

Telephone: (250) 382-8268
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43 ERIE ST., VICTORIA, BC
CANADA, V8V 1P8

TEST REPORT

Name Of Test: Occupied Bandwidth FCC Rules 47CFR 2.1049 (c) (1)

Test Performed By: Steve Burfoot

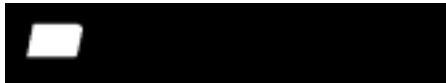
Test Date: March 3, 1999

Test Conditions: Modulated by a 2.5 kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.

Test Equipment: Daniels UT-3/860 –SWC300 UHF Radio Repeater Transmitter
Avantest R3361A Spectrum Analyzer
Marconi Instruments 2965A Radio Test Set
See Diagram 1 for Test Setup

Minimum Standard: 47CFR 90.210 (b). The power of any emission must be below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log(P)$ dB.



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Test Results Summary: See attached graphs. (Diagrams 2 - 7)

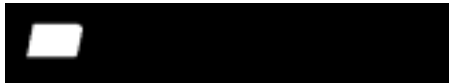
<u>Test Specification</u>	<u>Test Description</u>	<u>Test Results</u>
47CFR 90.210 (b)	Occupied Bandwidth	PASS

Measurement Data: See attached graphs. (Diagrams 2 - 7)

Dated this **16th** day of **MARCH**, 1999

By: **Ron Backlund**
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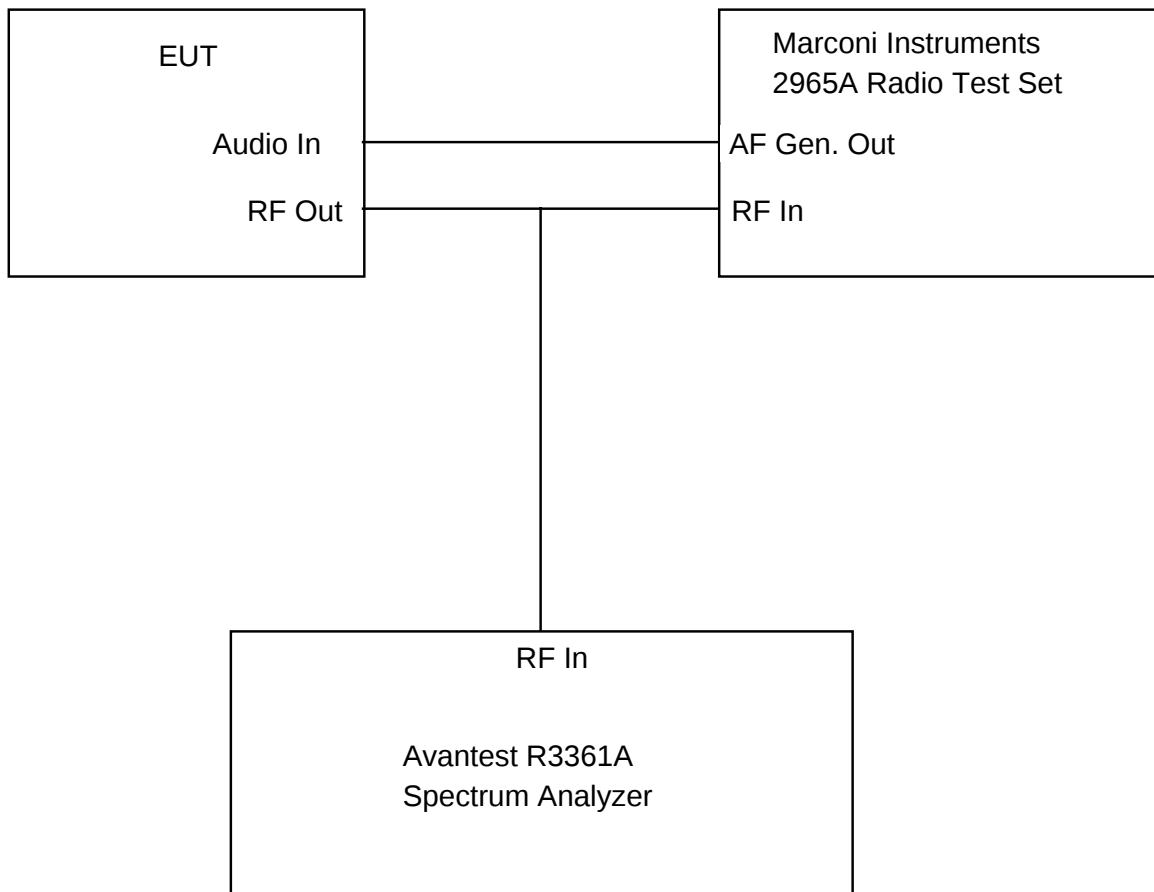
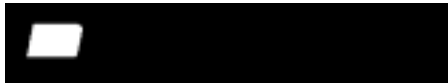


