



EMC Test Data

Client:	Microwave Data Systems	Job Number:	J63298
Model:	Mercury OFDM	Test-Log Number:	T63364
		Project Manager:	Esther Zhu
Contact:	Dennis McCarthy		
Emissions Spec:	FCC	Class:	A
Immunity Spec:	-	Environment:	-

EMC Test Data

For The

Microwave Data Systems

Model

Mercury OFDM

Date of Last Test: 7/18/2006



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EUT INFORMATION

The following information was collected during the test sessions(s).

General Description

The EUT is a 900 MHz wireless transceiver for ethernet data networks. There are two versions of the radio, a base (aka Master) unit and a remote (aka Subscriber) unit. The rf circuitry in both devices is identical. The digital device (modem) boards are the only difference between the two units.

Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
MDS	Mercury 900-R	900 MHz TRx (Remote)	1234567	E5MDS-Mercury900
MDS	Mercury 900-AP	900 MHz TRx (Base)		E5MDS-Mercury900

EUT Enclosure

The EUT enclosure is primarily constructed of cast aluminum. It measures approximately 18 cm wide by 10 cm deep by 4 cm high.

Modification History

Mod. #	Test	Date	Modification
1	Emissions (Remote)	5/18/2006	Modified digital board to rev 2
2	Emissions (Remote)	7/14/2006	Modified digital board to rev 2

Modifications applied are assumed to be used on subsequent tests unless otherwise stated as a further modification.



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Test Configuration #1 - Remote/Subscriber Unit

The following information was collected during the test sessions(s).

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	Latitude D510	Laptop	Not serialized	DoC
Topward	-	Power Supply	-	-

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
None	-	-	-	-

Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
Serial	Laptop serial	Multiwire	Shielded	1.5
10/100 BaseT	Laptop Ethernet	CAT 5	Unshielded	3.0
DC Power	Power supply	2 wire	Unshielded	2.0

EUT Operation During Emissions Tests

During emissions testing the EUT was in receive-mode with the ethernet interface active.



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Test Configuration #2

The following information was collected during the test sessions(s).

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
ACER	710TE	Laptop	9147A0132184900016M	DoC
IBM	ThinkPad (2371-87U)	Laptop	KV-41187	DoC
Protek	PUP55-13-HD	AC-DC adapter	336	N/A

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
None	-	-	-	-

Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
EUT Serial	ACER Laptop serial	Multiwire	Shielded	1.5
EUT 10/100 BaseT	IBM Laptop Ethernet	CAT 5	Unshielded	3.0
DC Power	Power supply	2 wire	Unshielded	2.0

Note: The device is a class A device and not a PC peripheral, therefore minimum system configuration does not apply.

EUT Operation During Emissions Tests

During radiated emissions testing the EUT was in receive-mode with the ethernet interface active. For conducted emissions measurements the transmitter was set to continuous transmit mode, center channel.



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Spec:	FCC	Class:	A

Conducted Emissions - Power Ports

Test Specifics

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/18/2006
Test Engineer: Rafael Varelas
Test Location: SVOATS #2

Config. Used: 2
Config Change: -
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT was located above a ground plane, 80 cm from the LISN. A second LISN was used for any local support equipment.

Ambient Conditions:
Temperature: 27 °C
Rel. Humidity: 49 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	Remote AC Power, 120V/60Hz	FCC 15.109 Class B	Pass	40.7dB μ V (108.4 μ V) @ 27.158MHz (-9.3dB)
2	Master AC Power, 120V/60Hz	FCC 15.109 Class B	Pass	40.6dB μ V (107.2 μ V) @ 8.597MHz (-9.4dB)

