

EXHIBIT VI. Test Report

FCC ID: AZ492FT5802

HDT515 Hand Held Data Terminal

New Certification Part 90

Prepared On Behalf Of

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Prepared

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CERTIFICATION
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- *Please refer to the original data on file under FCC ID:L6AR902M-2-0 for these items.*

TEST: RF POWER OUTPUT

FCC ID: AZ492FT5802

Grantee: Motorola, Inc.

Serial No.: each radio modem contains an ESN

Manufacture Rating: Low power 18 dBm 60 mW
High power 33 dBm 2 Watt peak
Continuously adjustable in 3 dB steps by the Mobitex base station
in response to the receive signal strength and the transmit power
levels instructions received

Measured Power Output: Low power 18.33 dBm
High power 32.87 dBm

Equipment Authorization Procedure: Para. 2.985 (a)

Duty Cycle: There is no deterministic pattern to the network traffic or
packet timing.

Frequency Measured: 899.000 MHz

Frequency Range: 896 – 902 MHz

The HDT515 has a permanently attached internal antenna. The unit was opened up to allow use of an adapter cable with a SMA adapter on one end, to facilitate measuring the power output.

TEST: OCCUPIED BANDWIDTH

FCC ID: AZ492FT5802

Grantee: Motorola, Inc.

Minimum Standard Specified: Para. 90.210 (j)

Test Results: Equipment is Compliant with Standard

Equipment Authorization Procedure: Para. 2.989

The transmitter was modulated with Mobitex pseudo random data at the maximum permissible data rate allowed by the protocol. The reference levels with no modulation and the modulated carrier are plotted on the following graphs.

MEASUREMENT DATA

Spectrum Analyzer: Hewlett Packard 8562A

Test Plots Located	Pg. 3	Low Power	Pg. 4	High Power
Settings: Resolution Bandwidth:	100		50	kHz
Video Filter:	100		50	kHz
Scan Time:	20.0		20.0	sec.
Scan Width:	50		50	kHz
Center Frequency:	899.000		899.000	MHz
Mask Limit:	90.210(j)		90.210(j)	
Emission designator:	12K8F1D		12K8F1D	

