

JESMAY

FCC ID.:NOQJM2064R

EXHIBIT 3

Test Report With EUT Photograph



Test Report

For

Applicant : Jesmay Electronics Co., Ltd.

Equipment Type : Sender

Model : 2062, 2064

FCC ID : NOQJM2064R

Report No. : 995039F

Test Report Certification

QuieTek Corporation

No.75-1, Wang-Yeh Valley, Yung-Hsing, Chiung-Lin,
Hsin-Chu County, Taiwan, R.O.C.

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Accredited by NIST(NVLAP), VCCI, BSMI, DNV, TUV

Applicant : Jesmay Electronics Co., Ltd.
Address : 74, Chung-Der 20th Street, Tainan, Taiwan, R.O.C.
Equipment Type : Sender
Model : 2062, 2064
FCC ID. : NOQJM2064R
Measurement Standard : FCC Part 15
TV Interface Device for Subpart B Paragraph 15.115
418Mhz Intentional Radiators for Subpart C Paragraph 15.231
PERIODIC TRANSMITTER
Measurement Procedure : ANSI C63.4 /1992
Operation Voltage : 120Vac/60Hz
Test Result : Complied
Test Date : Jun. 4, 1999
Report No. : 995039F

NVLAP[®]

The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented by: Kim Huang



Test Engineer: Jeff Chen



Approved: Gene Chang



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1. General Information

1.1 EUT Description

Applicant : Jesmay Electronics Co., Ltd.
Address : 74, Chung-Der 20th Street, Tainan, Taiwan,
R.O.C.
Equipment Type : Sender
Model : 2062, 2064
FCC ID : NOQJM2064R
Channel Number : 1
Working Frequency : 418 MHz
Operation Voltage : 120Vac/60Hz
TV hook-up Cable : Non-shielded, 1.8m
Audio/Video RCA Cable : Non-shielded, 1.8m
Power Adapter : MFR, Model
Cable Out: Non-shielded, 1.7m

Remark 1. This device is a 2.4Ghz wireless Video Sender included a 2.4Ghz receiving function, a 418Mhz transmitting function, an Audio/Video port and a RF output.
2. This device has 2 different models but the designing circuit and construction are same. The 2062 device is without IR-remote extender and the 2064 is with IR-remote extender.
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart B Paragraph 15.115 and Subpart C Paragraph 15.231.
4. This device is a composite device in accordance with Part 15 regulations. The function for the 2.4Ghz receiving was, measured and made a test report that the report number is 995040F, certified under Verification. The function for connecting to personal computer was, measured and made a test report that the report number is 995041F, certified under Declaration of Conformity.

1.2 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

1.2.1 None

1.3 EUT Exercise Software

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

- 1.4.1 Setup the EUT and simulators as shown on 1.3.
- 1.4.2 Turn on the power of all equipment.
- 1.4.3 Audio/Video Data will emit the fundamental frequency with Audio/Video data to Receiver.
- 1.4.4 Repeat the above procedure 1.4.2 to 1.4.4

1.4 Test performed

Conducted emissions were invested over the frequency range from **0.15MHz to 30MHz** using a receiver bandwidth of 9KHz.

Radiated emissions were invested over the frequency range from **30MHz to 1000MHz** using a receiver bandwidth of 120KHz and the frequency range from **1Ghz to 4Ghz** using a receiver bandwidth of 1Mhz.

Radiated testing was performed at an antenna to EUT distance of 3 meters .

1.5 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: November 3, 1998 File on

Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2



September 30, 1998 Accreditation on NVLAP

NVLAP Lab Code: 200347-0



February 23, 1999 Accreditation on DNV
Statement No. : 413-99-LAB11

December 8, 1998 Registration on VCCI
Registration No. for No.2 Shielded Room C-858
Registration No. for No.1 Open Area Test Site R-823
Registration No. for No.2 Open Area Test Site R-835



January 04, 1999 Accreditation on TUV Rheinland
Certificate No.: I9865712-9901



Name of firm : QuieTek Corporation

Site location : No.75-1, Wang-Yeh Valley, Yung-Hsing Tsuen,
Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.