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

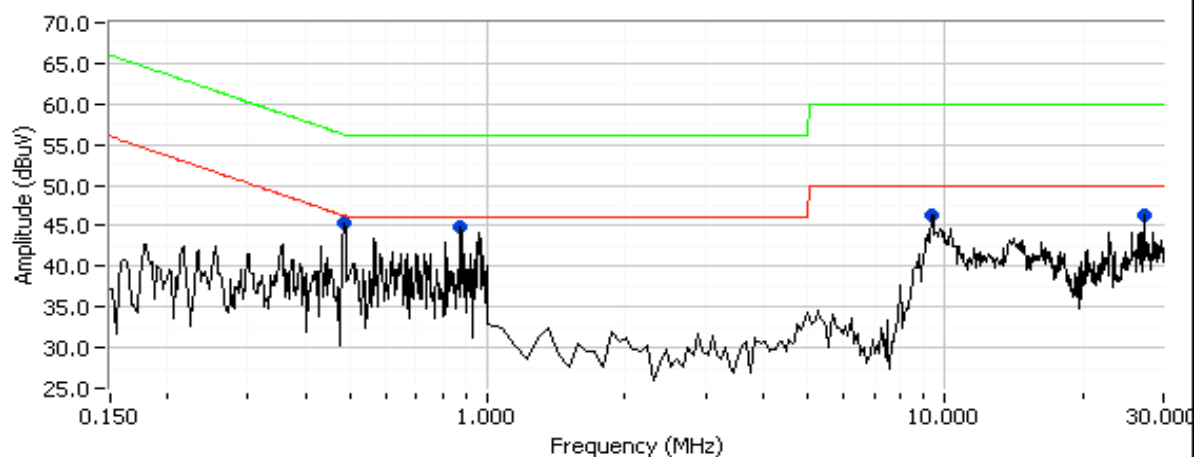


EMC Test Data

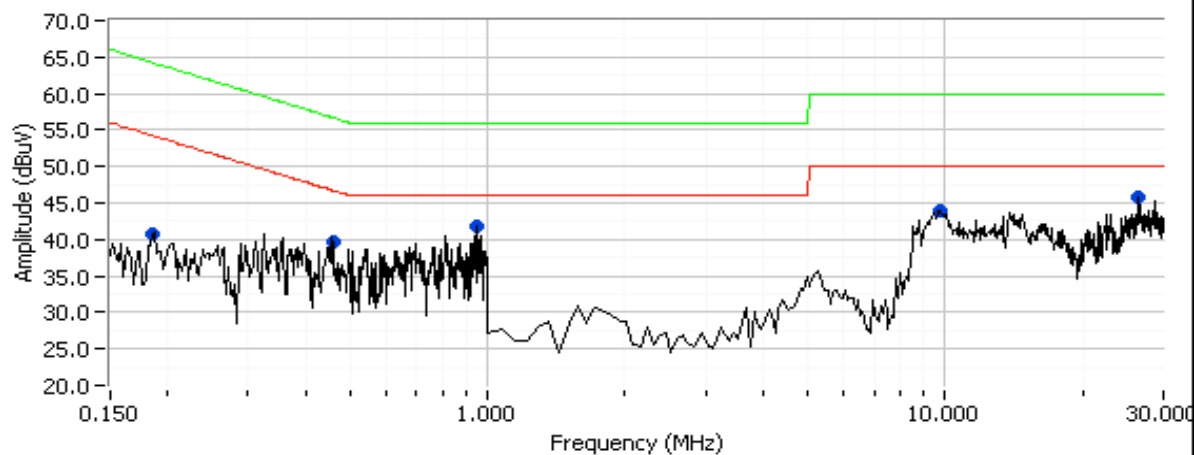
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Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz - Remote Unit