*ATTEN 0dB

RL -23.0dBm 10dB/

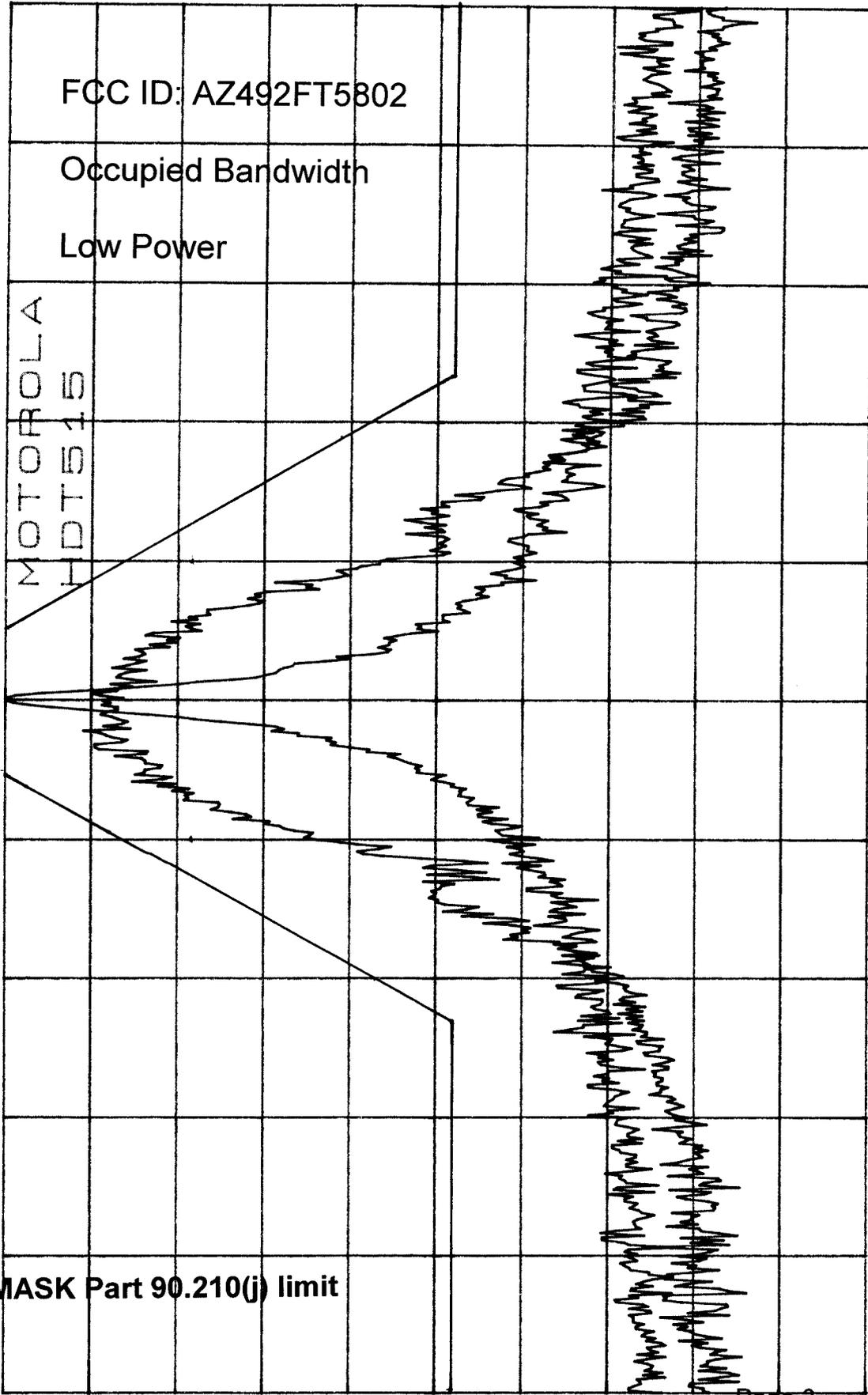
MASK Part 90.210(j) limit

MOTOROLA
HDT515

FCC ID: AZ492FT5802

Occupied Bandwidth

Low Power



9/13/00 W/All/MS

SPAN 50.000KHZ

SWP 20sec

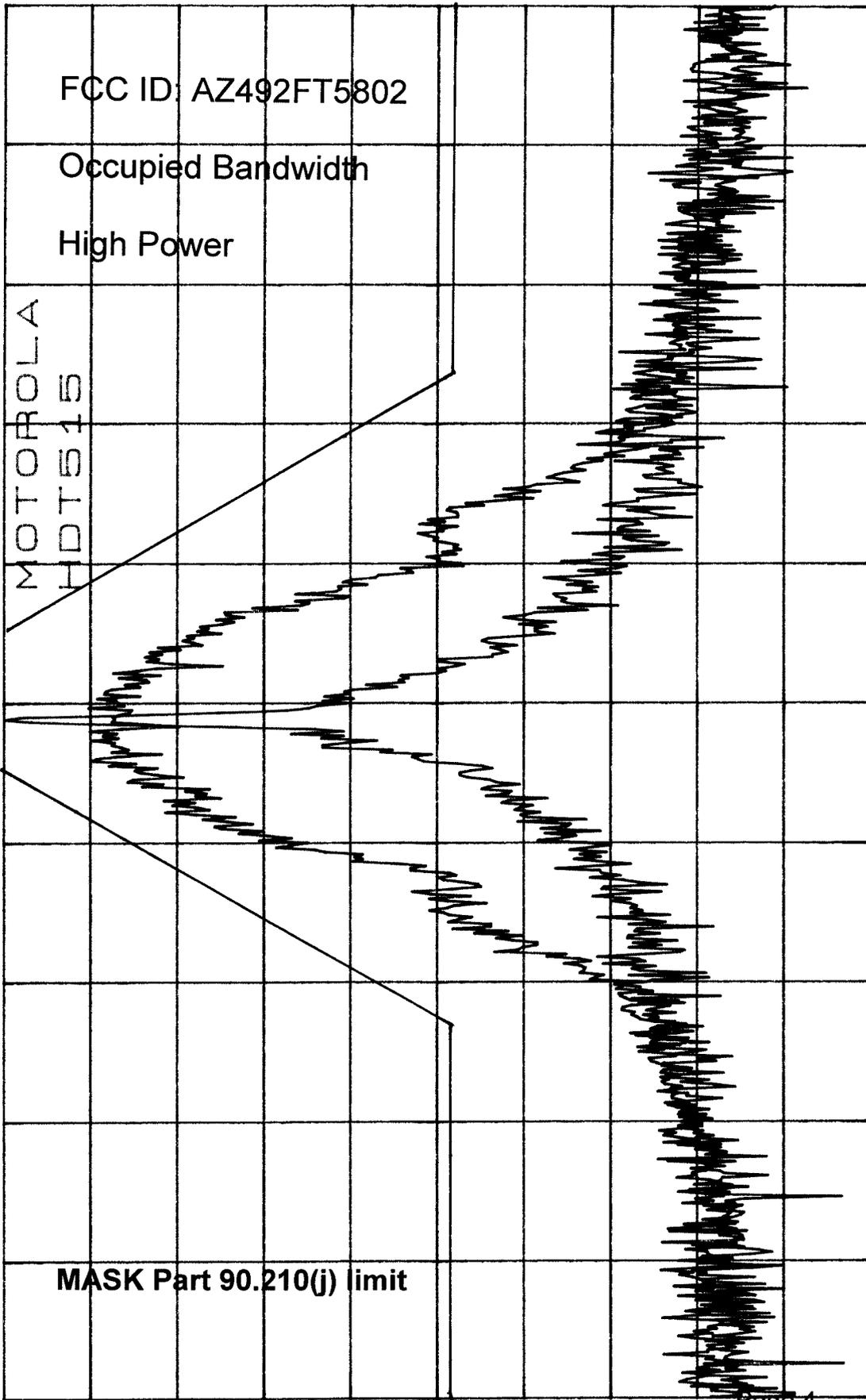
CENTER 899.00000MHZ

VBW 100HZ

*RBW 100HZ

*ATTEN 10dB
RL -8.3dBm

10dB/



FCC ID: AZ492FT5802

Occupied Bandwidth

High Power

MOTOROLA
HDT515

MASK Part 90.210(j) limit

9/13/00 W/CB/Myms

SPAN 50.000KHZ

SWP 20sec

CENTER 899.000000MHZ

VBW 100HZ

*RBW 100HZ

TEST: TRANSMITTER CONDUCTED SPURIOUS EMISSIONS

FCC ID: AZ492FT5802

Manufacturer: Motorola, Inc.

Serial No.: none

Minimum Standard Specified: Para. 90.210 (j)

Test Results: Equipment complies with standard

Equipment Authorization Procedure: Para. 2.991 & 2.989

Frequency Range Observed: 0 to 10 GHz

Operating Frequency: 899.0000 MHz

Power Output: 18 – 33 dBm 2 Watt power (peak)

Spurious Limit = $50 \text{ dB} + 10\text{Log}_{10} \text{ PO} =$ = 53 dB below the carrier

Six plots of the spurious emissions at the antenna terminals follow:

Low Power

Span 0 – 1 GHz,	100kHz RBW & VBW
Span 0 – 2.9 GHz	1 MHz RBW & VBW
Span 2.75 – 10 GHz	1 MHz RBW & VBW

High Power

Span 0 – 1 GHz,	100kHz RBW & VBW
Span 0 – 2.9 GHz	1 MHz RBW & VBW
Span 2.75 – 10 GHz	1 MHz RBW & VBW

A high pass filter was used to reduce the level of Fo 36 dB and avoid overloading the front end of the analyzer.

All harmonic and spurious emissions were at least 20 dB below the limit for both low and high power.