Diagram 1 - Test Setup Block Diagram



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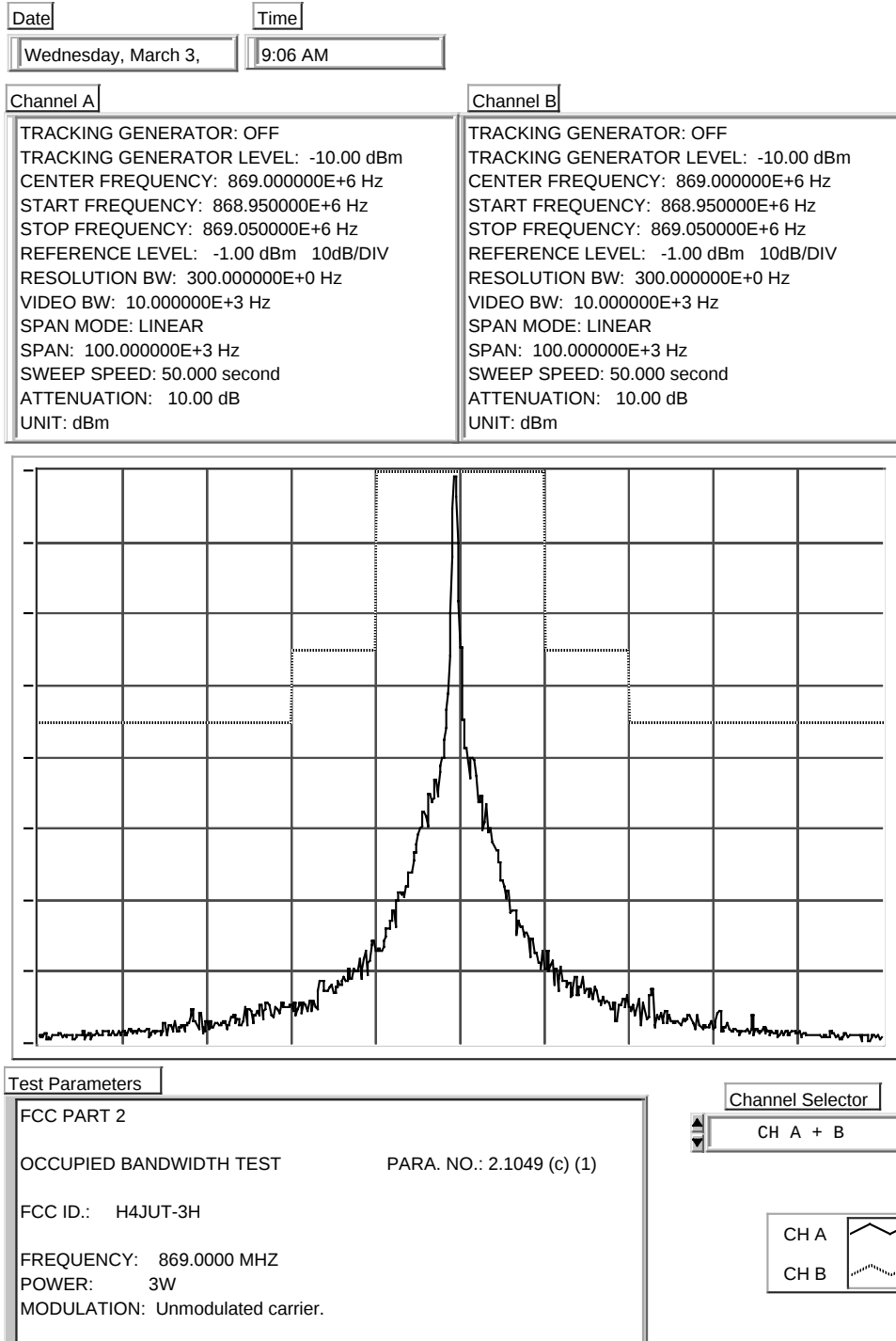
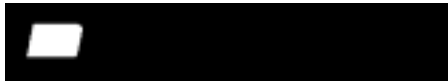