2. Conducted Emission

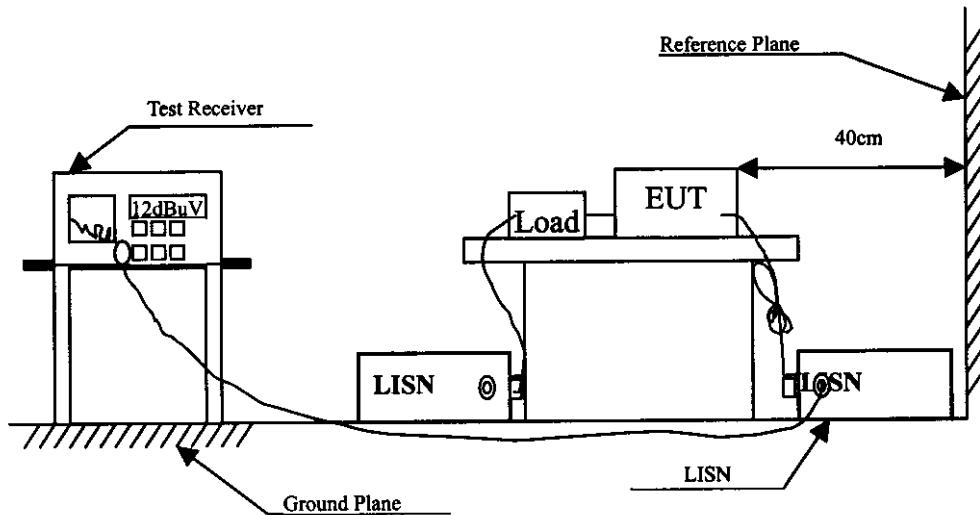
2.1 Test Equipment List

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal..	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 1999	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 1999	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 1999	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	N/A	
5	N0.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2 Test Setup



2.3 Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency MHz	Limits	
	uV	dBuV
0.45 - 30	250	48.0

2.4 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 /1992 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9Khz.

2.5 Test Results

The conducted emission from the EUT is measured and shown in Chapter 6. The acceptance criterion was met and the EUT passed the test.

3. Radiated Emission

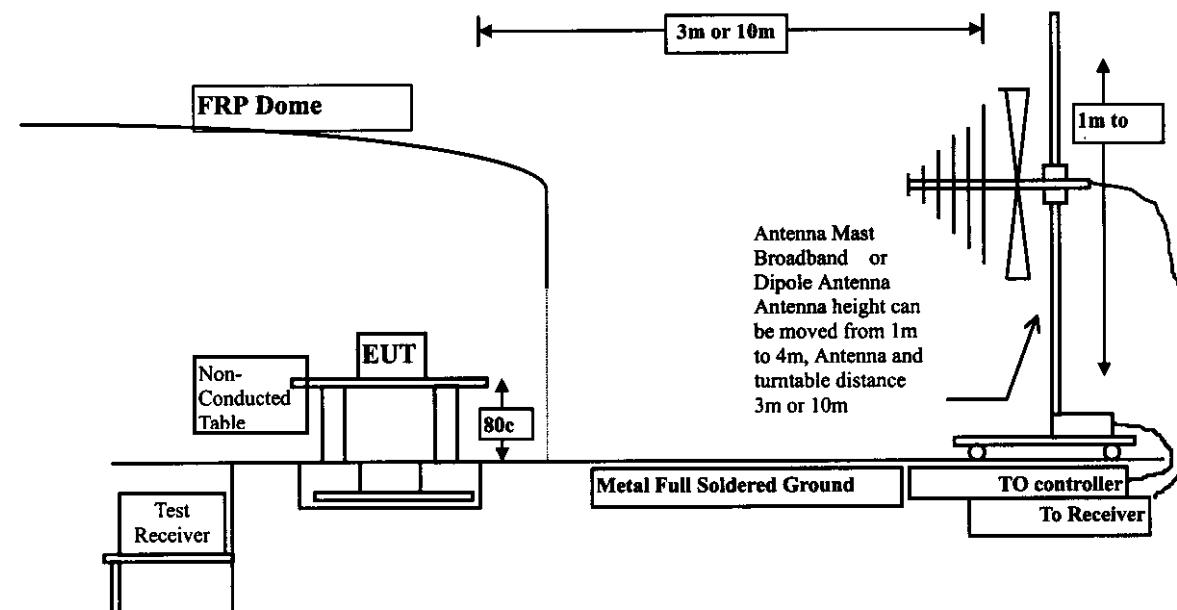
3.1 Test Equipment

The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 1	X Test Receiver	R & S	ESCS 30 / 825442/14	May, 1999
	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1999
	Pre-Amplifier	HP	8447D/3307A01812	May, 1999
	X Bilog Antenna	Chase	CBL6112B / 12452	Sep., 1998
Site # 2	X Horn Antenna	EM	EM6917 / 103325	May, 1999
	X Test Receiver	R & S	ESCS 30 / 825442/17	May, 1999
	Spectrum Analyzer	Advantest	R3261C / 71720609	May, 1999
	Pre-Amplifier	HP	8447D/3307A01814	May, 1999
X Bilog Antenna	Chase	CBL6112B / 2455	Sep., 1998	
	X Horn Antenna	EM	EM6917 / 103325	May, 1999

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
2.. Mark "X" test instruments are used to measure the final test results.

