

STATEMENT OF CERTIFICATION

The technical data supplied with this application, having been taken under my supervision is hereby duly certified. The following is a statement of my qualifications:

College Degree: BEET, DeVry Institute of Technology, Chicago, Illinois, USA

23 years of Manufacturing Test and Test Design experience in the field of two-way radio communication.

NAME: Scott Sladek

SIGNATURE: _____

DATE: January 25, 2002

POSITION: Project Manager

I hereby certify that the above application was prepared under my direction and that to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct:

NAME: Ken Weiss

SIGNATURE: _____

DATE: January 25, 2002

POSITION: Project Manager

SUBMITTED MEASURED DATA -- INDEX**EXHIBIT DESCRIPTION**

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11E-1	Frequency Stability Vs Temperature
11E-2	Frequency Stability Vs Voltage

RF POWER OUTPUT DATA

The RF power output was measured with the indicated voltage applied to and current into the final RF amplifying device. **The DC current indicated is the total for the final RF amplifier stage, consisting of six parallel modules, or twelve parallel power transistors.**

Quad Carrier Mode:

Measured RF output	<u>42</u>	Watts, Average
DC Voltage	<u>28.3</u>	Volts
DC Current	<u>14.3</u>	Amperes
Input power for final RF amplifying device(s)	<u>405</u>	Watts
Primary Supply Voltage	<u>48</u>	Volts DC
Minimum Measured RF output	<u>5</u>	Watts, Average
Normal DC Voltage	<u>28.3</u>	Volts
Normal DC Current	<u>4.9</u>	Amperes
Input power for final RF amplifying device(s)	<u>139</u>	Watts
Primary Supply Voltage	<u>48</u>	Volts DC

Single Carrier Mode:

Measured RF output	<u>52</u>	Watts, Average
Normal DC Voltage	<u>28.3</u>	Volts
Normal DC Current	<u>14.3</u>	Amperes
Input power for final RF amplifying device(s)	<u>405</u>	Watts
Primary Supply Voltage	<u>48</u>	Volts DC
Minimum Measured RF output	<u>5</u>	Watts, Average
Normal DC Voltage	<u>28.3</u>	Volts
Normal DC Current	<u>4.9</u>	Amperes
Input power for final RF amplifying device(s)	<u>139</u>	Watts
Primary Supply Voltage	<u>48</u>	Volts DC

OCCUPIED BANDWIDTH – SINGLE CARRIER 16-QAM

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Single Carrier
Emission Designator: 17K7D7W
Channelization: 25 kHz per channel
Power Setting: 52 Watts Average

SPECIFICATION REQUIREMENT:**§ 90.669 Emission Limits:**

- (a) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a).

Measurement Procedure and Instrument Settings:**Reference Calibration Analyzer Settings:**

Horizontal:	12.5 kHz per Division	Resolution Bandwidth:	30 kHz
Vertical:	10 dB per Division	Video Bandwidth:	100 kHz
Sweep Time:	75 Seconds (<2000 Hz / Second)	Span:	125 kHz
Detector Mode:	Positive Peak		

Emission Measurement Analyzer Settings:

Horizontal:	12.5 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	75 Seconds (<2000 Hz / Second)	Span:	125 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with a single carrier, at the full single carrier power rating (52 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

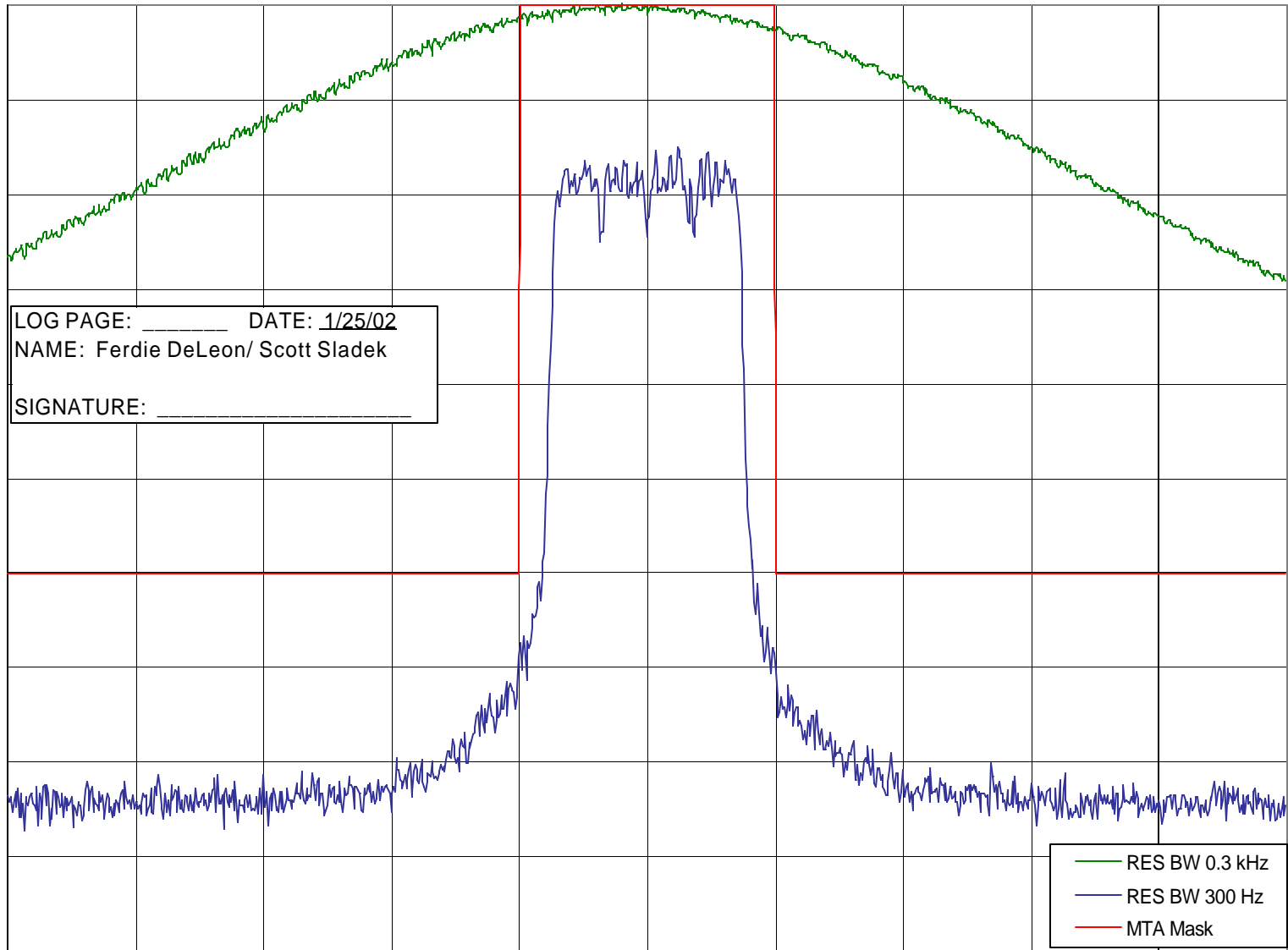
Occupied Bandwidth -- Single Carrier 16QAM at 52 Watts (Avg)

REF 8.9 dBm

ATTEN 20 dB

10 dB/
POS PK

LOG PAGE: _____ DATE: 1/25/02
NAME: Ferdie DeLeon/ Scott Sladek
SIGNATURE: _____



CENTER 937.5 MHz

RES BW 300 Hz

VID BW 3 kHz

SPAN 125 kHz

SWP 75 sec

OCCUPIED BANDWIDTH – DUAL CARRIER 16-QAM

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Dual Carrier
 Emission Designator: 42K7D7W
 Channelization: 25 kHz per channel
 Power Setting: 52 Watts Average

SPECIFICATION REQUIREMENT:**§ 90.669 Emission Limits:**

- (c) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (d) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a). For the composite two carrier signal (1 additional channel), the resulting necessary bandwidth is 17.7 kHz + 1*25 kHz = 42.7 kHz.

Measurement Procedure and Instrument Settings:**Reference Calibration Analyzer Settings:**

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 kHz
Vertical:	10 dB per Division	Video Bandwidth:	300 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