Diagram 2 - Unmodulated Carrier at 869 MHz



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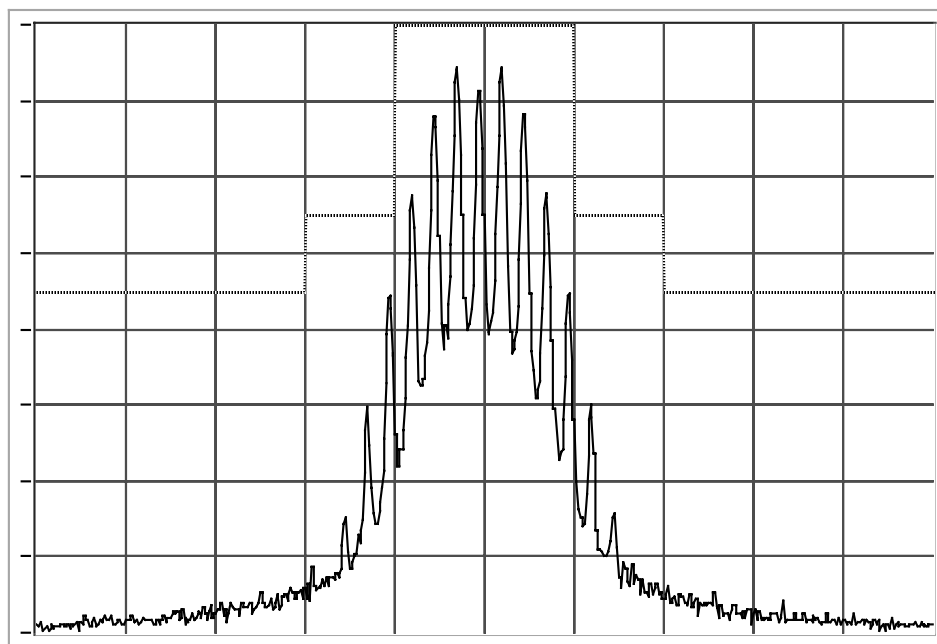
Date: Wednesday, March 3, Time: 9:09 AM

Channel A

TRACKING GENERATOR: OFF
TRACKING GENERATOR LEVEL: -10.00 dBm
CENTER FREQUENCY: 869.000000E+6 Hz
START FREQUENCY: 868.950000E+6 Hz
STOP FREQUENCY: 869.050000E+6 Hz
REFERENCE LEVEL: -1.00 dBm 10dB/DIV
RESOLUTION BW: 300.000000E+0 Hz
VIDEO BW: 10.000000E+3 Hz
SPAN MODE: LINEAR
SPAN: 100.000000E+3 Hz
SWEEP SPEED: 50.000 second
ATTENUATION: 10.00 dB
UNIT: dBm

Channel B

TRACKING GENERATOR: OFF
TRACKING GENERATOR LEVEL: -10.00 dBm
CENTER FREQUENCY: 869.000000E+6 Hz
START FREQUENCY: 868.950000E+6 Hz
STOP FREQUENCY: 869.050000E+6 Hz
REFERENCE LEVEL: -1.00 dBm 10dB/DIV
RESOLUTION BW: 300.000000E+0 Hz
VIDEO BW: 10.000000E+3 Hz
SPAN MODE: LINEAR
SPAN: 100.000000E+3 Hz
SWEEP SPEED: 50.000 second
ATTENUATION: 10.00 dB
UNIT: dBm



Test Parameters

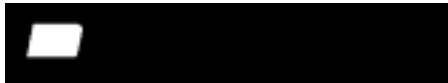
FCC PART 2
OCCUPIED BANDWIDTH TEST PARA. NO.: 2.1049 (c) (1)
FCC ID.: H4JUT-3H
FREQUENCY: 869.0000 MHZ
POWER: 3W
MODULATION: 2.5 kHz tone at an input level 16dB greater than that necessary to produce 50 percent modulation.

