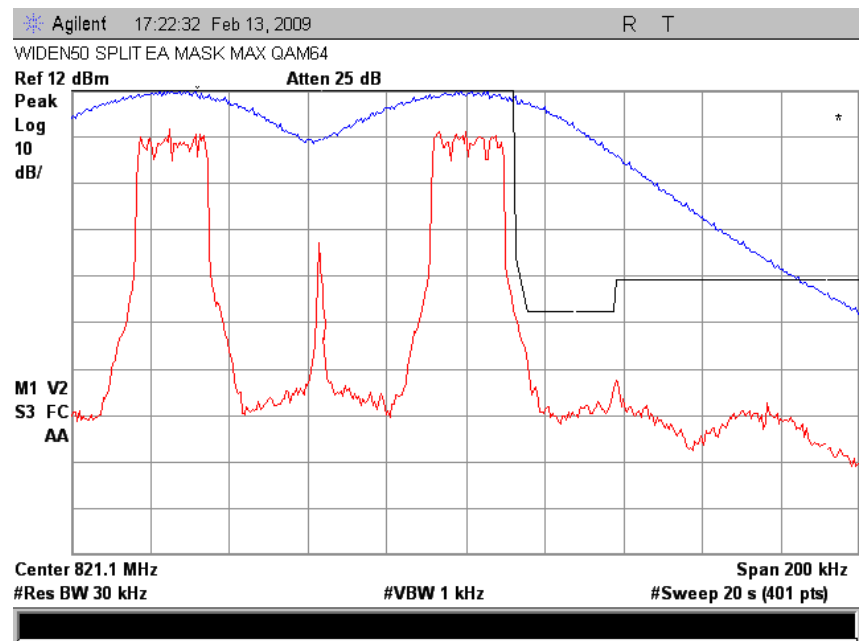


Figure 6a-2.7.5. WiDEN50 Split 800 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

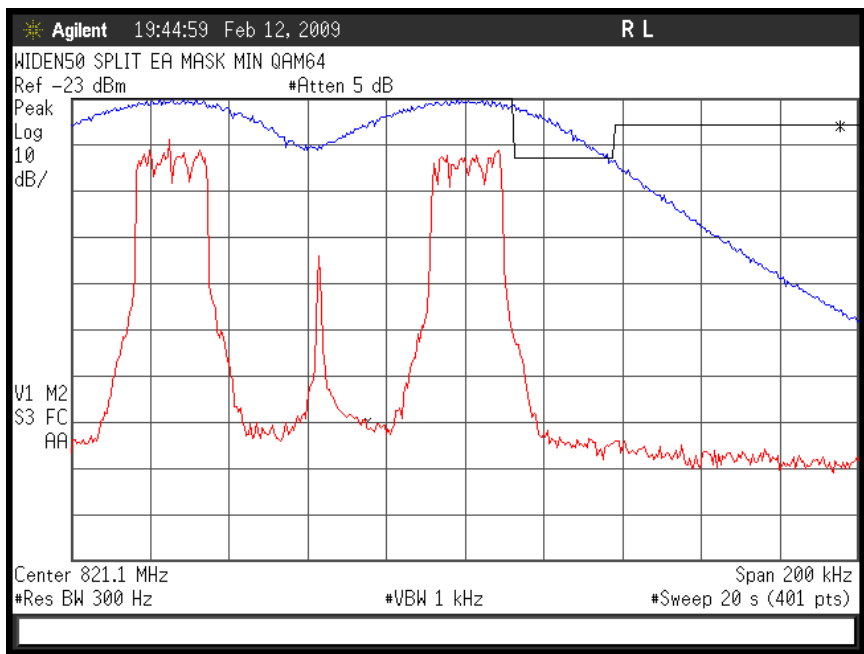


Figure 6a-2.7.6. WiDEN50 Split 800 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.8 Emission Designator 18K3D7D - WiDEN25 900 MHz Band

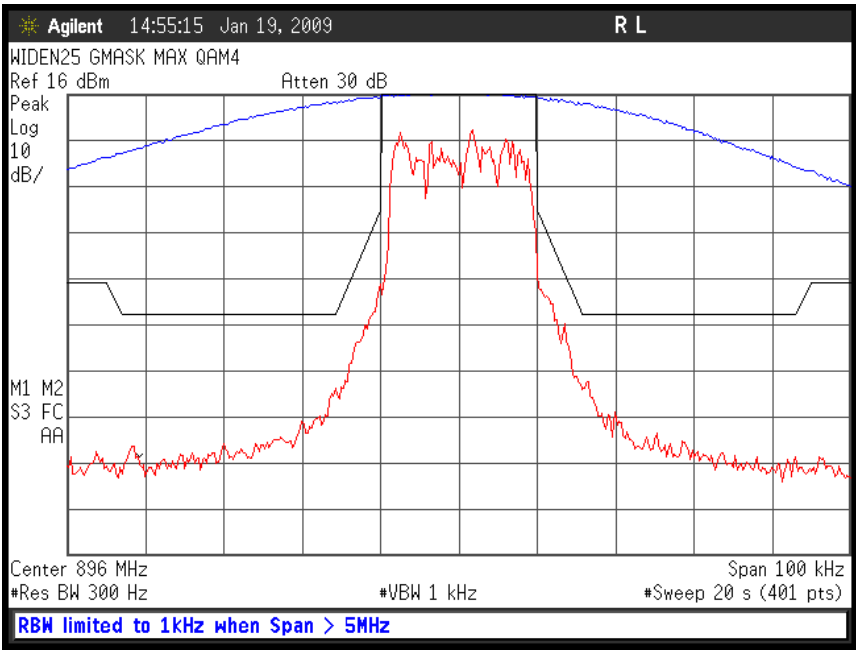


Figure 6a-2.8.1. WiDEN25 900 MHz Band, Quad-QPSK, Maximum Power, Emission Mask G

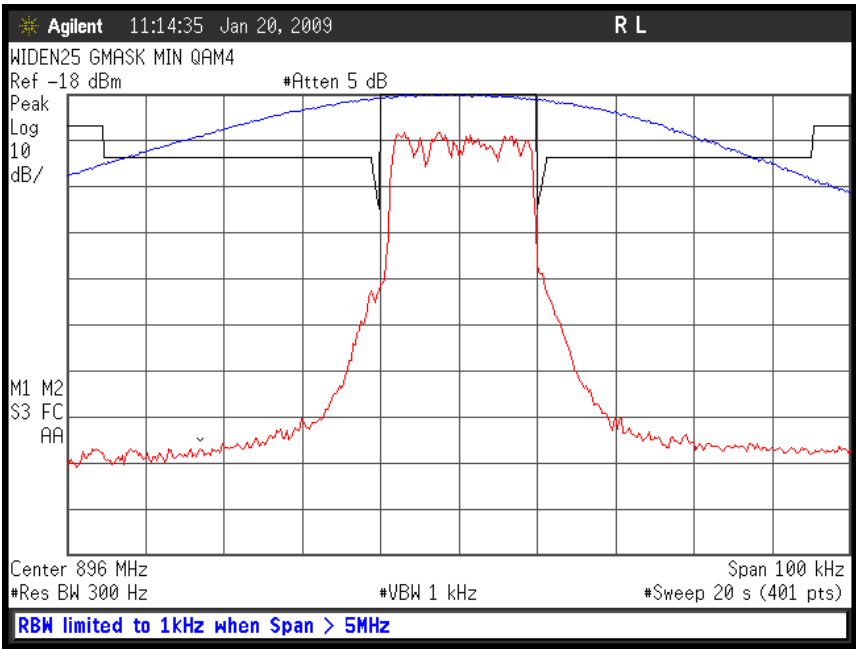


Figure 6a-2.8.2. WiDEN25 900 MHz Band, Quad-QPSK, Minimum Power, Emission Mask G

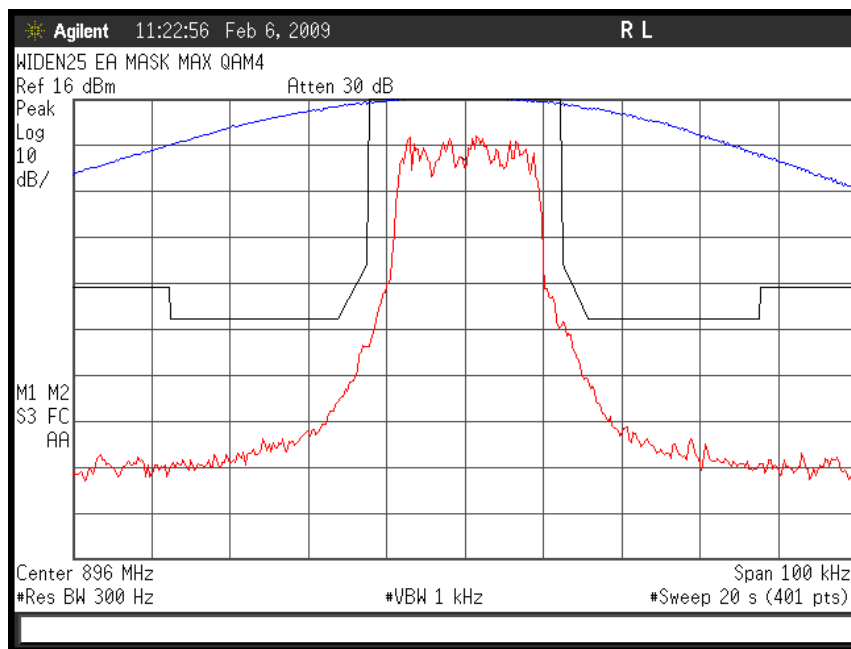


Figure 6a-2.8.3. WiDEN25 900 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

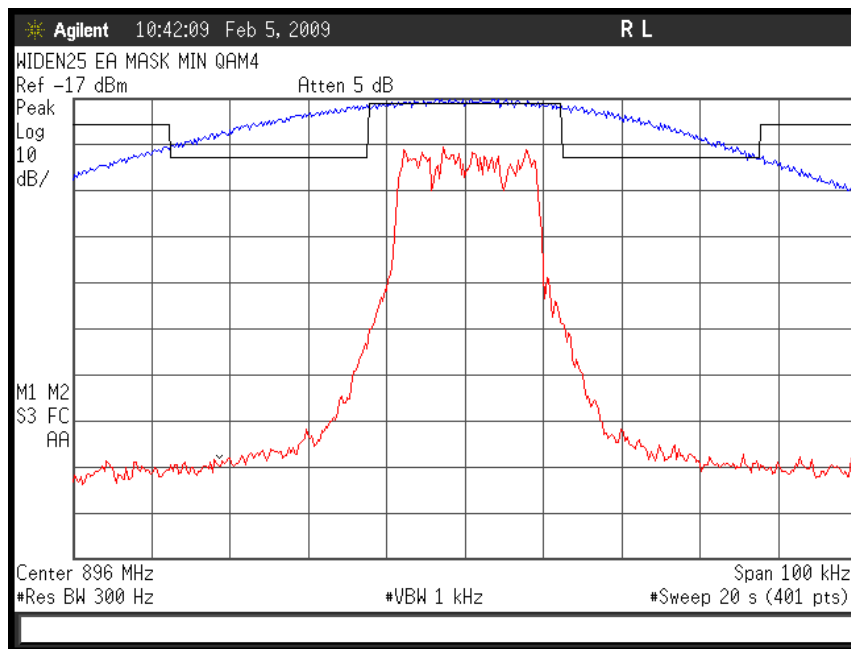


Figure 6a-2.8.4. WiDEN25 900 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

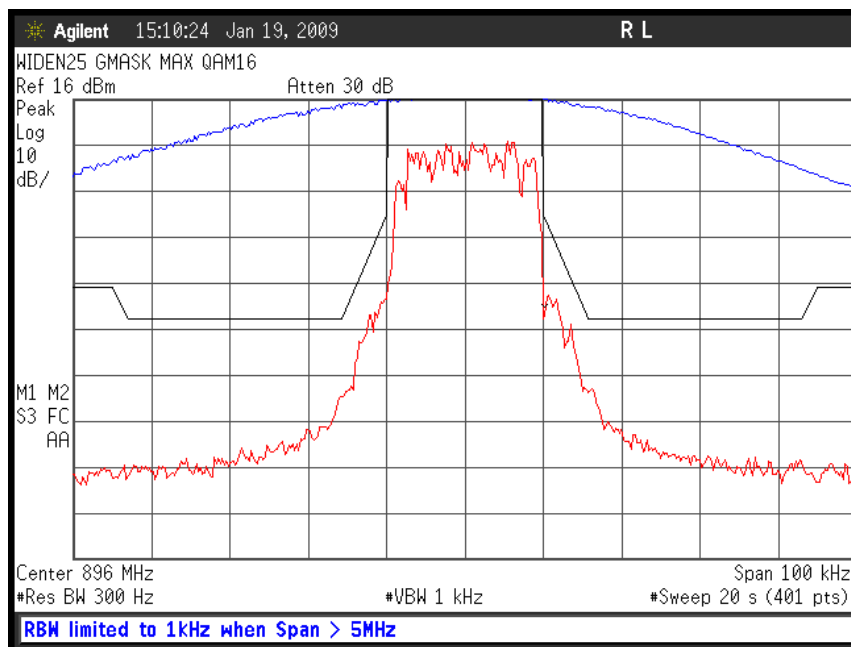


Figure 6a-2.8.5. WiDEN25 900 MHz Band, Quad-16QAM, Maximum Power, Emission Mask G

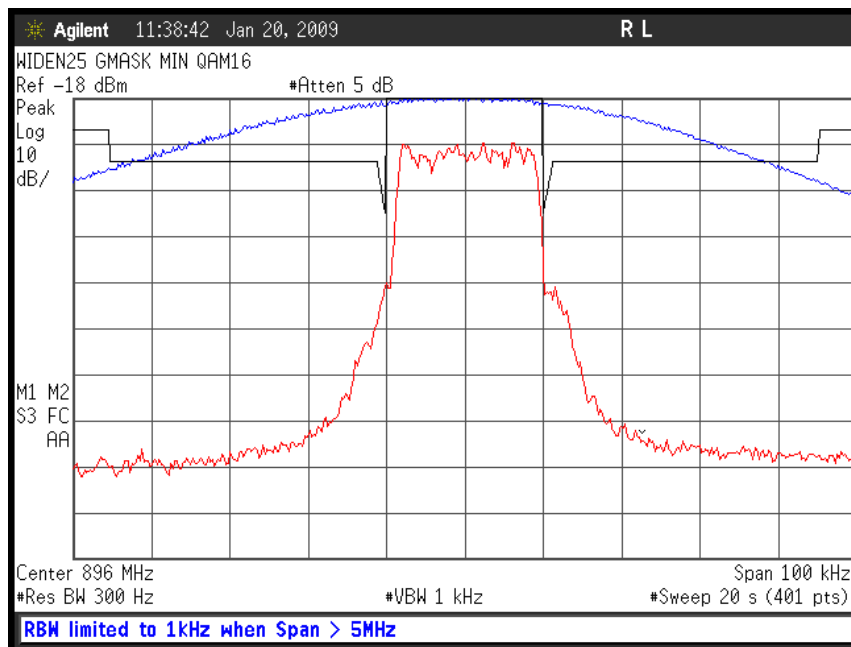


Figure 6a-2.8.6. WiDEN25 900 MHz Band, Quad-16QAM, Minimum Power, Emission Mask G

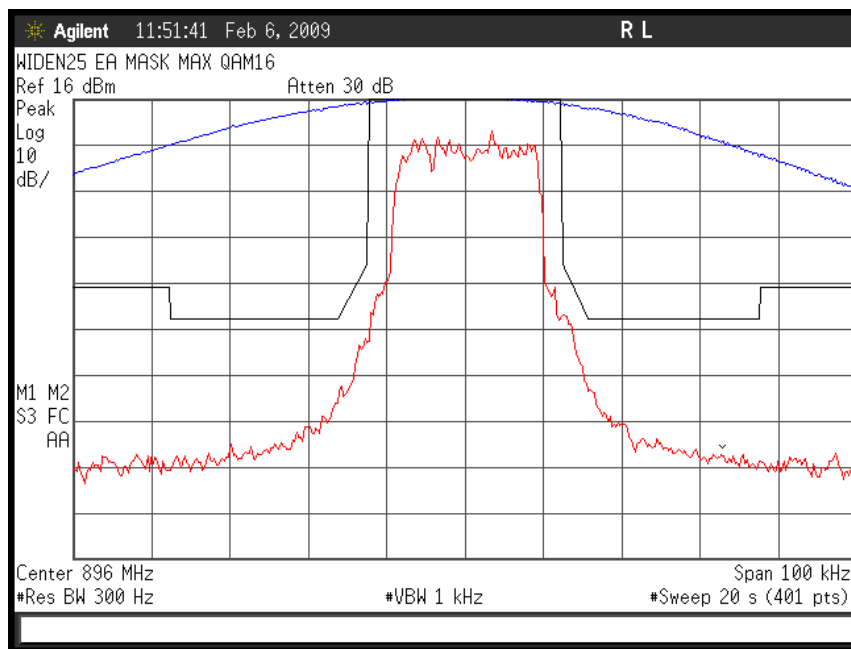


Figure 6a-2.8.7. WiDEN25 900 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

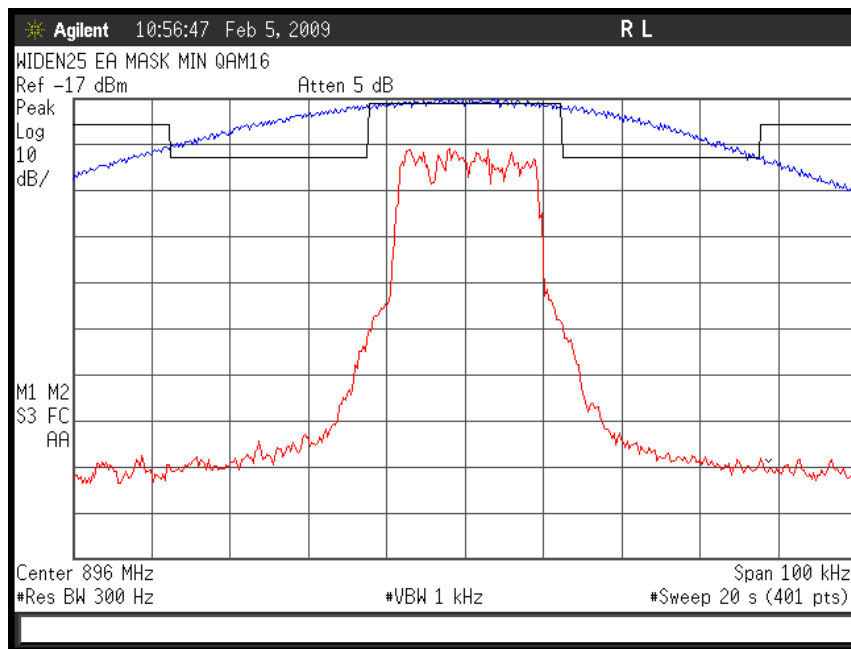


Figure 6a-2.8.8. WiDEN25 900 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

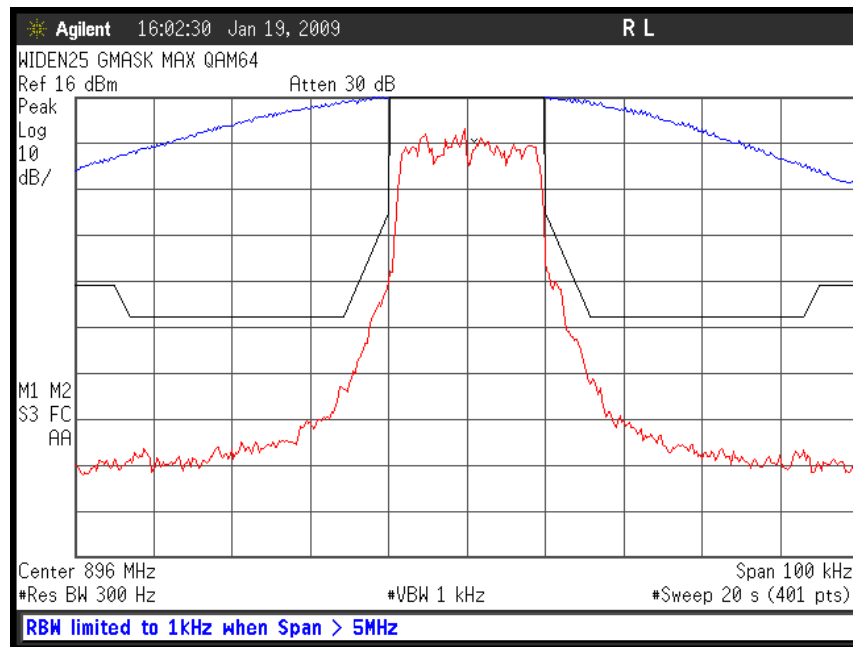


Figure 6a-2.8.9. WiDEN25 900 MHz Band, Quad-64QAM, Maximum Power, Emission Mask G

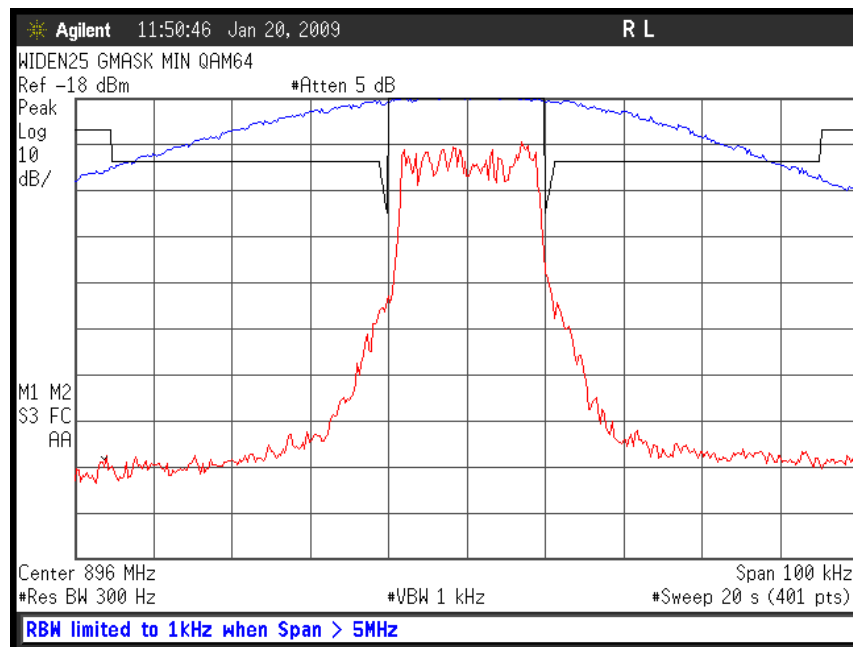


Figure 6a-2.8.10. WiDEN25 900 MHz Band, Quad-64QAM, Minimum Power, Emission Mask G

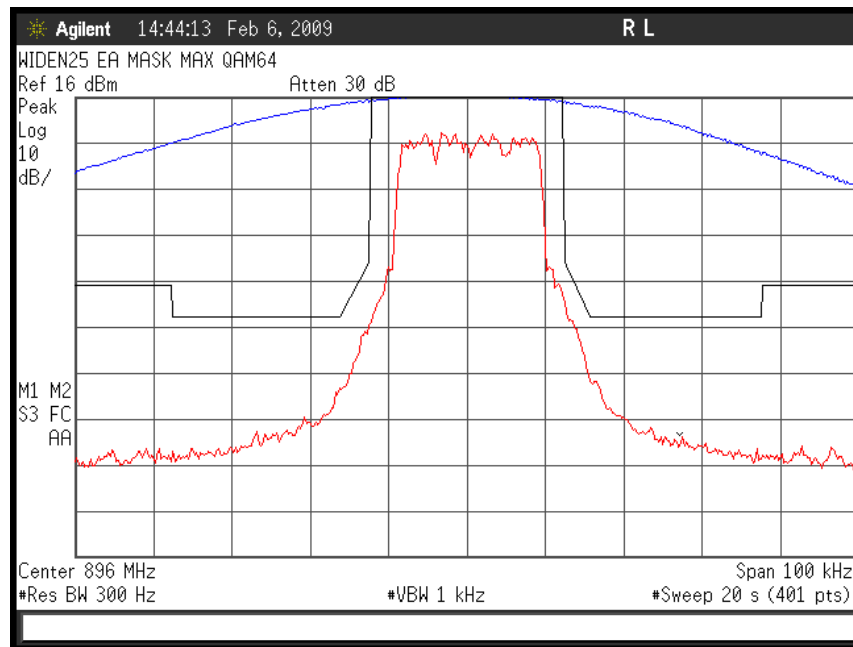


Figure 6a-2.8.11. WiDEN25 900 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

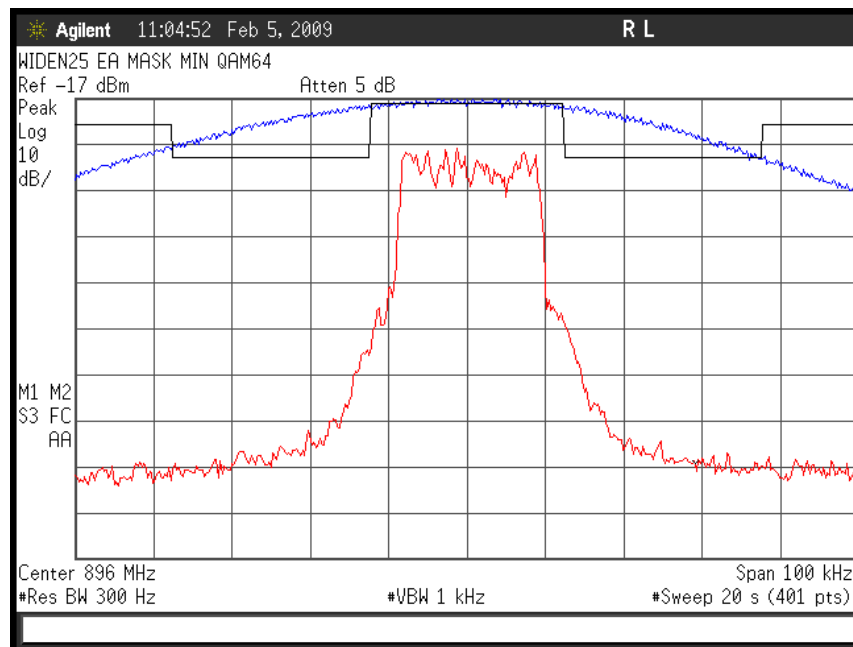


Figure 6a-2.8.12. WiDEN25 900 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.9 Emission Designator 43K3D7D - WiDEN50 900 MHz Band