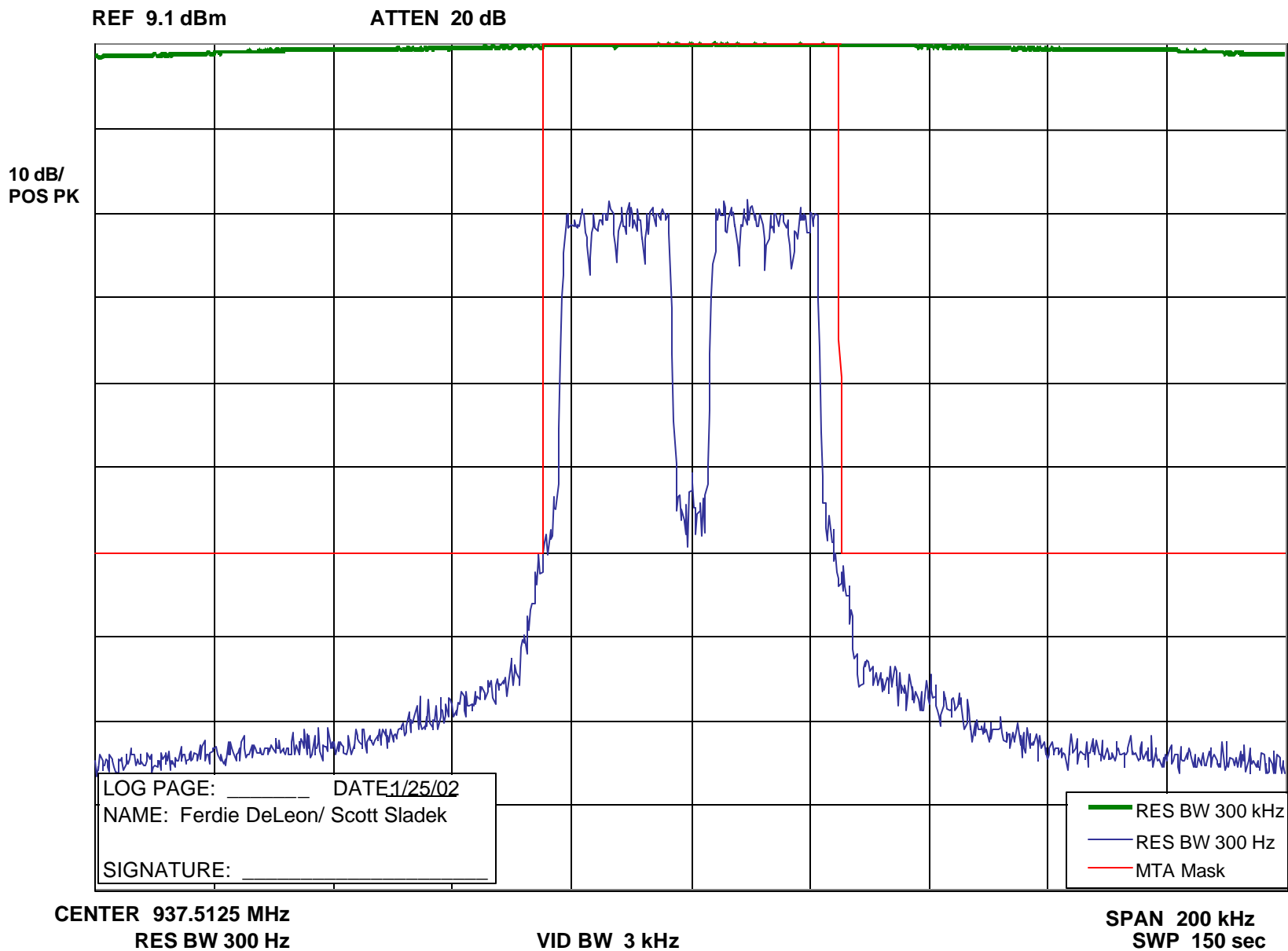
Emission Measurement Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with two carriers, at the full two carrier power rating (52 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

Occupied Bandwidth -- Dual Carrier 16QAM at 52 Watts Composite



OCCUPIED BANDWIDTH – TRIPLE CARRIER 16-QAM

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Triple Carrier
 Emission Designator: 67K7D7W
 Channelization: 25 kHz per channel
 Power Setting: 48 Watts Average

SPECIFICATION REQUIREMENT:**§ 90.669 Emission Limits:**

- (e) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (f) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a). For the composite three carrier signal (2 additional channels), the resulting necessary bandwidth is 17.7 kHz + 2*25 kHz = 67.7 kHz.

Measurement Procedure and Instrument Settings:**Reference Calibration Analyzer Settings:**

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 kHz
Vertical:	10 dB per Division	Video Bandwidth:	300 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

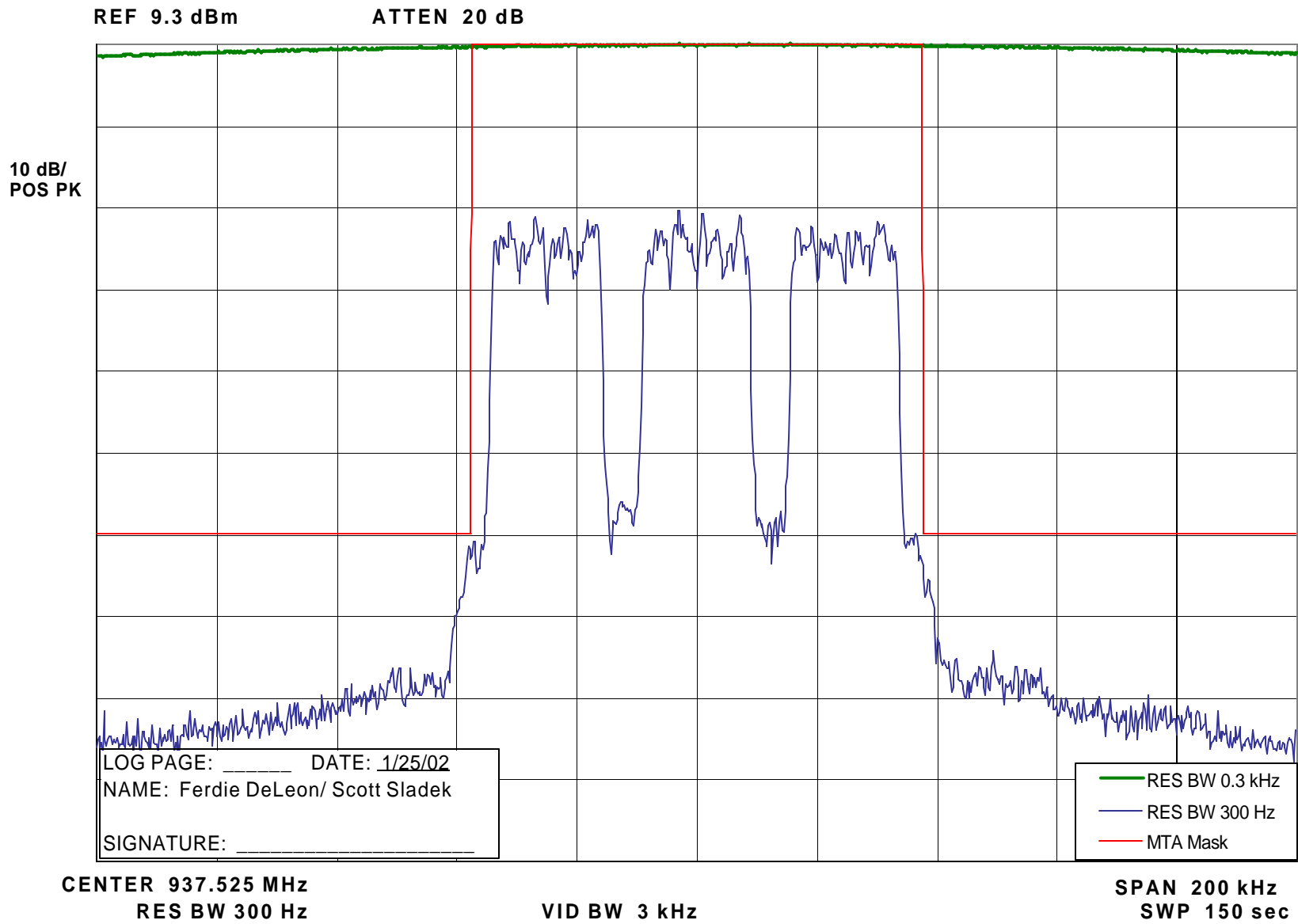
Emission Measurement Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with three carriers, at the full three carrier power rating (48 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

Occupied Bandwidth -- Triple Carrier 16QAM at 48 Watts Composite Signal



OCCUPIED BANDWIDTH – QUAD CARRIER 16 QAM

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Quad Carrier
 Emission Designator: 92K7D7W
 Channelization: 25 kHz per channel
 Power Setting: 42 Watts Average

SPECIFICATION REQUIREMENT:

§ 90.669 Emission Limits:

- (g) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (h) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a). For the composite four carrier signal (3 additional channels), the resulting necessary bandwidth is 17.7 kHz + 3*25 kHz = 92.7 kHz.

Measurement Procedure and Instrument Settings:

Reference Calibration Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 kHz
Vertical:	10 dB per Division	Video Bandwidth:	300 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Emission Measurement Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with four carriers, at the full Quad carrier power rating (42 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