Channel Selector

CH A + B



Diagram 3 - Modulated Carrier at 869 MHz



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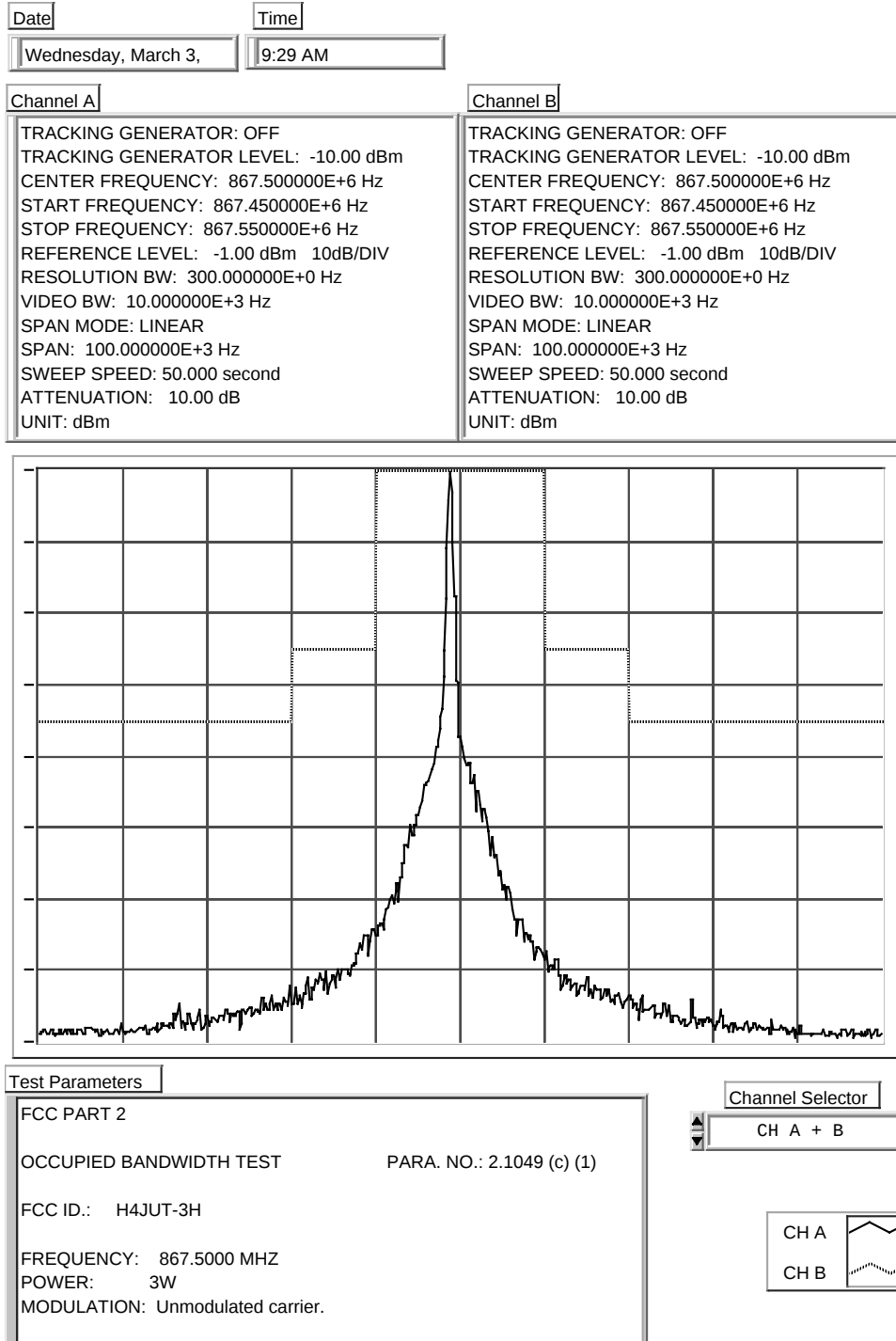
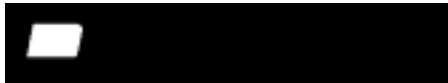