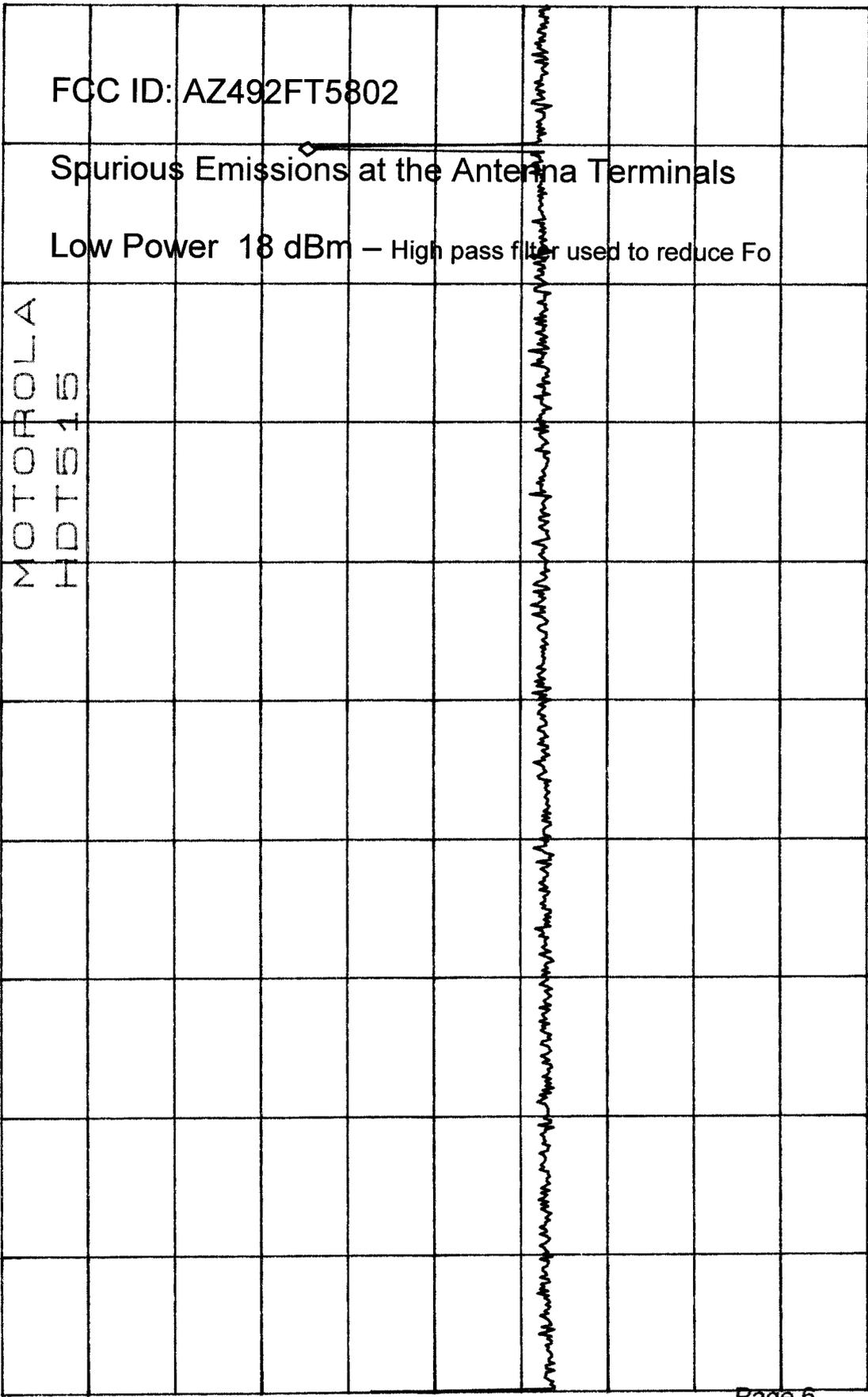
*ATTEN 0dB
MKR -59.17dBm

RL -23.0dBm
897MHz

MOTOROLA
HDT515

10dB/

100kHz



FCC ID: AZ492FT5802

Spurious Emissions at the Antenna Terminals

Low Power 18 dBm - High pass filter used to reduce Fo

9/13/00

1.000GHz

STOP

START 0Hz

SWP 300ms

VBW 100kHz

*RBW 100kHz

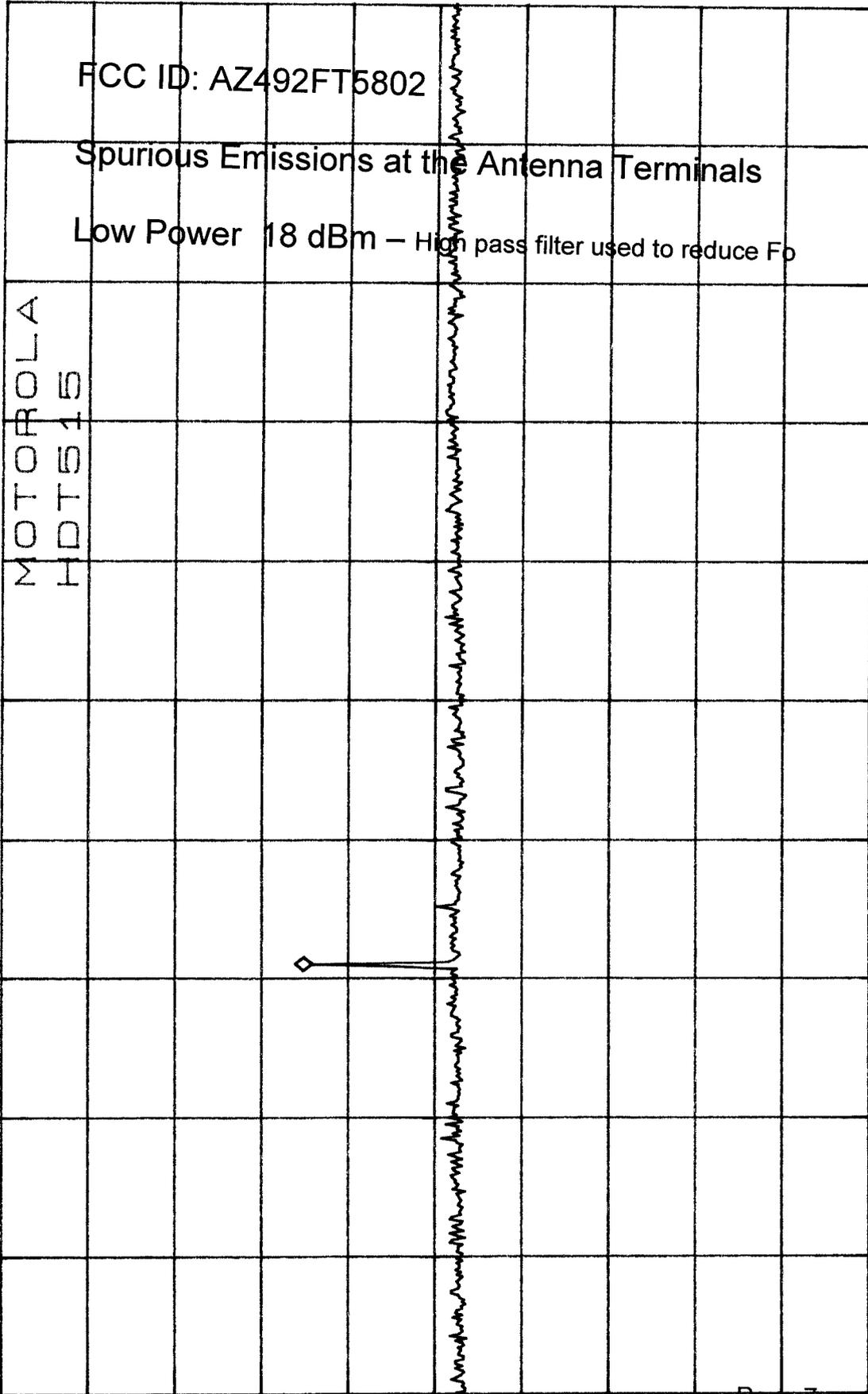
D

*ATTEN 0dB
RL -23.0dBm
MKR -58.83dBm

899MHz