Run #1: .15-30MHz, Line



Run #1: .15-30MHz, Neutral





EMC Test Data

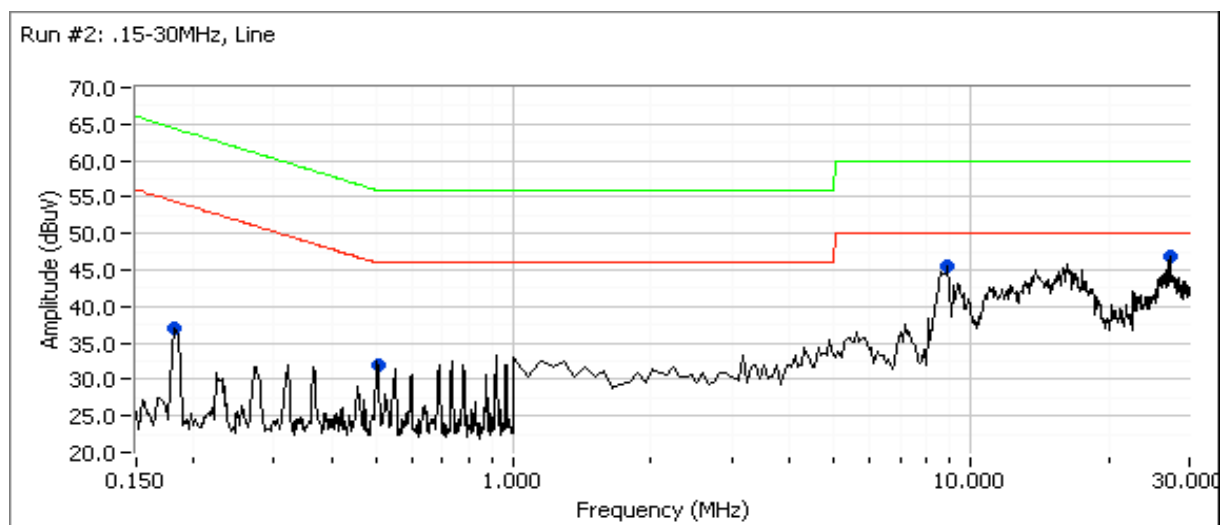
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Spec:	FCC	Class:	A

Run #1: Continued

Frequency MHz	Level dB μ V	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
27.158	40.7	Line	50.0	-9.3	Average	
9.510	40.4	Line	50.0	-9.6	Average	
9.706	40.1	Neutral	50.0	-9.9	Average	
26.487	40.1	Neutral	50.0	-9.9	Average	
9.510	44.1	Line	60.0	-15.9	QP	
0.956	29.8	Line	46.0	-16.2	Average	
9.706	43.3	Neutral	60.0	-16.7	QP	
27.158	43.0	Line	60.0	-17.0	QP	
26.487	42.6	Neutral	60.0	-17.4	QP	
0.956	30.2	Line	56.0	-25.8	QP	
0.950	19.5	Neutral	46.0	-26.5	Average	
0.950	21.5	Neutral	56.0	-34.5	QP	