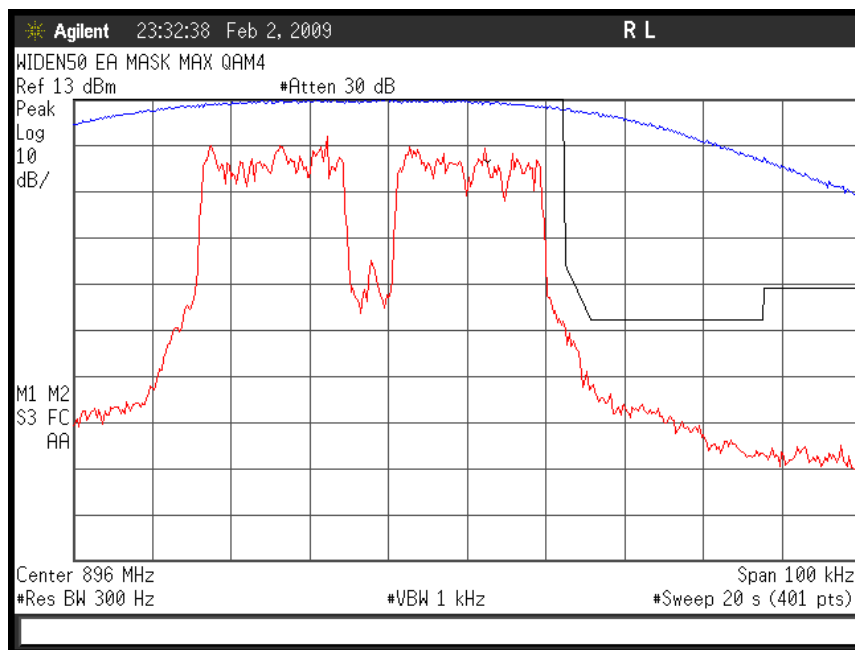


Figure 6a-2.9.1. WiDEN50 900 MHz Band, Continuous Quad-QPSK, Maximum Power, EA Emission Mask

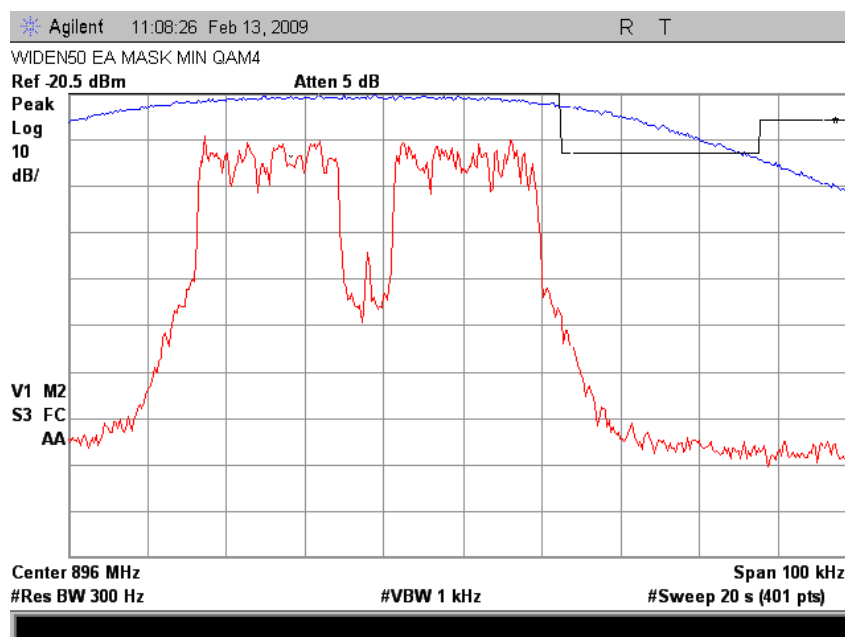


Figure 6a-2.9.2. WiDEN50 900 MHz Band, Continuous Quad-QPSK, Minimum Power, EA Emission Mask

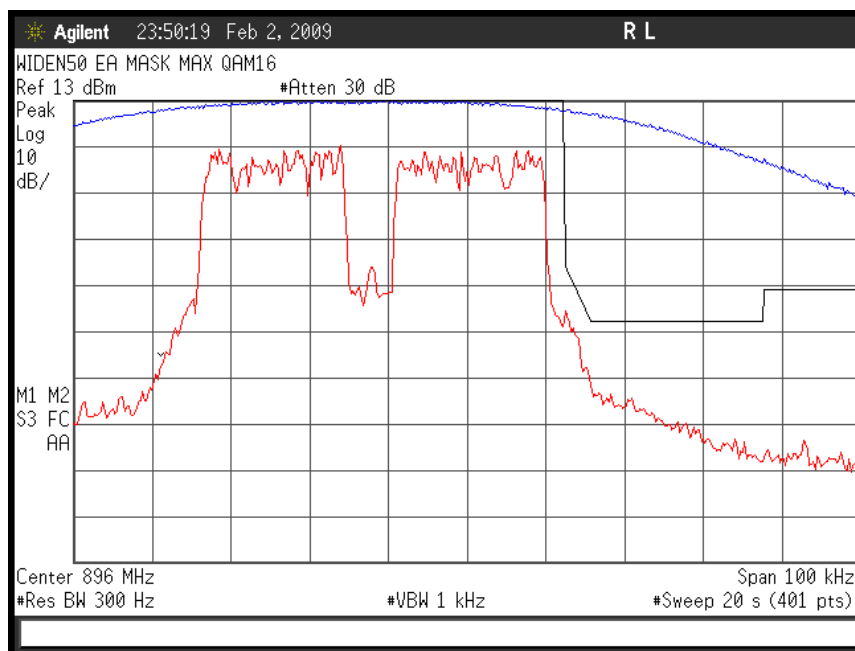


Figure 6a-2.9.3. WiDEN50 900 MHz Band, Continuous Quad-16QAM, Maximum Power, EA Emission Mask

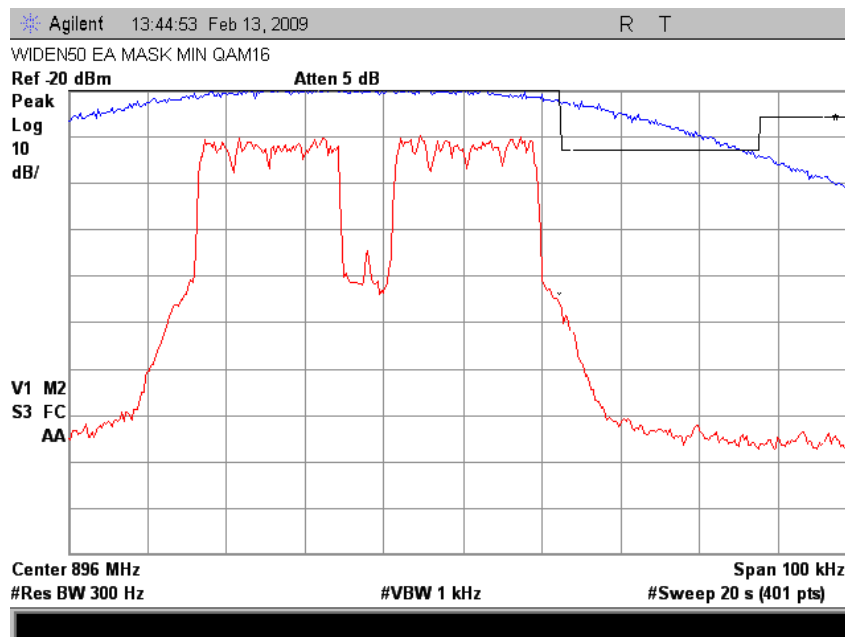


Figure 6a-2.9.4. WiDEN50 900 MHz Band, Continuous Quad-16QAM, Minimum Power, EA Emission Mask

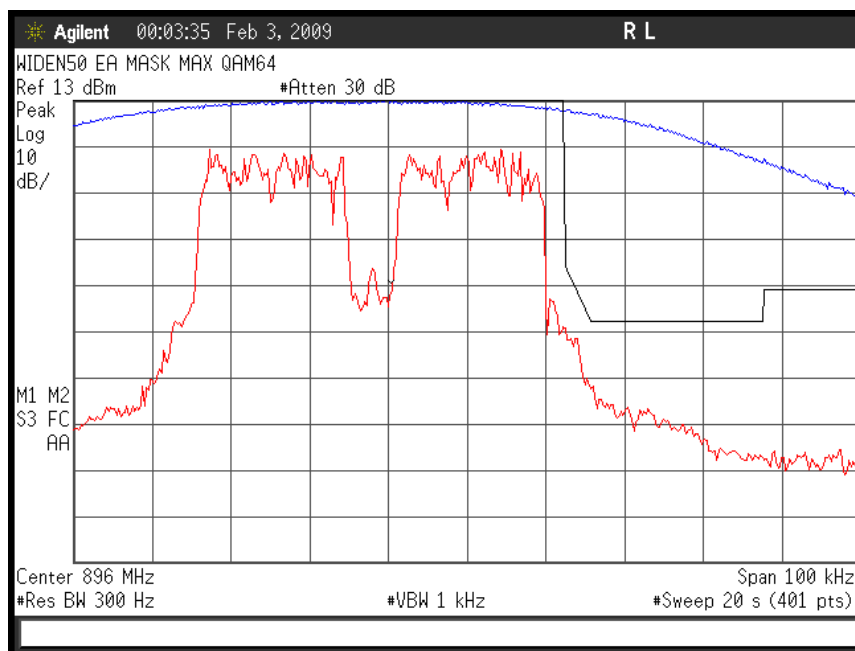


Figure 6a-2.9.5. WiDEN50 900 MHz Band, Continuous Quad-64QAM, Maximum Power, EA Emission Mask

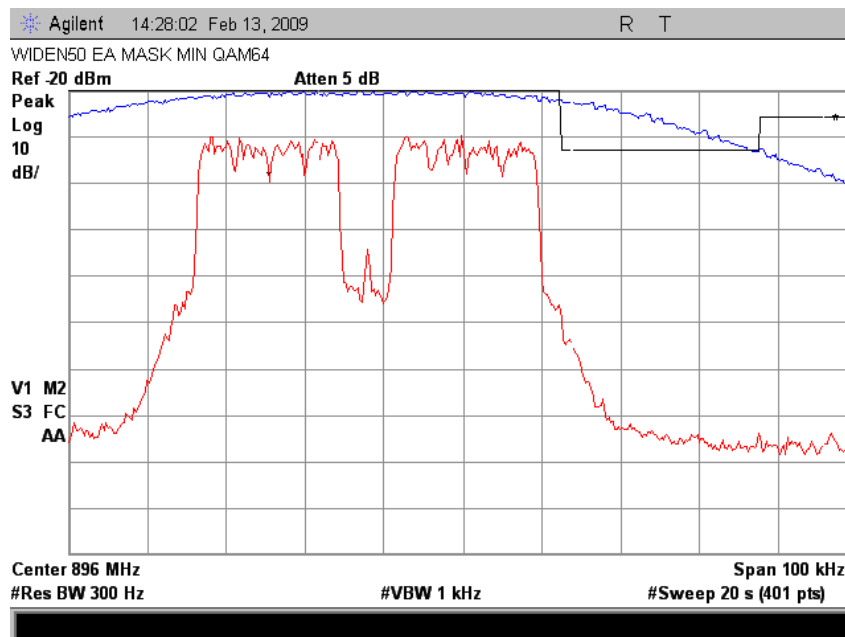


Figure 6a-2.9.6. WiDEN50 900 MHz Band, Continuous Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.10 Emission Designator 68K3D7D - WiDEN75 900 MHz Band

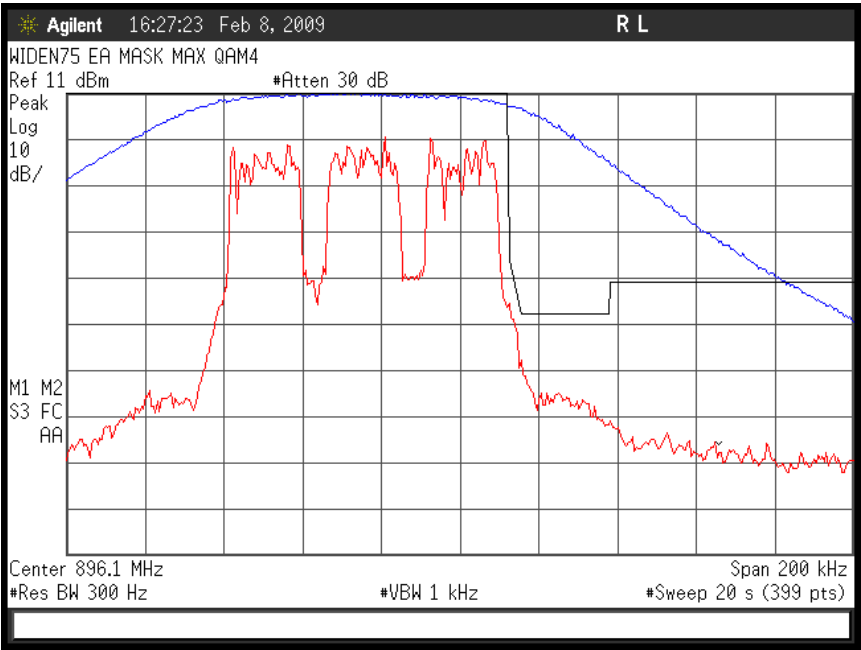


Figure 6a-2.10.1. WiDEN75 900 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

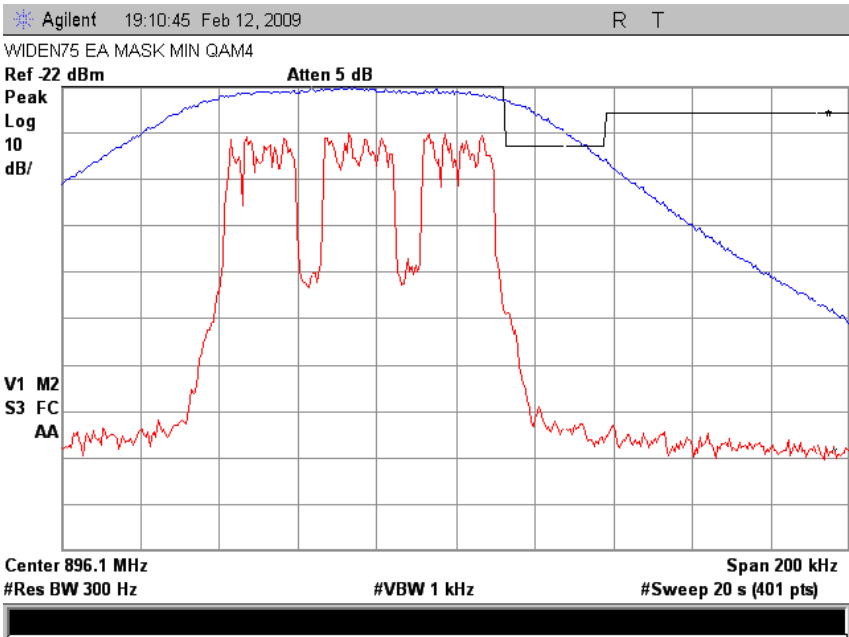


Figure 6a-2.10.2. WiDEN75 900 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

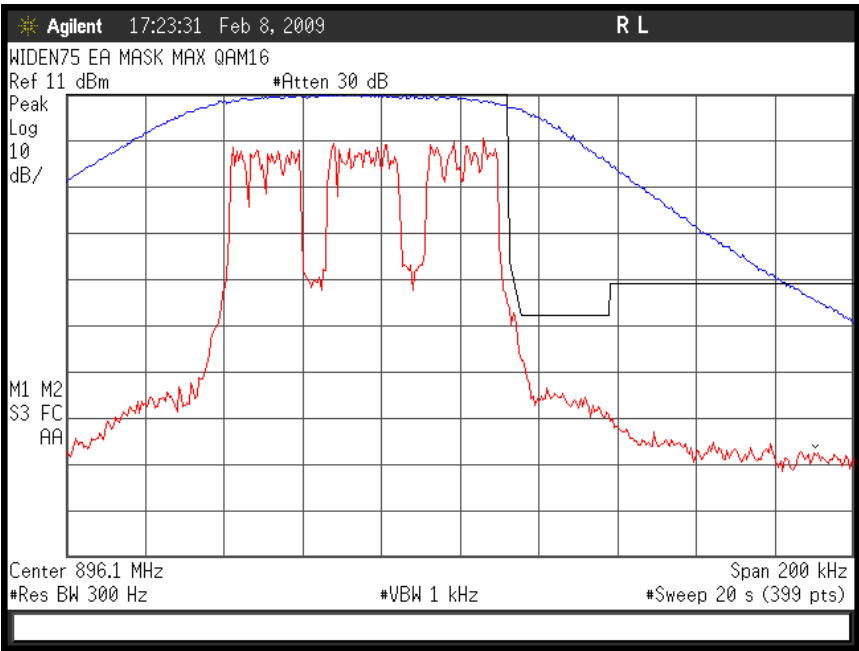


Figure 6a-2.10.3. WiDEN75 900 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

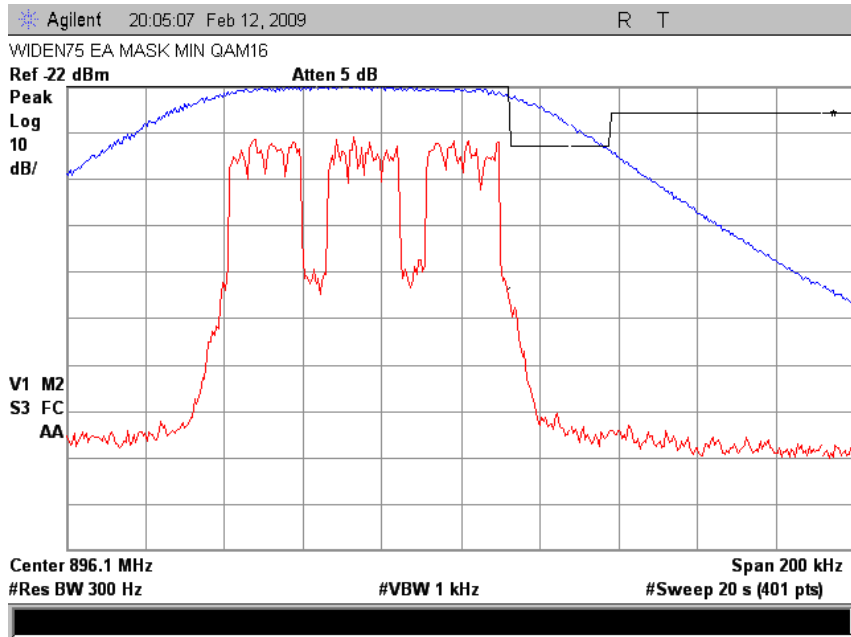


Figure 6a-2.10.4. WiDEN75 900 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

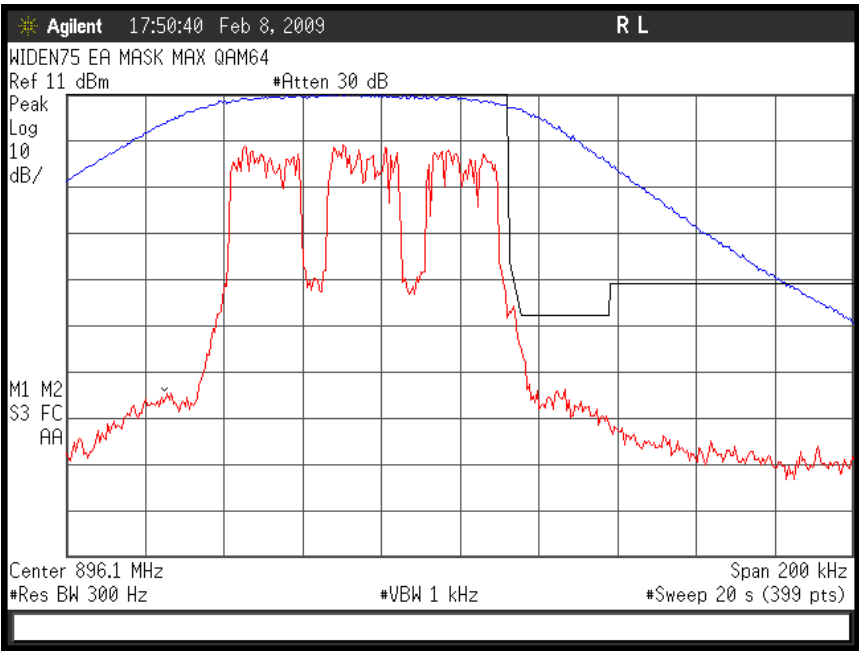


Figure 6a-2.10.5. WiDEN75 900 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

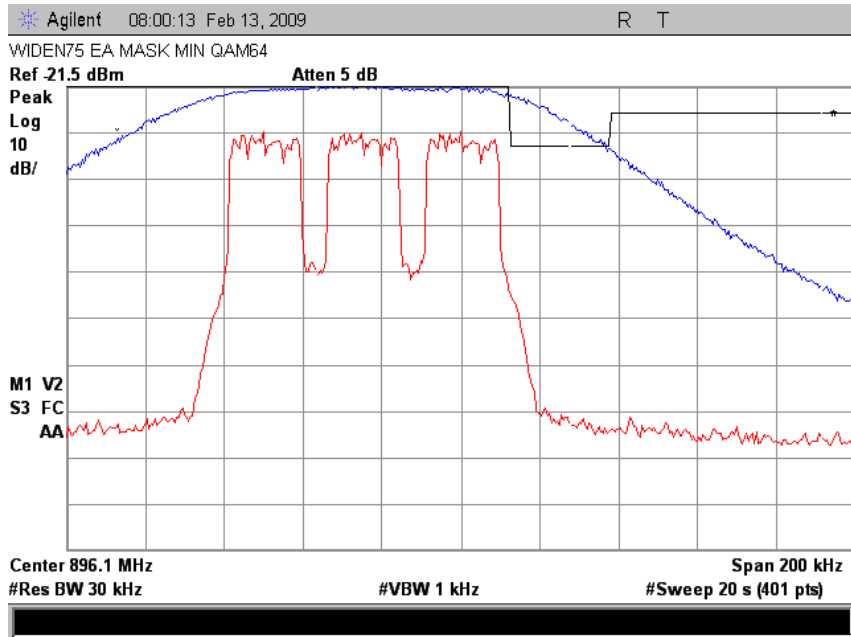


Figure 6a-2.10.6. WiDEN75 900 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.11 Emission Designator 93K3D7D - WiDEN100 900 MHz Band

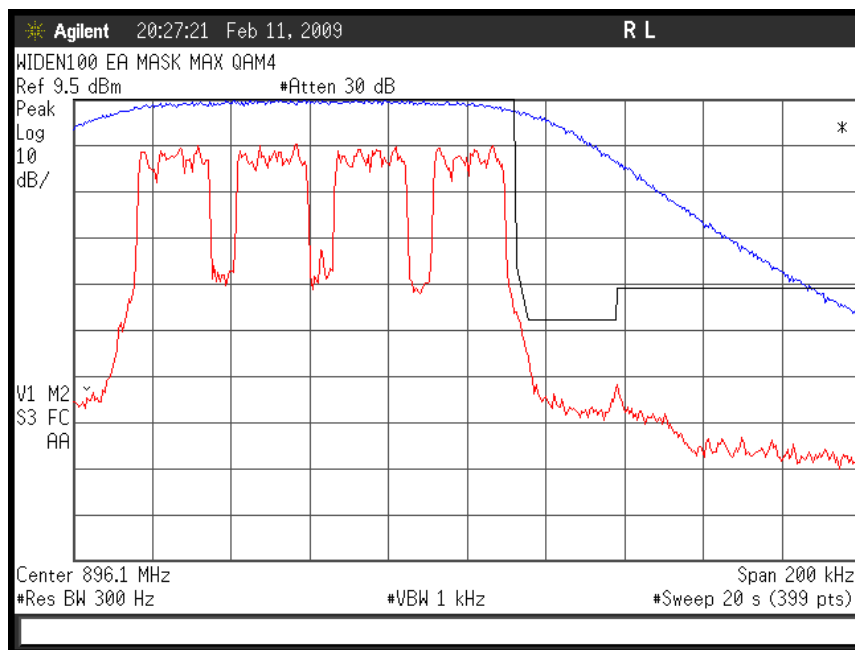


Figure 6a-2.11.1. WiDEN100 900 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