3.2 Test Setup



3.3 Limits

➤ FCC Part 15 Subpart C Paragraph 15.231 Limit

Fundamental Frequency MHz	Field strength of fundamental		Field Strength of spurious emissions	
	uV/m	dBuV/m	uV/m	dBuV/m
40.66-40.70	2250	67.0	225	47.0
70-130	1250	61.9	125	41.9
130-174	1250-3750 ¹	61.9 – 71.5	125-375 ¹	41.9 – 51.5
174-260	3750	71.5	375	51.5
260-470	3750-12500 ¹	71.5 – 81.9	375-1250 ¹	51.5 – 61.9
above 470	12500	81.9	1250	61.9

Remarks : 1. RF Line Voltage (dBuV) = 20 log RF Line Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

➤ Frequencies in restricted band are complied to limits on Paragraph 15.209.

Frequency MHz	15.209 Limits (dBuV/m @3m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remarks : 1. RF Line Voltage (dBuV) = 20 log RF Line Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters .

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4 /1992 on radiated measurement.

The bandwidth below 1Ghz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 Khz and above 1Ghz is 1Mhz.

3.5 Test Results

The radiated emission from the EUT is measured and shown in Chapter 6. The acceptance criterion was met and the EUT passed the test.

4. Output Signal Level (TV Function)

4.1 Test Equipment

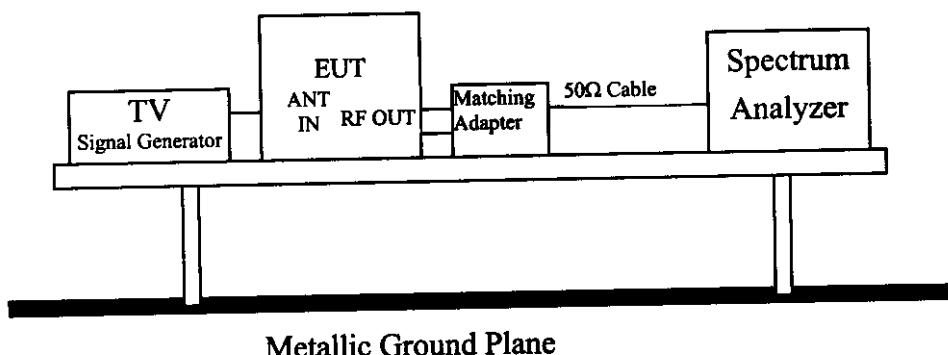
The following test equipment are used during the radiated emission test:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1999
Matching Adapter	Stack	MI-01/9903S101	Feb., 1999

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

4.2 Test Setup

Shielded Room



4.3 Limits

➤ FCC Part 15 Subpart B Paragraph 15.115 (b)(1)(ii) Limit

Channel	Signal	Frequency MHz	Limits dBuV/75Ω
# 3	Video	61.25	69.5
# 3	Audio	61.75	56.5
# 4	Video	67.25	69.5
# 4	Audio	67.75	56.5

4.4 Test Procedure

The EUT and its simulators are placed on a table which is 0.8 meter above ground. Configure the EUT System in accordance with Section 4.2. The RF output terminal is connected to the spectrum analyzer through the matching adapter with a calibrated 50Ω coaxial cable. The unused input/output terminals are terminated in the proper impedance.

Set the spectrum analyzer as follows:

Frequency Span : 1MHz
Resolution Bandwidth : 100KHz
Video bandwidth : 3MHz
Detector Function : Peak mode

The RF output signal level is measured under the EUT condition produced the maximum signal level.

4.5 Test Results

The output signal level from the EUT is measured and shown in Chapter 6. The acceptance criterion was met and the EUT passed the test.