Occupied Bandwidth -- Quad Carrier 16QAM at 42 Watts Composite Signal

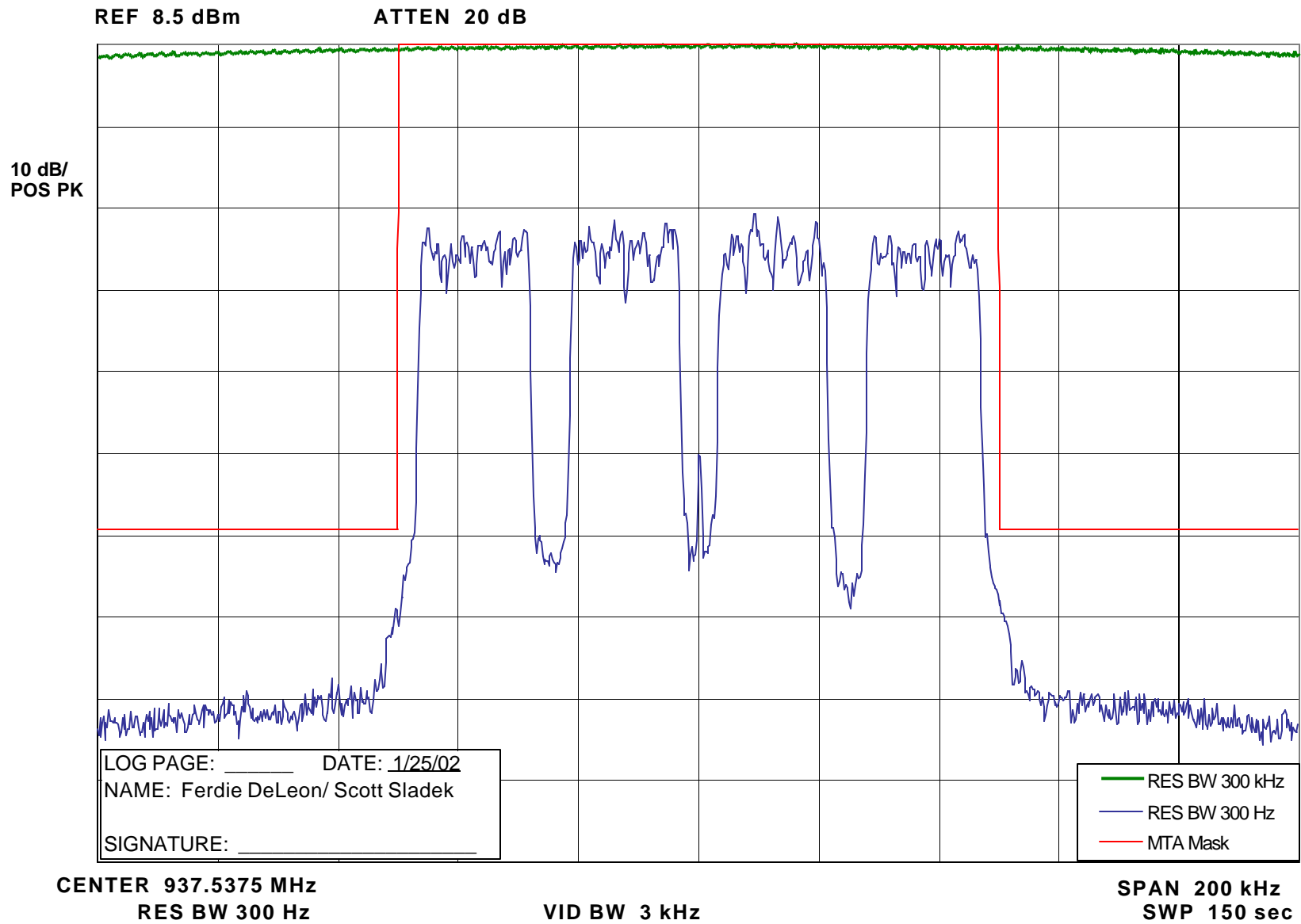


EXHIBIT 11B-4 (Sheet 2 of 2)

OCCUPIED BANDWIDTH – QUAD CARRIER QPSK

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Quad Carrier
 Emission Designator: 92K7D7W
 Channelization: 25 kHz per channel
 Power Setting: 42 Watts Average

SPECIFICATION REQUIREMENT:

§ 90.669 Emission Limits:

- (g) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (h) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a). For the composite four carrier signal (3 additional channels), the resulting necessary bandwidth is 17.7 kHz + 3*25 kHz = 92.7 kHz.

Measurement Procedure and Instrument Settings:

Reference Calibration Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 kHz
Vertical:	10 dB per Division	Video Bandwidth:	300 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Emission Measurement Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with four carriers, at the full Quad carrier power rating (42 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

Occupied Bandwidth -- Quad Carrier QPSK at 42 Watts Composite Signal



OCCUPIED BANDWIDTH – QUAD CARRIER 64 QAM

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Quad Carrier
Emission Designator: 92K7D7W
Channelization: 25 kHz per channel
Power Setting: 42 Watts Average

SPECIFICATION REQUIREMENT:**§ 90.669 Emission Limits:**

- (g) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (h) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a). For the composite four carrier signal (3 additional channels), the resulting necessary bandwidth is 17.7 kHz + 3*25 kHz = 92.7 kHz.

Measurement Procedure and Instrument Settings:**Reference Calibration Analyzer Settings:**

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 kHz
Vertical:	10 dB per Division	Video Bandwidth:	300 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

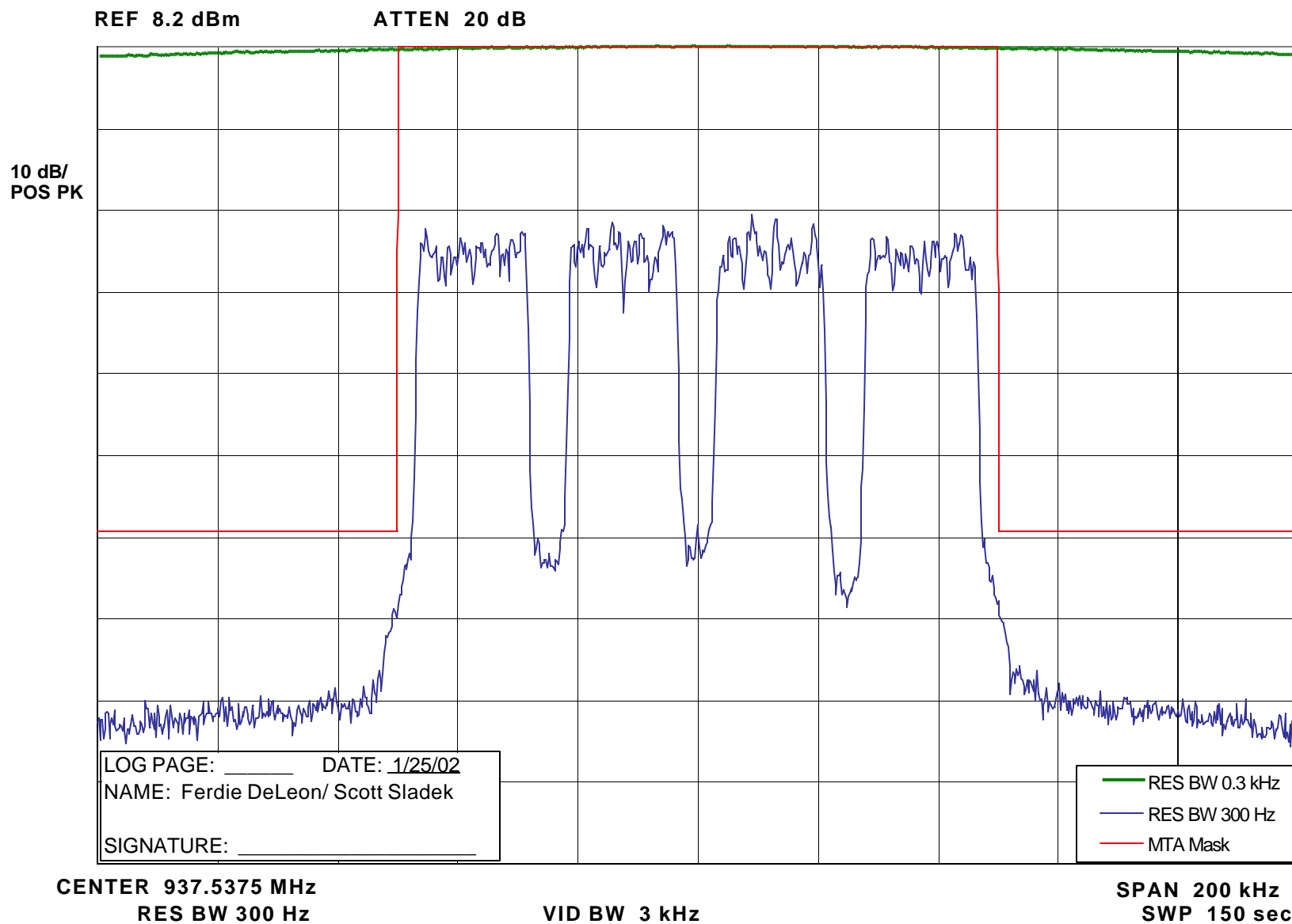
Emission Measurement Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with four carriers, at the full Quad carrier power rating (42 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

Occupied Bandwidth -- Quad Carrier 64 QAM at 42 Watts Composite Signal



OCCUPIED BANDWIDTH – QUAD CARRIER 64-16 QAM

Modulation Type: Quad-QAM – 64 kbps Random Data Per Channel – Quad Carrier
Emission Designator: 92K7D7W
Channelization: 25 kHz per channel
Power Setting: 42 Watts Average

SPECIFICATION REQUIREMENT:**§ 90.669 Emission Limits:**

- (g) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least *43 plus 10 log₁₀(P) dB or 80 dB, whichever is the lesser attenuation.*

Note: The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

- (h) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 17.7 kHz per carrier is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a). For the composite four carrier signal (3 additional channels), the resulting necessary bandwidth is 17.7 kHz + 3*25 kHz = 92.7 kHz.

Measurement Procedure and Instrument Settings:**Reference Calibration Analyzer Settings:**

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 kHz
Vertical:	10 dB per Division	Video Bandwidth:	300 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

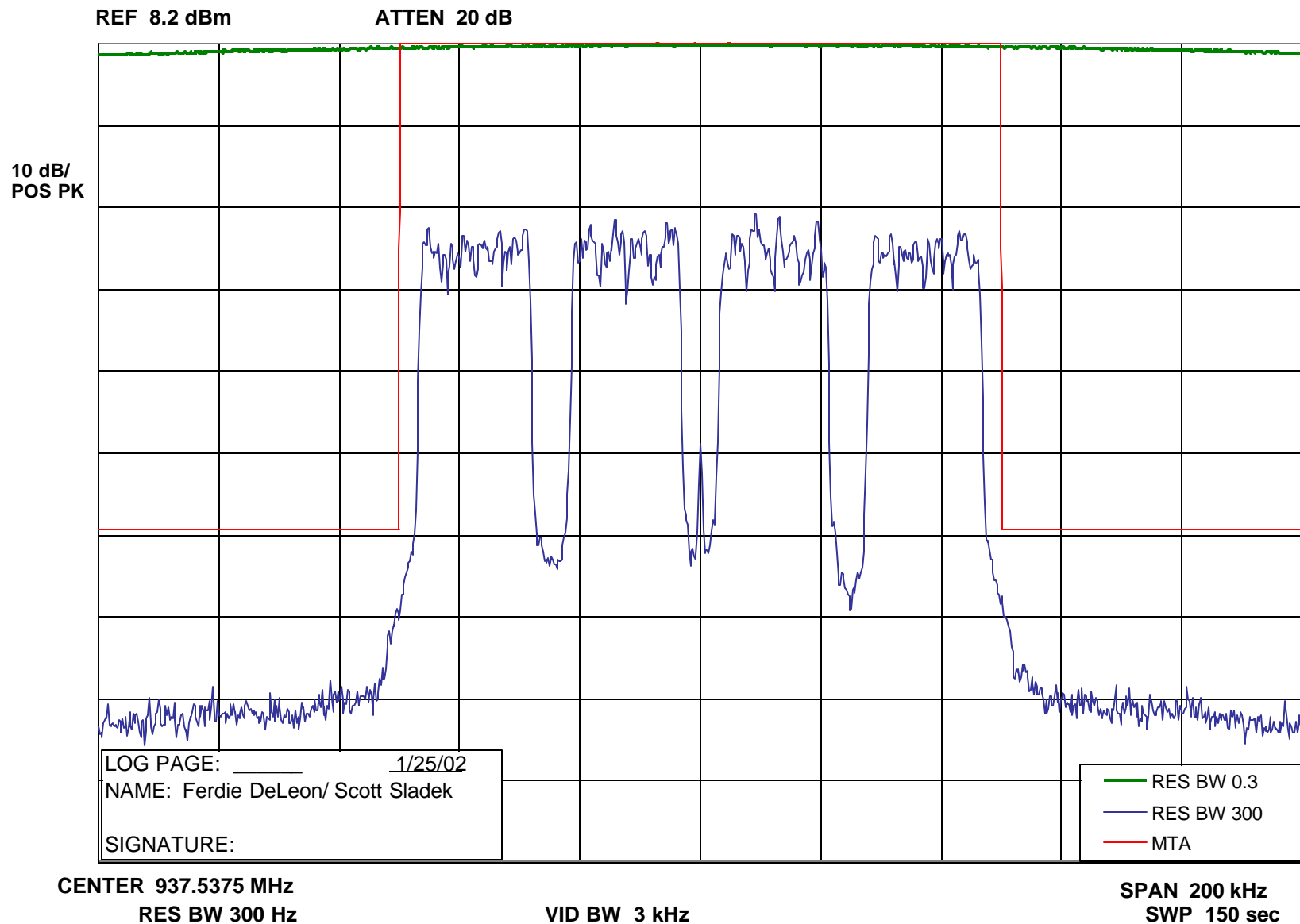
Emission Measurement Analyzer Settings:

Horizontal:	20 kHz per Division	Resolution Bandwidth:	300 Hz
Vertical:	10 dB per Division	Video Bandwidth:	3 kHz
Sweep Time:	150 Seconds (<2000 Hz / Second)	Span:	200 kHz
Detector Mode:	Positive Peak		

Test Procedure:

- 1) Adjust the spectrum analyzer per the values specified in the Reference Calibration Analyzer Settings.
- 2) Modulate the transmitter with the appropriate signaling pattern, (psuedorandom data) and key the transmitter with four carriers, at the full Quad carrier power rating (42 Watts). 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) Adjust the analyzer per the Emission Measurement Analyzer Settings.
- 4) Allow the analyzer to sweep, and record the resultant emission levels.
- 5) Plot the resulting analyzer trace and the emission mask limit, add text and labeling as appropriate.

Occupied Bandwidth -- Quad Carrier 64-16-16-16 at 42 Watts Composite Signal



CONDUCTED SPURIOUS EMISSIONS**SPECIFICATION REQUIREMENT:****Reference: Part 90.669 (Emission Mask MTA)**

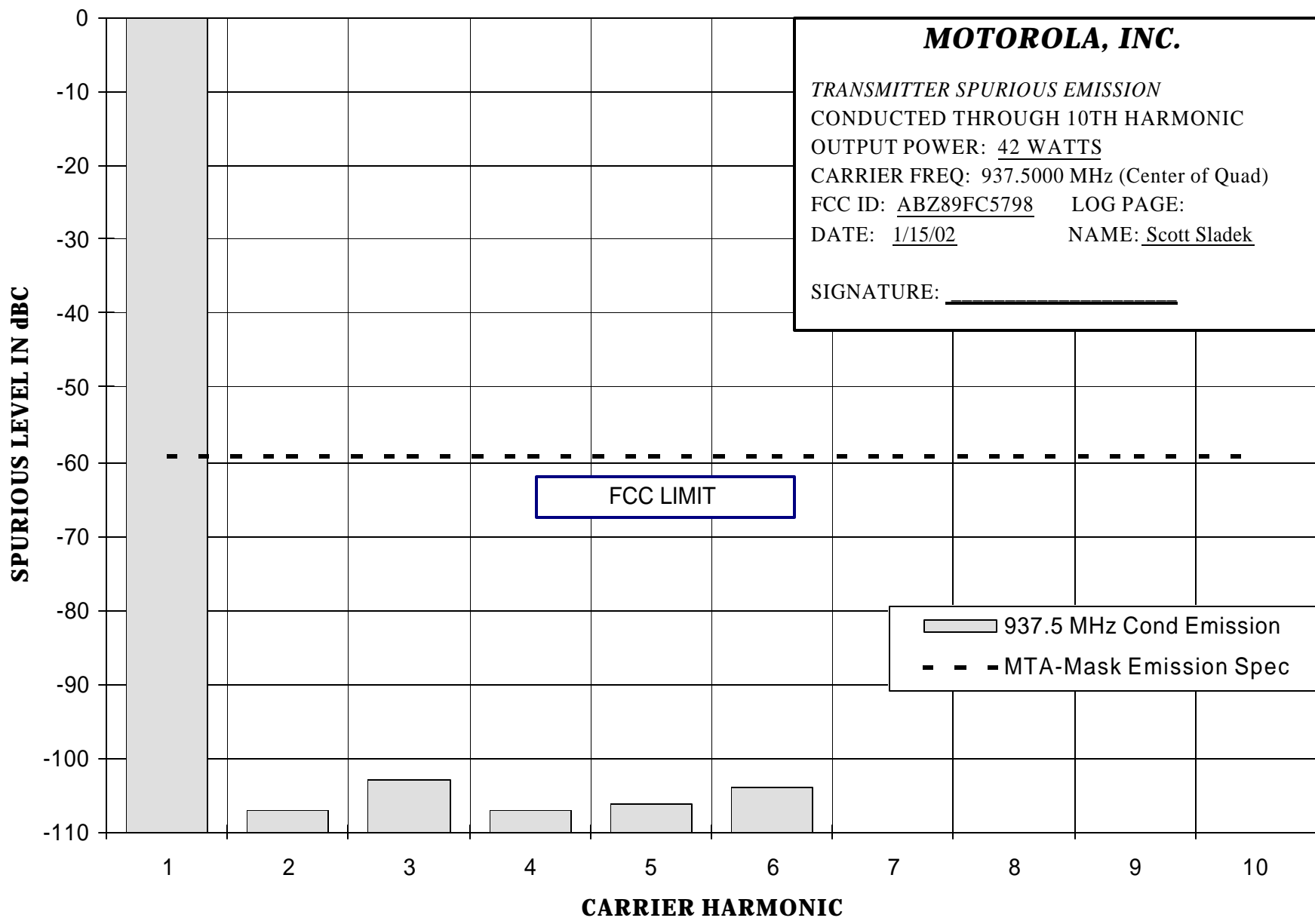
On any frequency displacement of greater than 12.5 kHz removed from the authorized frequency block, the power of any emission shall be attenuated below the transmitter power (P), in Watts, by at least 43 plus $10 \log_{10}(P)$ dB or 80 dB, whichever is the lesser attenuation.