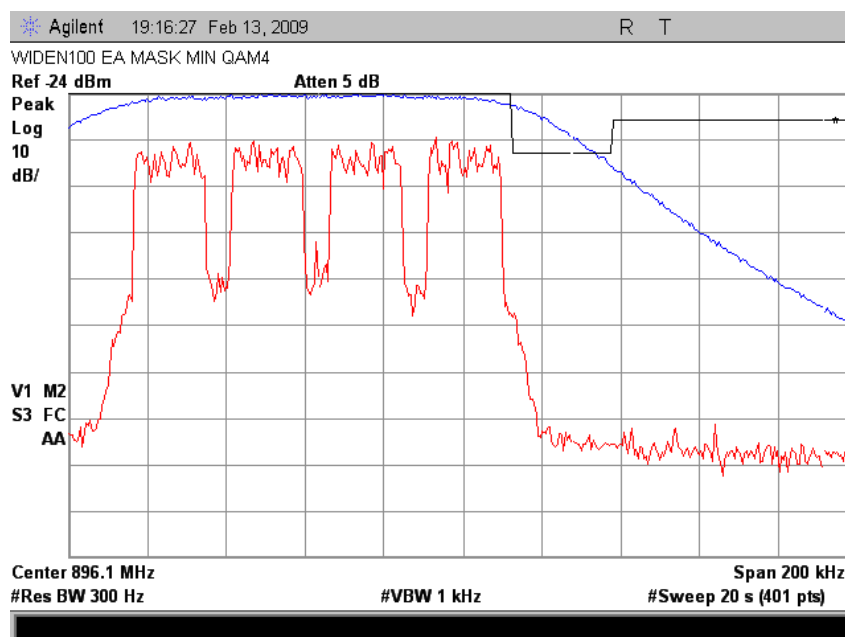


Figure 6a-2.11.2. WiDEN100 900 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

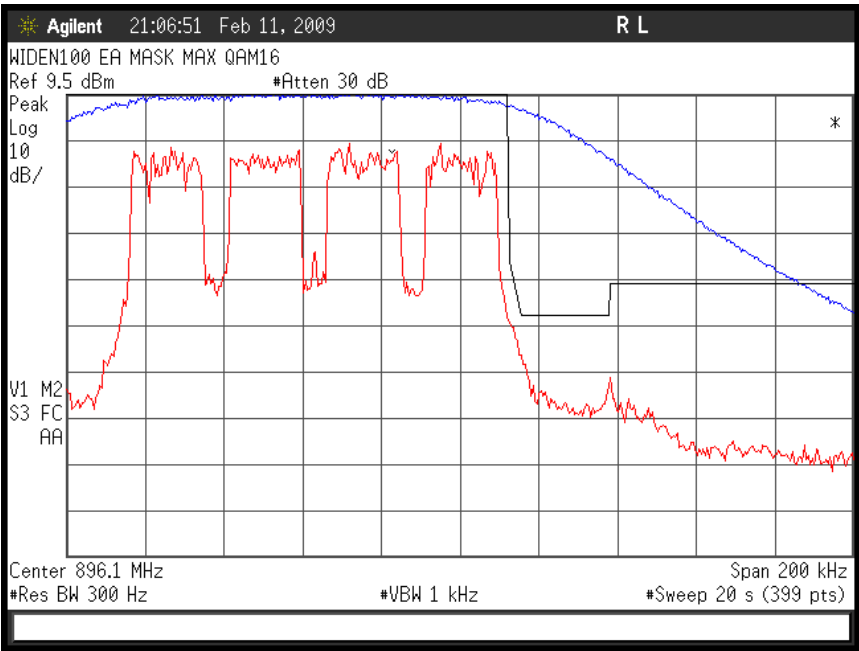


Figure 6a-2.11.3. WiDEN100 900 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

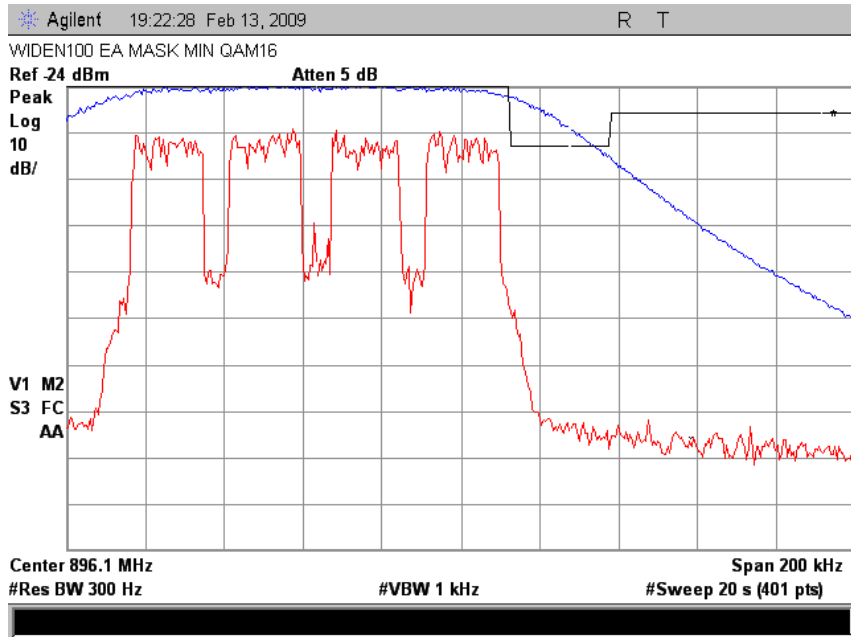


Figure 6a-2.11.4. WiDEN100 900 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

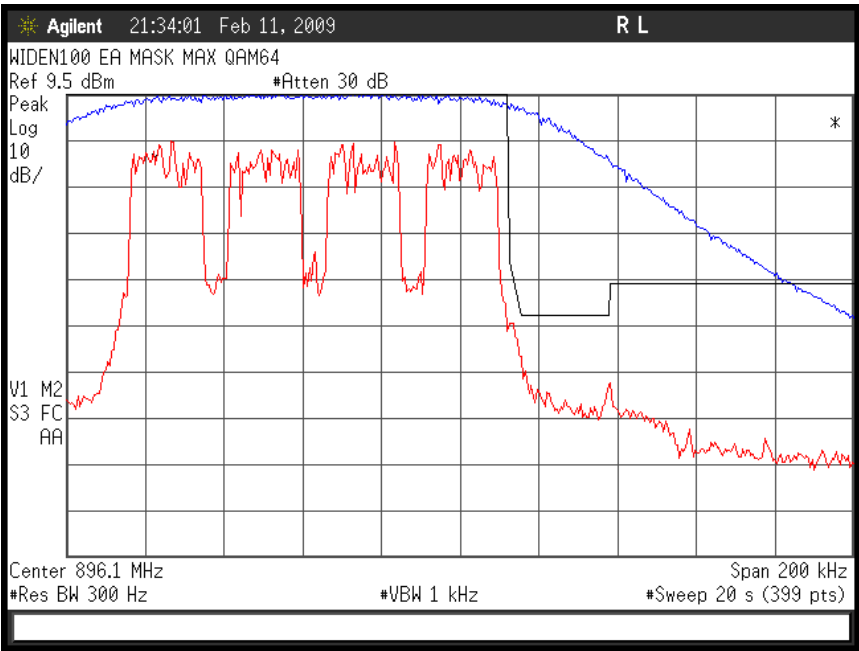


Figure 6a-2.11.5. WiDEN100 900 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

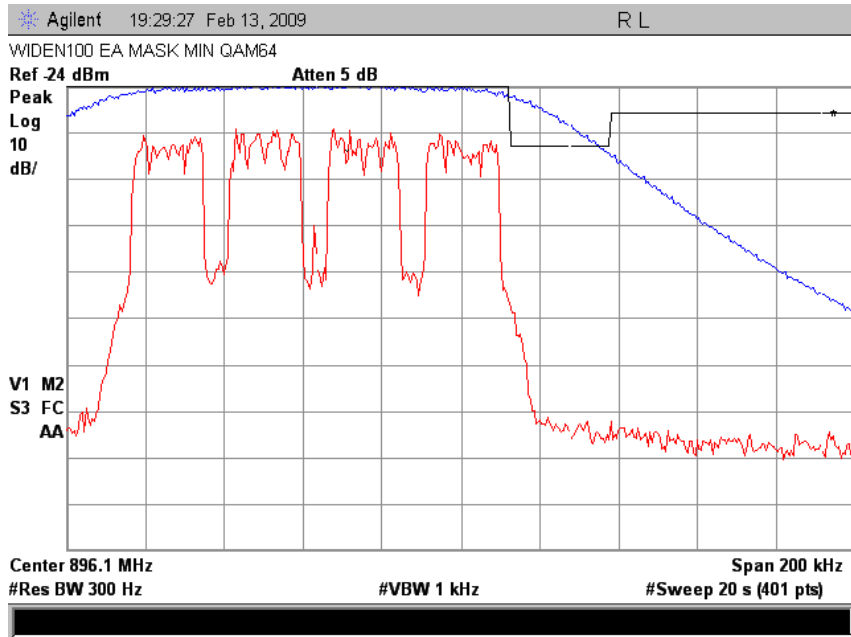


Figure 6a-2.11.6. WiDEN100 900 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6a.2.12 Emission Designator 93K3D7D - WiDEN50_Split 900 MHz Band

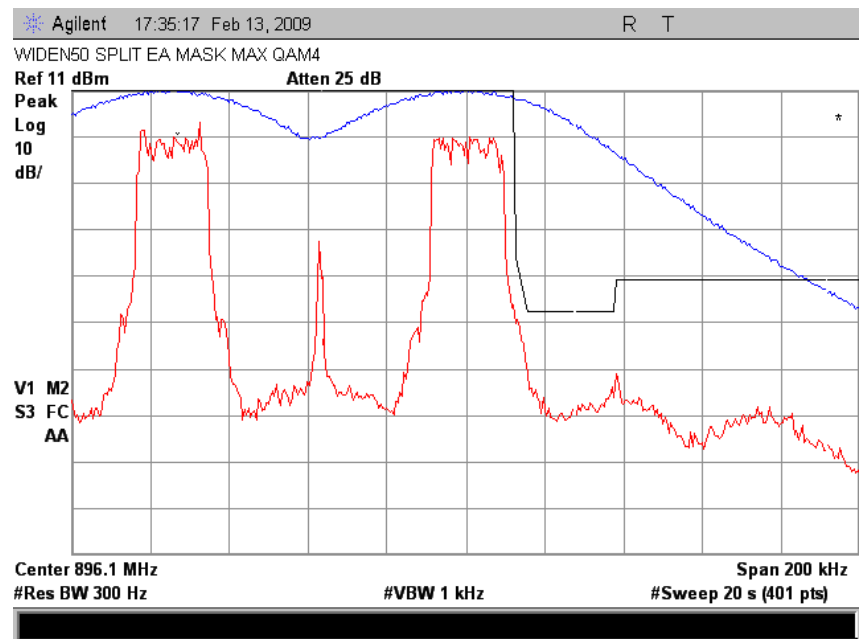


Figure 6a-2.12.1. WiDEN50 Split 900 MHz Band, Quad-QPSK, Maximum Power, EA Emission Mask

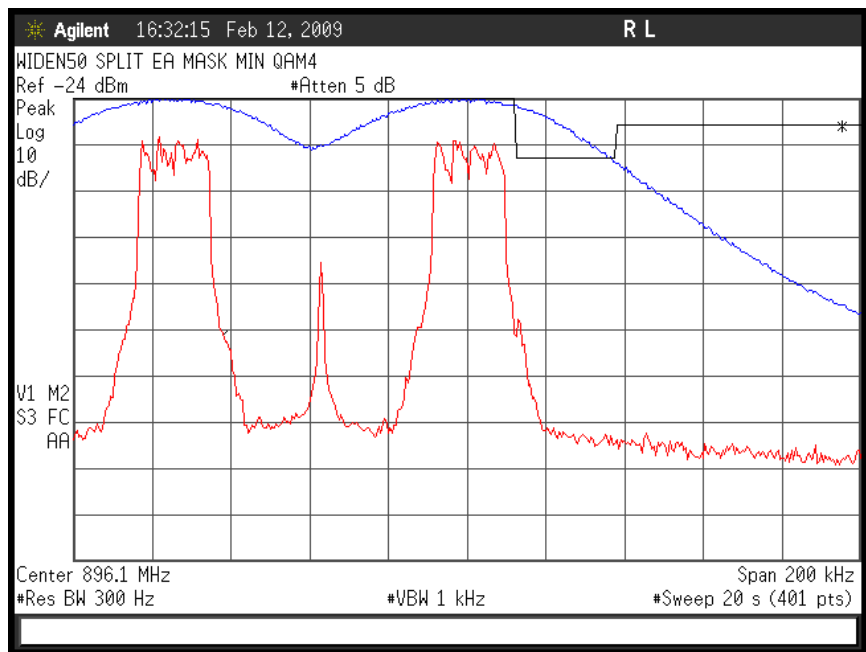


Figure 6a-2.12.2. WiDEN50 Split 900 MHz Band, Quad-QPSK, Minimum Power, EA Emission Mask

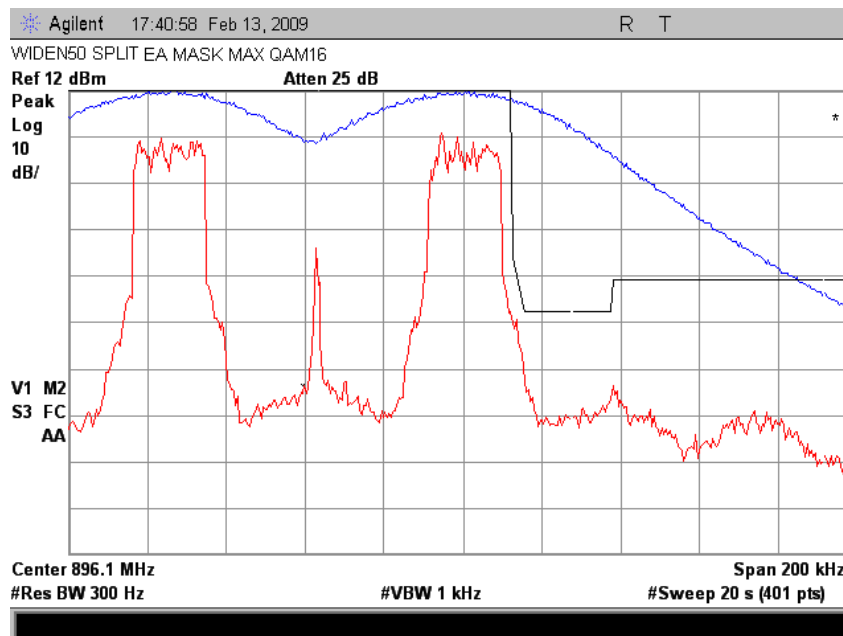


Figure 6a-2.12.3. WiDEN50 Split 900 MHz Band, Quad-16QAM, Maximum Power, EA Emission Mask

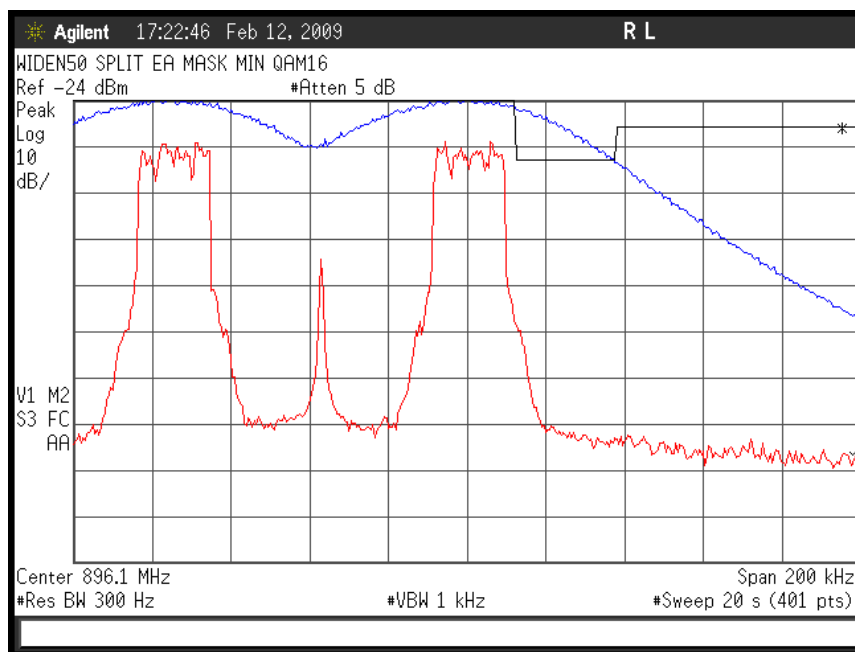


Figure 6a-2.12.4. WiDEN50 Split 900 MHz Band, Quad-16QAM, Minimum Power, EA Emission Mask

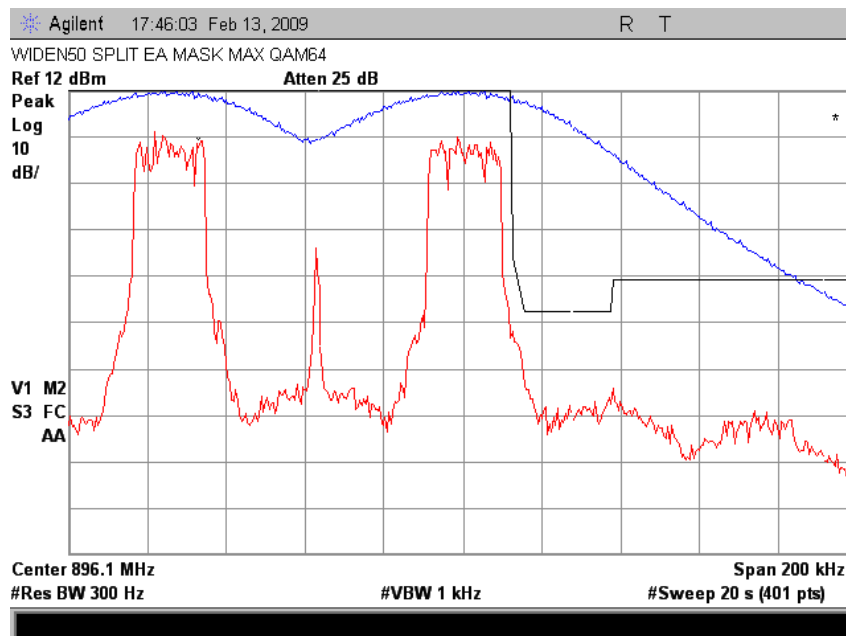


Figure 6a-2.12.5. WiDEN50 Split 900 MHz Band, Quad-64QAM, Maximum Power, EA Emission Mask

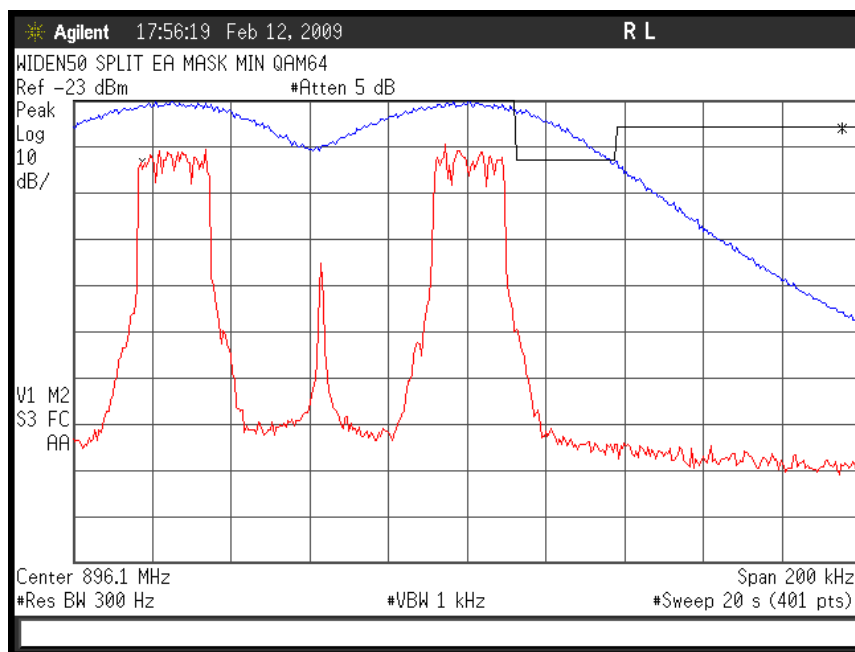


Figure 6a-2.12.6. WiDEN50 Split 900 MHz Band, Quad-64QAM, Minimum Power, EA Emission Mask

6b.2. Modulation Characteristics and Necessary Bandwidth -- Pursuant 47 CFR 2.1033(c)(13), §2.1047(d), §2.1049, §2.202, §24.131, and §24.133(a)(1); RSS-Gen Section 3, RSS-134 Section 6.3.

6b.2.1 Emission Designator 18K3D7W - NBPCS iDEN Measured data

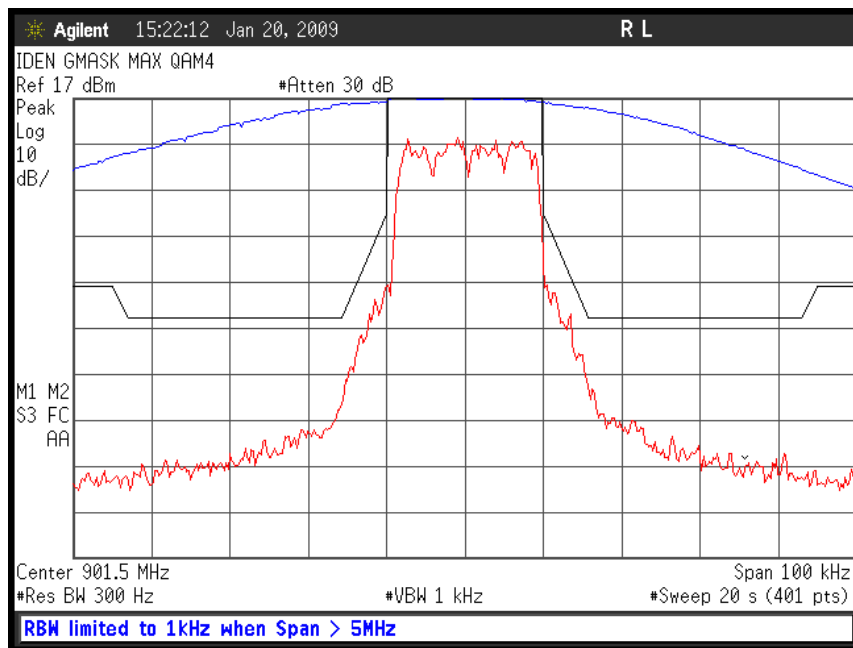


Figure 6b.2.1.1 iDEN NBPCS Band, Occupied Bandwidth, Quad-QPSK, Maximum Power.

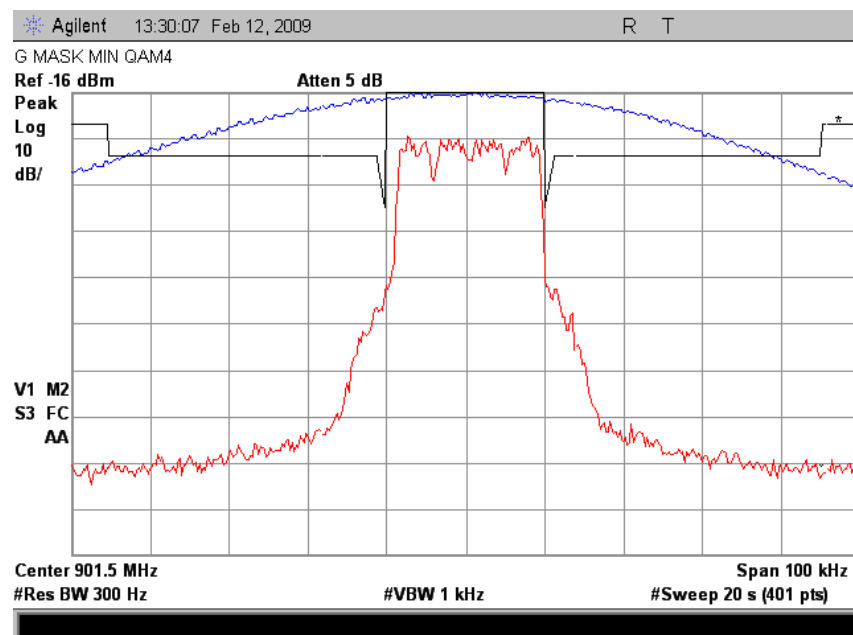


Figure 6b.2.1.2 iDEN NBPCS Band, Occupied Bandwidth, Quad-QPSK, Minimum Power

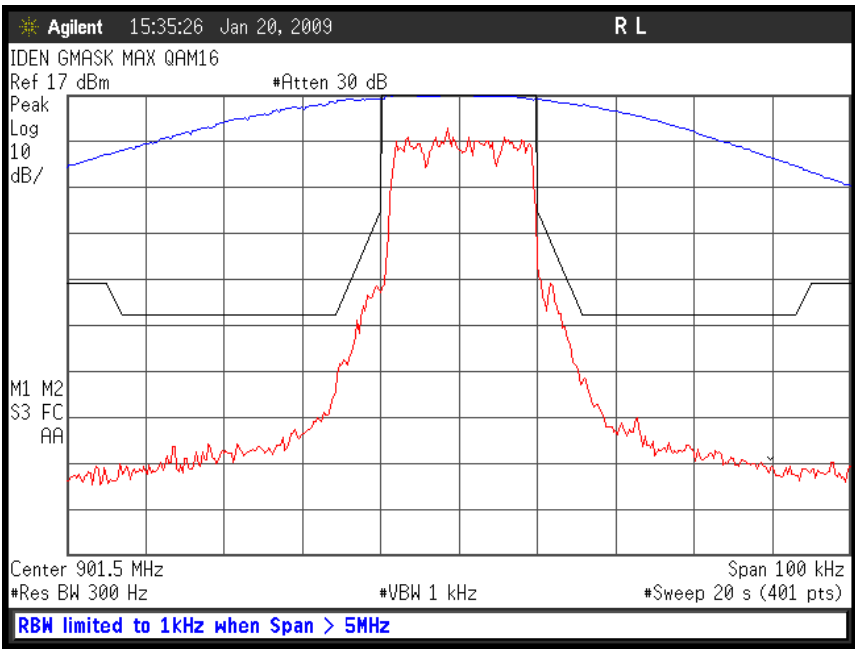


Figure 6b.2.1.3 iDEN NBPCS Band, Occupied Bandwidth, Quad-16QAM, Maximum Power.