5. Output Terminal Conducted Spurious Emission (TV Function)

5.1 Test Equipment

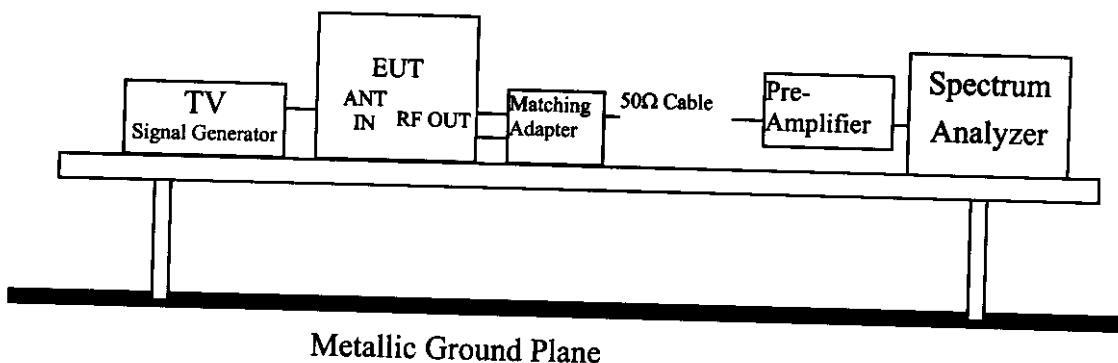
The following test equipment are used during the radiated emission test:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1999
Pre-Amplifier	HP	8447D/3307A01812	May, 1999
Matching Adapter	Stack	MI-01/9903S101	Feb., 1999

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

5.2 Test Setup

Shielded Room



5.3 Limits

➤ FCC Part 15 Subpart B Paragraph 15.115 (b)(2)(ii) Limit

Channel	Video Frequency MHz	Frequency Range (Video-4.6 or Video+7.4MHz) MHz	Limits dBuV/75Ω
# 3	61.25	30 - 56.65	39.5
		68.65 - 1000	39.5
# 4	67.25	30 - 62.65	39.5
		74.65 - 1000	39.5

5.4 Test Procedure

The EUT and its simulators are placed on a table which is 0.8 meter above ground. Configure the EUT System in accordance with Section 4.2. The RF output terminal is connected to the spectrum analyzer through the matching adapter with a calibrated 50Ω coaxial cable. The unused input/output terminals are terminated in the proper impedance.

Set the spectrum analyzer as follows:

Frequency Span : 1MHz
Resolution Bandwidth : 100KHz
Video bandwidth : 3MHz
Detector Function : Peak mode

The spectrum was scanned from 30 MHz to more than 4.6 MHz below the video carrier frequency and from more than 7.4 above the video carrier frequency to 1000 MHz, and three highest emissions are selected under the EUT condition produced the maximum signal level.

5.5 Test Results

The Output Terminal Conducted Spurious Emission from the EUT is measured and shown in Chapter 6. The acceptance criterion was met and the EUT passed the test.

6. Summary of Test Results

The test results in the emission were performed according to the requirements of measurement standard and process. QuieTek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The test data of the emission are listed as the attached data.

All the tests were carried out with the EUT in normal operation, which was defined as:

- (1) Mode 1: 2064

The EUT passed all the tests.

The uncertainty is calculated in accordance with NAMAS NIS 81, The total uncertainty for this test is as follows:

➤ Emission Test

- Uncertainty in the Conducted Emission Test: $< \pm 2.0$ dB
- Uncertainty in the field strength measured: $< \pm 4.0$ dB

CONDUCTED EMISSION DATA

Date of Test	:	Jun. 4, 1999	EUT	:	Sender
Test Mode	:	Mode 1	Detect Mode	:	Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level	Measurement Level	Limits
			Line1 dBuV	Line1 dBuV	dBuV
0.481	0.06	0.10	35.17	35.33	48.00
0.563	0.07	0.10	35.27	35.44	48.00
0.595	0.07	0.10	34.65	34.82	48.00
0.645	0.08	0.10	32.65	32.83	48.00
0.673	0.08	0.10	31.08	31.26	48.00
1.086	0.11	0.10	19.44	19.65	48.00

Remarks :

1. “ * ” means that this data is the worse emission level.

CONDUCTED EMISSION DATA

Date of Test : Jun. 4, 1999 EUT : Sender
Test Mode : Mode 1 Detect Mode : Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level	Measurement Level	Limits
			Line2 dBuV	Line2 dBuV	dBuV
0.497	0.06	0.10	43.06	43.22	48.00
0.568	0.07	0.10	41.70	41.87	48.00
0.619	0.07	0.10	40.65	40.82	48.00
0.641	0.08	0.10	39.99	40.17	48.00
0.900	0.09	0.10	36.73	36.92	48.00
1.018	0.10	0.10	33.07	33.27	48.00

Remarks :

1. “ * ” means that this data is the worse emission level.