Diagram 4 - Unmodulated Carrier at 867.5 MHz



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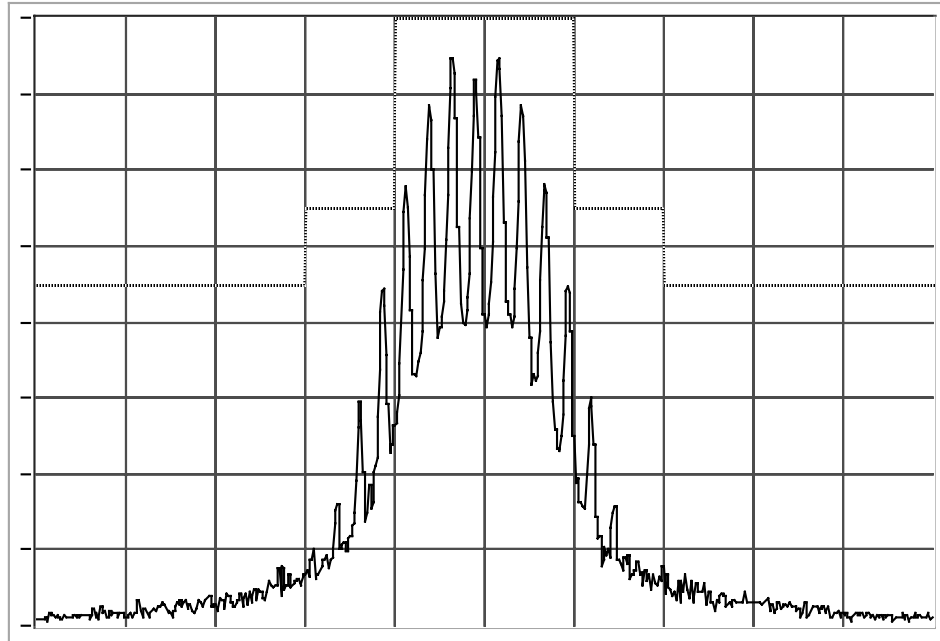
Date: Wednesday, March 3, Time: 9:34 AM

Channel A

TRACKING GENERATOR: OFF
TRACKING GENERATOR LEVEL: -10.00 dBm
CENTER FREQUENCY: 867.500000E+6 Hz
START FREQUENCY: 867.450000E+6 Hz
STOP FREQUENCY: 867.550000E+6 Hz
REFERENCE LEVEL: -1.00 dBm 10dB/DIV
RESOLUTION BW: 300.000000E+0 Hz
VIDEO BW: 10.000000E+3 Hz
SPAN MODE: LINEAR
SPAN: 100.000000E+3 Hz
SWEEP SPEED: 50.000 second
ATTENUATION: 10.00 dB
UNIT: dBm

Channel B

TRACKING GENERATOR: OFF
TRACKING GENERATOR LEVEL: -10.00 dBm
CENTER FREQUENCY: 867.500000E+6 Hz
START FREQUENCY: 867.450000E+6 Hz
STOP FREQUENCY: 867.550000E+6 Hz
REFERENCE LEVEL: -1.00 dBm 10dB/DIV
RESOLUTION BW: 300.000000E+0 Hz
VIDEO BW: 10.000000E+3 Hz
SPAN MODE: LINEAR
SPAN: 100.000000E+3 Hz
SWEEP SPEED: 50.000 second
ATTENUATION: 10.00 dB
UNIT: dBm



Test Parameters

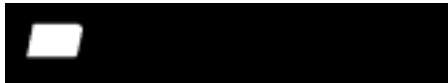
FCC PART 2
OCCUPIED BANDWIDTH TEST PARA. NO.: 2.1049 (c) (1)
FCC ID.: H4JUT-3H
FREQUENCY: 867.5000 MHZ
POWER: 3W
MODULATION: 2.5 kHz tone at an input level 16dB greater than that necessary to produce 50 percent modulation.

