

LIST OF EXHIBITS (added as supplemental to the information currently on record)

EXHIBIT	DESCRIPTION	REFERENCE
E	Report on Test Measurements	2.1033-(c)(14)
E1-4 PC	Occupied Bandwidth: Setup, Specifications, and Index: Digital Modulation, 12.5 kHz Channels, 800 MHz NPSPAC Operation – D-Mask Digital Modulation, 12.5 kHz Channels, 800 MHz NPSPAC Operation – H-Mask	
E1-4.7 PCa	Occupied Bandwidth Plot – Carrier with Digitized Voice / Data, 800 MHz NPSPAC Band - D-Mask	
E1-4.7 PCb	Occupied Bandwidth Plot – Carrier with Digitized Voice / Data, 800 MHz NPSPAC Band - H-Mask	

Report on Test Measurements

Occupied Bandwidth – MotoTRBO 2-Slot TDMA Digital Modulation, 12.5 kHz Channels – D-Mask Compliance

The digital modulation is shown. It can be used in a system configuration based upon channel usage as described in Exhibit B. The occupied bandwidth charts reference the following setup and specification requirements.

Modulation Type: MotoTRBO TMDA Digitized Voice / Data

Emission Designator: 7K60FXE, 7K60FXD

7K60F7E, 7K60F7D, 7K60F7W

Channelization: 12.5 kHz

Power Setting: 100 Watts

Specification Requirement § 90.210(d) Emission Limits – “D-Mask”:

Emission Mask D. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- (1) On any frequency from the center of the authorized bandwidth (f_0) to 5.625 kHz removed from f_0 : Zero dB
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: *At least 7.27 * (f_d - 2.88 kHz) dB*
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: *At least 50 plus 10 log₁₀(P) dB or 70 dB, whichever is the lesser attenuation.*
- (4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide to capture the true peak emission of the equipment under test. In order to show compliance with the emissions mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to ensure that the emission profile is developed.

Necessary Bandwidth Calculation: Refer to information provided in the associated full filing package or change packages for necessary bandwidth information for these modulations.

Measurement Procedure and Instrument Settings:Emission Measurement Analyzer Settings:

Horizontal: 12.5 kHz per Division

Resolution Bandwidth: 100 Hz

Vertical: 10 dB per Division

Video Bandwidth: 10 kHz

Sweep Time: 72 Seconds (<2000 Hz / Second)

Span: 125 kHz

Detector Mode: Peak

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Emission Measurement Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (pseudorandom data) and key the transmitter at the full power rating. Use the analyzer controls to set this signal to the full-scale reference line. Allow the analyzer to sweep fully and store the sweep.
- 3) Use the band power marker function of the spectrum analyzer to measure the power of the carrier in a 12.5 kHz bandwidth.
- 4) Use the carrier power value from the previous step to generate the emission mask limit.
- 5) Plot the resulting analyzer trace and the emission mask limit; add text and labeling as appropriate.

EXHIBIT DESCRIPTION

E1-4.7 PCa	Occupied Bandwidth Plot – Carrier with Digitized Voice / Data, 800 MHz NPSPAC Band - D-Mask
E1-4.7 PCb	Occupied Bandwidth Plot – Carrier with Digitized Voice / Data, 800 MHz NPSPAC Band - H-Mask

Report on Test Measurements

Occupied Bandwidth – MotoTRBO 2-Slot TDMA Digital Modulation, 12.5 kHz Channels – H-Mask Compliance

The digital modulation is shown. It can be used in a system configuration based upon channel usage as described in Exhibit B. The occupied bandwidth charts reference the following setup and specification requirements.

Modulation Type: MotoTRBO TMDA Digitized Voice / Data

Emission Designator: 7K60FXE, 7K60FXD

7K60F7E, 7K60F7D, 7K60F7W

Channelization: 12.5 kHz

Power Setting: 100 Watts

Specification Requirement § 90.210(h) Emission Limits – “H-Mask”:

Emission Mask H. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier output power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: Zero dB
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz but no more than 8.5 kHz: $At \ least \ 107 * \log_{10}(f_d / 4) \ dB$
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 8.5 kHz, but no more than 15 kHz: $At \ least \ 40.5 \log_{10}(f_d / 1.16) \ dB;$
- (4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz, but no more than 25 kHz: $At \ least \ 116 \log_{10}(f_d / 6.1) \ dB;$
- (5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: $At \ least \ 43 \ plus \ 10 \ log_{10}(P) \ dB$

Necessary Bandwidth Calculation: Refer to information provided in the associated full filing package or change packages for necessary bandwidth information for these modulations.