Radiated Emission Data

Date of Test	:	Jun. 4, 1999	EUT	:	Sender
Test Mode	:	Mode 1	Test Site	:	No.1 Open Test Site

Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
Loss	Factor			Level	Horizontal				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg

QP Detector

Fundamental Frequency

416.200	2.99	17.39	26.00	81.63	76.01	4.19	80.20	0	0
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Spurious Frequency

832.700	5.14	20.72	26.00	53.28	53.14	7.06	60.20	0	0
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Average Detector

Spurious Frequency

1254.200	0.75	25.52	35.19	62.72	53.80	6.40	60.20	0	0
1672.300	1.00	27.05	34.71	62.20	55.54	4.66	60.20	0	0
2089.850	1.26	28.42	34.50	59.70	54.88	5.32	60.20	0	0
2508.200	1.51	29.53	34.50	56.59	53.13	7.07	60.20	0	0
2926.500	1.75	30.59	34.66	46.90	44.58	15.62	60.20	0	0
3344.150	2.00	31.38	34.70	47.11	45.79	14.41	60.20	0	0
3762.500	2.25	32.07	34.50	47.42	47.25	12.95	60.20	0	0
4180.350	2.54	32.72	34.34	45.12	46.05	14.15	60.20	0	0

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

$60.20 \text{ dB } \mu\text{V/m}$ $50.20 \text{ dB } \mu\text{V/m}$
 $1,032 \mu\text{V/m} \text{ at } 0.3\text{m}$ $10,332 \mu\text{V/m at } 0.3\text{m}$



General Radiated Emission Data

Date of Test	:	Jun. 4, 1999	EUT	:		Sender	
Test Mode	:	Mode 1	Test Site				
Freq. Cable Probe PreAMP Reading Measurement Margin Limit Ant Turn							
		Loss Factor	Level	Vertical			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

QP Detctor

Fundamental Frequency

416.200	2.99	17.26	26.00	81.64	75.89	4.31	80.20	0	0
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Spurious Frequency

832.700	5.14	20.65	26.00	52.69	52.48	7.72	60.20	0	0
---------	------	-------	-------	-------	-------	------	-------	---	---

Average Detector

Spurious Frequency

1254.200	0.75	25.52	35.19	56.23	47.31	12.89	60.20	0	0
1672.300	1.00	27.05	34.71	62.16	55.50	4.70	60.20	0	0
2090.300	1.26	28.42	34.50	58.23	53.41	6.79	60.20	0	0
2508.600	1.51	29.53	34.50	52.65	49.19	11.01	60.20	0	0
2926.150	1.75	30.59	34.66	50.98	48.66	11.54	60.20	0	0
3344.300	2.00	31.38	34.70	47.24	45.92	14.28	60.20	0	0
3762.500	2.25	32.07	34.50	48.74	48.57	11.63	60.20	0	0
4180.250	2.54	32.72	34.34	47.31	48.24	11.96	60.20	0	0

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss



Output Signal Level Data

Date of Test	:	Jun. 4, 1999	EUT	:	Sender
Test Mode	:	Mode 1	Test Site	:	No.3 Shielded Room

Emission Frequency (MHz)	Correction Factor (dB)	Reading Level (dBuV/50Ω)	Measurement Level (dBuV/75Ω)	Limits (dBuV/75Ω)
Test Channel #3				
61.25	2.0	64.7	66.7	69.5
65.75	2.1	48.75	50.85	56.5
Test Channel #4				
67.25	2.1	63.42	65.52	69.5
67.75	2.1	49.65	51.75	56.5

Output Terminal Conducted Spurious Emission Data

Date of Test	:	Jun. 4, 1999	EUT	:	Sender
Test Mode	:	Mode 1	Test Site	:	No.3 Shielded Room

Emission Frequency (MHz)	Correction Factor (dB)	Reading Level (dBuV/50Ω)	Measurement Level (dBuV/75Ω)	Limits (dBuV/75Ω)
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Test Channel #3

36.24	2.0	18.72	20.72	39.5
47.80	2.0	20.42	22.42	39.5
52.40	2.1	25.30	27.40	39.5
123.70	2.2	31.22	33.42	39.5
183.70	2.4	30.55	32.95	39.5
247.60	2.6	22.42	23.02	39.5

Test Channel #4

42.32	2.0	18.42	20.42	39.5
49.26	2.0	19.20	21.20	39.5
58.44	2.1	24.80	26.90	39.5
134.30	2.2	32.90	35.10	39.5
201.70	2.4	28.65	31.05	39.5
627.30	3.1	19.80	22.90	39.5

7. **EMI Reduction Method During Compliance Testing**

No modification was made during testing.