10dB/

MOTOROLA
HDT515

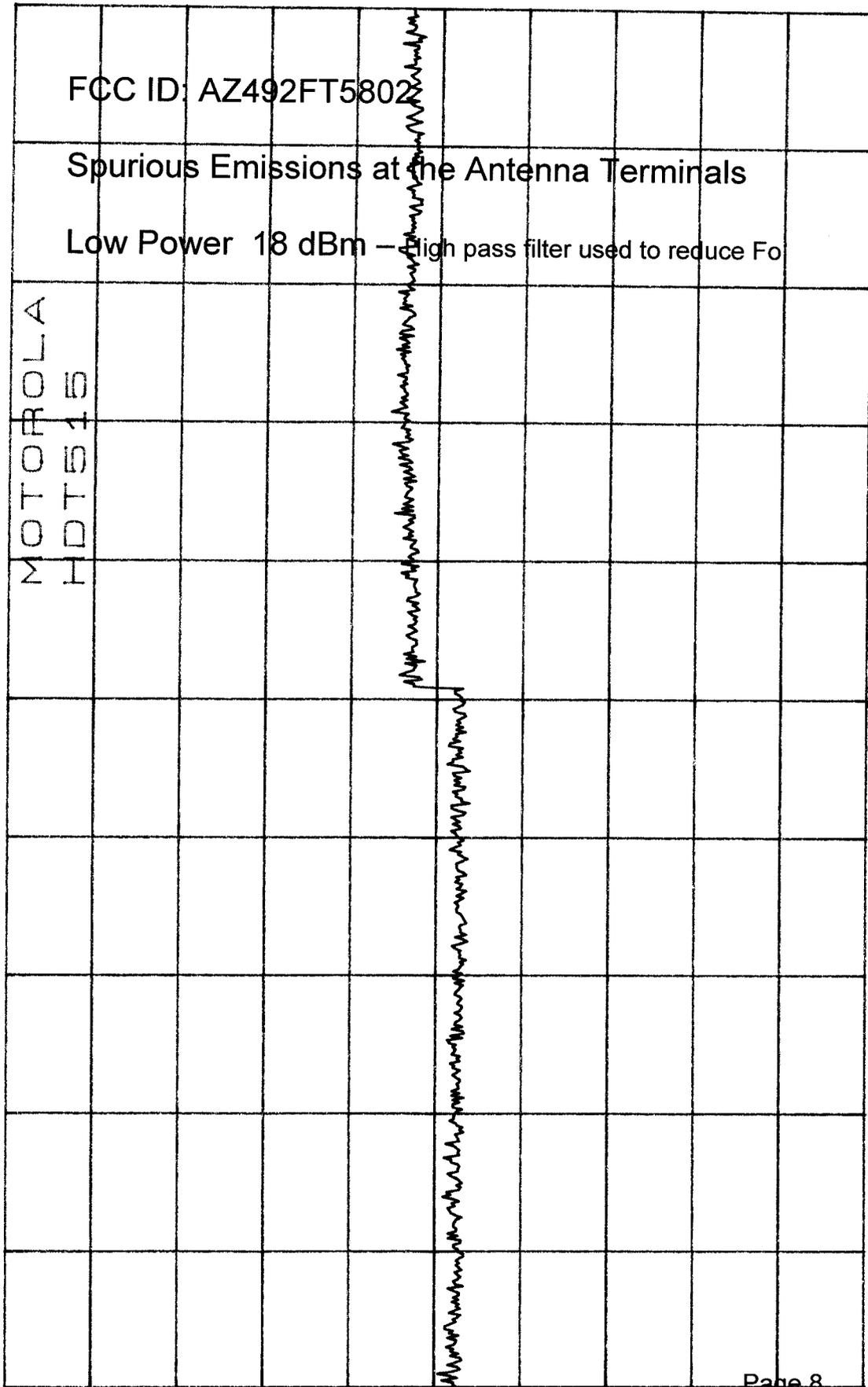


START 0Hz STOP 2.900GHz
*RBW 1.0MHz VBW 1.0MHz SWP 60ms

*ATTEN 0dB

RL -23.0dBm

10dB/



START 2.750GHZ

STOP 10.000GHZ

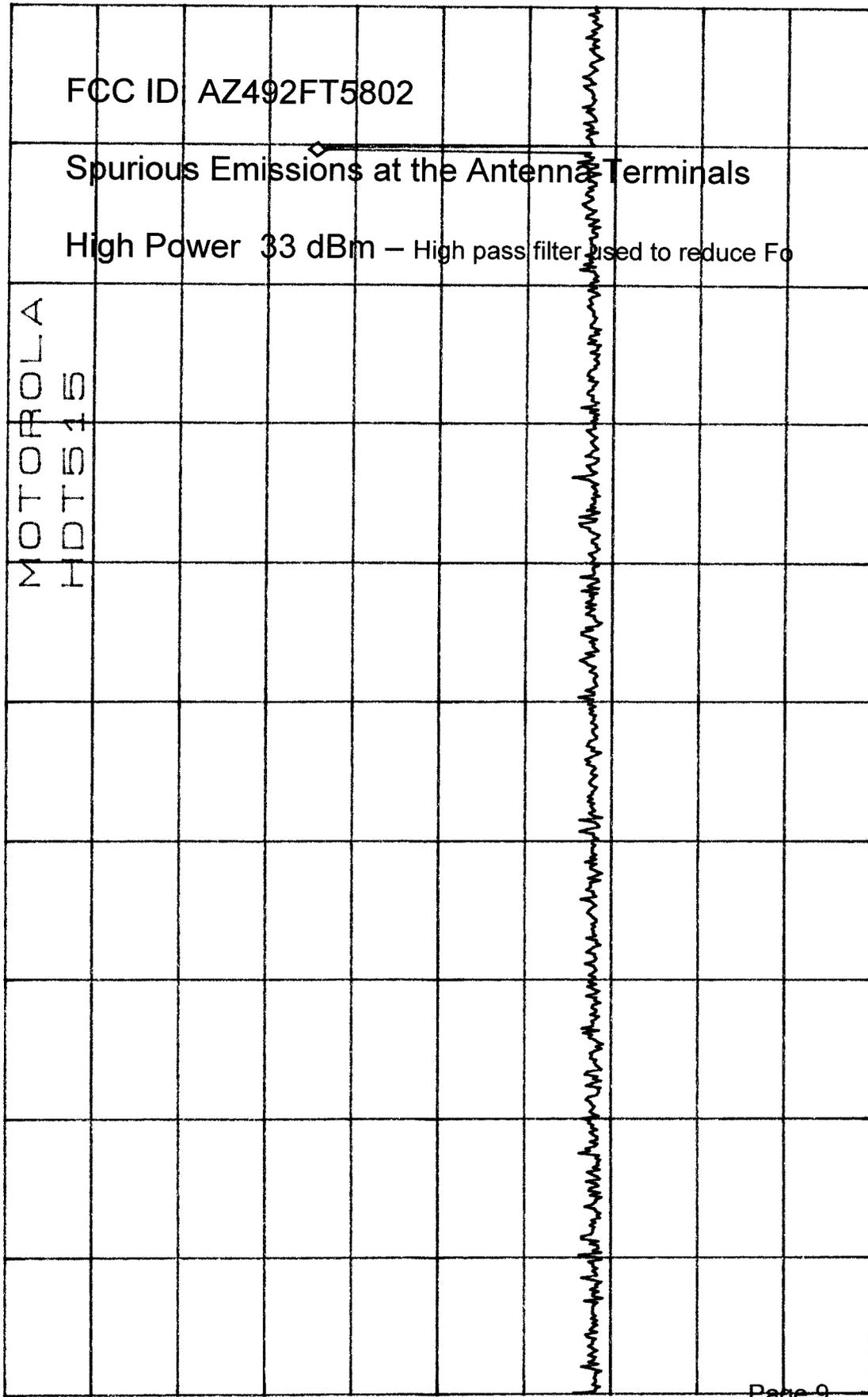
*RBW 1.0MHZ

VBW 1.0MHZ

SWP 200ms

*ATTEN 10dB
RL -8.3dBm

MKR -44.80dBm
897MHz

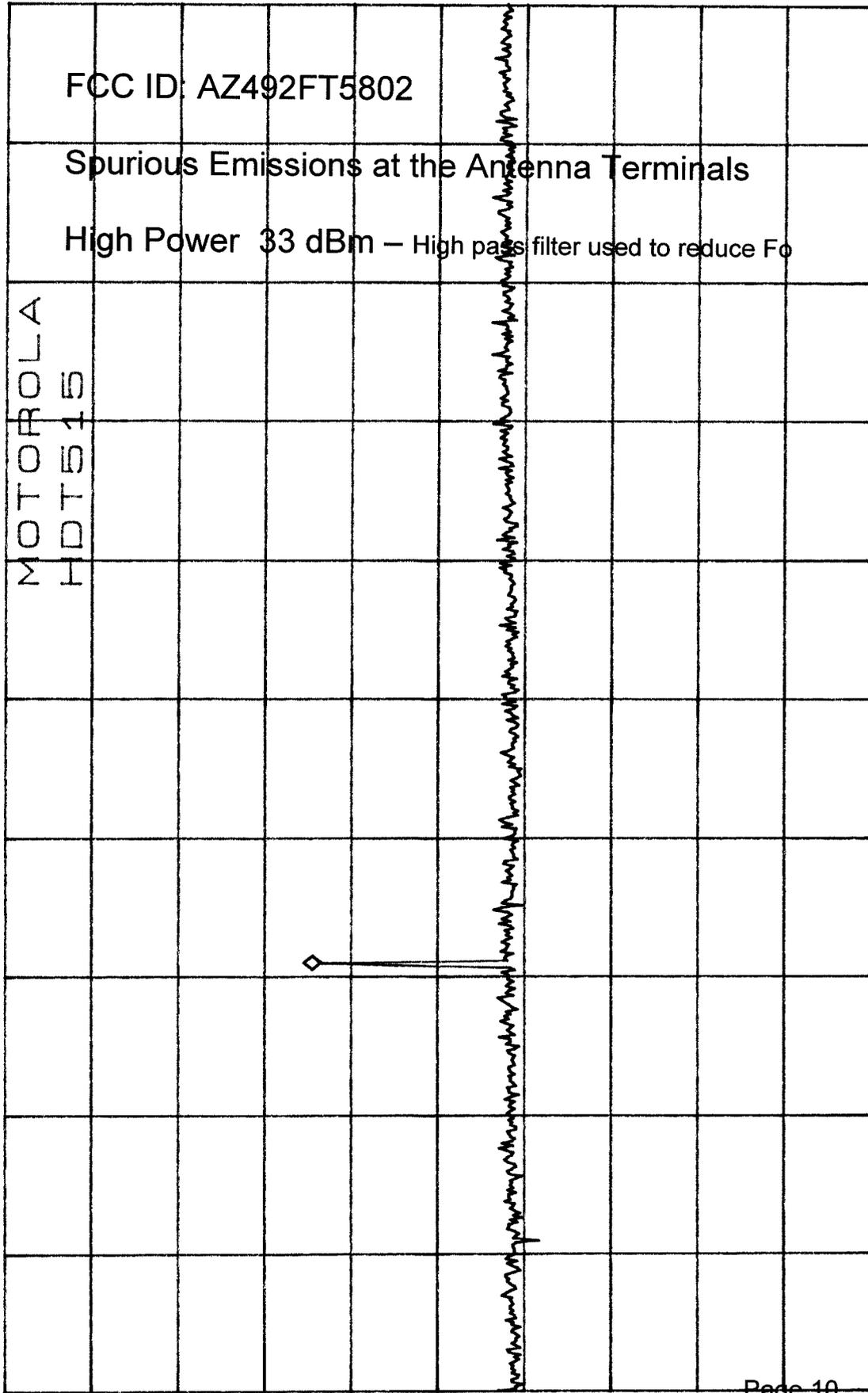


9/13/00 CW/ML/MS

START 0Hz STOP 1.000GHz
