



EMC Test Data

Client: Aperto	Job Number: J44068
Model: Packet Wave 1000 Base Station Unit	T-Log Number: T44079
	Proj Eng: Enter on cover sheet
Contact: Tim Cyr	
Spec: FCC / EN55022 B	Class: B

Radiated Emissions

Test Specifics

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

Date of Test: 7/9/01	Config. Used: 1
Test Engineer: Joseph Cadigal	Config Change:
Test Location: SVOATS #2	EUT Voltage: 120V / 60Hz

General Test Configuration

The EUT was located on the turntable for radiated emissions testing. Remote support equipment was located approximately 30 meters from the test area with all I/O connections routed overhead.

On the OATS, the measurement antenna was located 10 meters from the EUT for the measurement range 30 - 1000 MHz and 3m from the EUT for the frequency range 1 - 10 GHz.

For radiated emissions testing below 30 MHz the measurement antenna was located 3 meters from the EUT, unless otherwise noted. Radiated magnetic field measurements were made with the loop antenna located one meter above the ground plane, with the loop of the antenna either parallel or perpendicular to the EUT. Radiated electric field measurements were made using an active rod antenna located on the ground plane.

Note, **preliminary** testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. **Maximized** testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, and manipulation of the EUT's interface cables.

Note, for testing above 1 GHz, the FCC specifies the limit as an average measurement. In addition, the FCC states that the peak reading of any emission above 1 GHz, can not exceed the average limit by more than 20 dB.

Ambient Conditions: Temperature: 23°C
Rel. Humidity: 59%

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	RE, Preliminary Scan 30 - 1000 MHz	FCC B	Eval	Refer to individual runs
2	RE, 30 - 1000MHz - Maximized Emissions	FCC B	Pass	-2.8dB @ 933.5MHz
3	RE, 1000 - 2000 MHz Maximized Emissions	FCC B	Pass	-17.08dB @ 1199.945MHz



EMC Test Data

Client: Aperto	Job Number: J44068
Model: Packet Wave 1000 Base Station Unit	T-Log Number: T44079
	Proj Eng: Enter on cover sheet
Contact: Tim Cyr	
Spec: FCC / EN55022 B	Class: B

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.

Run #1: Preliminary Radiated Emissions, 30-1000 MHz

Frequency	Level	Pol	FCC B		Detector	Azimuth	Height	Comments
MHz	dB μ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
933.500	34.2	V	37.0	-2.8	QP	0	4.0	
734.000	32.6	V	37.0	-4.4	QP	226	3.5	
800.000	32.5	H	37.0	-4.5	QP	360	2.2	
34.100	23.0	V	30.0	-7.0	QP	360	4.0	
31.400	22.0	V	30.0	-8.0	QP	360	1.0	
499.500	28.2	H	37.0	-8.8	QP	242	3.3	
400.000	27.4	V	37.0	-9.6	QP	265	1.0	
113.700	20.1	H	30.0	-9.9	QP	232	4.0	
57.497	20.0	V	30.0	-10.0	QP	0	1.0	broadband

Run #2: Maximized Readings From Run #1

Frequency	Level	Pol	FCC B		Detector	Azimuth	Height	Comments
MHz	dB μ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
933.500	34.2	V	37.0	-2.8	QP	0	4.0	
734.000	32.6	V	37.0	-4.4	QP	226	3.5	
800.000	32.5	H	37.0	-4.5	QP	360	2.2	
34.100	24.0	V	30.0	-6.0	QP	360	4.0	
31.400	22.0	V	30.0	-8.0	QP	360	1.0	
499.500	28.4	H	37.0	-8.6	QP	242	3.3	



EMC Test Data

Client: Aperto					Job Number: J44068			
Model: Packet Wave 1000 Base Station Unit					T-Log Number: T44079			
					Proj Eng: Enter on cover sheet			
Contact: Tim Cyr								
Spec: FCC / EN55022 B					Class: B			
Run #3: Maximized readings, 1000 - 2000 MHz								
Measurements made at 3m test distance and extrapolated to 10m using -10.5 correction factor.								
Frequency	Level	Pol	FCC B		Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1199.945	36.9	H	54.0	-17.1	Avg	103	1.0	Average reading, average limit
1133.510	36.8	V	54.0	-17.2	Avg	206	1.0	Average reading, average limit
1199.831	35.5	V	54.0	-18.5	Avg	163	1.0	Average reading, average limit
1132.846	55.2	V	74.0	-18.8	Pk	206	1.0	Peak reading, peak limit
1066.521	34.0	V	54.0	-20.0	Avg	143	1.0	Average reading, average limit
1000.043	32.2	V	54.0	-21.8	Avg	202	1.0	Average reading, average limit
1233.596	31.5	V	54.0	-22.5	Avg	152	1.0	Average reading, average limit
1199.850	50.1	V	74.0	-23.9	Pk	163	1.0	Peak reading, peak limit
1067.167	44.8	V	74.0	-29.2	Pk	143	1.0	Peak reading, peak limit
1200.120	44.1	H	74.0	-29.9	Pk	103	1.0	Peak reading, peak limit
1000.345	43.2	V	74.0	-30.8	Pk	202	1.0	Peak reading, peak limit
1234.071	43.2	V	74.0	-30.8	Pk	152	1.0	Peak reading, peak limit



EMC Test Data

Client: Aperto	Job Number: J44068
Model: Packet Wave 1000 Base Station Unit	T-Log Number: T44079
	Proj Eng: Enter on cover sheet
Contact: Tim Cyr	
Spec: FCC / EN55022 B	Class: B

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: 7/9/01	Config. Used: 1
Test Engineer: Joseph Cadigal	Config Change:
Test Location: SVOATS #2	EUT Voltage: 120V/ 60Hz

General Test Configuration

For tabletop equipment, the EUT was located on a wooden table, 40 cm from a vertical coupling plane and 80cm from the LISN. Remote support equipment was located approximately 30 meters away from the test area, with all I/O connections routed overhead.

Ambient Conditions: Temperature: 23°C
Rel. Humidity: 59%

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power 120V/60Hz	EN55022 B	Pass	-32.2dB @ .164MHz

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

Client: Aperto		Job Number: J44068			
Model: Packet Wave 1000 Base Station Unit		T-Log Number: T44079			
		Proj Eng: Enter on cover sheet			
Contact: Tim Cyr					
Spec: FCC / EN55022 B		Class: B			
Run #1: AC Power Port Conducted Emissions, 0.12 - 30MHz, 120V/60Hz					
Frequency	Level	AC	EN55022 B	Detector	Comments
MHz	dBμV	Line	Limit	Margin	QP/Ave
0.164	33.0	Line 1	65.2	-32.2	QP
0.165	33.3	Neutral	65.0	-31.7	QP
0.245	36.0	Neutral	61.8	-25.8	QP
0.245	35.9	Line 1	61.8	-25.9	QP
11.768	14.8	Neutral	60.0	-45.2	QP
13.114	9.7	Line 1	60.0	-50.3	QP
15.505	10.0	Line 1	60.0	-50.0	QP
0.164	26.7	Line 1	55.2	-28.5	AV
0.165	26.5	Neutral	55.0	-28.5	AV
0.245	33.8	Neutral	51.8	-18.0	AV
0.245	33.5	Line 1	51.8	-18.3	AV
11.768	12.1	Neutral	50.0	-37.9	AV
13.114	7.9	Line 1	50.0	-42.1	AV
15.505	8.2	Line 1	50.0	-41.8	AV