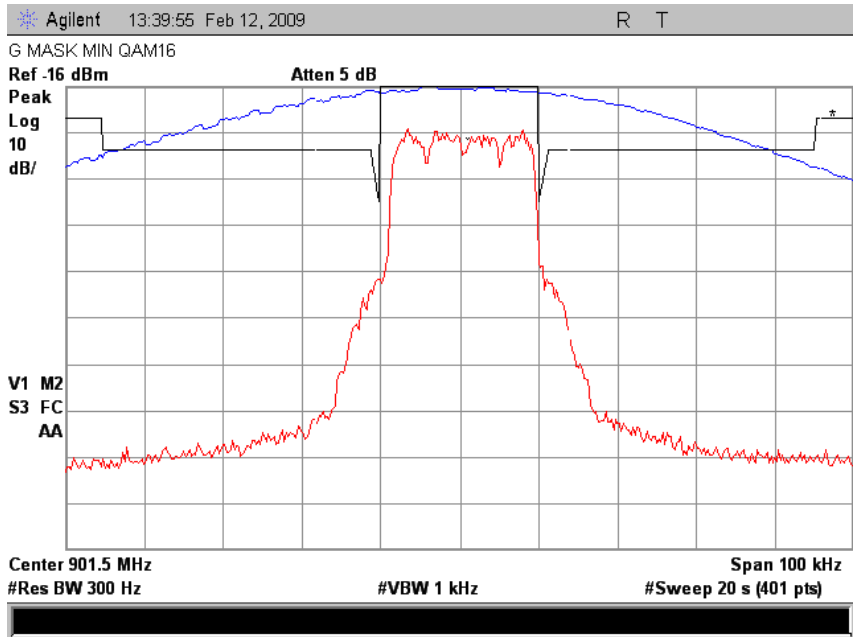


Figure 6b.2.1.4. iDEN NBPCS Band, Occupied Bandwidth, Quad-16QAM, Minimum Power

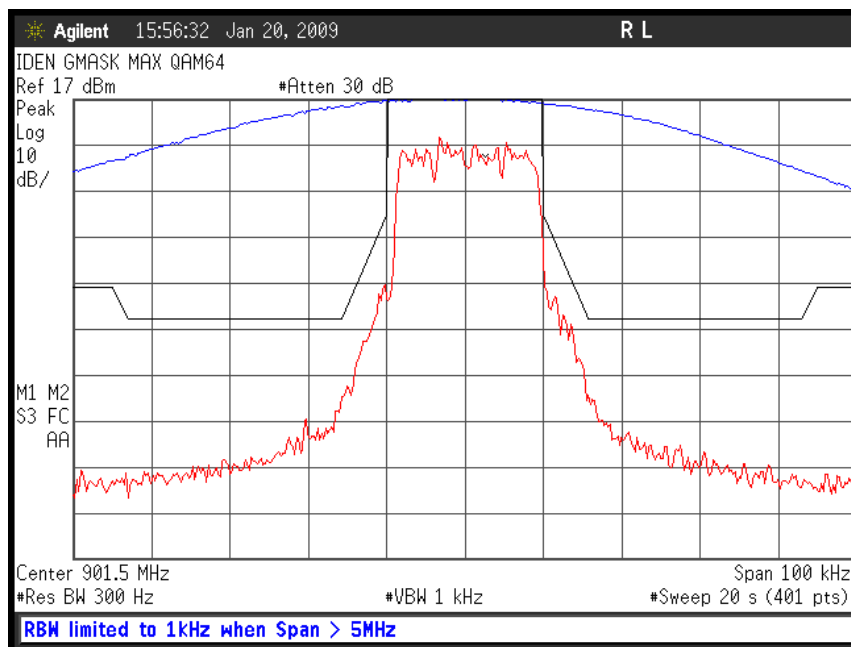


Figure 6b.2.1.5 iDEN NBPCS Band, Occupied Bandwidth, Quad-64QAM, Maximum Power.

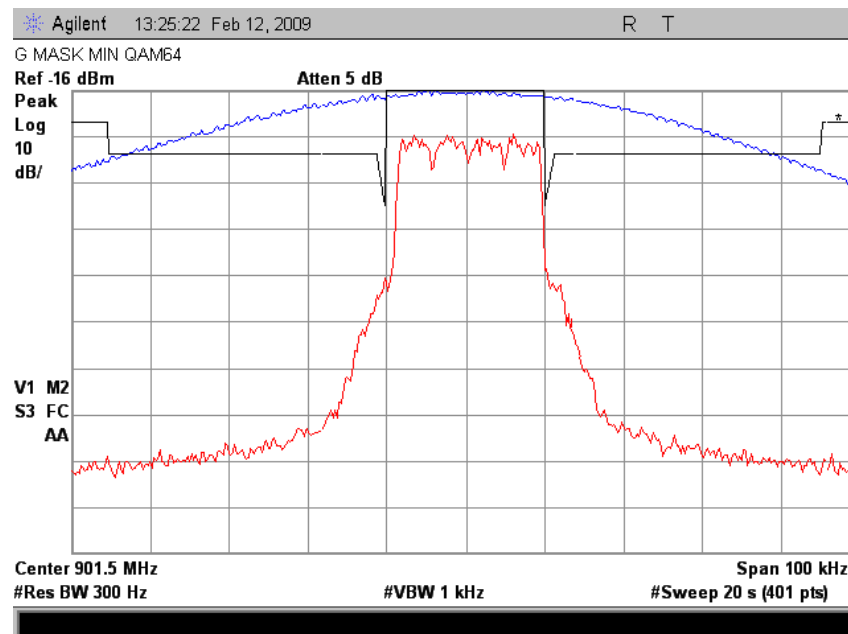


Figure 6b.2.1.6. iDEN NBPCS Band, Occupied Bandwidth, Quad-64QAM, Minimum Power

6b.2.2 Emission Designator 18K3D7D - NBPCS WiDEN25 Measured data

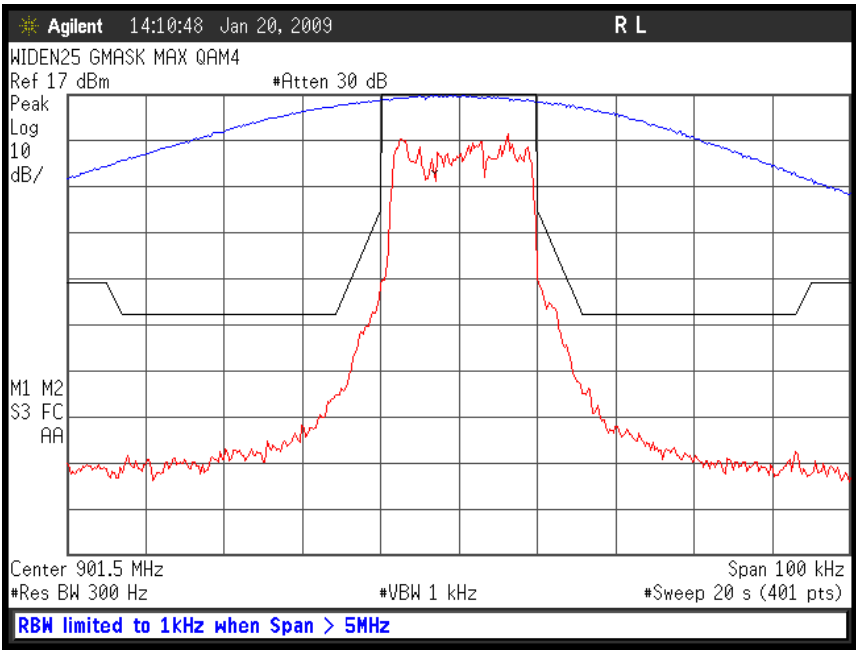


Figure 6b.2.2.1. WiDEN 25 NBPCS Band, Occupied Bandwidth, Quad-QPSK, Maximum Power

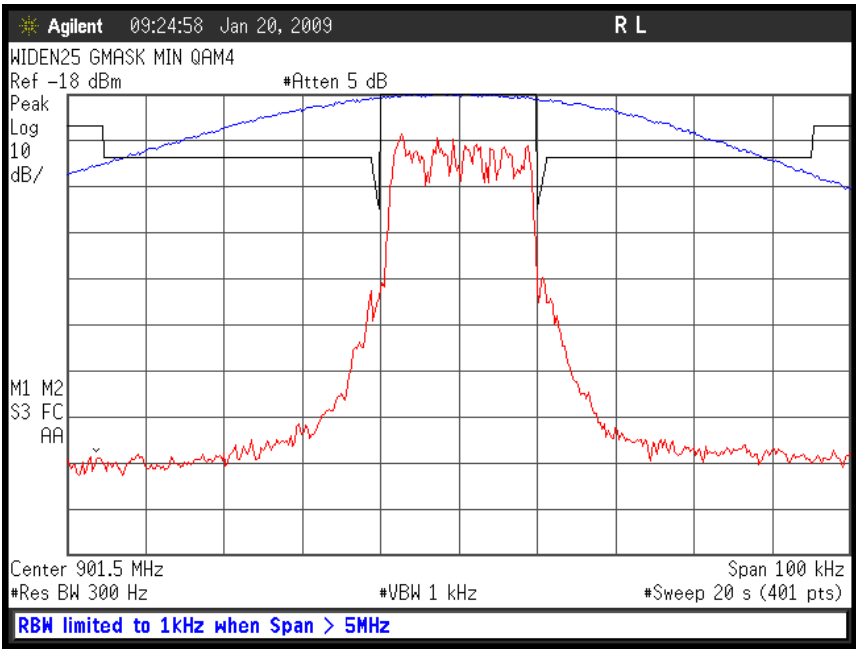


Figure 6b.2.2.2. WiDEN 25 NBPCS Band, Occupied Bandwidth, Quad-QPSK, Minimum Power

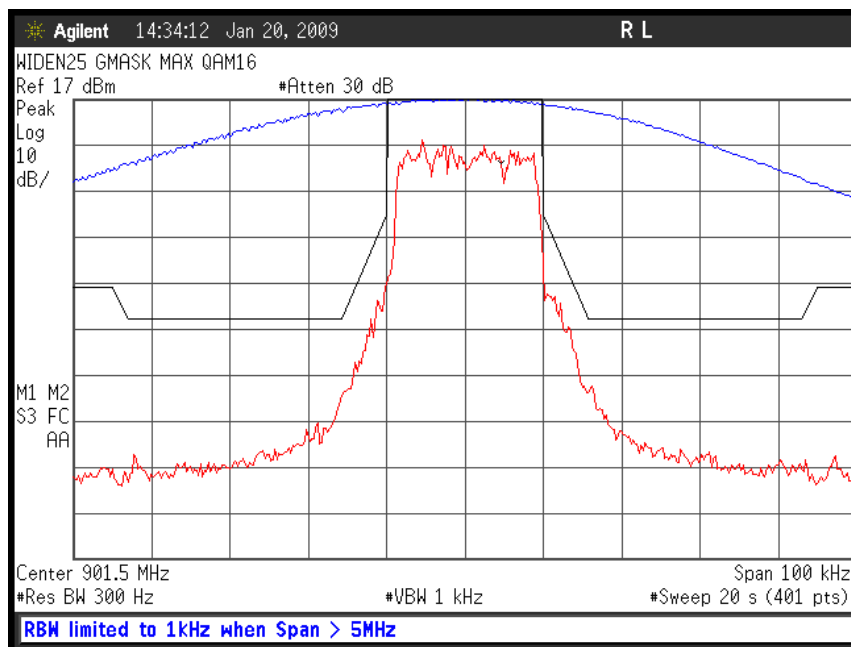


Figure 6b.2.2.3. WiDEN 25 NBPCS Band, Occupied Bandwidth, Quad-16QAM, Maximum Power

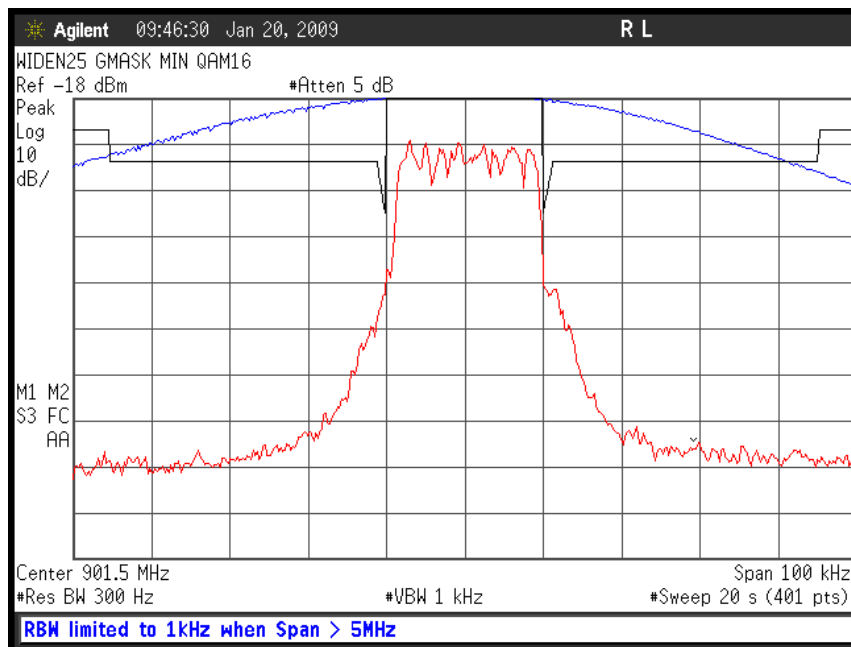


Figure 6b.2.2.4. WiDEN 25 NBPCS Band, Occupied Bandwidth, Quad-16QAM, Minimum Power

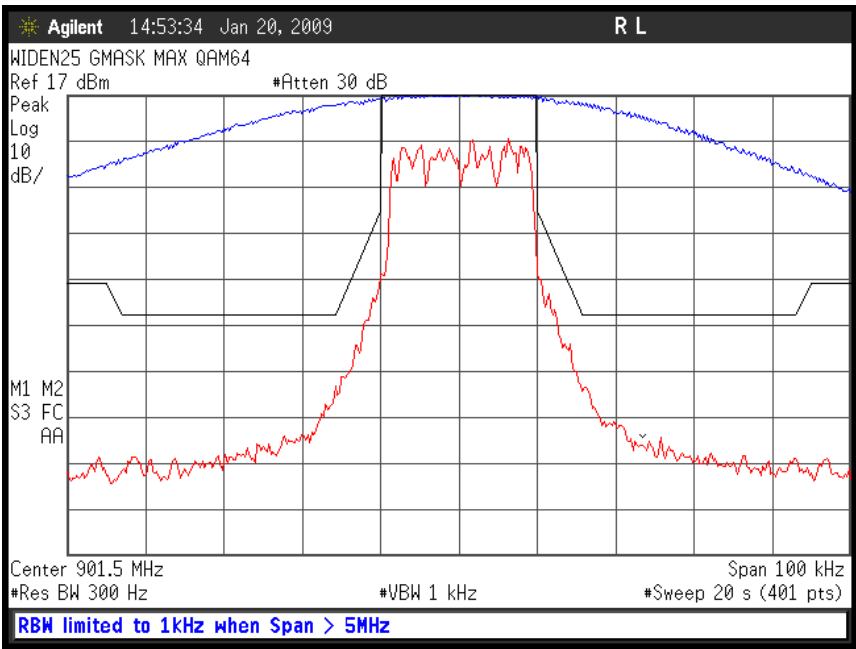


Figure 6b.2.2.5. WiDEN 25 NBPCS Band, Occupied Bandwidth, Quad-64QAM, Maximum Power

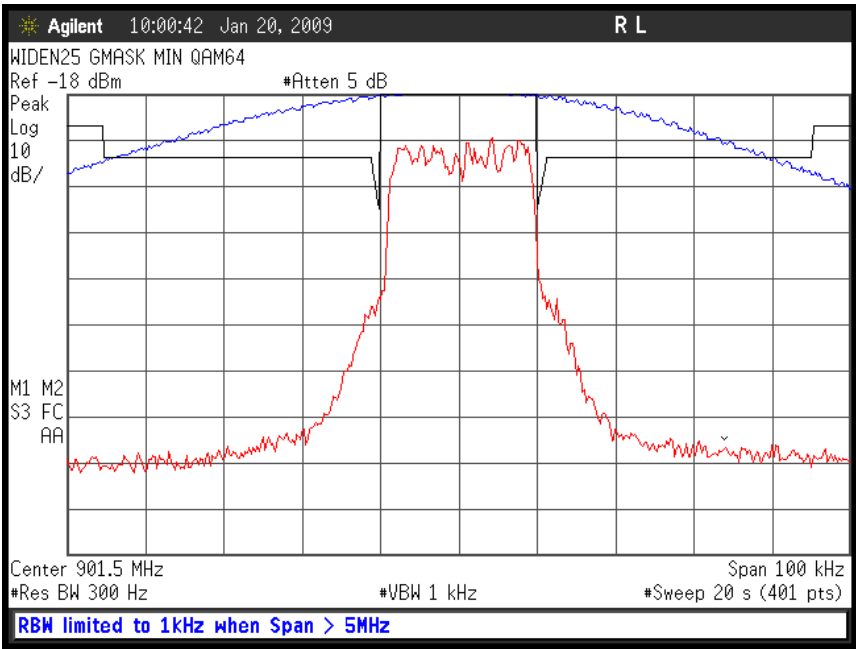


Figure 6b.2.2.6. WiDEN 25 NBPCS Band, Occupied Bandwidth, Quad-64QAM, Minimum Power

6b.2.3 Emission Designator 43K3D7D - WiDEN50 800 MHz Band

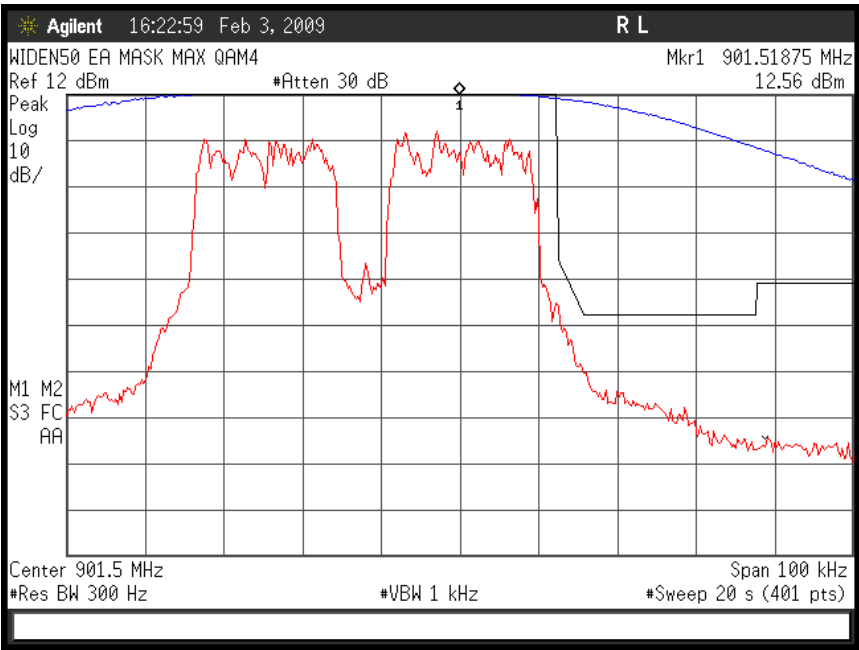


Figure 6b.2.3.1. WiDEN 50 NBPCS Band Occupied Bandwidth, Quad-QPSK, Maximum Power.

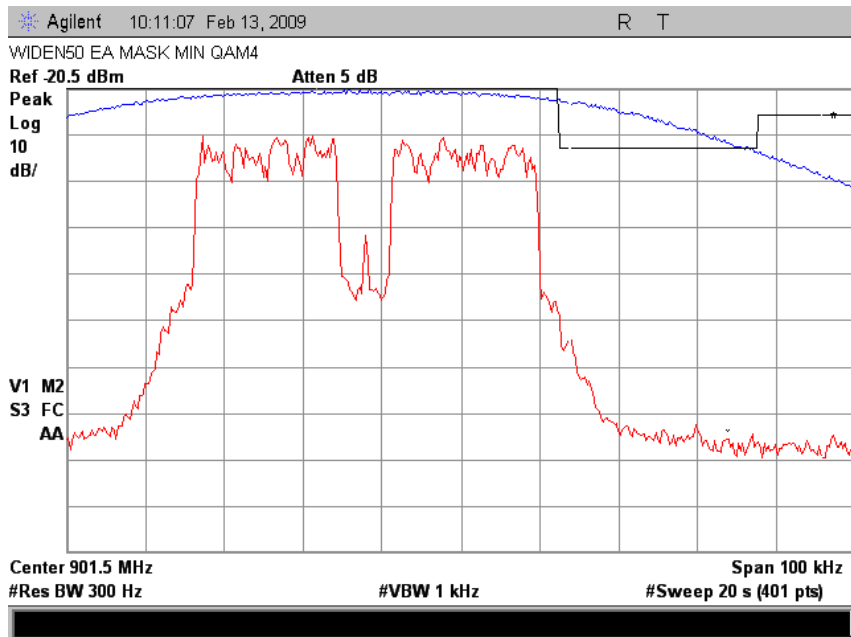


Figure 6b.2.3.2. WiDEN 50 NBPCS Band Occupied Bandwidth, Quad-QPSK, Minimum Power

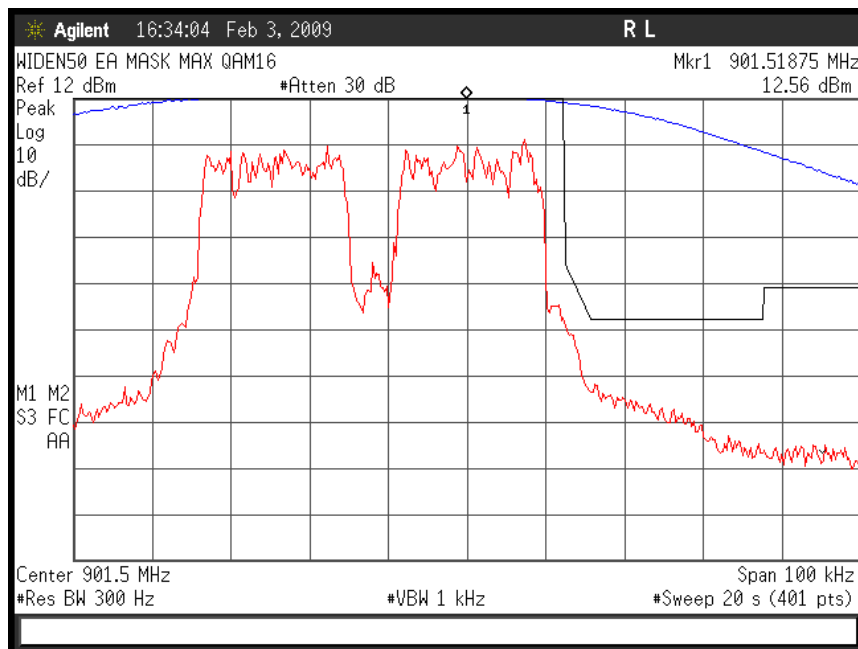


Figure 6b.2.3.3. WiDEN 50 NBPCS Band Occupied Bandwidth, Quad-16QAM, Maximum Power.

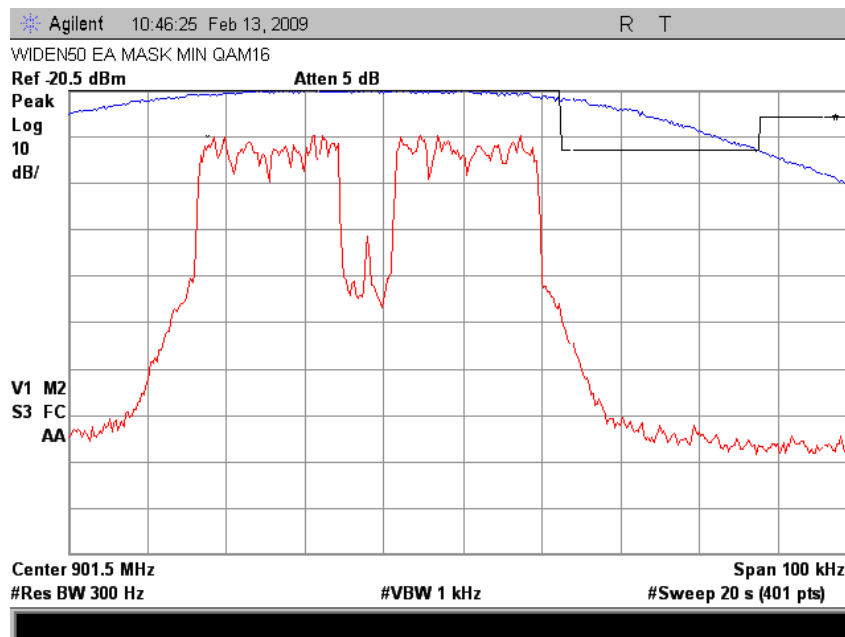


Figure 6b.2.3.4. WiDEN 50 NBPCS Band Occupied Bandwidth, Quad-16QAM, Minimum Power

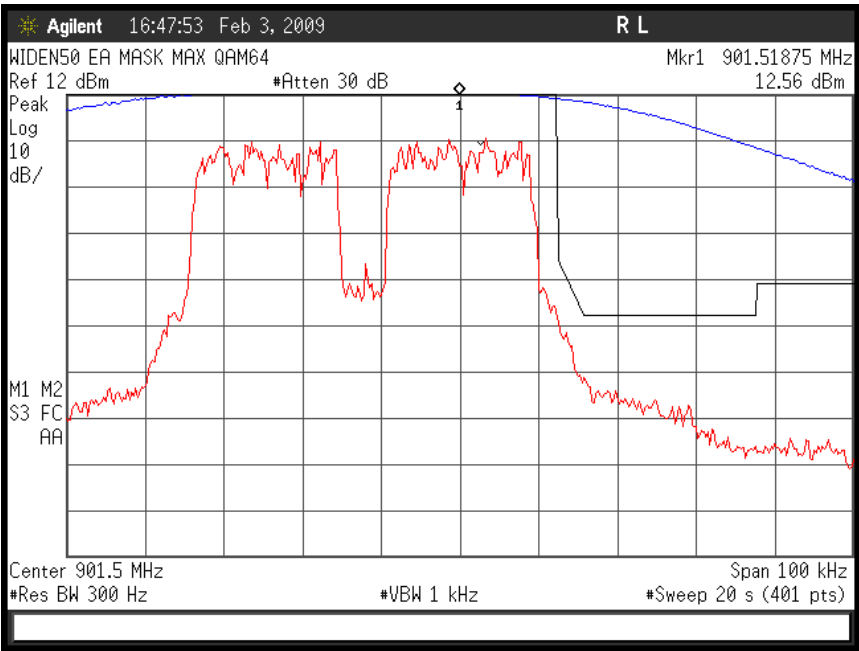


Figure 6b.2.3.5. WiDEN 50 NBPCS Band Occupied Bandwidth, Quad-64QAM, Maximum Power.