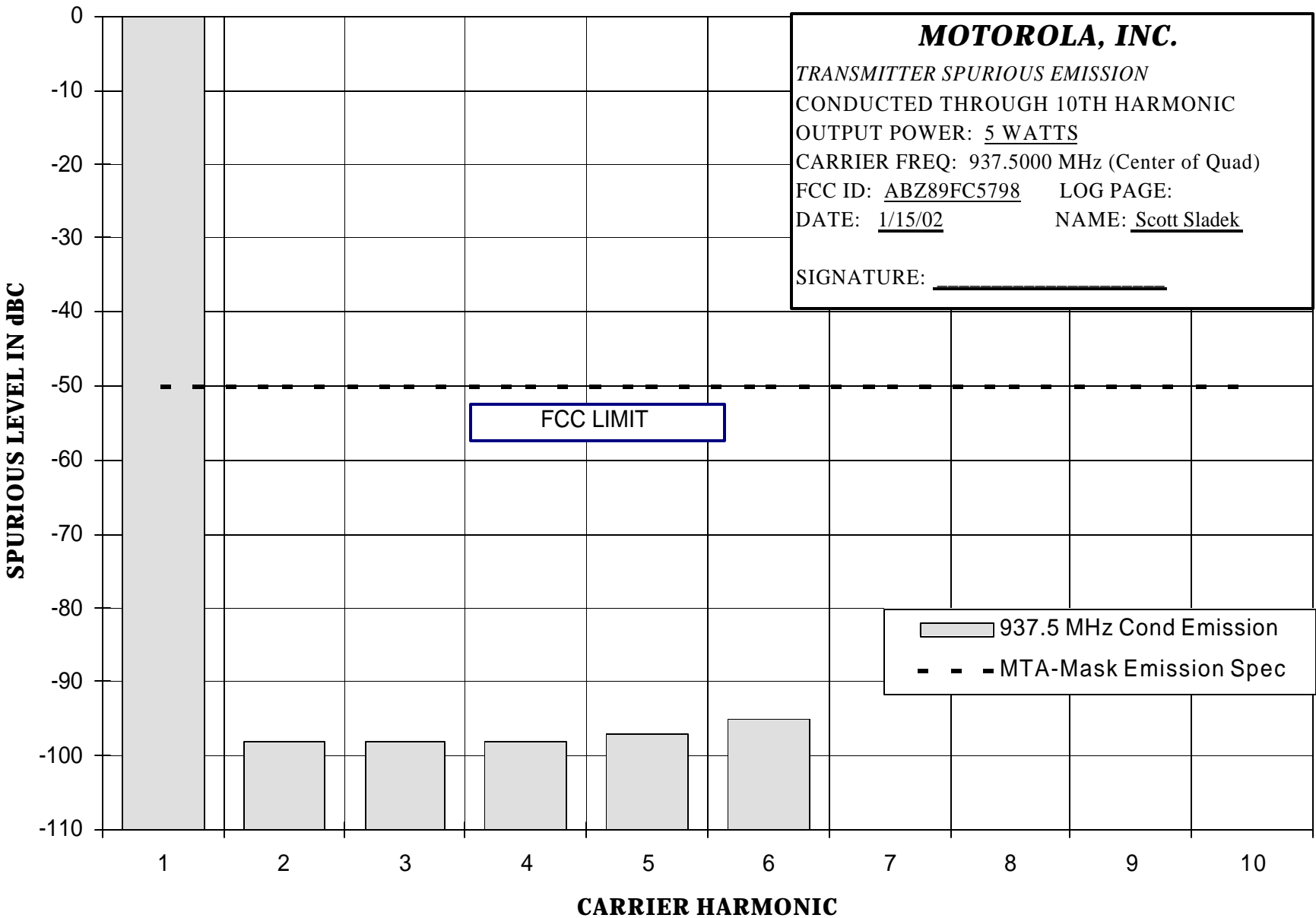
Modulation: Psuedorandom data

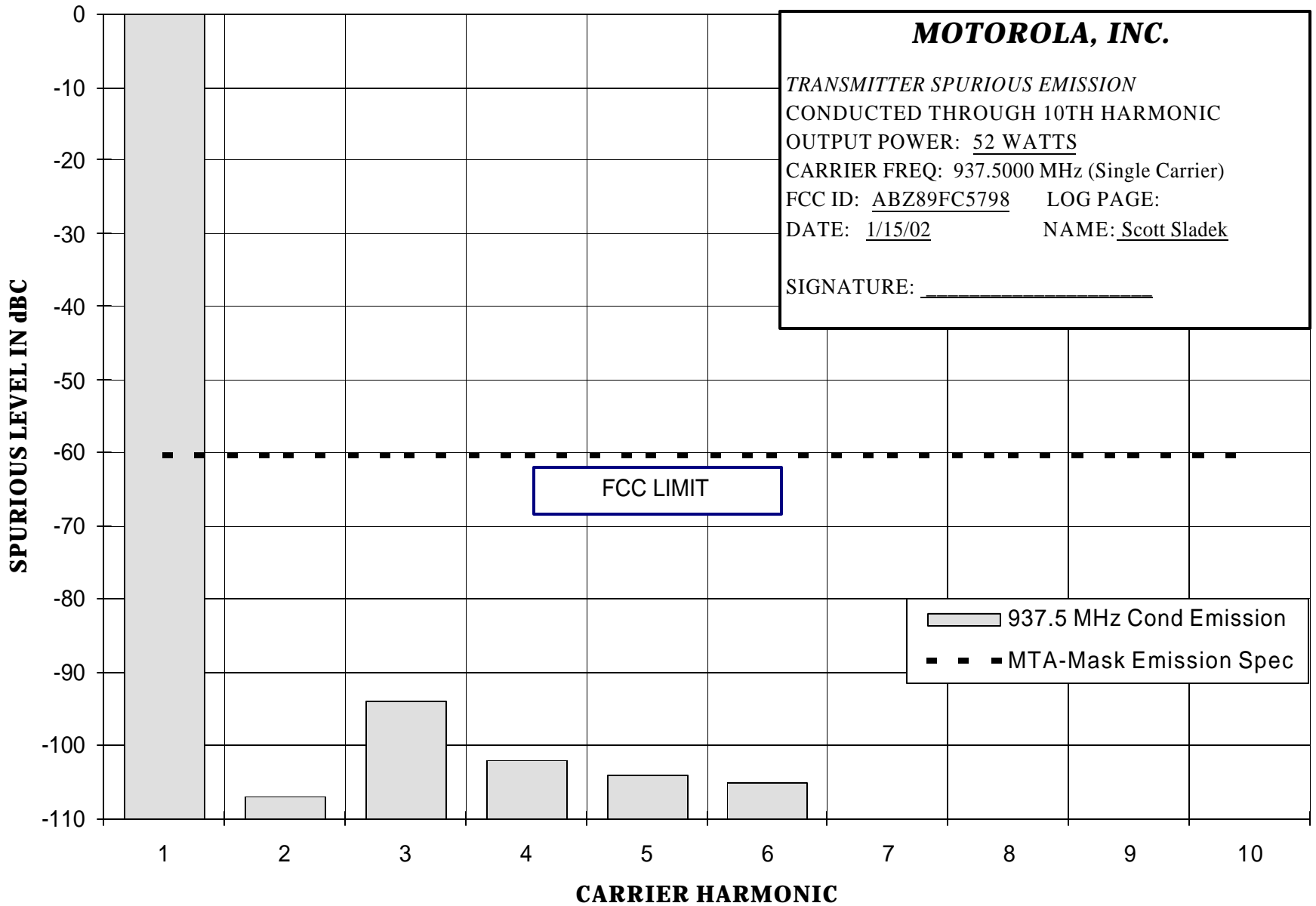
Carrier Frequency: A Quad carrier centered around 937.5000 MHz, or one single carrier frequency, at 937.5000 MHz, was measured. This frequency is near the center of the operating band 935-940 MHz.

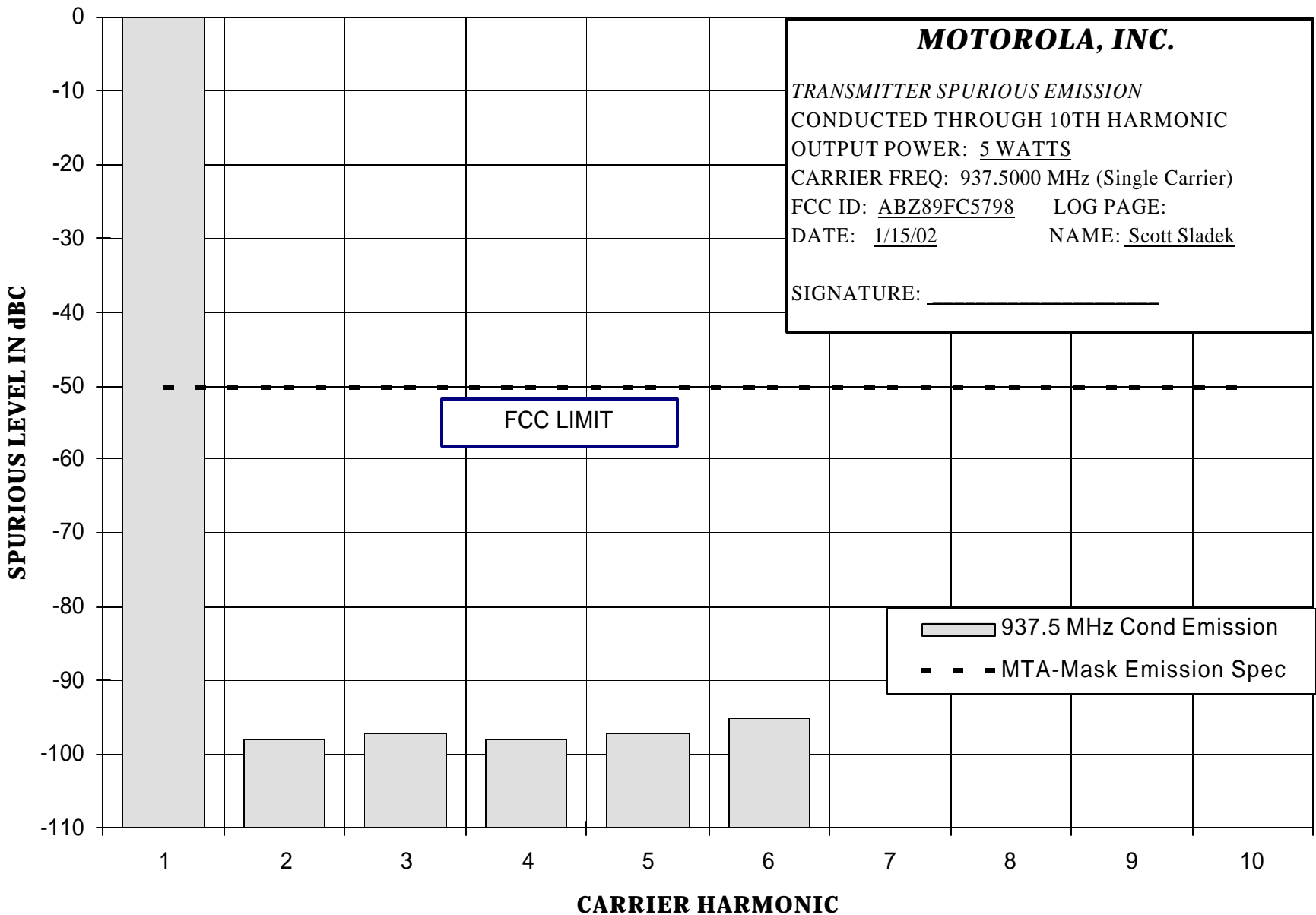
SPURIOUS EMISSION PLOTS:**EXHIBIT DESCRIPTION**

11C-1	Quad Carrier - Conducted Spurious Emissions, Harmonics, Power Output at 42 Watts The specification limit is -59.2 dBC
11C-2	Quad Carrier - Conducted Spurious Emissions, Harmonics, Power Output at 5 Watts The specification limit is -50.0 dBC
11C-3	Single Carrier - Conducted Spurious Emissions, Harmonics, Power Output at 52 Watts The specification limit is -60.2 dBC
11C-4	Single Carrier - Conducted Spurious Emissions, Harmonics, Power Output at 5 Watts The specification limit is -50.0 dBC
11C-5	Quad Carrier - Conducted Spurious Emissions, Close-In, Power Output at 42 Watts The specification limit is -59.2 dBC
11C-6	Single Carrier - Conducted Spurious Emissions, Close-In, Power Output at 52 Watts The specification limit is -60.2 dBC









16:40:56 JAN 17, 2002

MKR 937.0364 MHz
-56.97 dBm

REF -11.0 dBm A1 10 dB

PEAK
LOG
10
dB/

Quad Carrier - 42 Watt - 0 dB Reference (at top line)