Measurement Procedure and Instrument Settings:

Emission Measurement Analyzer Settings:

Horizontal: 12.5 kHz per Division

Resolution Bandwidth: 300 Hz

Vertical: 10 dB per Division

Video Bandwidth: 10 kHz

Sweep Time: 72 Seconds (<2000 Hz / Second)

Span: 125 kHz

Detector Mode: Peak

Test Procedure:

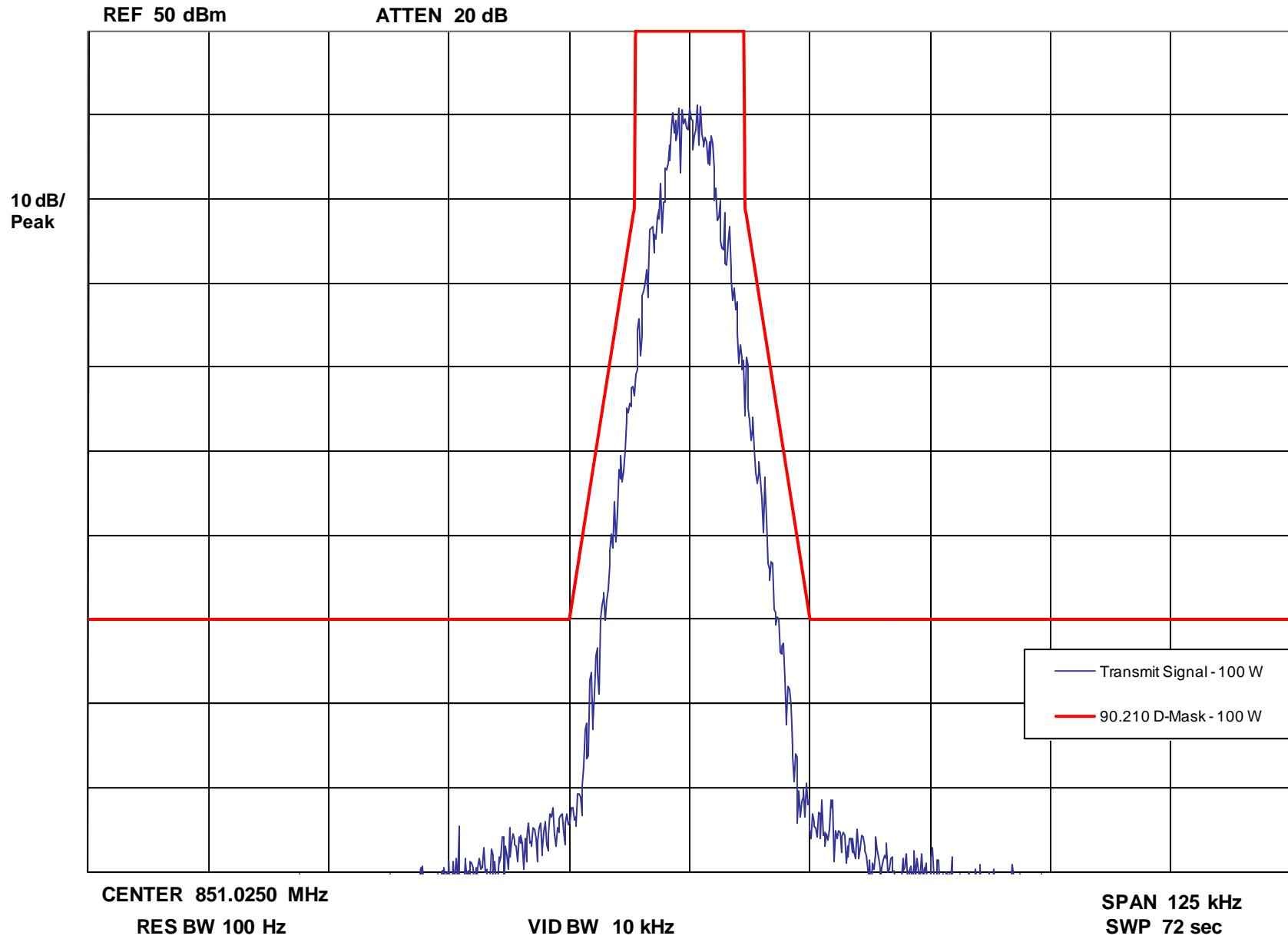
- 1) Adjust the spectrum analyzer per the values specified in the Emission Measurement Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (pseudorandom data) and key the transmitter at the full power rating. Use the analyzer controls to set this signal to the full-scale reference line. Allow the analyzer to sweep fully and store the sweep.
- 3) Use the band power marker function of the spectrum analyzer to measure the power of the carrier in a 12.5 kHz bandwidth.
- 4) Use the carrier power value from the previous step to generate the emission mask limit.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

EXHIBIT DESCRIPTION

E1-4.7 PCa	Occupied Bandwidth Plot – Carrier with Digitized Voice / Data, 800 MHz NPSPAC Band - D-Mask
E1-4.7 PCb	Occupied Bandwidth Plot – Carrier with Digitized Voice / Data, 800 MHz NPSPAC Band - H-Mask

Report on Test Measurements
Occupied Bandwidth – MotoTRBO 2-Slot TDMA Digital Modulation – D-Mask

Occupied Bandwidth -- 4-Level Frequency Shift Keying Modulation - 100 Watts



Report on Test Measurements
Occupied Bandwidth – MotoTRBO 2-Slot TDMA Digital Modulation – H-Mask

Occupied Bandwidth -- 4-Level Frequency Shift Keying Modulation - 100 Watts