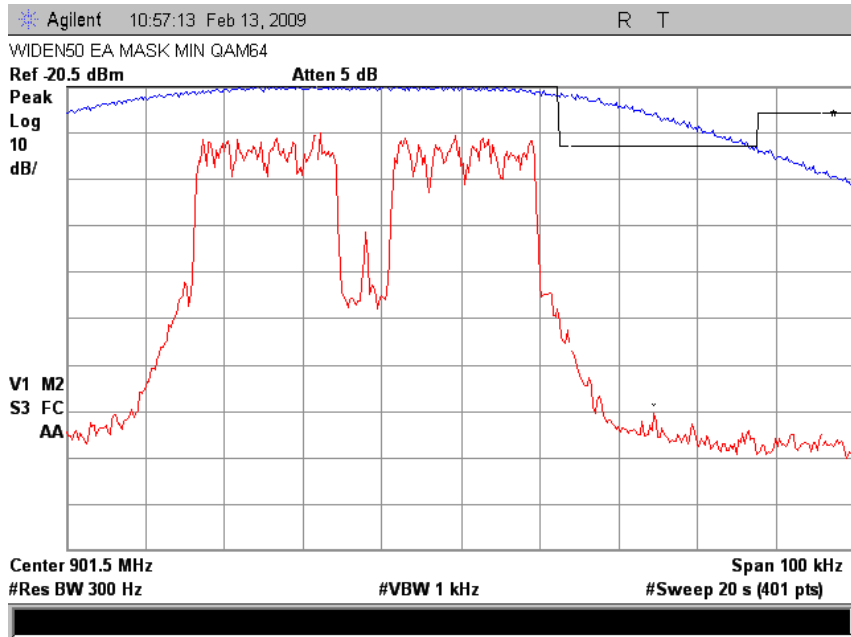


Figure 6b.2.3.6. WiDEN 50 NBPCS Band Occupied Bandwidth, Quad-64QAM, Minimum Power

6b.2.4 Emission Designator 68K3D7D - WiDEN75 NBPCS Band

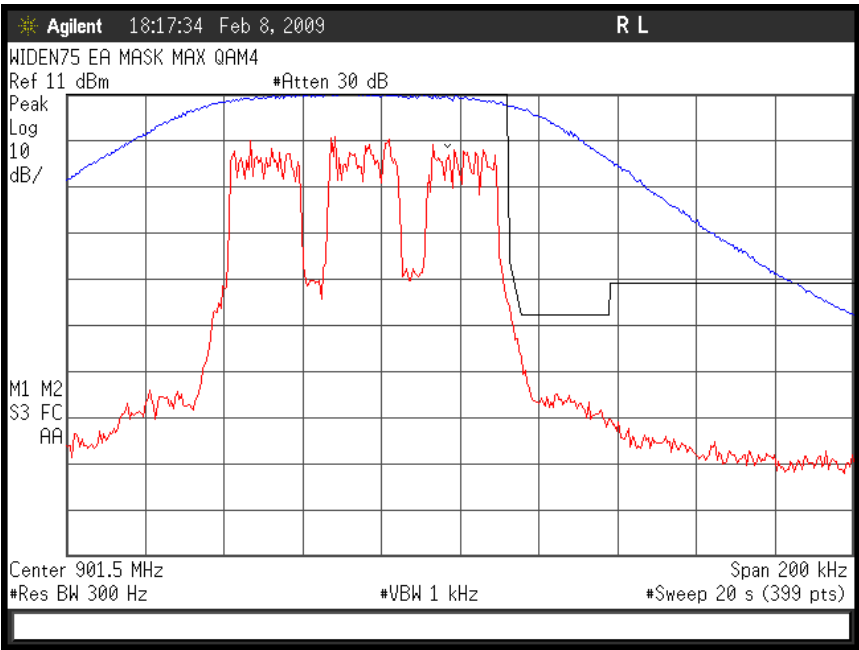


Figure 6b.2.4.1. WiDEN 75 NBPCS Band Occupied Bandwidth, Quad-QPSK, Maximum Power

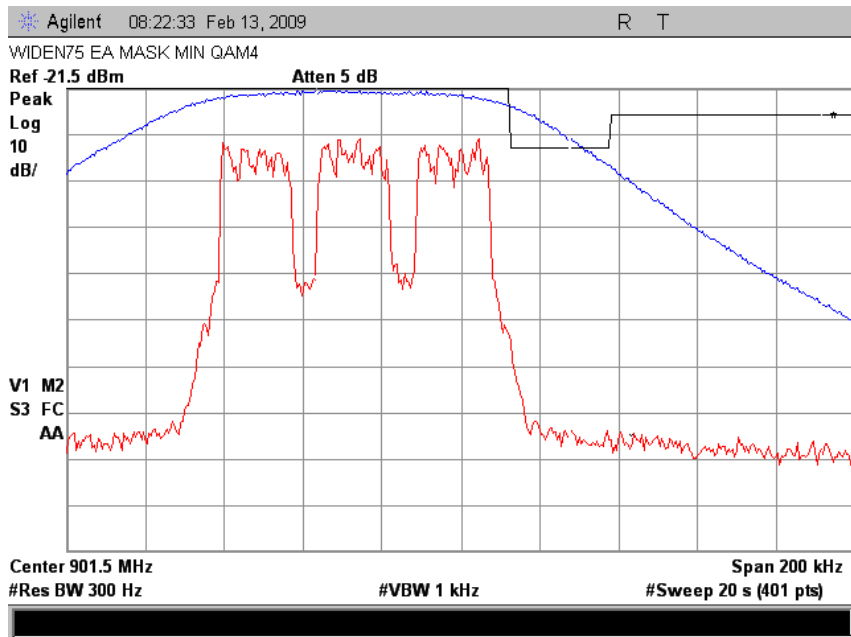


Figure 6b.2.4.2. WiDEN 75 NBPCS Band Occupied Bandwidth, Quad-QPSK, Minimum Power

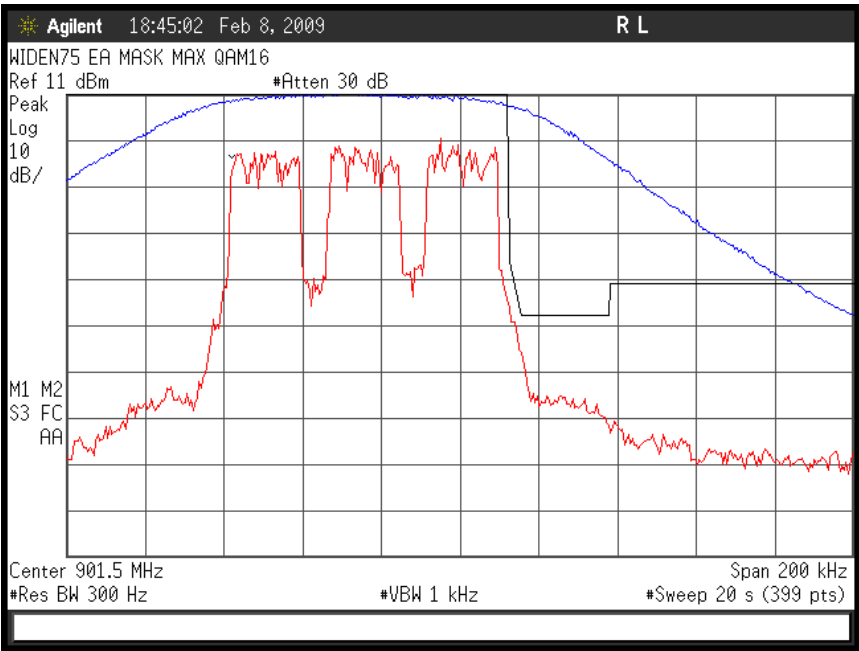


Figure 6b.2.4.3. WiDEN 75 NBPCS Band Occupied Bandwidth, Quad-16QAM, Maximum Power

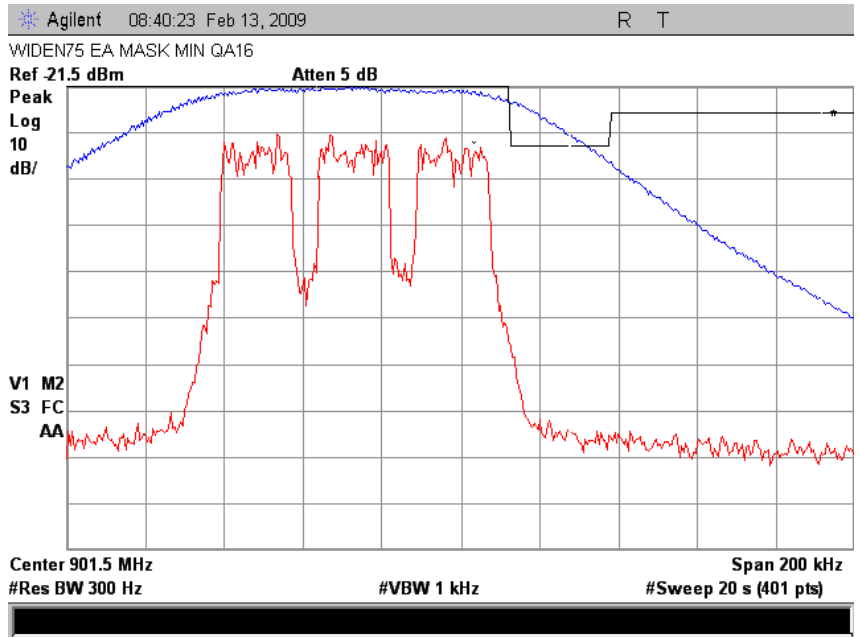


Figure 6b.2.4.4. WiDEN 75 NBPCS Band Occupied Bandwidth, Quad-16QAM, Minimum Power

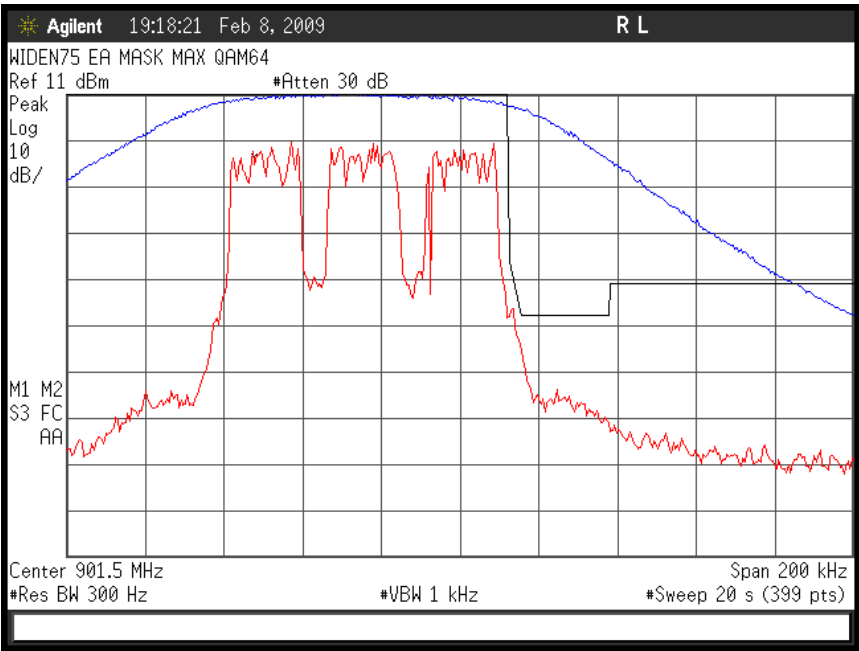


Figure 6b.2.4.5. WiDEN 75 NBPCS Band Occupied Bandwidth, Quad-64QAM, Maximum Power

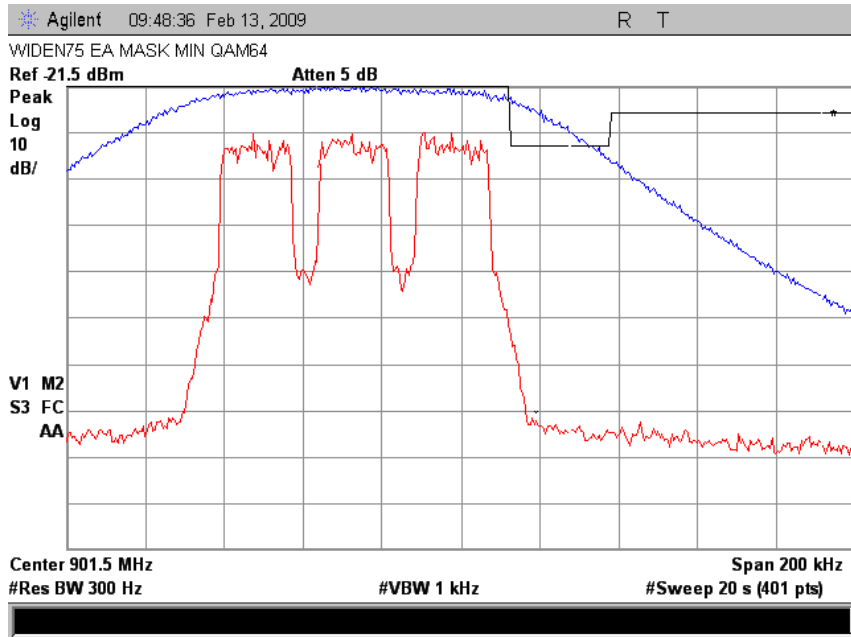


Figure 6b.2.4.6. WiDEN 75 NBPCS Band Occupied Bandwidth, Quad-64QAM, Minimum Power

6b.2.5 Emission Designator 93K3D7D - WiDEN100 800 MHz Band

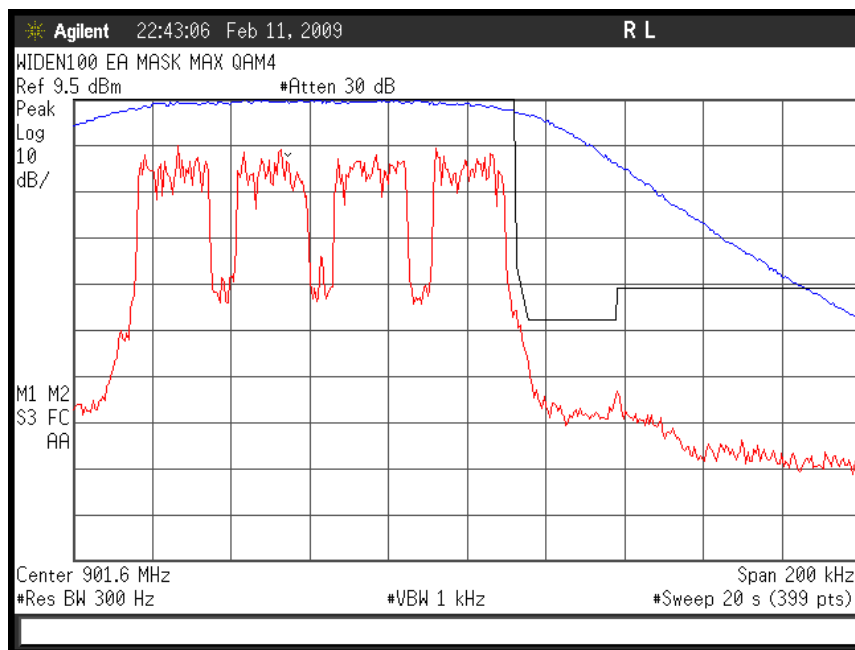


Figure 6b.2.5.1. WiDEN 100 NBPCS Band Occupied Bandwidth, Quad-QPSK, Maximum Power

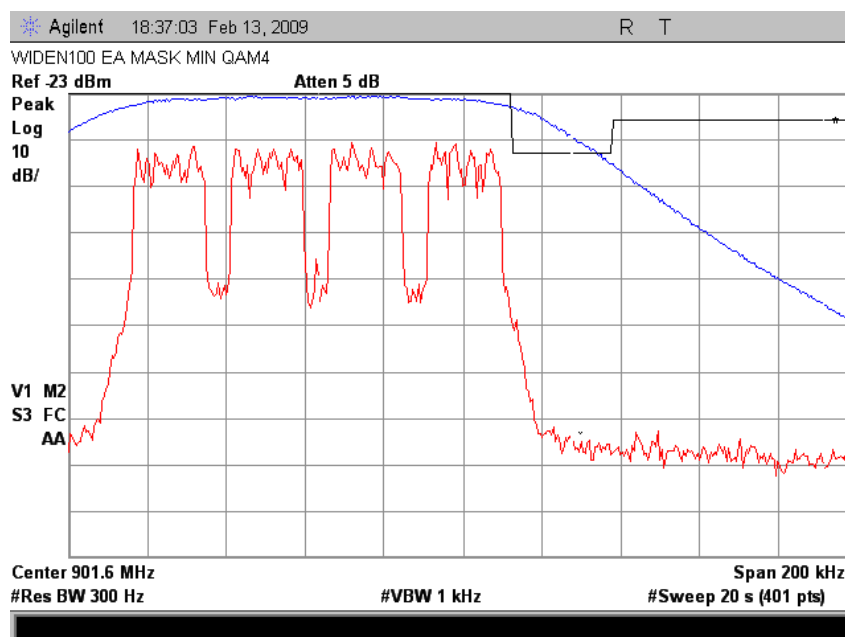


Figure 6b.2.5.2. WiDEN 100 NBPCS Band Occupied Bandwidth, Quad-QPSK, Maximum Power

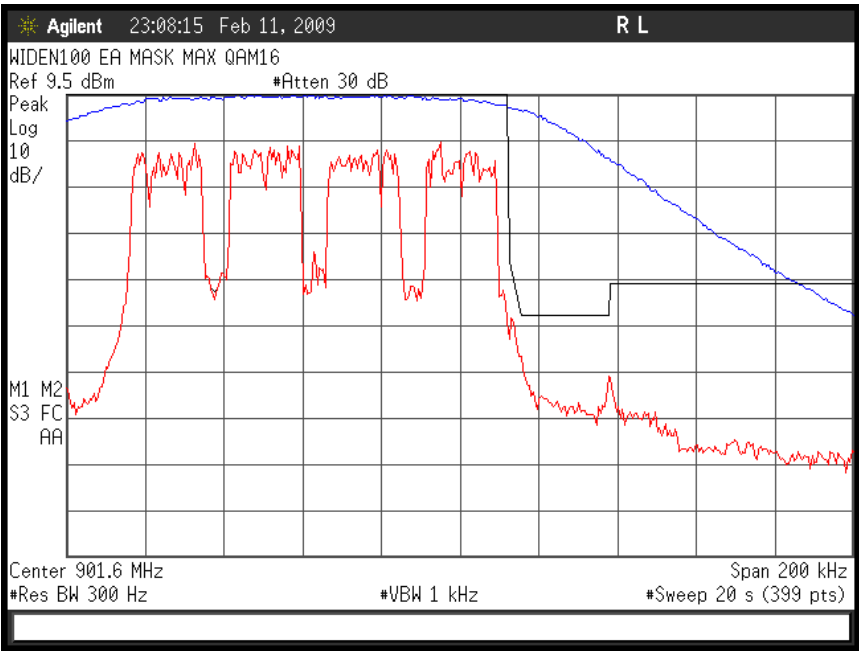


Figure 6b.2.5.3. WiDEN 100 NBPCS Band Occupied Bandwidth, Quad-16QAM, Maximum Power

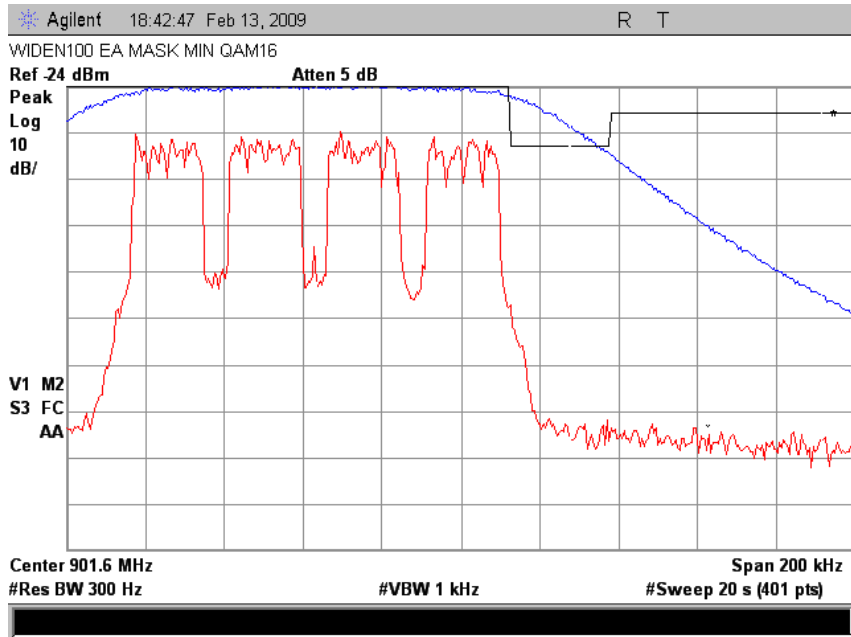


Figure 6b.2.5.4. WiDEN 100 NBPCS Band Occupied Bandwidth, Quad-16QAM, Maximum Power

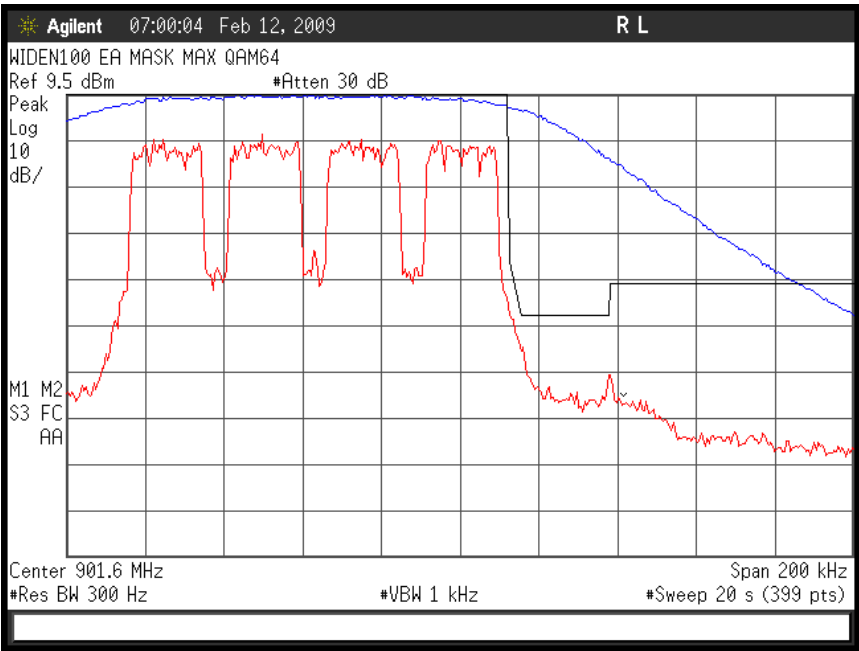


Figure 6b.2.5.5. WiDEN 100 NBPCS Band Occupied Bandwidth, Quad-64QAM, Maximum Power

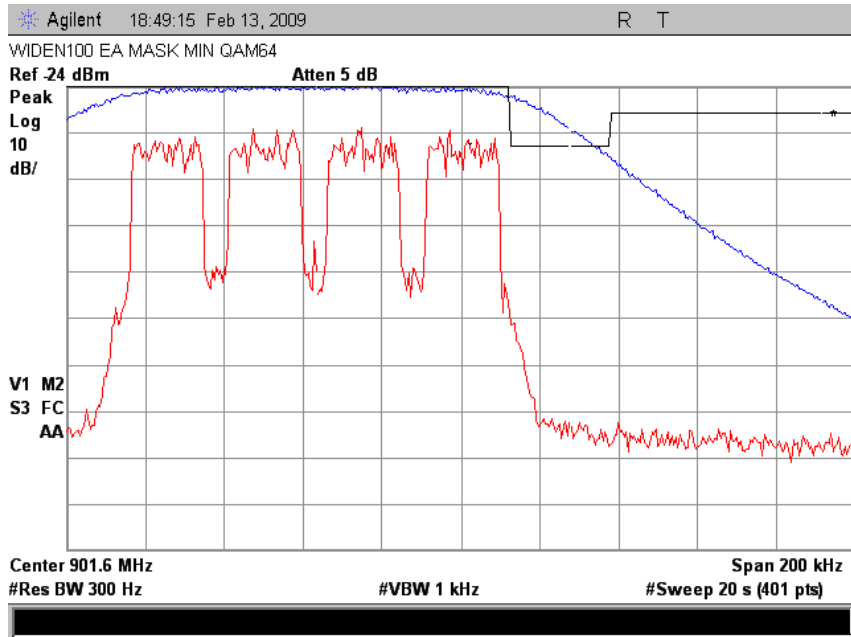


Figure 6b.2.5.6. WiDEN 100 NBPCS Band Occupied Bandwidth, Quad-64QAM, Maximum Power