Noise Floor approx -73 dBC - no close-in spurs noted

MARKER
937.0364 MHz
-56.97 dBm

Residual Carrier after Suckout Filter

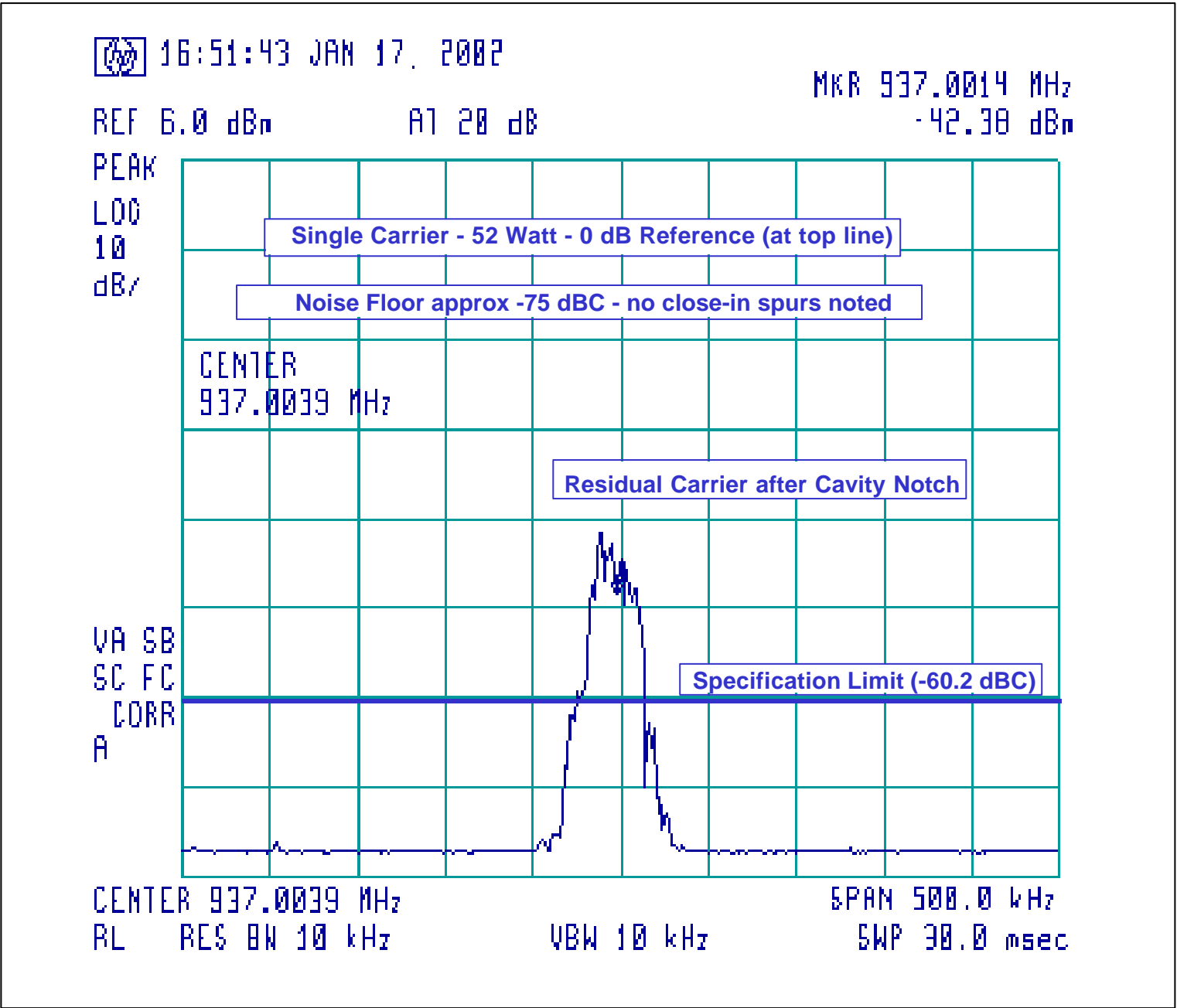
VA SB
SC FC
CORR
A

Specification Limit (-59.2 dBC)

CENTER 937.0389 MHz
RL RES BW 10 kHz

VBW 10 kHz

SPAN 500.0 kHz
SWP 30.0 msec



RADIATED SPURIOUS EMISSIONS**SPECIFICATION REQUIREMENT:****Reference: Part 90.669 (Emission Mask MTA)**

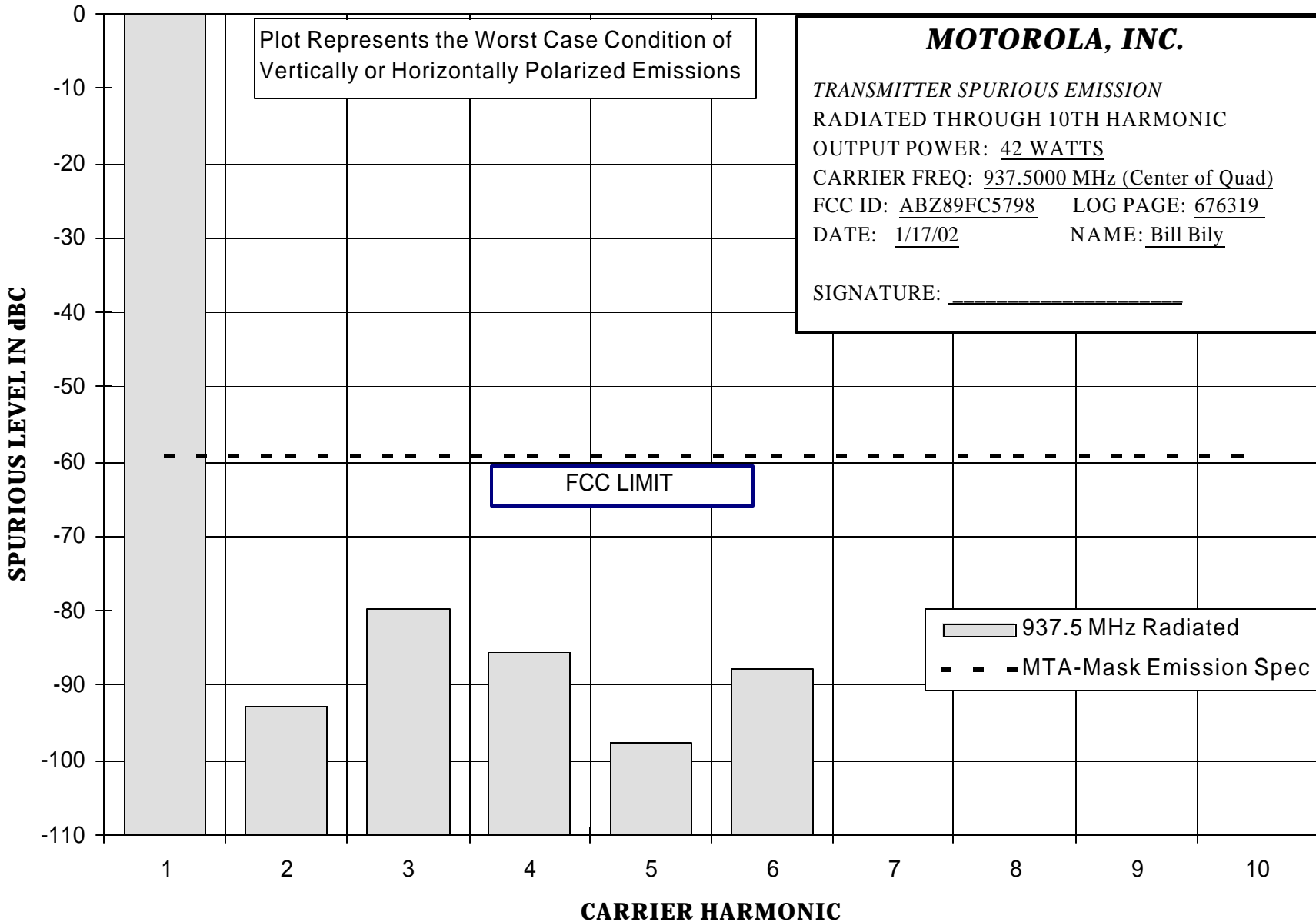
On any frequency displacement of greater than 12.5 kHz removed from the authorized frequency block, the power of any emission shall be attenuated below the transmitter power (P), in Watts, by at least 43 plus $10 \log_{10}(P)$ dB or 80 dB, whichever is the lesser attenuation.