Channel Selector

CH A + B



Diagram 5 - Modulated Carrier at 867.5 MHz



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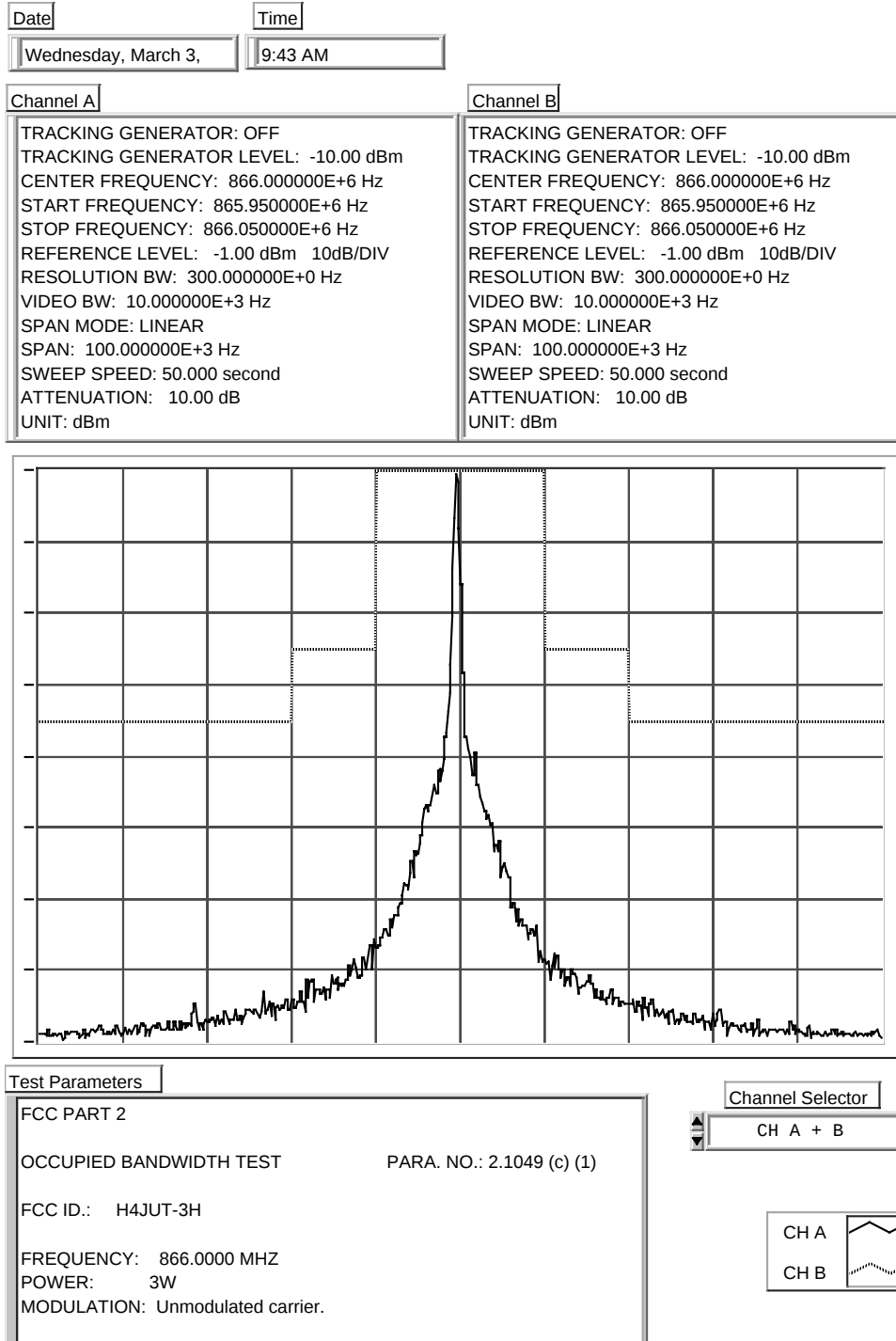
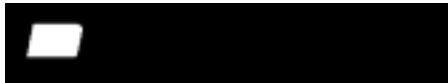