6b.2.6 Emission Designator 93K3D7D - WiDEN50 Split NBPCS Band

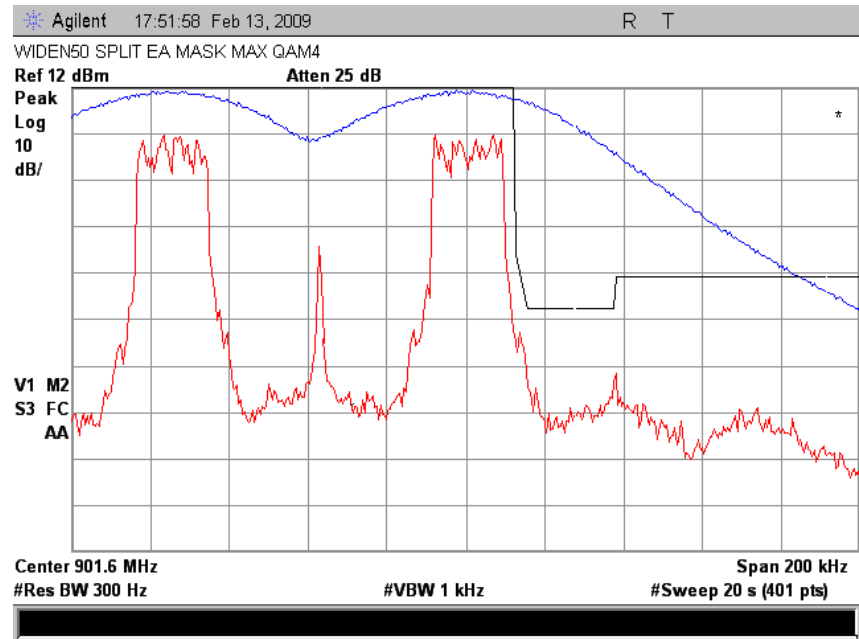


Figure 6b.2.6.1. WiDEN 50_Split NBPCS Band Occupied Bandwidth, Quad-QPSK, Maximum Power

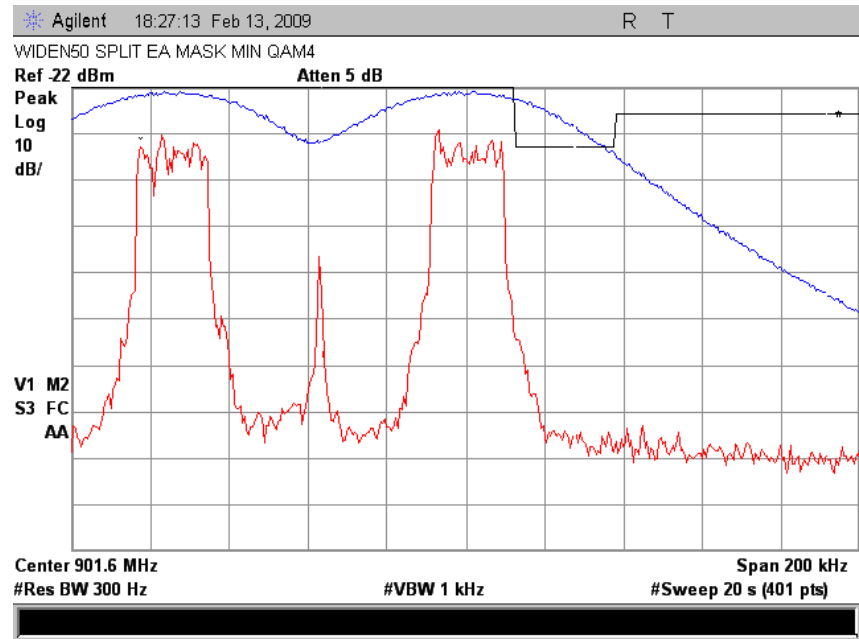


Figure 6b.2.6.2. WiDEN 50_Split NBPCS Band Occupied Bandwidth, Quad-QPSK, Minimum Power

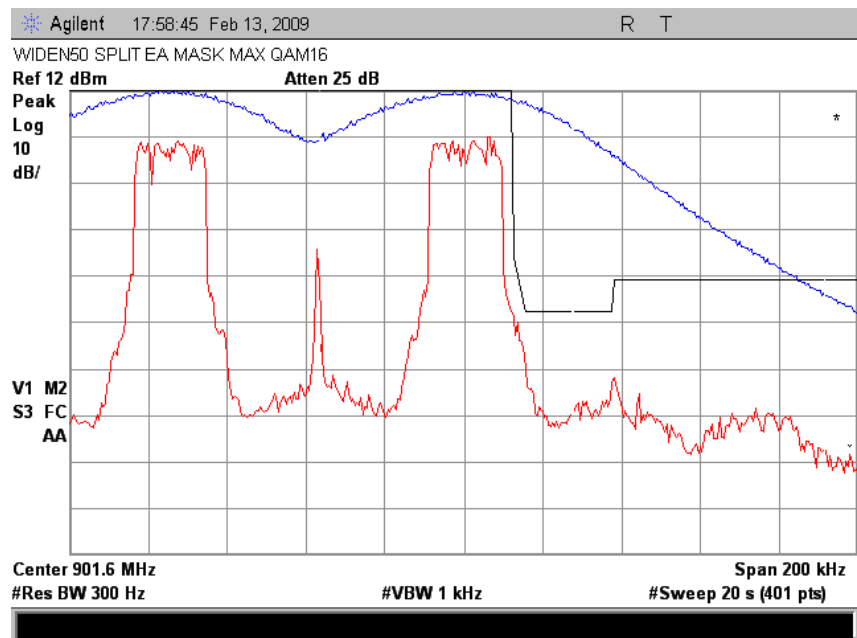


Figure 6b.2.6.3. WiDEN 50_Split NBPCS Band Occupied Bandwidth, Quad-16QAM, Maximum Power

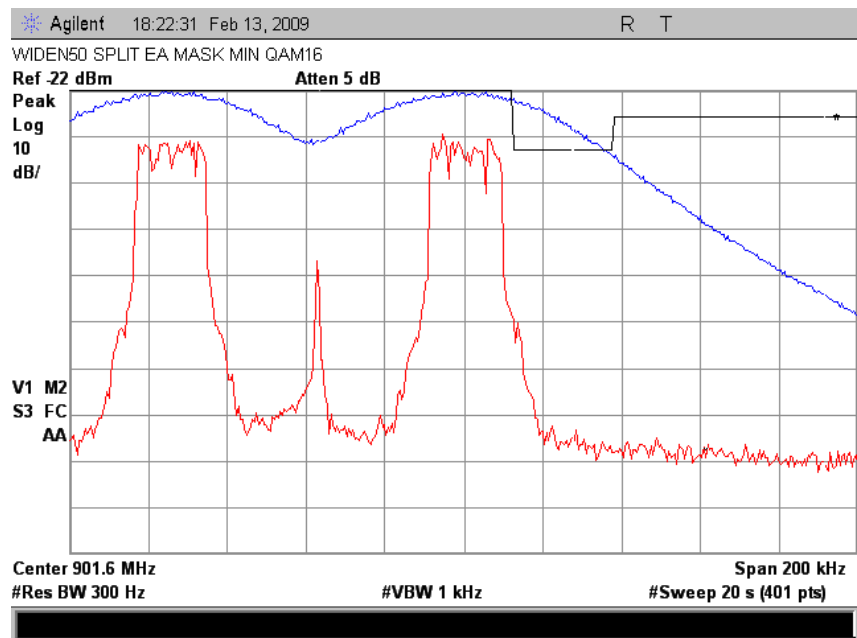


Figure 6b.2.6.4. WiDEN 50_Split NBPCS Band Occupied Bandwidth, Quad-16QAM, Minimum Power

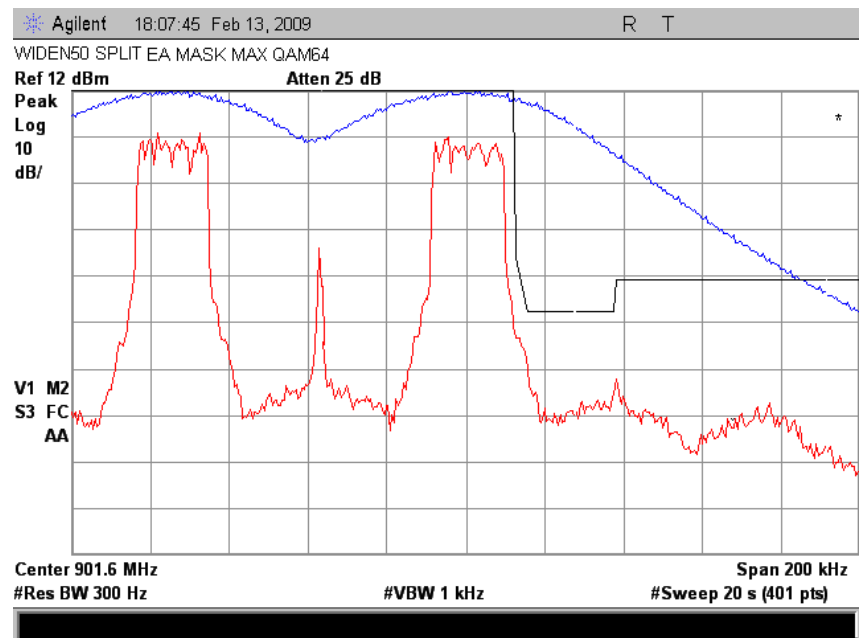


Figure 6b.2.6.5. WiDEN 50_Split NBPCS Band Occupied Bandwidth, Quad-64QAM, Maximum Power

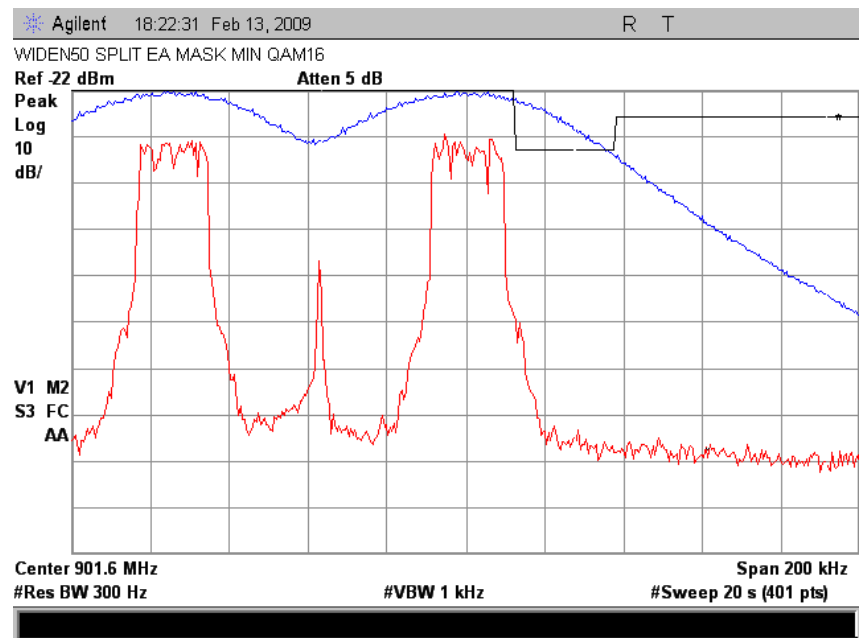


Figure 6b.2.6.6. WiDEN 50_Split NBPCS Band Occupied Bandwidth, Quad-64QAM, Minimum Power

6a.3 Radiated Spurious Emissions -- Pursuant 47 CFR 2.1053, §2.1057, §90.210(g)(3), §90.691(a)(2); RSS-Gen Section 3, RSS-119 Section 5.8, RSS-134 Section 6.4.

6a.3.1 800-900 MHz SRM Bands.

FCC Limits

Per 90.210(g)(3) and 90.691(a)(2), radiated spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

- $43 + 10 \log_{10}(P)$
(Thus the effective limit is -13 dBm for any transmitter power level).

NOTE 1: Spurious emissions are dependent on the linearity of the Power Amplifier and are independent of modulation type or TDM interleaving. Thus emissions were tested with the radio set to Quad-16QAM at both maximum and minimum radio output power settings.

NOTE 2: An asterisk () in the data indicates the spurious emission was greater than 20 dB below the specification limit, or could not otherwise be detected due to noise limitations or ambient signal levels.*

NOTE 3: Spurious emission levels were measured with the non-detachable antenna mounted on the radio product, as in intended use. Measurement setup is described in Exhibit 7.3.

NOTE 4: Spurious emissions are dependent on the linearity of the Power Amplifier (U2051) and are independent of modulation type or TDM interleaving. Thus, for the Land Mobile Band, emissions were tested with the radio set to Quad-16QAM.

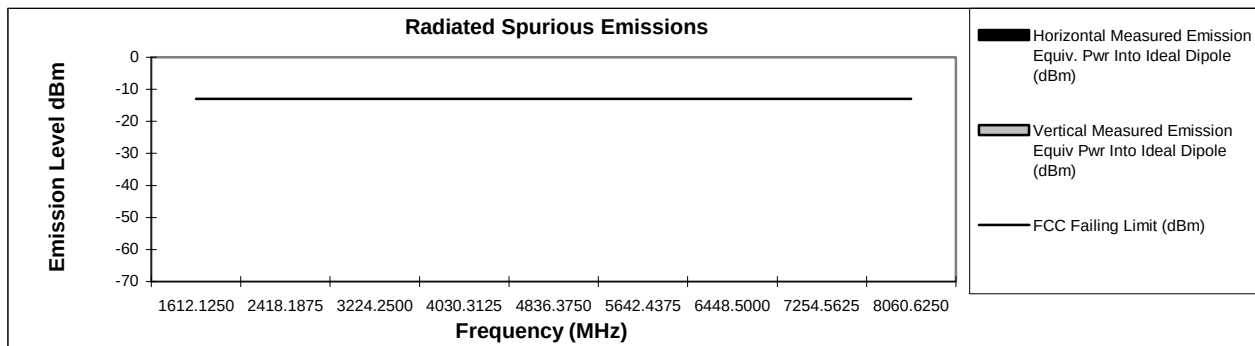
NOTE 5: Emissions resulting from intermodulation products possible due to the simultaneous operation of the Part 90 SMR and Bluetooth transmitters were investigated and those of significance are shown in the graphs below. All were compliant with the applicable Part 90 emissions requirements.

Tx Power: 0.64 Watts

806.0625 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

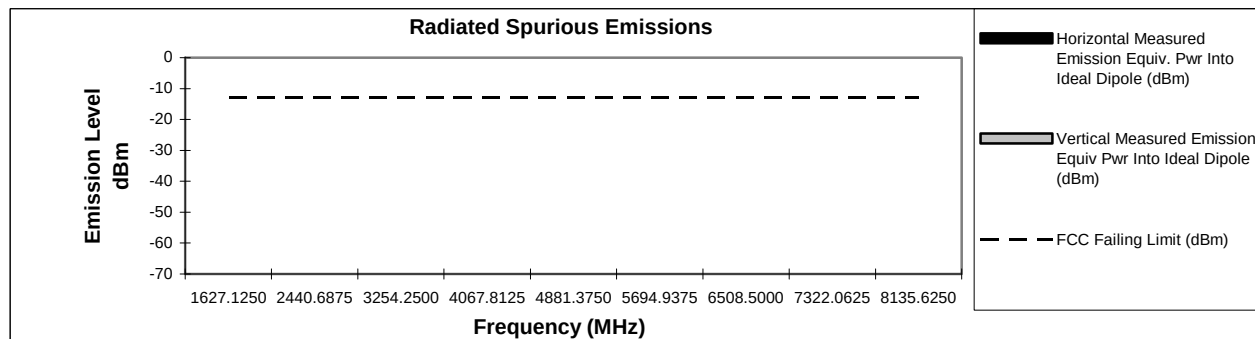
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1612.1250	-13	*	*
2418.1875	-13	*	*
3224.2500	-13	*	*
4030.3125	-13	*	*
4836.3750	-13	*	*
5642.4375	-13	*	*
6448.5000	-13	*	*
7254.5625	-13	*	*
8060.6250	-13	*	*



813.5625 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1627.1250	-13	*	*
2440.6875	-13	*	*
3254.2500	-13	*	*
4067.8125	-13	*	*
4881.3750	-13	*	*
5694.9375	-13	*	*
6508.5000	-13	*	*
7322.0625	-13	*	*
8135.6250	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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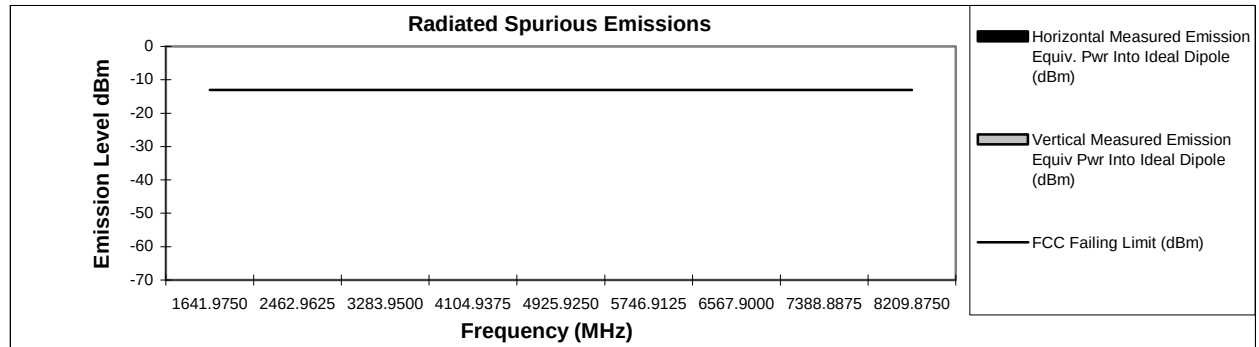
Table 6a.2.1. Spurious emissions at 806.0625 and 813.5625 MHz (Max. Pwr.).

Tx Power: 0.64 Watts

820.9875 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

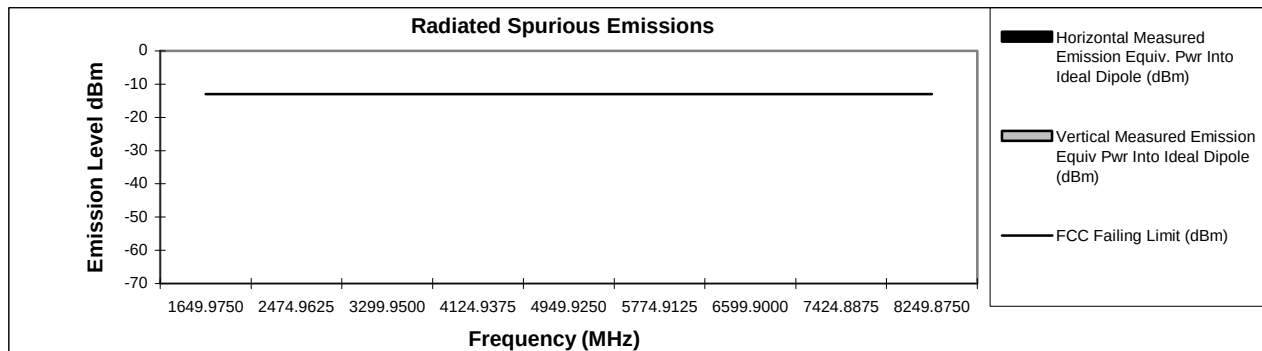
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1641.9750	-13	*	*
2462.9625	-13	*	*
3283.9500	-13	*	*
4104.9375	-13	*	*
4925.9250	-13	*	*
5746.9125	-13	*	*
6567.9000	-13	*	*
7388.8875	-13	*	*
8209.8750	-13	*	*



824.9875 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1649.9750	-13	*	*
2474.9625	-13	*	*
3299.9500	-13	*	*
4124.9375	-13	*	*
4949.9250	-13	*	*
5774.9125	-13	*	*
6599.9000	-13	*	*
7424.8875	-13	*	*
8249.8750	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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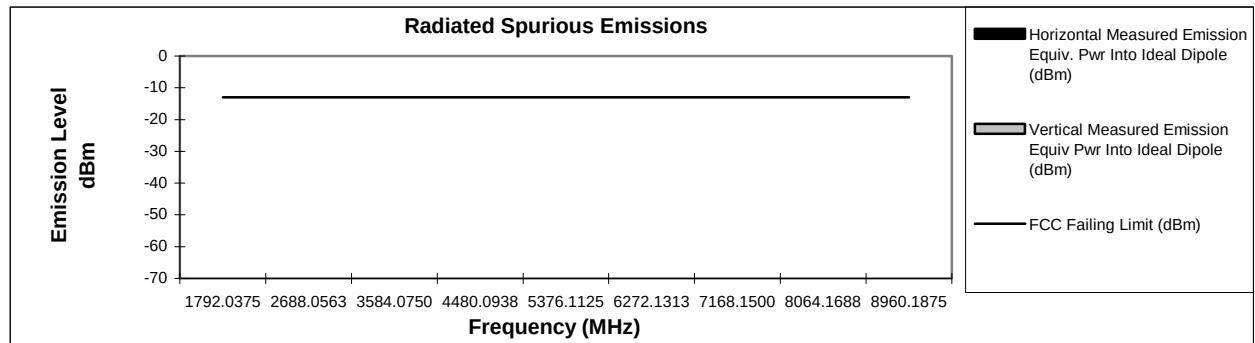
Table 6a.2.2. Spurious emissions at 820.9875 and 824.9875 MHz (Max. Pwr.).

Tx Power: 0.64 Watts

896.01875 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

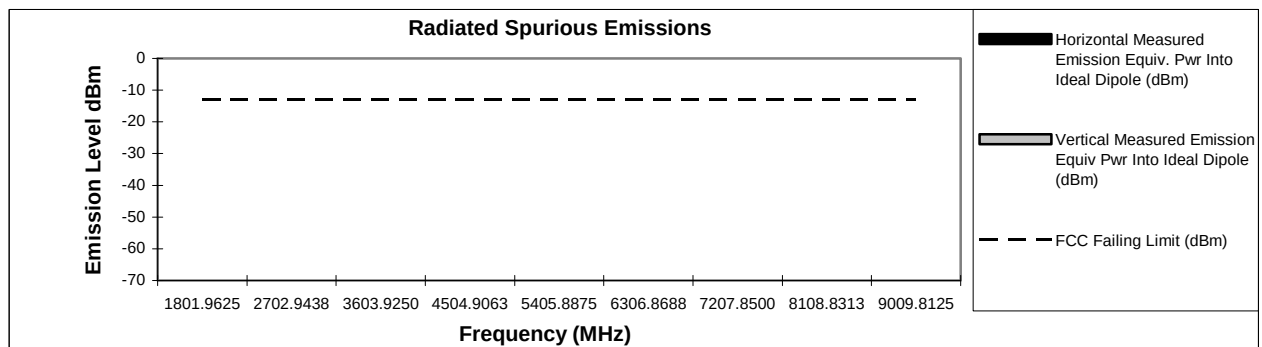
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1792.0375	-13	*	*
2688.0563	-13	*	*
3584.0750	-13	*	*
4480.0938	-13	*	*
5376.1125	-13	*	*
6272.1313	-13	*	*
7168.1500	-13	*	*
8064.1688	-13	*	*
8960.1875	-13	*	*



900.98125 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1801.9625	-13	*	*
2702.9438	-13	*	*
3603.9250	-13	*	*
4504.9063	-13	*	*
5405.8875	-13	*	*
6306.8688	-13	*	*
7207.8500	-13	*	*
8108.8313	-13	*	*
9009.8125	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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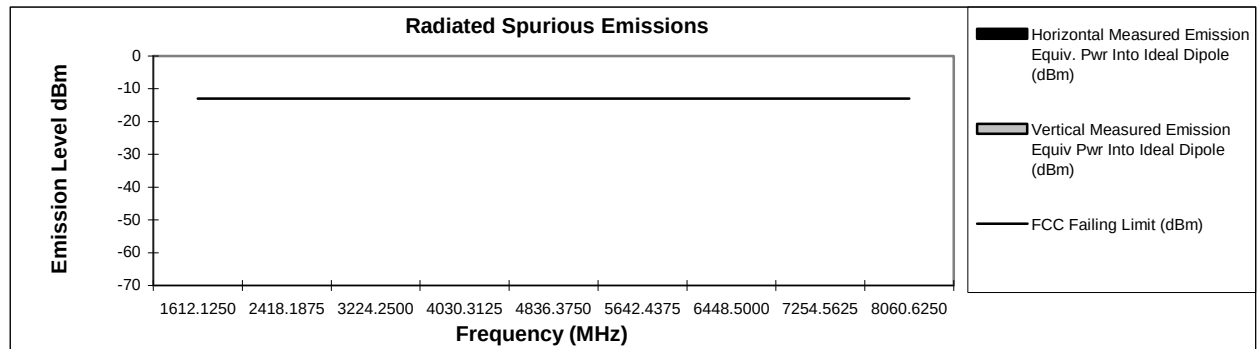
Table 6a.2.3. Spurious emissions at 896.01875 and 900.98125 MHz (Max. Pwr.).

