

**EXHIBIT VI. Supplemental Test Report For New Certification
Of A Previously Certified OEM Module**

FCC ID: AZ489FT7004

HDT 600 Handheld Data Terminal

Certification Under Part 90

Prepared On Behalf Of

Motorola, Inc.
8000 West Sunrise Blvd.
Ft. Lauderdale, Florida 33322

Prepared

By

Spectrum Technology, Inc.
209 Dayton Street, Suite 205
Edmonds, WA 98020
425 771-4482

March 6, 2003

Supplemental Test Report

TABLE OF CONTENTS

Cover Page	1
Table Of Contents	2
Exhibit 6A – RF Power Output (2.1046)	3
Exhibit 6G – Transmitter Radiated Spurious Emissions (2.1053)	4
Exhibit 6G - Equivalent Isotropic Radiated Power	5
Exhibit 11 – RF Exposure Information	see Exhibit 11

Note: *Please refer to the original Certification data for FCC ID: PQS-BM28001 uploaded separately with this application for all other test report Exhibits not expected to have changed with the addition of a new antenna.*

EXHIBIT 6A TEST: RF Power Output

FCC ID: AZ489FT7004
 Grantee: Motorola, Inc.
 Model: F4415A

Maximum Mobile Output Power: Part 90.635 allows 100 Watts (20 dBw)

Test Results: The measured output power level shows compliance with the granted output in Watts referenced below.

Authorization Procedure: Part 2.1046

Granted Output Power at Antenna Terminals: 806 – 821 MHz 1.914 Watts
 821 – 824 MHz 1.857 Watts

Method of Measurement:

1. The transmitter was set at maximum power level with CW modulation.
2. The peak output power was measured with HP438A Power Meter & HP8482H Power Sensor.
3. The measured channels covered the low, mid and high channels covering the operational frequency range of this transmitter of 806 – 824 MHz, (two bands 806 – 821 & 821 – 824MHz).

MEASUREMENT DATA

Conducted RF Power Output Results At The Antenna Terminal

**HDT 600
 DataTAC**

Test Mode CW		Internal Antenna		EIRP	EIRP
Frequency (MHz)	Power (W)	Power (dBm)	Antenna Gain (dB)	Power (W)	Power (dBm)
806.0	1.970	32.94	0.0	1.970	32.94
813.5	1.960	32.92	0.0	1.960	32.92
821.0	1.920	32.83	0.0	1.920	32.83

EXHIBIT 6G TEST: TRANSMITTER RADIATED SPURIOUS EMISSIONS

FCC ID: AZ489FT7004
 Applicant: Motorola, Inc.
 Model: F4415A

Minimum Standard Specified: Part 90.210
 Test Results: Equipment complies with standard
 Authorization Procedure: Part 2.1053
 Test Equipment Set Up: See Block Diagram in Exhibit 7
 Frequency Range Observed: 30 to 8240 MHz
 Spurious Limit = $43 + 10\text{Log}_{10}(\text{PO})$ or $43 + 10\log_{10}(1.97) = 45.94 \text{ dB}$

Note: 3 meters EUT to antenna distance, using 1 MHz RBW and VBW for measurements above 1 GHz. A high pass filter was used during the measurements to reduce the fundamental signal and avoid overloading the front end of the analyzer.

RADIATED HARMONIC AND SPURIOUS EMISSIONS										
Frequency GHz	SA Rdg. dBu/V	Ant. Vert. or Horz.	Peak or Average Reading	Antenna Factor dB	Cable & filter loss dB	Amp Gain	Corrected Reading dBuV/m	Margin in dB below limit	3m Limit dBuV/m	
Fo – 807.00										
2Fo 1.614	40.50	V	Peak	25.70	2.2	- 0 -	68.4	15.90	84.3	
2Fo 1.614	38.50	H	Peak	25.70	2.2	- 0 -	66.4	17.90	84.3	
3Fo 2.421	36.33	V	Peak	28.37	2.7	- 0 -	67.4	16.90	84.3	
3Fo 2.421	37.00	H	Peak	28.37	2.7	- 0 -	68.07	16.23	84.3	
Fo – 815.00										
2Fo 1.630	37.50	V	Peak	25.70	2.2	- 0 -	65.4	18.90	84.3	
2Fo 1.630	33.50	H	Peak	25.70	2.2	- 0 -	61.4	22.90	84.3	
3Fo 2.445	36.18	V	Peak	28.37	2.7	- 0 -	67.25	17.05	84.3	
3Fo 2.445	34.67	H	Peak	28.37	2.7	- 0 -	65.74	18.56	84.3	
Fo – 824.00										
2Fo 1.648	36.50	V	Peak	25.70	2.2	- 0 -	64.4	19.90	84.3	
2Fo 1.648	36.50	H	Peak	25.70	2.2	- 0 -	64.4	19.90	84.3	
3Fo 2.472	33.00	V	Peak	28.37	2.7	- 0 -	64.07	20.23	84.3	
3Fo 2.472	33.00	H	Peak	28.37	2.7	- 0 -	64.07	20.23	84.3	
Harmonic Emissions on all three channels 4Fo – 10Fo at or below noise floor										
Channel	Frequency in GHz	Harmonics Observed @3m			Limit 84.3 dBuV/m					
Low Ch.	807.00									
4Fo – 10Fo	3.228 – 8.070	None measureable < noise floor			All emissions > 20 dB below the limit					
Mid Ch.	815.00									
4Fo – 10Fo	3.260 – 8.150	None measureable < noise floor			All emissions > 20 dB below the limit					
High Ch.	824.00									
4Fo - 10Fo	3.296 – 8.240	None measureable < noise floor			All emissions > 20 dB below the limit					

Note: A sample calculation on following page.

Test: Equivalent Isotropic Radiated Power

FCC ID: AZ489FT7004
 Grantee: Motorola, Inc.
 Model: F4415A

Discussion:

Measurements of the EIRP were made at 3 meters EUT to antenna spacing. The EUT was investigated in three mutually orthogonal planes. The maximum levels reported below were observed with the HDT 600 flat on it's back on the table. Turntable rotation, combined with antenna height and polarization adjustments were made to maximize the measured levels.

FREQUENCY MHz	Maximum Spectrum Analyzer Reading dBuV	Ant Factor D-4 Di-pole Sn:1335 Vertical Polarization	Cable Loss	dBuV/m	uV/m	EIRP Watts
807.0	97.83	27.8	1.75	127.38	2338837.239	1.64
815.0	97.83	28.0	1.75	127.58	2393315.756	1.71
824.0	98.17	28.2	1.75	128.12	2546830.253	1.94

Sample calculation for 3 meter radiated spurious limit

This example is based on a 1 Watt peak conducted output power and Part 90.210 (g) requirements.

$$43 + 10\log(1 W) = 43 \text{ dB}$$

Therefore the spurious emissions must be reduced below the carrier by 43 dB.

$$1 \text{ Watt or } 125.2289 \text{ dBuV/m} - 43 \text{ dB} = 82.2 \text{ dBuV/m}$$

$$\text{Referenced to a half wavelength tuned di-pole: } 82.2\text{dBuV/m} + 2.1 \text{ dB} = 84.3 \text{ dBuV/m}$$

Therefore the 3 meter radiated spurious emissions limit is 84.3 dBuV/m.