November 25, 1998

Mitsubishi Consumer Electronics America, Inc.
ATTN: Simon Jung
CMT Group
2001 Cherry Drive
Braselton, GA 30517

Dear Mr. Jung:

Enclosed please find a copy of the test data for the following project:

U.S. Tech Project #:	98-623
Mitsubishi Tracking #:	Unknown
Model:	MT261
Type of Test:	Spurious Emissions for 47CFR 24.238(a)
Test Date(s):	10/12/98 - 10/17/98
Final Test Date:	N/A
Tested By:	Roger Bowen

Engineer Present: Simon Jung

Thank you for this opportunity to be of service to Mitsubishi. Should you have any questions or need further assistance please don't hesitate to call.

Sincerely,
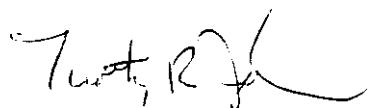
Timothy R. Johnson
Lab Manager

MEASUREMENT PROCEDURE Subpart 2.993(a) and 24.238(a)

Field Strength of Spurious Radiation

Radiated spurious emissions were evaluated for frequencies outside the occupied band while the EUT was transmitting into a non-radiating load. Spurious emissions were evaluated from 30 MHz to 19 GHz at an EUT to antenna distance of 3 meters. Measurements for 30 to 1000 MHz were made with the analyzer's bandwidth set to 120 kHz. Measurements above 1000 MHz were made with the analyzer's bandwidth set to 1 MHz. The power output of the EUT was measured at the antenna terminals and the following values obtained: 691.8 mW (1.85020 GHz), 724.4 mW (1.88000 GHz), and 794.3 mW (1.90973 GHz). This level is used in the following calculations for the purpose of comparing the fundamental to the spurious radiation measurements as shown in Table 1. Since the EUT was a hand held device, it was rotated about all axis in order to obtain the highest possible spurious emission at each frequency measured.

The spurious measurements made are compared to the level the transmitter would produce at 3 meters if connected to an ideal 1/2 wave dipole using:

$$E = \frac{(30\ Pt\ Gt)^{1/2}}{d}\ \text{volts per meter}$$

E = Field intensity (volts per meter)

Pt = Measured power output of transmitter (watts)

Gt = Gain of antenna (1.64 for 1/2 wave dipole)

d = distance (meters)

Example: The 0.6918 watt transmitter would produce

$$\frac{[(30)(0.6918)(1.64)]^{1/2}}{3.0}\ \text{volts per meter} = 1,944,695\ \text{uV/m @ 3m}$$

converting uV/m to dBm @ 3 meters yields

20 log (1,944,695) - 107 = 18.8 dBm @ 3 meters for the low channel.

Similiar calculations were performed in order to obtain 19.0 dBm @ 3 meters for the middle channel and 19.4 dBm for the high channel.

FCC Minimum Standard
$43 + 10\ Log_{10}\ (P)$ = attenuation below carrier (dB) = Minimum Attenuation in dB

FIELD STRENGTH OF SPURIOUS RADIATION (Subpart 2.993(a) and 24.238(a))

TEST DATE: November 12 - November 17, 1998
UST PROJECT: 98-623
CUSTOMER: Mitsubishi
MODEL: MT261

FCC Minimum Standard: 43 + 10 log (.6918) = 41.4 dB attenuation

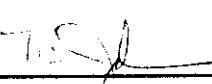## TABLE 1a

EUT Transmit Frequency = 1.85020 GHz

FREQ. (GHz)	MEASUREMENT @ 3 m* (dBm)	CORRECTION AF + CL - AMP GAIN	CORRECTED MEASUREMENT @ 3 m (dBm)	ATTENUATED LEVEL BELOW CARRIER POWER (dB)
3.70	-45.0	3.4	-41.6	60.4
5.55	-36.4	7.1	-29.3	48.1
7.40	-46.9	9.7	-37.2	56.0
9.26	-49.2	12.1	-37.1	55.9

* - Data corrected by 1.0 dB for insertion loss of high pass filter

SAMPLE CALCULATION:

Results dBm @ 3m:

-45.0 + 3.4 = -41.6

**Test Results
Reviewed By
Signature:** _____ **Name:** __Tim Johnson__

FIELD STRENGTH OF SPURIOUS RADIATION (Subpart 2.993(a) and 24.238(a))

TEST DATE: November 12 - November 17, 1998
UST PROJECT: 96-623
CUSTOMER: Mitsubishi
MODEL: MT261

FCC Minimum Standard: 43 + 10 log (.7244) = 41.6 dB attenuation

TABLE 1b

EUT Transmit Frequency = 1.88000 GHz

FREQ. (GHz)	MEASUREMENT @ 3 m* (dBm)	CORRECTION AF + CL - AMP GAIN	CORRECTED MEASUREMENT @ 3 m (dBm)	ATTENUATED LEVEL BELOW CARRIER POWER (dB)
3.76	-47.2	3.6	-43.6	62.6
5.64	-36.6	7.3	-29.3	48.3
7.52	-44.8	10.1	-34.7	53.7

* - Data corrected by 1.0 dB for insertion loss of high pass filter

SAMPLE CALCULATION:

Results dBm @ 3m:

-47.2 + 3.6 = -43.6

Test Results Reviewed By Signature: _____ **Name:** ___Tim Johnson___

FIELD STRENGTH OF SPURIOUS RADIATION (Subpart 2.993(a) and 24.238(a))

TEST DATE: November 12 - November 17, 1998
UST PROJECT: 98-623
CUSTOMER: Mitsubishi
MODEL: MT261

FCC Minimum Standard: 43 + 10 log (.7943) = 42.0 dB attenuation

TABLE 1c

EUT Transmit Frequency = 1.90980 GHz

FREQ. (GHz)	MEASUREMENT @ 3 m* (dBm)	CORRECTION AF + CL - AMP GAIN	CORRECTED MEASUREMENT @ 3 m (dBm)	ATTENUATED LEVEL BELOW CARRIER POWER (dB)
3.82	-42.9	4.0	-38.9	58.7
5.73	-35.4	7.5	-28.9	48.3
9.55	-42.6	11.4	-31.2	50.6

* - Data corrected by 1.0 dB for insertion loss of high pass filter

SAMPLE CALCULATION:

Results dBm @ 3m:

-42.9 + 4.0 = -38.9

Tests Results
Reviewed By
Signature: _____ **Name:** ___Tim Johnson___