Tx Power: Cutback Watts

806.0625 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

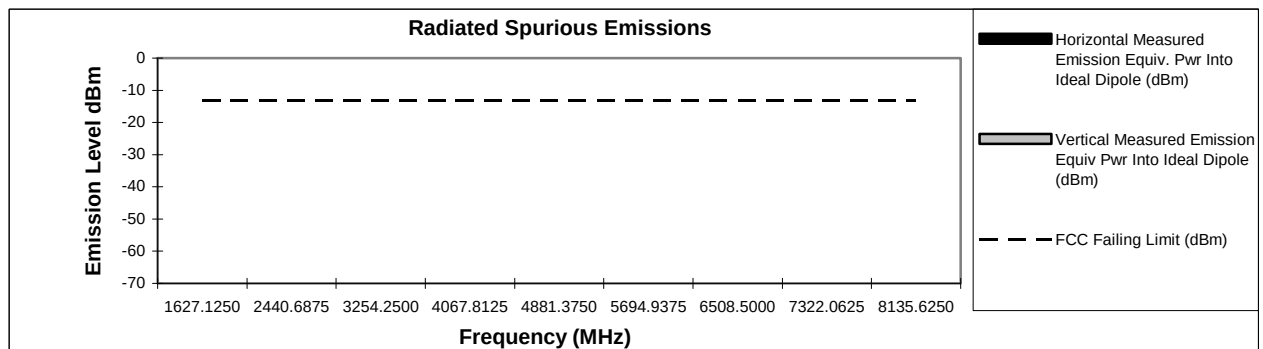
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1612.1250	-13	*	*
2418.1875	-13	*	*
3224.2500	-13	*	*
4030.3125	-13	*	*
4836.3750	-13	*	*
5642.4375	-13	*	*
6448.5000	-13	*	*
7254.5625	-13	*	*
8060.6250	-13	*	*



813.5625 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1627.1250	-13	*	*
2440.6875	-13	*	*
3254.2500	-13	*	*
4067.8125	-13	*	*
4881.3750	-13	*	*
5694.9375	-13	*	*
6508.5000	-13	*	*
7322.0625	-13	*	*
8135.6250	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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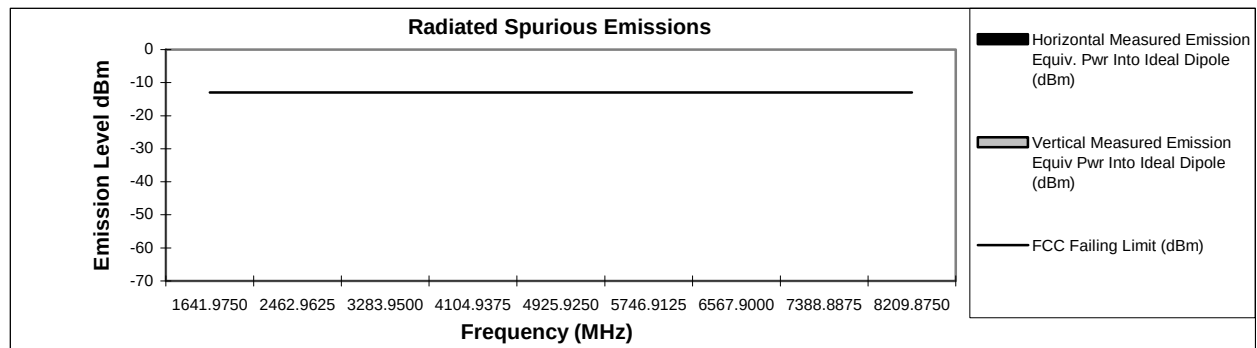
Table 6a.2.4. Spurious emissions at 806.0625 and 813.5625 MHz (-34 dB Cutback).

Tx Power: Cutback Watts

820.9875 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

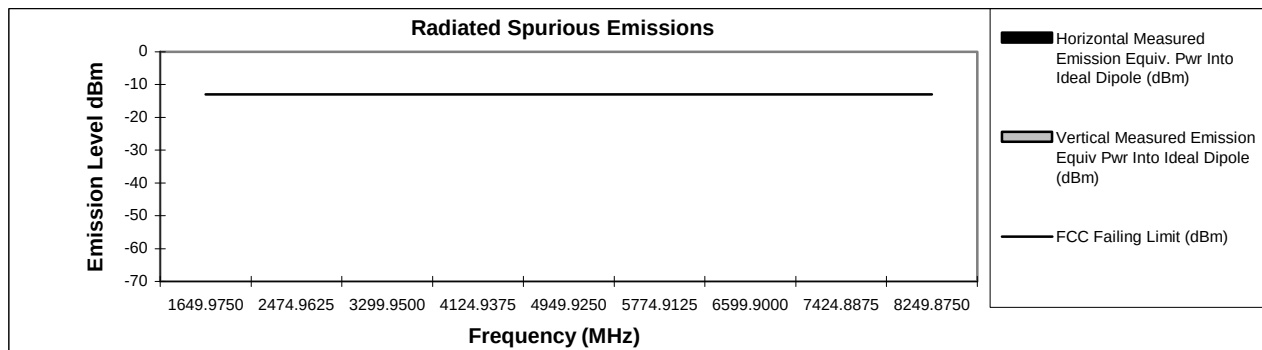
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1641.9750	-13	*	*
2462.9625	-13	*	*
3283.9500	-13	*	*
4104.9375	-13	*	*
4925.9250	-13	*	*
5746.9125	-13	*	*
6567.9000	-13	*	*
7388.8875	-13	*	*
8209.8750	-13	*	*



824.9875 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1649.9750	-13	*	*
2474.9625	-13	*	*
3299.9500	-13	*	*
4124.9375	-13	*	*
4949.9250	-13	*	*
5774.9125	-13	*	*
6599.9000	-13	*	*
7424.8875	-13	*	*
8249.8750	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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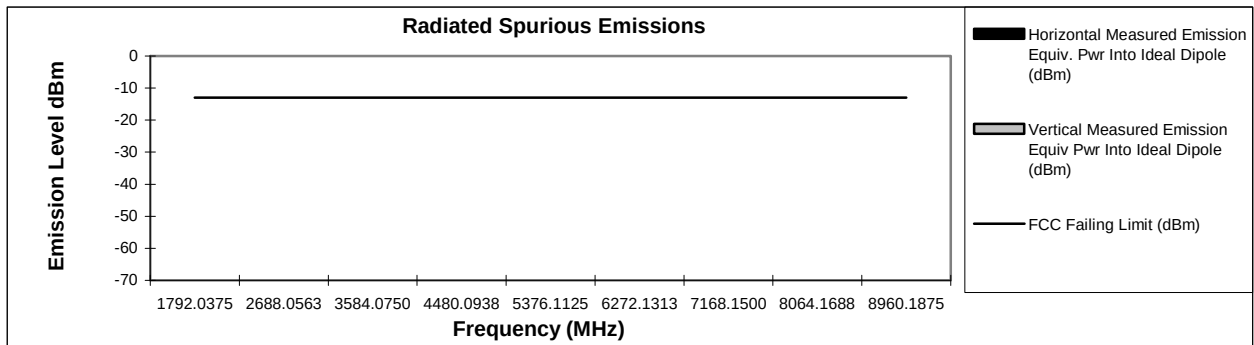
Table 6a.2.5. Spurious emissions at 820.9875 and 824.9875 MHz (-34 dB Cutback).

Tx Power: Cutback Watts

896.01875 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

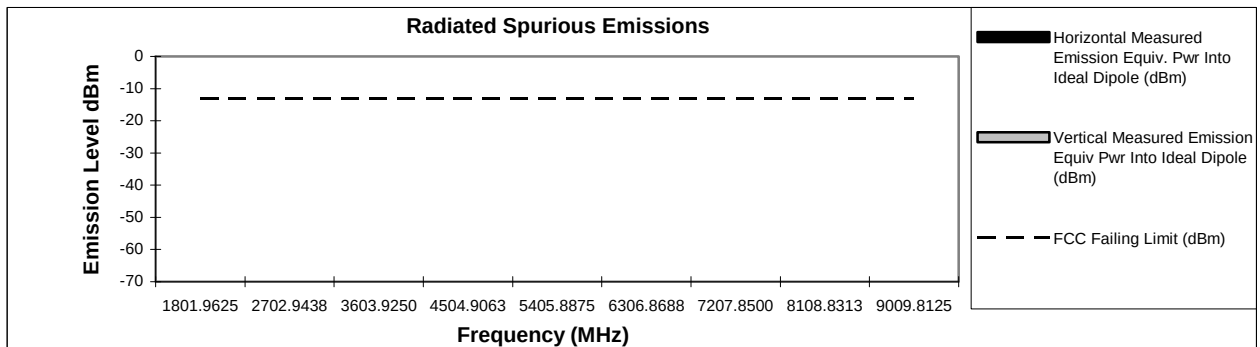
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1792.0375	-13	*	*
2688.0563	-13	*	*
3584.0750	-13	*	*
4480.0938	-13	*	*
5376.1125	-13	*	*
6272.1313	-13	*	*
7168.1500	-13	*	*
8064.1688	-13	*	*
8960.1875	-13	*	*



900.98125 MHz

Channel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1801.9625	-13	*	*
2702.9438	-13	*	*
3603.9250	-13	*	*
4504.9063	-13	*	*
5405.8875	-13	*	*
6306.8688	-13	*	*
7207.8500	-13	*	*
8108.8313	-13	*	*
9009.8125	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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FCC Registration: 91932 / Industry Canada: IC109U-1

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Table 6a.2.6. Spurious emissions at 896.01875 and 900.98125 MHz (-34 dB Cutback).

6b.3 Radiated Spurious Emissions -- Pursuant 47 CFR 2.1053, §2.1057, and §24.133(a)(1)(ii)**6b.3.1 900 MHz NBPCS Band.**FCC Limits

Per 47 CFR 24.133(a)(1), radiated spurious emissions shall be attenuated below the *lesser* of the attenuations given below:

- $43 + 10 \log_{10} (P)$ (in dBm).
- 80 dB

For this product, the applicable attenuation limit is *-13 dBm*.

NOTE 1: Spurious emissions are dependent on the linearity of the Power Amplifier and are independent of modulation type or TDM interleaving. Thus emissions were tested with the radio set to Quad-16QAM at both maximum and minimum radio output power settings.

NOTE 2: An asterisk () in the data indicates the spurious emission was greater than 20 dB below the specification limit, or could not otherwise be detected due to noise limitations or ambient signal levels.*

NOTE 3: Spurious emission levels were measured with the non-detachable antenna mounted on the radio product, as in intended use. Measurement setup is described in Exhibit 7.3.

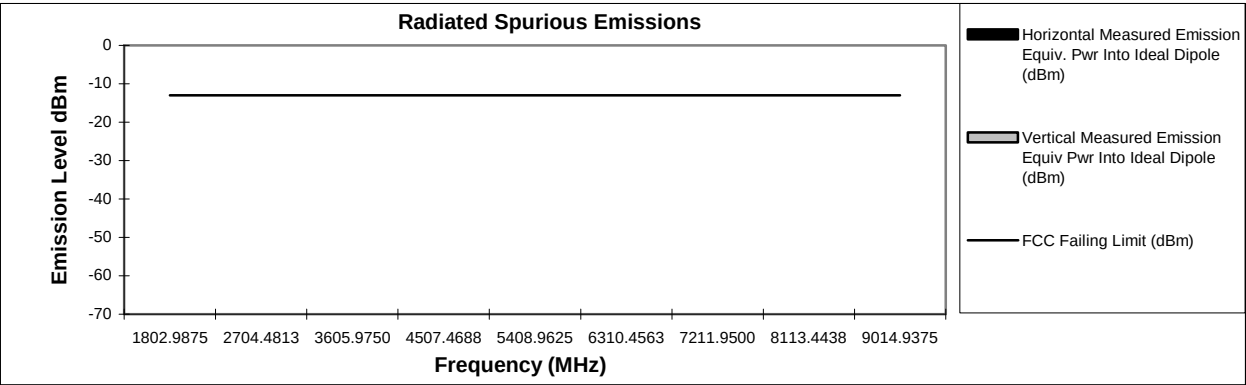
NOTE 4: Spurious emissions are dependent on the linearity of the Power Amplifier (U2051) and are independent of modulation type or TDM interleaving. Thus, for the Land Mobile Band, emissions were tested with the radio set to Quad-16QAM.

NOTE 5: Emissions resulting from intermodulation products possible due to the simultaneous operation of the Part 24 NBPCS band and Bluetooth transmitters were investigated and those of significance are shown in the graphs below. All were compliant with the applicable Part 24 emissions requirements.

Tx Power: 0.64 Watts

901.49375 MHzChannel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1802.9875	-13	*	*
2704.4813	-13	*	*
3605.9750	-13	*	*
4507.4688	-13	*	*
5408.9625	-13	*	*
6310.4563	-13	*	*
7211.9500	-13	*	*
8113.4438	-13	*	*
9014.9375	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.
The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

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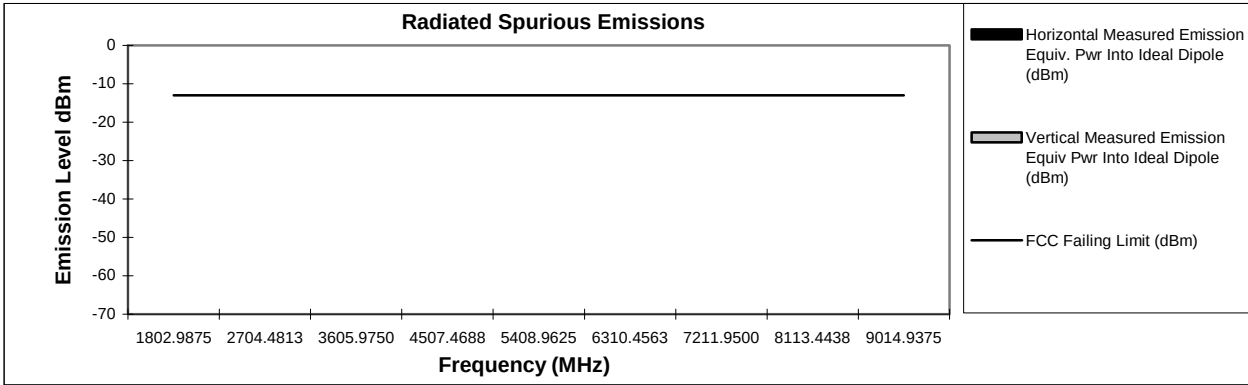
January 23, 2009

Table 6b.2.1. Spurious emissions at 901.49375 MHz (Max. Pwr.).

Tx Power: Cutback Watts

901.49375 MHzChannel Spacing 25kHz | S/N 364VJYJS2S

Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1802.9875	-13	*	*
2704.4813	-13	*	*
3605.9750	-13	*	*
4507.4688	-13	*	*
5408.9625	-13	*	*
6310.4563	-13	*	*
7211.9500	-13	*	*
8113.4438	-13	*	*
9014.9375	-13	*	*



* Indicates the spurious emission could not be detected due to noise limitations or ambients.
The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Frank Baader

FCC Registration: 91932 / Industry Canada: IC109U-1

January 26, 2009

Table 6b.2.2. Spurious emissions at 901.49375 MHz (-34 dB Cutback).

6a.4 Power Line Conducted Spurious Voltage -- Pursuant 47 CFR 15.207; RSS-Gen Section 3.

Conducted voltage limits:

-Per 47 CFR 15.207

This radio product can transmit in 800 and 900 MHz SMR bands while resting in a battery charger that is connected to the AC power line. Phase and Neutral traces are shown below, in addition to the two applicable limit lines, the higher being applicable to measurements utilizing a quasi-peak detector and the lower being applicable to measurements utilizing an average detector. The data trace portrays the amplitude of the voltage measured during sweeping with a quasi-peak detector. The table below the traces shows the measured values at frequencies of interest, including measurements made with the averaging detector.

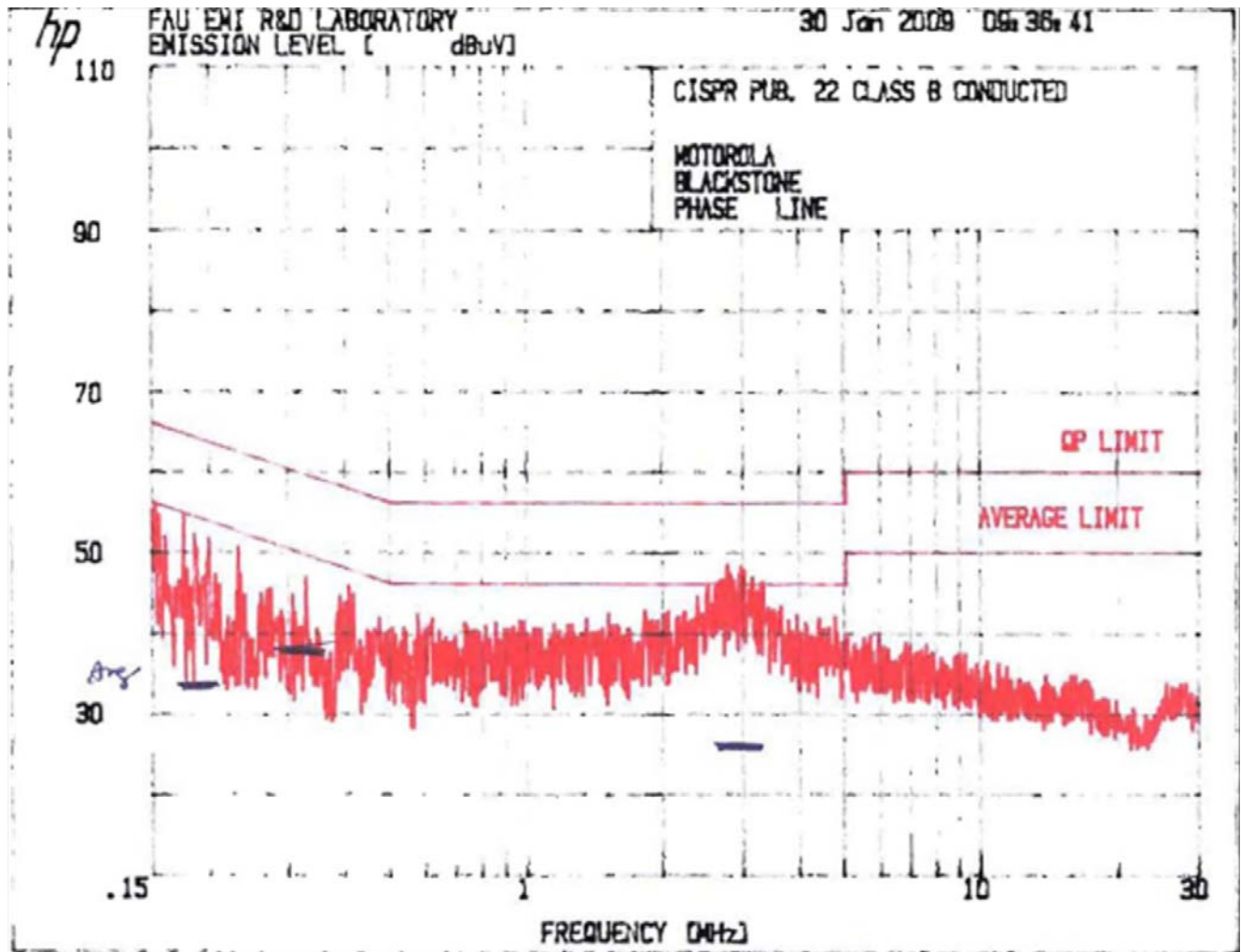


Figure 6a-4.1: iDEN 800 MHz SMR Band Phase Line Voltage at 806.0625 MHz, with a Quasi-Peak Detector.

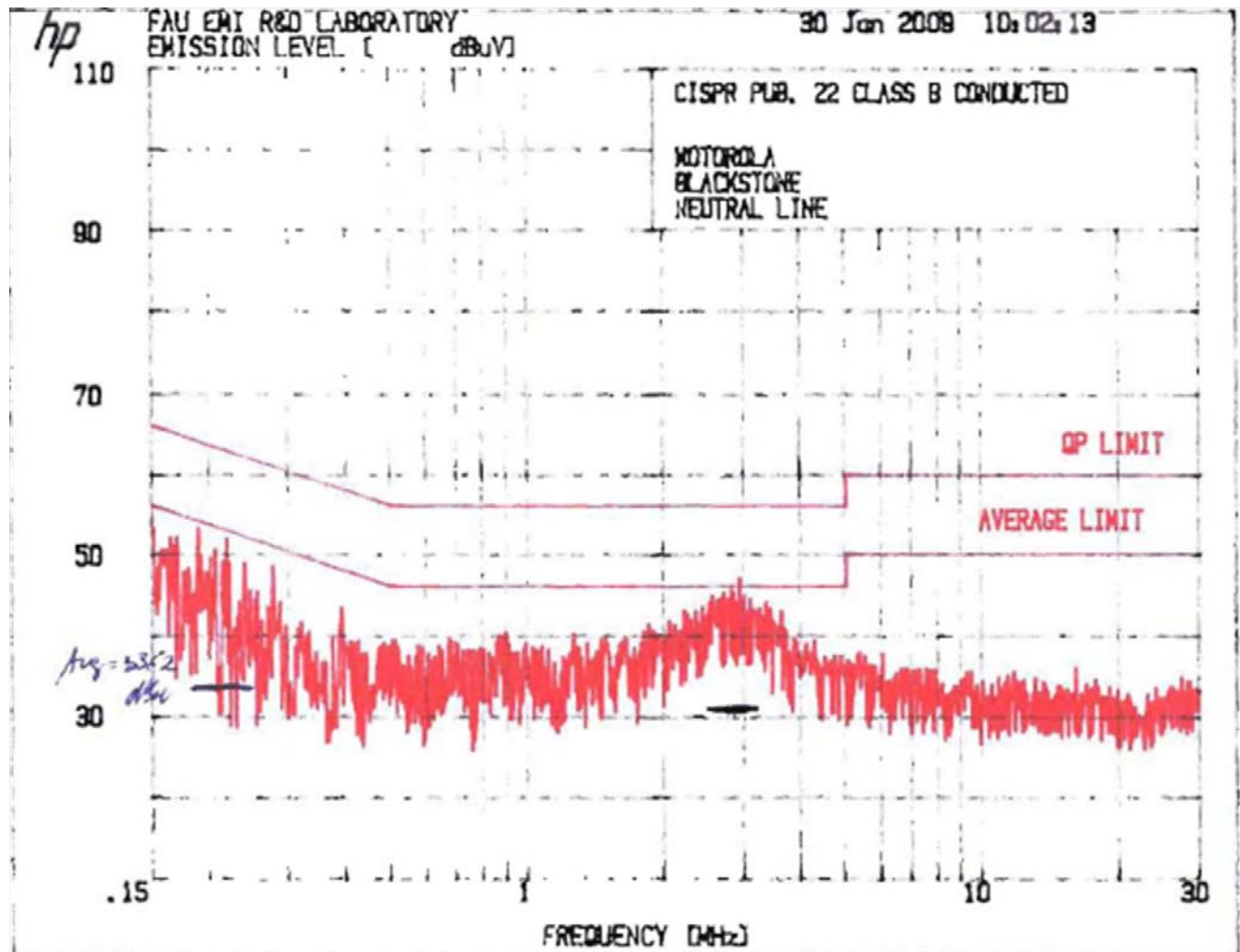


Figure 6a-4.2: iDEN 800 MHz SMR Band Neutral Line Voltage at 806.0625 MHz, with a Quasi-Peak Detector.

iDEN							iDEN TX: 806.0625 MHz
Line Tested	Frequency (kHz)	Peak Value (dBμV)	QP Value (dBμV)	Average Value (dBμV)	Avg. Limit (dBμV)	Margin to Avg. Limit (dB)*	
Phase	191.7	59.08		33.80	53.96	20.16	
Neutral	162	58.38		33.62	55.36	21.74	
Phase	305.7	50.21		37.69	50.09	12.40	
Neutral							
Phase	2615	49.28		26.52	46.00	19.48	
Neutral	2853	48.88		30.49	46.00	15.51	

Table 6a-4.1: Line Voltage Data: Quasi-Peak and Average Detectors

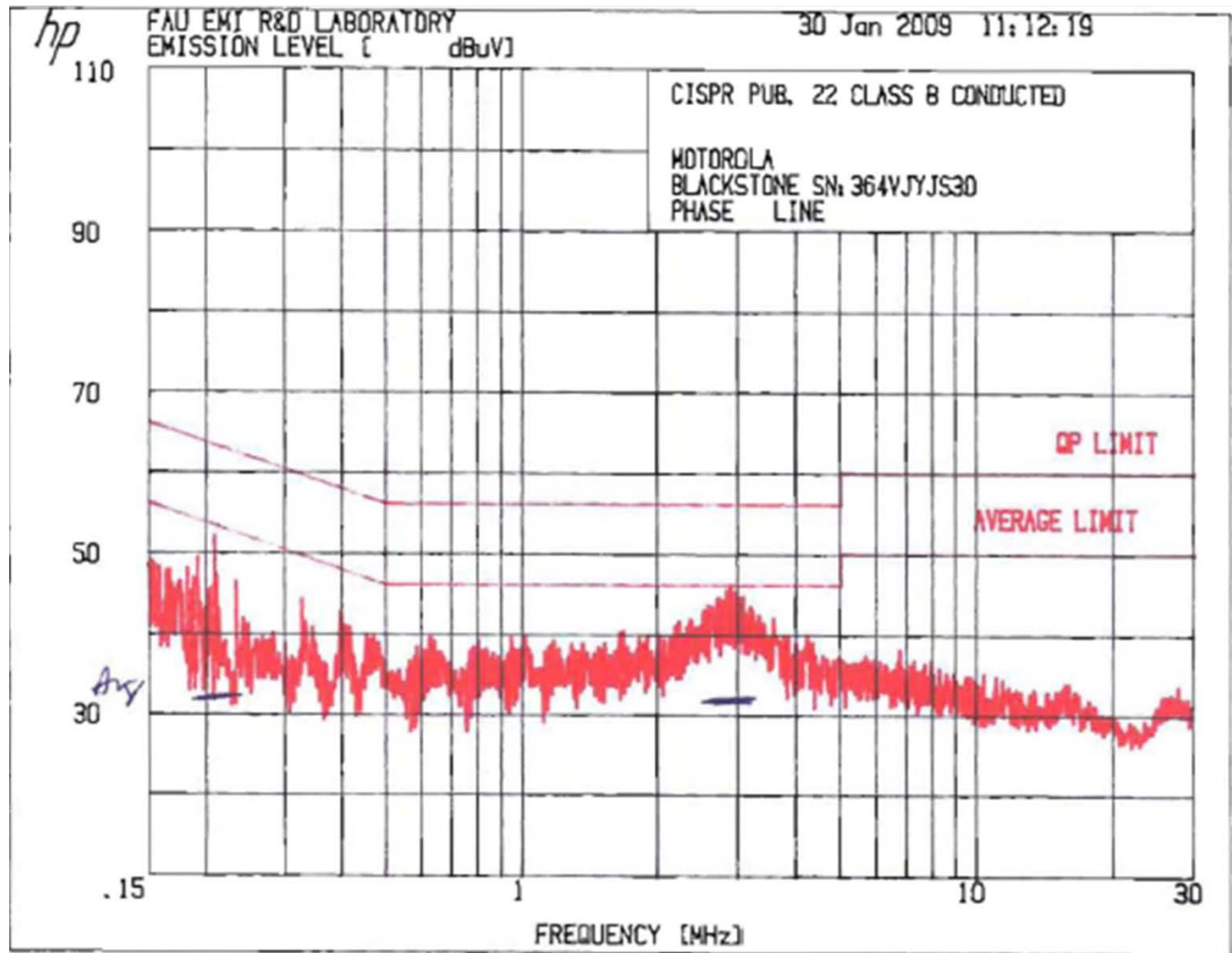


Figure 6a-4.3: iDEN 900 MHz SMR Band Phase Line Voltage at 896.00625 MHz, with a Quasi-Peak Detector.