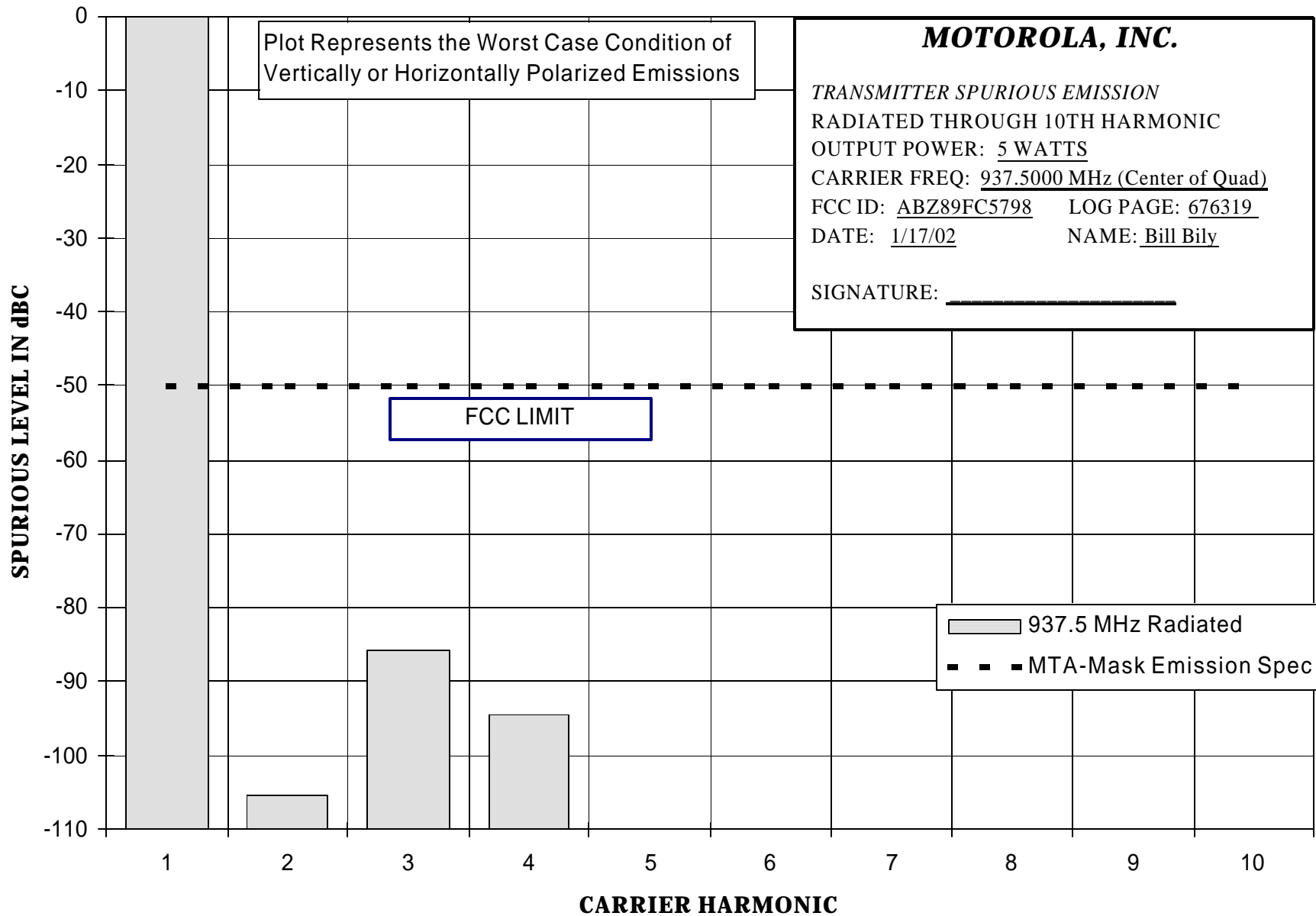
Modulation: Psuedorandom data

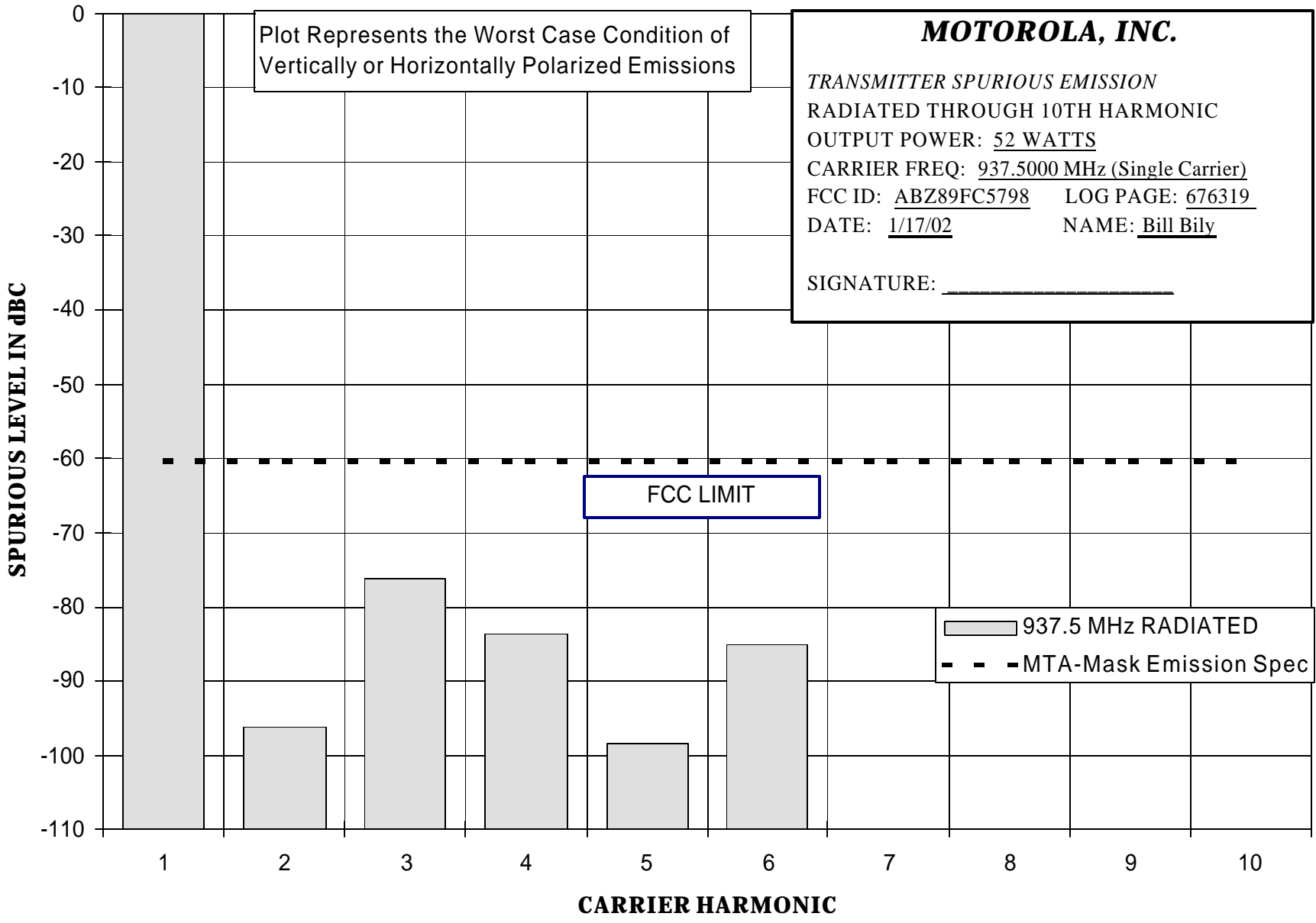
Carrier Frequency: A Quad carrier centered around 937.5000 MHz, or one single carrier frequency, at 937.5000 MHz, was measured. This frequency is near the center of the operating band 935-940 MHz.

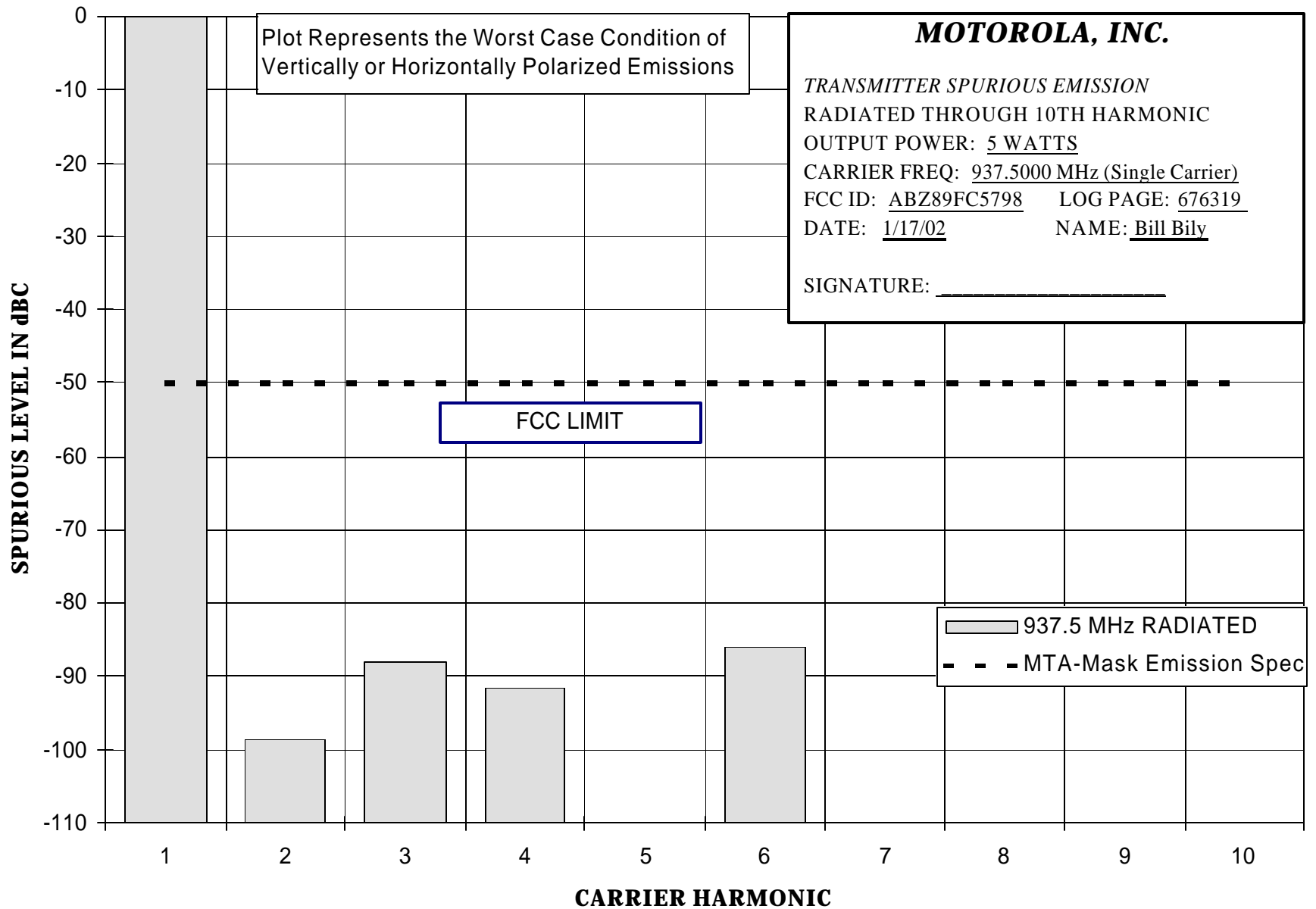
SPURIOUS EMISSION PLOTS:

<u>EXHIBIT</u>	<u>DESCRIPTION</u>
11D-1	Quad Carrier - Radiated Spurious Emissions, Power Output at 42 Watts The specification limit is -59.2 dBC
11D-2	Quad Carrier - Radiated Spurious Emissions, Power Output at 5 Watts The specification limit is -50.0 dBC
11D-3	Single Carrier - Radiated Spurious Emissions, Power Output at 52 Watts The specification limit is -60.2 dBC
11D-4	Single Carrier - Radiated Spurious Emissions, Power Output at 5 Watts The specification limit is -50.0 dBC









OSCILLATOR FREQUENCY STABILITY

SPECIFICATION REQUIREMENT:

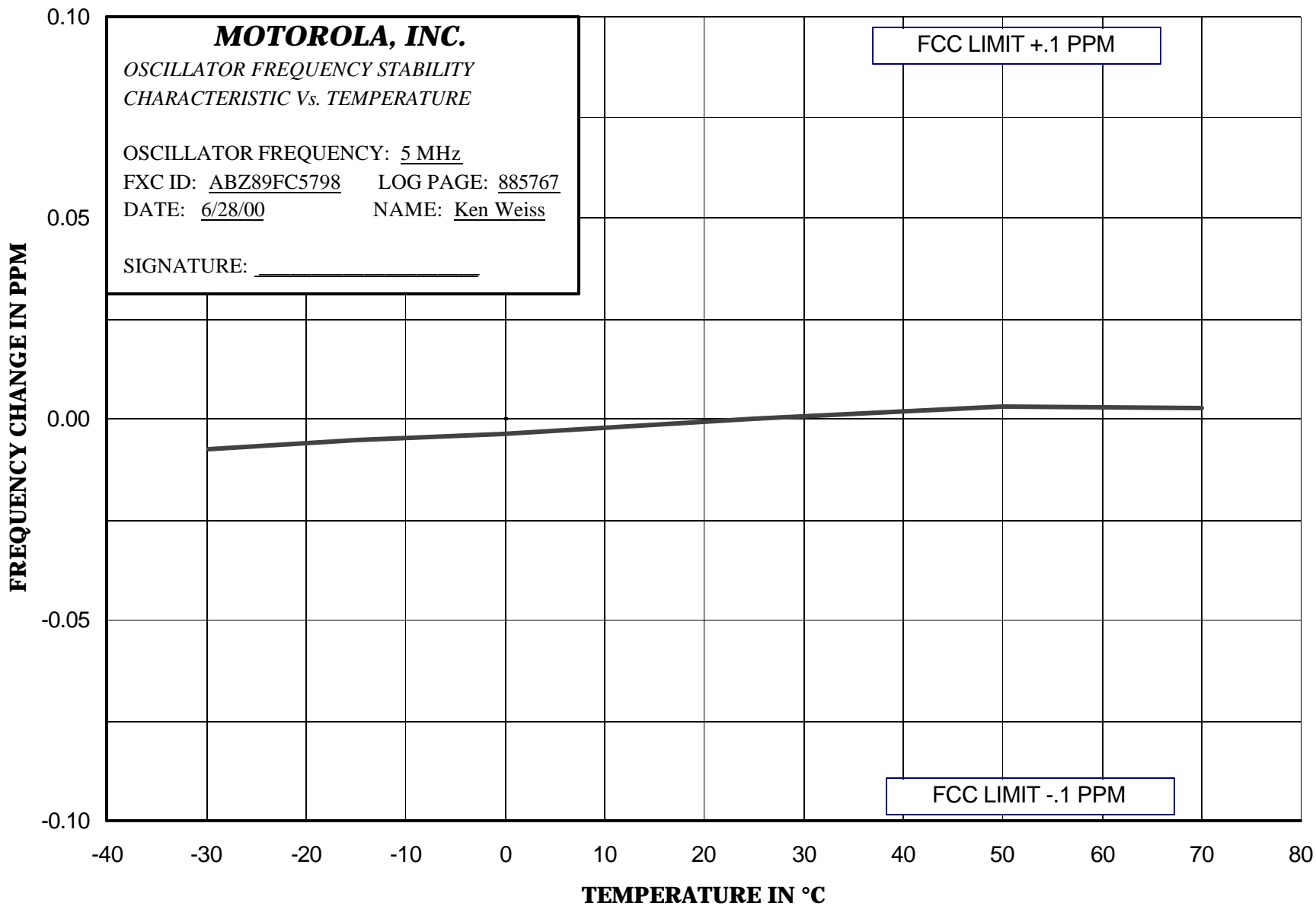
Reference: Part 90.213

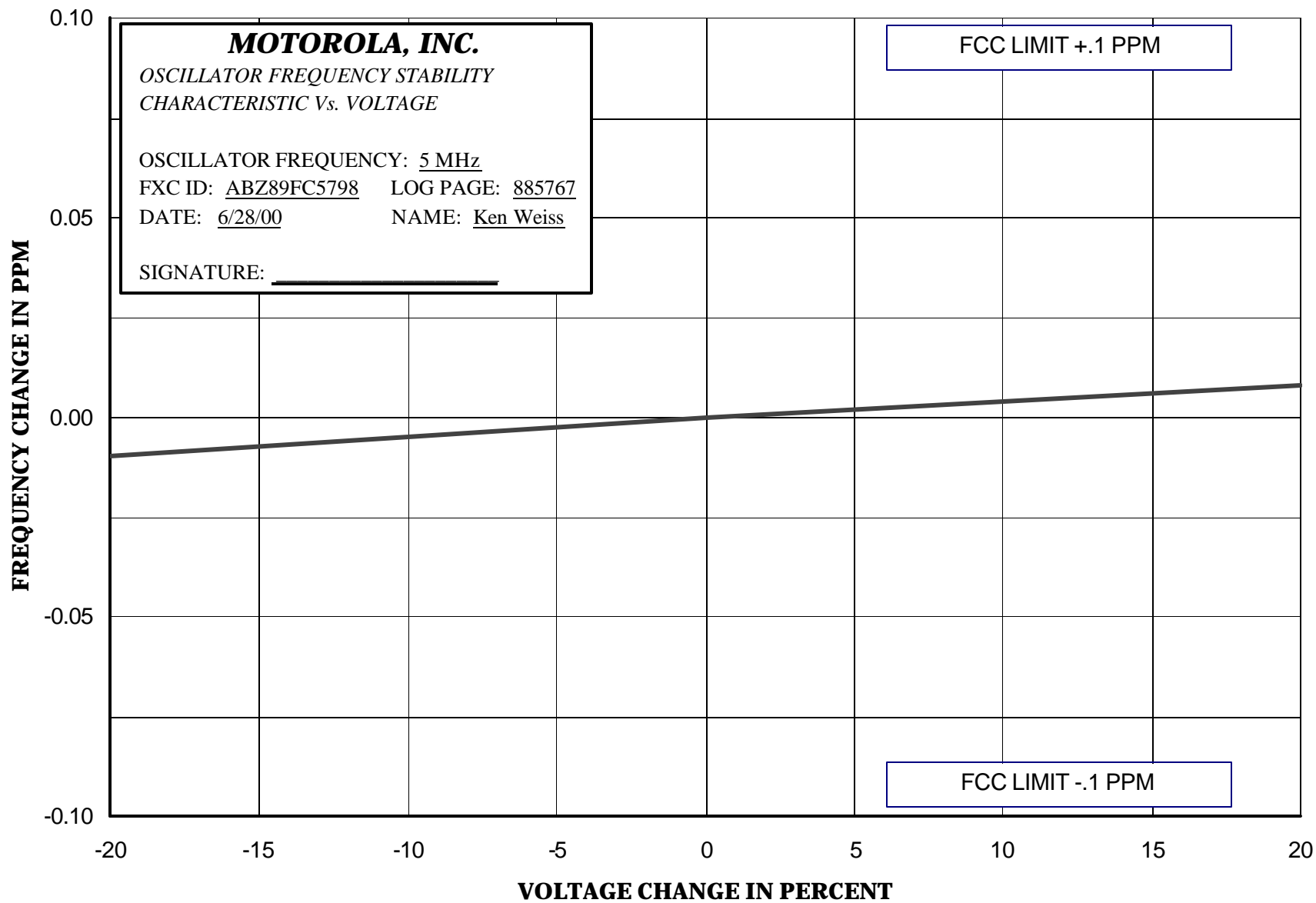
Fixed and Base stations, operating at 935-940 MHz, must have a frequency stability of better than +/- 0.1 PPM.

Manufacturer data for the system site frequency standard was used in generation of the following frequency stability exhibits.

FREQUENCY STABILITY PLOTS:

<u>EXHIBIT</u>	<u>DESCRIPTION</u>
11E-1	Frequency Stability Vs Temperature
11E-2	Frequency Stability Vs Voltage





TEST EQUIPMENT LIST

<u>MODEL</u>	<u>MANUFACTURER</u>	<u>DESCRIPTION</u>	<u>Serial No.</u>	<u>Last Cal</u>	<u>Next Cal</u>
E4419BA	Hewlett Packard	RF Power Meter	MY40330213	NA	11/30/03
E9301A	Hewlett Packard	RF Power Sensor	US39212146	NA	11/30/03
8568B	Hewlett Packard	Spectrum Analyzer	2841A04405	06/18/00	06/18/03
7475A	Hewlett Packard	Plotter	2807F99291	no calibration required	
6071A	Fluke	Signal Generator	3005007	no calibration required	
83712A	Hewlett Packard	Signal Generator	3429A00455	no calibration required	
85460A	Hewlett Packard	EMI Analyzer, Filter	3704A00467	10/12/02	10/12/04
85462A	Hewlett Packard	EMI Analyzer, RF/Display	3906A00500	10/12/02	10/12/04
(Various)	Weinschel, Kathrein, Bird	RF Loads	Various	no calibration required	
3020A, etc.	Narda	Directional Coupler	Various	no calibration required	