Note 1: Limit covers RSS 210, FCC 15.209 and FCC 15.109

Run #2: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz - Base Unit

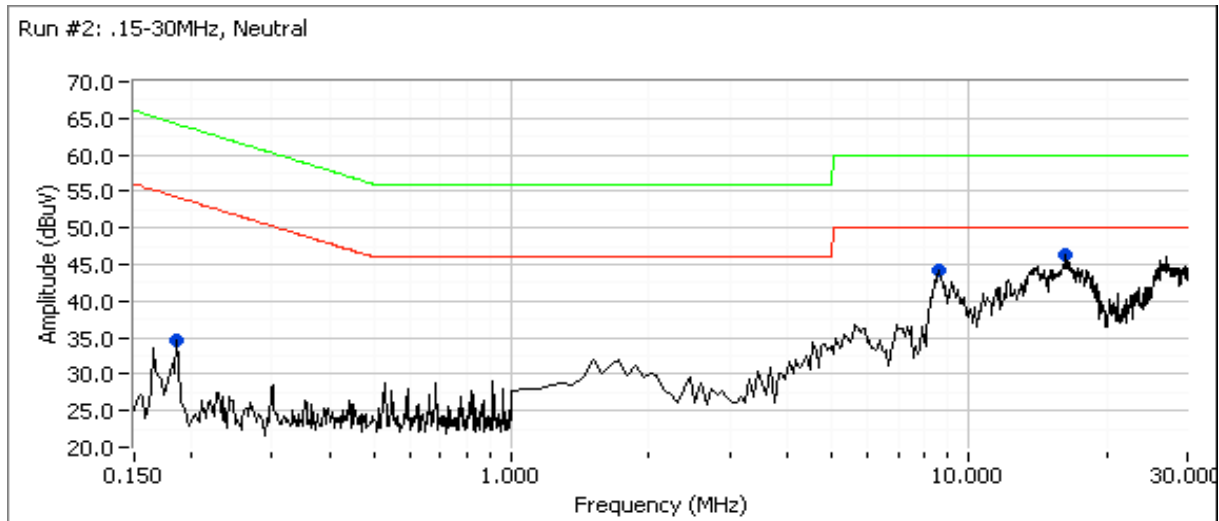




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Spec:	FCC	Class:	A

Run #2: Continued



Frequency MHz	Level dBuV	AC Line	Class B		Detector QP/Ave	Comments
			Limit	Margin		
8.597	40.6	Neutral	50.0	-9.4	Average	
27.129	40.5	Line	50.0	-9.5	Average	
16.396	40.2	Neutral	50.0	-9.8	Average	
8.698	37.7	Line	50.0	-12.3	Average	
16.396	44.9	Neutral	60.0	-15.1	QP	
27.129	44.2	Line	60.0	-15.8	QP	
8.597	43.8	Neutral	60.0	-16.2	QP	
0.501	29.3	Line	46.0	-16.7	Average	
8.698	42.5	Line	60.0	-17.5	QP	
0.501	30.1	Line	56.0	-25.9	QP	
0.182	25.6	Line	54.4	-28.8	Average	
0.182	34.3	Line	64.4	-30.1	QP	
0.182	23.3	Neutral	54.4	-31.1	Average	
0.182	31.9	Neutral	64.4	-32.5	QP	

Note 1: Limit covers RSS 210, FCC 15.209 and FCC 15.109

Radiated Emissions, 30 -3,000 MHz, 18-May-06**Engineer: Mark Briggs**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Elliott Laboratories	Biconical Antenna, 30-300 MHz	EL30.300	54	07-Mar-07
EMCO	Log Periodic Antenna, 0.3-1 GHz	3146A	364	17-Nov-06
Hewlett Packard	EMC Spectrum Analyzer, 9 KHz-26.5 GHz	8593EM	1141	10-Jun-06
Hewlett Packard	Microwave Preamplifier 0.5-26.5 GHz	83017A	1257	28-Sep-06
EMCO	Antenna, Horn, 1-18 GHz	3117	1662	07-Apr-07
Hewlett Packard	Preamplifier	8447D OPT 010	1826	02-May-07

Radiated Emissions, 30 - 1,000 MHz, 19-May-06**Engineer: Mark Briggs**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Log Periodic Antenna, 0.2-2 GHz	3148	1321	30-Mar-07
Rohde & Schwarz	Test Receiver, 0.009-2750 MHz	ESN	1332	23-May-06
EMCO	Biconical Antenna, 30-300 MHz	3110B	1498	03-Mar-07

Preliminary Scans - Radiated Emissions (Receiver/Digital Device - Master Unit), 14-Jul-06**Engineer: Mark Briggs**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Log Periodic Antenna, 0.3-1 GHz	3146A	364	17-Nov-06
Hewlett Packard	EMC Spectrum Analyzer, 9 kHz - 6.5 GHz	8595EM	780	26-Aug-06
EMCO	Biconical Antenna, 30-300 MHz	3110B	801	03-Aug-06
Hewlett Packard	Microwave Preamplifier 0.5-26.5 GHz	83017A	1257	28-Sep-06
EMCO	Antenna, Horn, 1-18 GHz	3117	1662	07-Apr-07
Hewlett Packard	Preamplifier	8447D OPT 010	1826	02-May-07

Conducted Emissions - AC Power Ports, 18-Jul-06**Engineer: Rafael Varelas**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Elliott Laboratories	LISN-2 + 2 (Solar 8028 + 6512 Cap)	LISN-1	198	19-Dec-06
Elliott Laboratories	LISN, FCC / CISPR	LISN-4, OATS	362	30-Jun-07
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	372	06-Sep-06
Hewlett Packard	EMC Spectrum Analyzer, 9 kHz - 6.5 GHz	8595EM	787	10-Jan-07
Rohde & Schwarz	Test Receiver, 0.009-2750 MHz	ESN	1332	23-Aug-06