*RBW 100kHz VBW 100kHz SWP 300ms

*ATTEN 10dB
RL -8.3dBm

MKR -44.80dBm
899MHz

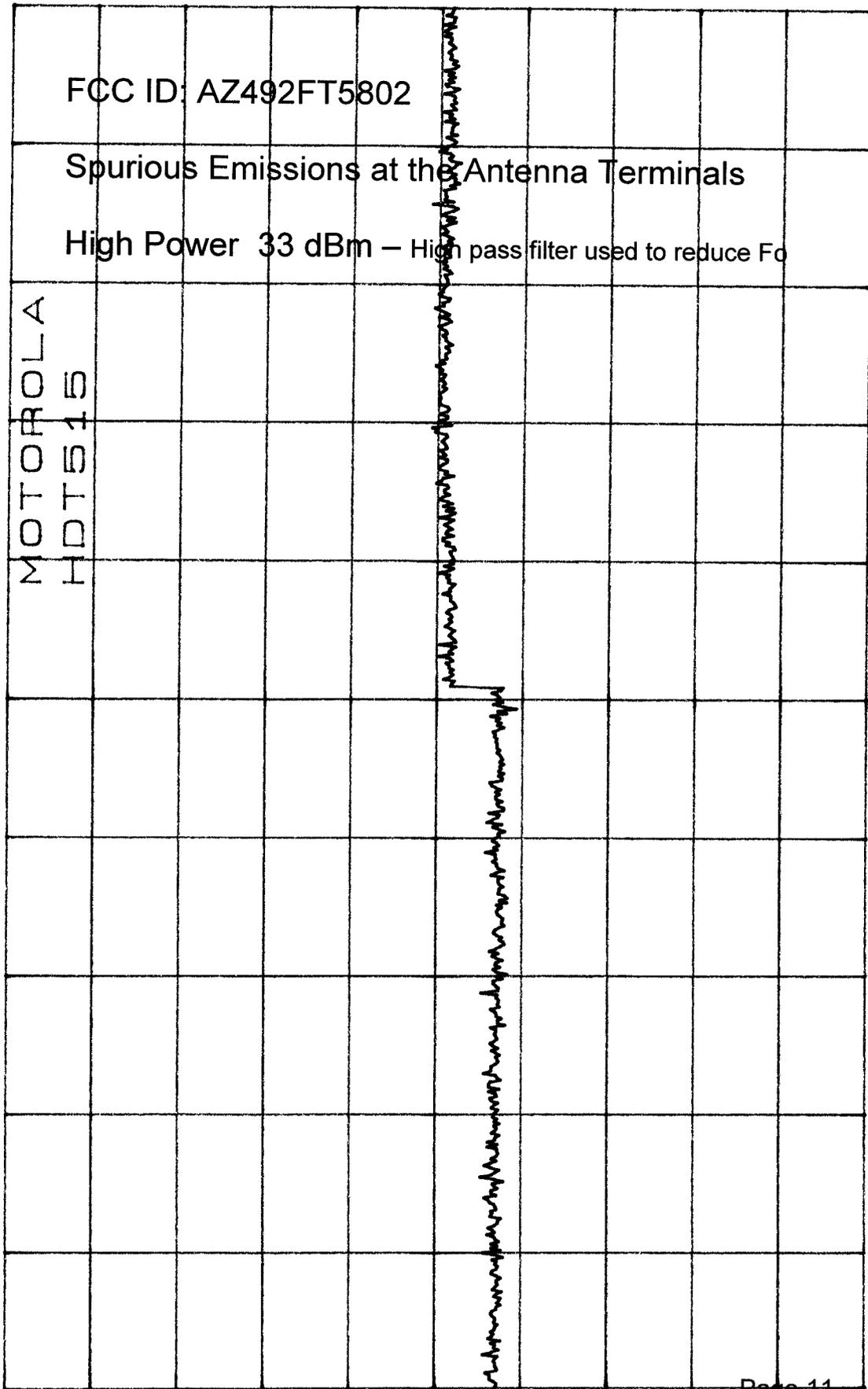


9/13/00 *Handwritten*

START 0Hz STOP 2.900GHz
*RBW 1.0MHz VBW 1.0MHz SWP 60ms

*ATTEN 10dB
RL -8.3dBm

10dB/



START 2.750GHZ STOP 10.000GHZ
*RBW 1.0MHZ VBW 1.0MHZ SWP 200ms

TEST: TRANSMITTER RADIATED SPURIOUS EMISSIONS

FCC ID: AZ492FT5802
 Manufacturer: Motorola, Inc.
 Serial No.: none
 Minimum Standard Specified: Para. 90.210 (j)
 Test Results: Equipment complies with standard
 Equipment Authorization Procedure: Para. 2.993 & 2.989
 Test Equipment Set Up: See Block Diagram
 Frequency Range Observed: 0 to 10 GHz
 Operating Frequency: 898.0000 MHz
 Power Output: 18 – 33 dBm 2-Watt power (peak)
 Spurious Limit = $50 \text{ dB} + 10\text{Log}_{10} \text{ PO} =$ = 53 dB below the carrier

During preliminary measurements @<. 5-meter low levels of the harmonics were observed with 3Fo being the only one measurable at 3 m.

<u>FORMULA</u>	<u>FREQUENCY IN MHz</u>	<u>Level (dB below carrier)</u>	
		Low Power	High Power
Fo	899.0	-0-	-0-
3Fo	35960	-----	-75.26

At 3 meters with 1 MHz RBW and VBW all harmonic and spurious emissions were at least 20 dB below the limit for both low and high power