Diagram 6 - Unmodulated Carrier at 866 MHz



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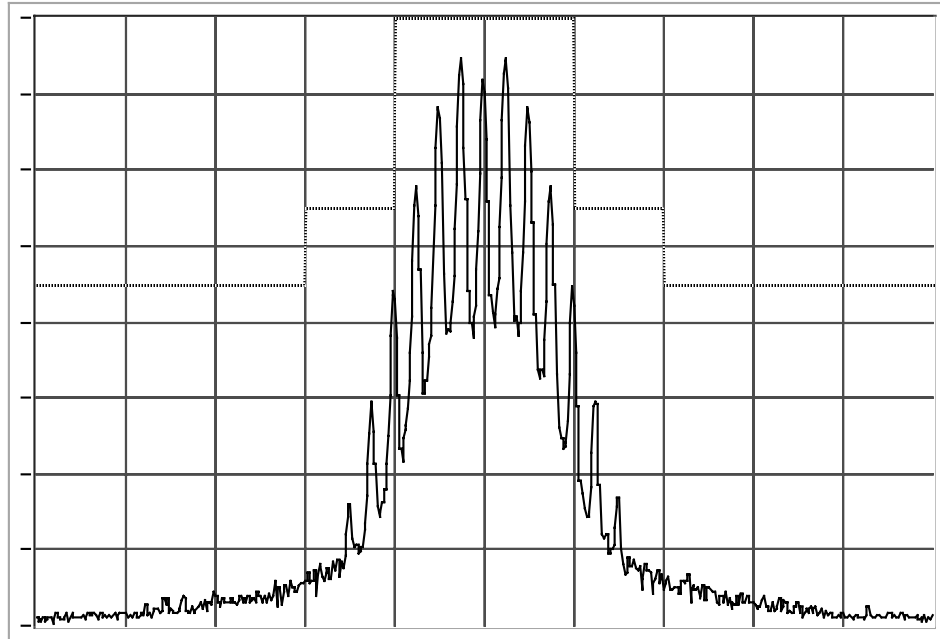
Date: Wednesday, March 3, Time: 9:46 AM

Channel A

TRACKING GENERATOR: OFF
TRACKING GENERATOR LEVEL: -10.00 dBm
CENTER FREQUENCY: 866.000000E+6 Hz
START FREQUENCY: 865.950000E+6 Hz
STOP FREQUENCY: 866.050000E+6 Hz
REFERENCE LEVEL: -1.00 dBm 10dB/DIV
RESOLUTION BW: 300.000000E+0 Hz
VIDEO BW: 10.000000E+3 Hz
SPAN MODE: LINEAR
SPAN: 100.000000E+3 Hz
SWEEP SPEED: 50.000 second
ATTENUATION: 10.00 dB
UNIT: dBm

Channel B

TRACKING GENERATOR: OFF
TRACKING GENERATOR LEVEL: -10.00 dBm
CENTER FREQUENCY: 866.000000E+6 Hz
START FREQUENCY: 865.950000E+6 Hz
STOP FREQUENCY: 866.050000E+6 Hz
REFERENCE LEVEL: -1.00 dBm 10dB/DIV
RESOLUTION BW: 300.000000E+0 Hz
VIDEO BW: 10.000000E+3 Hz
SPAN MODE: LINEAR
SPAN: 100.000000E+3 Hz
SWEEP SPEED: 50.000 second
ATTENUATION: 10.00 dB
UNIT: dBm



Test Parameters

FCC PART 2
OCCUPIED BANDWIDTH TEST PARA. NO.: 2.1049 (c) (1)
FCC ID.: H4JUT-3H
FREQUENCY: 866.0000 MHZ
POWER: 3W
MODULATION: 2.5 kHz tone at an input level 16dB greater than that necessary to produce 50 percent modulation.

Channel Selector

CH A + B



Diagram 7 - Modulated Carrier at 866 MHz