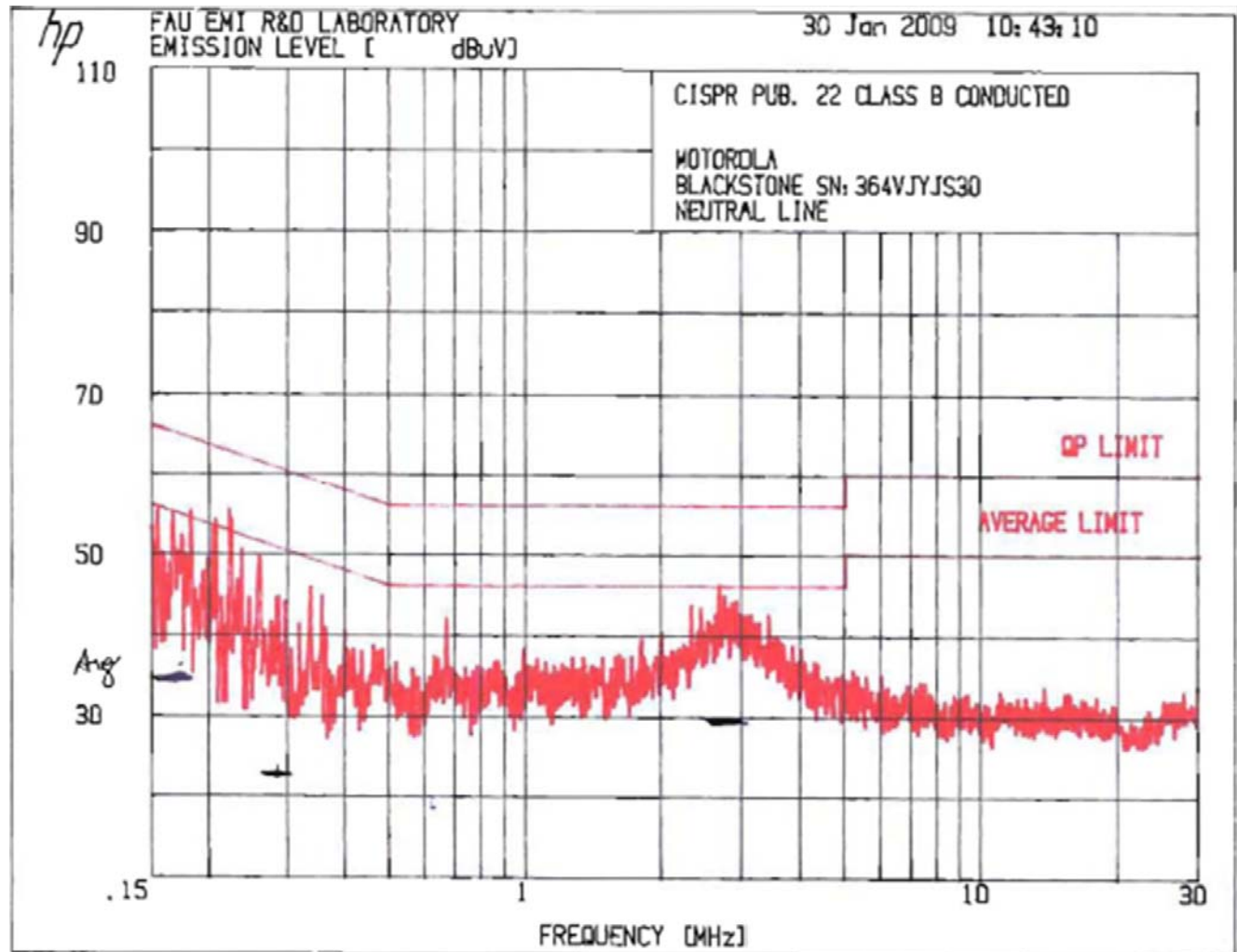


Figure 6a-4.4: iDEN 900 MHz SMR Band Neutral Line Voltage at 896.00625 MHz, with a Quasi-Peak Detector.

iDEN							iDEN TX: 896.00625 MHz
Line Tested	Frequency (kHz)	Peak Value (dBμV)	QP Value (dBμV)	Average Value (dBμV)	Avg. Limit (dBμV)	Margin to Avg. Limit (dB)*	
Phase	150.79	59.71		32.26	55.96	23.70	
Neutral	150	57.02		34.90	56.00	21.10	
Phase							
Neutral	291.6	49.58		23.87	50.48	26.61	
Phase							
Neutral	660.44	40.62		19.89	46.00	26.11	
Phase	2808	45.79		32.65	46.00	13.35	
Neutral	2940	44.91		29.97	46.00	16.03	

Table 6a-4.2: Line Voltage Data: Quasi-Peak and Average Detectors.

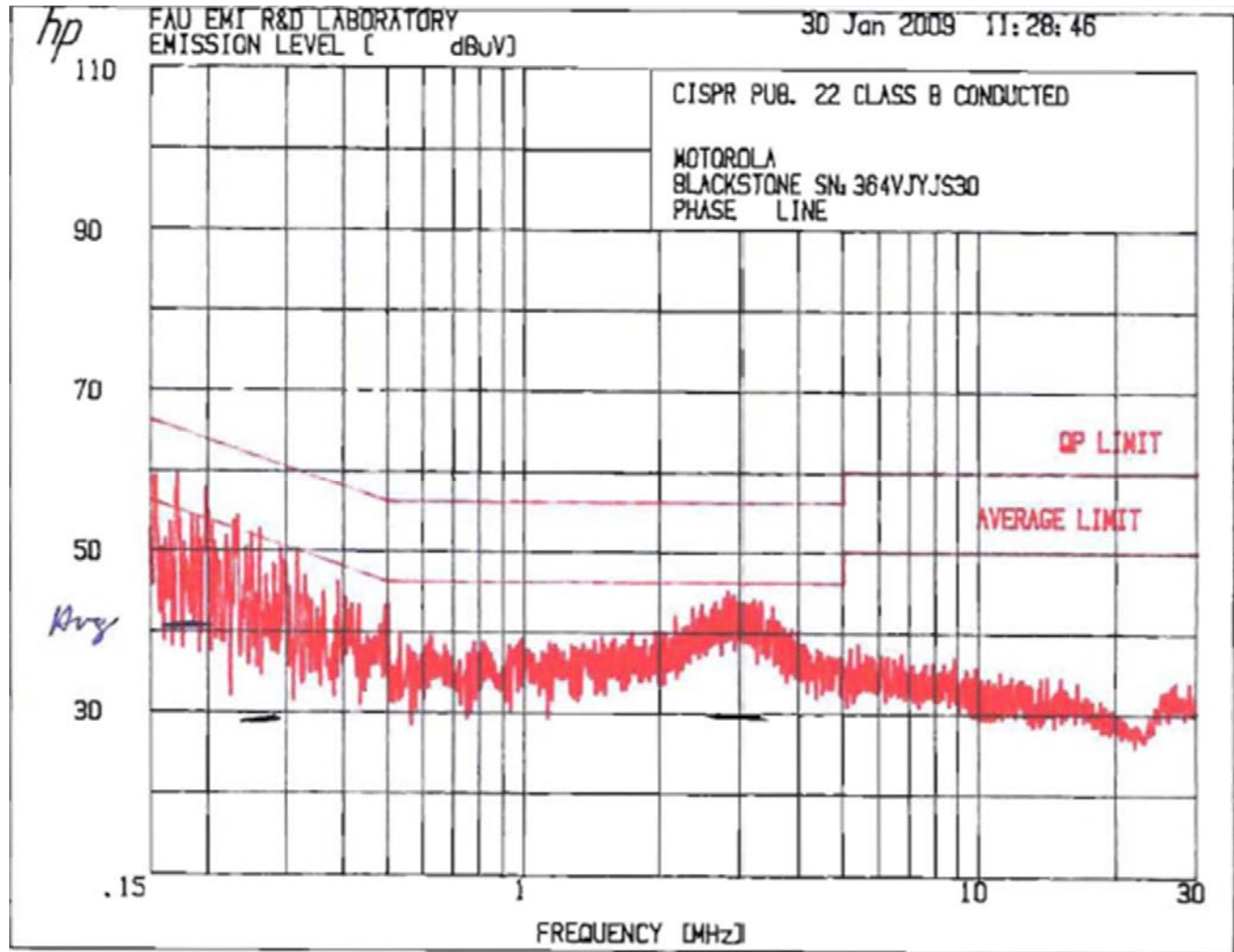


Figure 6a-4.5: iDEN 900 MHz NBPCS Band Phase Line Voltage at 901.49375 MHz, with a Quasi-Peak Detector.

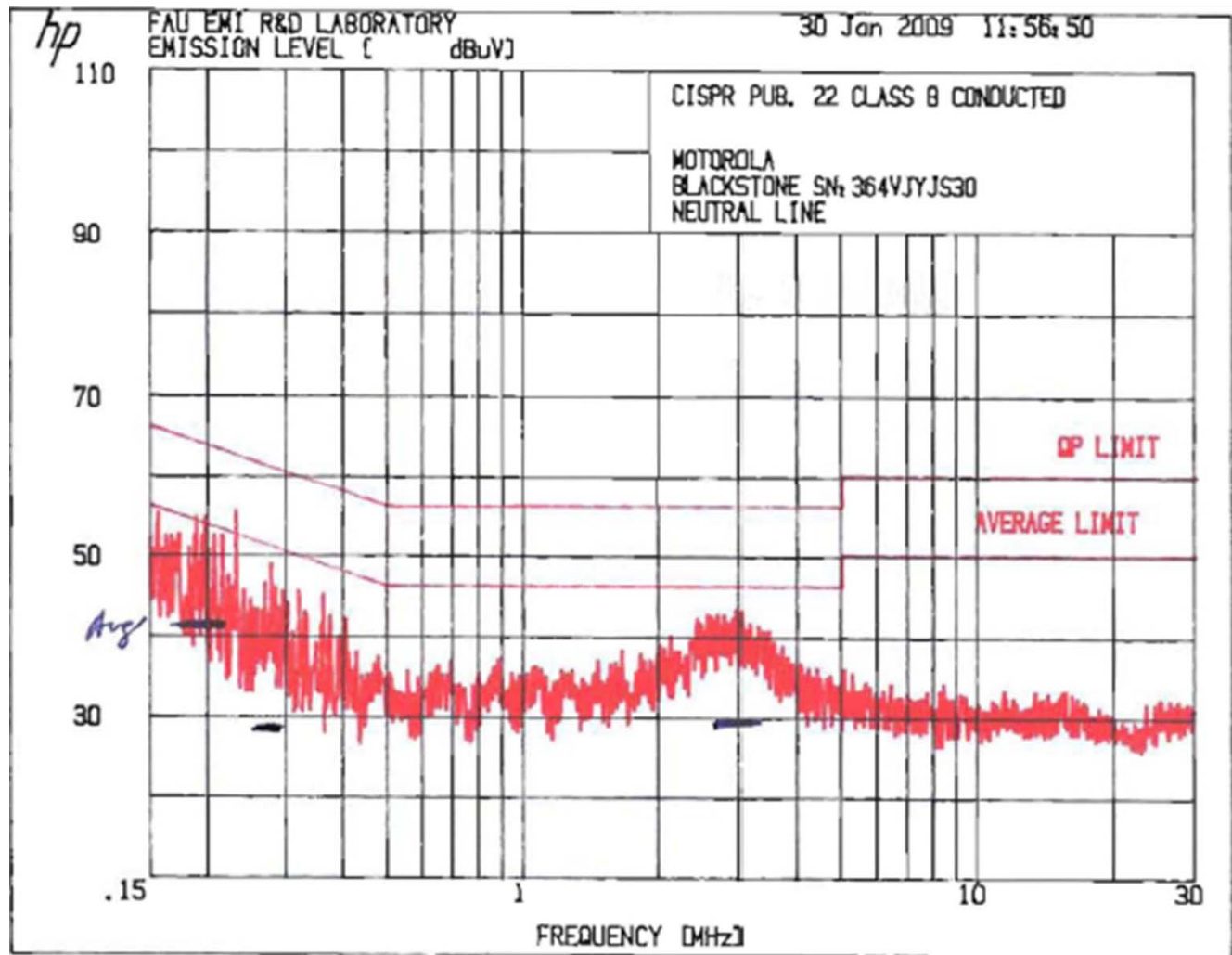


Figure 6a-4.6: iDEN 900 MHz NBPCS Band Neutral Line Voltage at 901.49375 MHz, with a Quasi-Peak Detector

iDEN							iDEN TX: 901.49375 MHz
Line Tested	Frequency (kHz)	Peak Value (dBμV)	QP Value (dBμV)	Average Value (dBμV)	Avg. Limit (dBμV)	Margin to Avg. Limit (dB)*	
Phase	157.1	60.50		40.26	55.62	15.36	
Neutral	165.36	56.98		41.92	55.19	13.27	
Phase	274.5	53.99		28.80	50.98	22.18	
Neutral	355.8	53.59		28.81	48.83	20.02	
Phase	2904	46.07		29.40	46.00	16.60	
Neutral	1910	44.89		29.61	46.00	16.39	

Table 6a-4.3: Line Voltage Data:- Quasi-Peak and Average Detectors.

6a.5 Land Mobile Frequency Stability -- Pursuant to 47 CFR 2.1055(a)(1), §2.1055(d)(2), and §24.135; RSS-Gen Section 3.2, RSS-119 Section 5.3, RSS-134 Section 7.

Frequency stability measurements were made as described in paragraph 7.4. Because of the transmitter's dependence on the stability of the base station oscillator, it is not possible to provide stability data for this transmitter as is commonly supplied for certification per 47 CFR 2.1055 for a radio with a locally stabilized oscillator. The following data was collected in a setup comprising of a base station simulator and it represents the absolute frequency error of the transceiver under test versus the base station frequency reference.

Frequency Stability (in ppm) at 813.5125 MHz, Voltage = 4V_{DC}	
TEMP (°C)	Error (ppm)
-30	0.016
-20	0.064
-10	0.030
0	0.028
10	0.021
20	0.034
30	0.066
40	0.138
50	0.034
60	0.036
70	0.038

Table 6a-5.1. Transmitter Frequency Stability vs. Temperature in 800 MHz SMR Band.

Frequency Stability in PPM at 899.98125 MHz, Voltage = 4V_{DC}	
TEMP (°C)	Error (ppm)
-30	0.027
-20	0.050
-10	0.106
0	0.032
10	0.059
20	0.045
30	0.055
40	0.084
50	0.049
60	0.033
70	0.082

Table 6a-5.2. Transmitter Frequency Stability vs. Temperature in 900 MHz SMR Band.

Frequency Stability in PPM at 900.98125 MHz, Voltage = 4V_{DC}	
TEMP (°C)	Error (ppm)
-30	0.090
-20	0.082
-10	0.076
0	0.084
10	0.052
20	0.040
30	0.057
40	0.087
50	0.058
60	0.062
70	0.048

Table 6a-5.3. Transmitter Frequency Stability vs. Temperature in 900 MHz NBPCS Band.

Frequency Stability in PPM at 813.5125 MHz, Temperature = 25°C	
Power Supply Output Voltage	PPM
3.6	0.019
3.7	0.036
3.8	0.020
3.9	0.050
4.0	0.013
4.1	0.017
4.2	0.025
4.3	0.030

Table 6a-5.4. Transmitter Frequency Stability vs. Voltage in 800 MHz SMR Band.

Frequency Stability in PPM at 900.98125 MHz, Temperature = 25°C	
Power Supply Output Voltage	PPM
3.6	0.028
3.7	0.013
3.8	0.050
3.9	0.065
4.0	0.033
4.1	0.018
4.2	0.041
4.3	0.037

Table 6a-5.5. Transmitter Frequency Stability vs. Voltage in 900 MHz SMR Band.

Frequency Stability in PPM at 900.98125 MHz, Temperature = 25°C	
Power Supply Output Voltage	PPM
3.6	0.070
3.7	0.065
3.8	0.075
3.9	0.058
4.0	0.089
4.1	0.066
4.2	0.070
4.3	0.085

Table 6a-5.6. Transmitter Frequency Stability vs. Voltage in 900 MHz NBPCS Band.

6a.6 Effective Radiated Power (ERP) -- Pursuant 47 CFR 2.1046 and §24.132(b); RSS-Gen Section 3.2, RSS-119 Section 5.4, RSS-134 Section 6.2.

The ERP characteristic was measured while a radio was set to transmit a test mode signal at the maximum rated output power (+/- 5%) and was vertically mounted on a non-conducting platform/turntable in a spherical RF Anechoic Chamber. The power at the receive antenna was recorded on a power meter with the unit rotating about the z-axis. The azimuth of receiving antenna is rotated 180 degrees while the UUT is rotating producing a spiral antenna measurement. For this ERP test, the phi cuts were taken in 15 degree increments or slices and the theta spins used about 200 measurements per rotation. ERP data is extracted from the phi= 90 degree cut. The power recorded from the meter is then corrected to compensate for path loss, cable losses, and amplifier and antenna gains at the given frequencies resulting in absolute radiated power.

The following calculations show how the reported scaled max ERP was determined.

For 800 MHz SMR band operation,

$$\begin{aligned} \text{Measured MaxERP, dBm} &= 10 * \log(\text{measured output power, mW}) + \text{measured antenna gain, dBd} \\ &= 24.13 \text{ dBm} \end{aligned}$$

The resulting max ERP was converted to mW:

$$\begin{aligned} \text{MeasuredMaxERP, mW} &= 10^{\left(\frac{\text{Measured MaxERP, dBm}}{10}\right)} \\ &= 258.82 \text{ mW} \end{aligned}$$

Since the measured max ERP was not determined at the production maximum output power, a simple scaling is performed to 640 mW:

$$\begin{aligned} \text{Scaled MaxERP, mW} &= \text{Measured MaxERP, mW} * \left(\frac{640 \text{ mW}}{\text{measured output power, mW}}\right) \\ &= 276.1 \text{ mW} \end{aligned}$$

For 900 MHz SMR band operation,

$$\begin{aligned} \text{Measured MaxERP, dBm} &= 10 * \log(\text{measured output power, mW}) + \text{measured antenna gain, dBd} \\ &= 26.63 \text{ dBm} \end{aligned}$$

The resulting max ERP was converted to mW:

$$\begin{aligned} \text{Measured MaxERP, mW} &= 10^{\left(\frac{\text{Measured MaxERP, dBm}}{10}\right)} \\ &= 460.25 \text{ mW} \end{aligned}$$

Since the measured ERP was not determined at the production maximum output power, a simple scaling is performed to 640 mW:

$$\begin{aligned} \text{Scaled MaxERP, mW} &= \text{Measured MaxERP, mW} * \left(\frac{640 \text{ mW}}{\text{measured output power, mW}}\right) \\ &= 490.9 \text{ mW} \end{aligned}$$

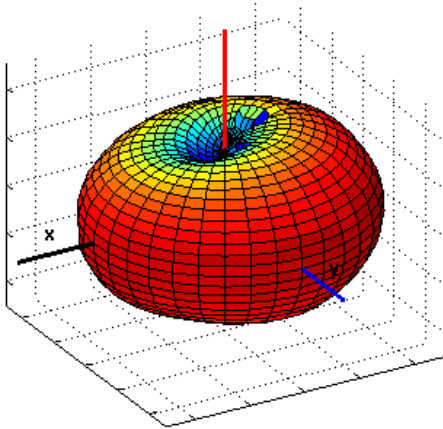


Figure 6a-6.1 Antenna pattern in the 800 MHz SMR frequency band.

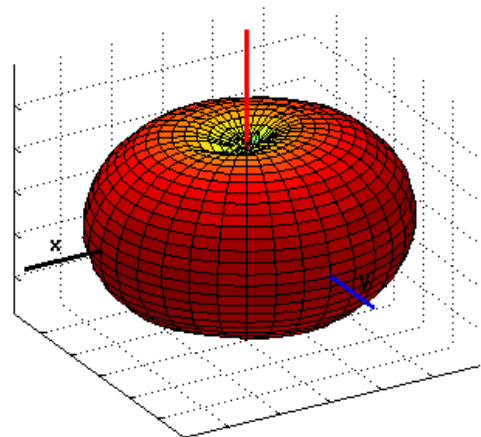


Figure 6a-6.2 Antenna pattern in the 900 MHz SMR frequency band.

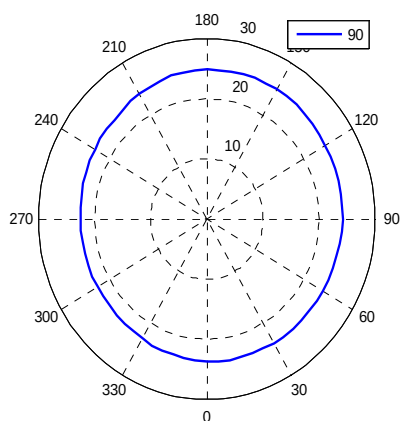


Figure 6a-6.3 Scaled ERP (dBm) vs. angle in 800 MHz SMR band.

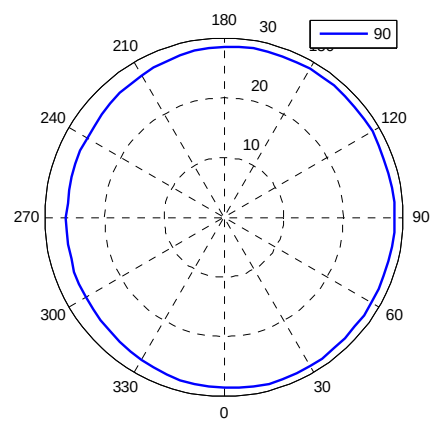


Figure 6a-6.4 Scaled ERP (dBm) vs. angle in 900 MHz SMR Band.

For 900 MHz NBPCS band operation,

$$\begin{aligned} \text{Measured MaxERP, dBm} &= 10 * \log(\text{measured output power, mW}) + \text{measured antenna gain, dBd} \\ &= 26.63 \text{ dBm} \end{aligned}$$

The resulting max ERP was converted to mW:

$$\begin{aligned} \text{MeasuredMaxERP, mW} &= 10^{\left(\frac{\text{Measured MaxERP, dBm}}{10}\right)} \\ &= 460.25 \text{ mW} \end{aligned}$$

Since the measured ERP was not determined at the production maximum output power, a simple scaling is performed to 640 mW:

$$\begin{aligned} \text{Scaled MaxERP, mW} &= \text{Measured MaxERP, mW} * \left(\frac{640\text{mW}}{\text{measured output power, mW}}\right) \\ &= 490.9 \text{ mW} \end{aligned}$$

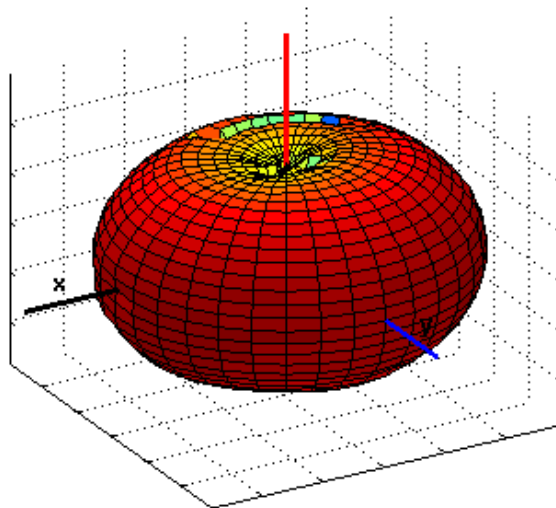


Figure 6a-6.5 Antenna pattern in the 900 MHz NBPCS frequency band.

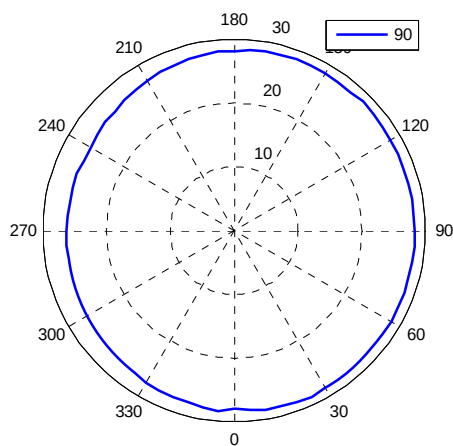


Figure 6a-6.6 Scaled ERP (dBm) vs. angle in 900 MHz NBPCS band.