

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 1 of 23

Applicant: REPIDTRADE (HK) CO., LTD.

**Description of Samples:** Model name: AM/FM/AIR Band Scanner Radio  
Model no.: Air-Scan®V  
Brand name: Sporty's  
FCC ID: R7ERTSP127

**Date Samples Received:** 2004-03-11

**Date Tested:** 2004-03-23 to 2004-04-13

**Investigation Requested:** FCC PART 15 SUBPART B

**Conclusions:** See the attached sheets for details

**Remarks:** ----

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K C Lee, EMC  
for Chief Executive

**CONTENT:**

Cover	Page 1 of 23
Content	Page 2-3 of 23
Conclusions	Page 4 of 23

**1.0 General Details**

1.1 Test Laboratory	Page 5 of 23
1.2 Applicant Details	Page 5 of 23
Applicant	
HKSTC Code Number for Applicant	
Manufacturer	
1.3 Equipment Under Test [EUT]	Page 6 of 23
Description of EUT operation	
1.4 Date of Order	Page 6 of 23
1.5 Submitted Samples	Page 6 of 23
1.6 Test Duration	Page 6 of 23
1.7 Country of Origin	Page 6 of 23
1.8 Additional Information of EUT	Page 7 of 23

**2.0 Technical Details**

2.1 Investigations Requested	Page 8 of 23
2.2 Test Standards and Results Summary	Page 8 of 23

**3.0 Test Results**

3.1 Emission	Page 9-15 of 23
--------------	-----------------

Date: 2004-05-03  
No.: HM150337

## **TEST REPORT**

Page 3 of 23

### **Appendix A**

List of Measurement Equipment

Page 16 of 23

### **Appendix B**

Photographs

Page 17-23 of 23

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 4 of 23

### CONCLUSIONS

The submitted product was deemed to have COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

Date: 2004-05-03  
No.: HM150337

## **TEST REPORT**

Page 5 of 23

### **1.0 General Details**

#### **1.1 Test Laboratory**

The Hong Kong Standards and Testing Centre Ltd.  
EMC Laboratory  
10 Dai Wang Street, Taipo Industrial Estate  
New Territories, Hong Kong

Telephone: 852 2666 1888  
Fax: 852 2664 4353

#### **1.2 Applicant Details**

**Applicant**

REPIDTRADE (HK) CO., LTD.  
Flat F, 9/F Valiant Ind. Centre, 12 Au Pui Wan St.,  
Fotan, N.T., Hong Kong.

**HKSTC Code Number for Applicant**

**REH002**

**Manufacturer**

GOLDEN WEALTH INDUSTRIAL LIMITED.  
Flat G, 9/F Valiant Ind. Centre, 12 Au Pui Wan St.,  
Fotan, N.T., Hong Kong.

**1.3 Equipment Under Test [EUT]**  
**Description of Sample**

Model Name: AM/FM/AIR Band Scanner Radio  
Manufacturer: Golden Wealth Industrial Ltd.  
Brand Name: Sporty's  
Model Number: Air-Scan®V  
Input Voltage: 9Vd.c. ("C" size battery x 6) with jack  
The AC/DC Adaptor used for the tests was provided by the applicant with the following details: Model Number: T3515-09D-300, Input: 120Va.c. 60Hz 5.3W, Output: 9Vd.c. 300mA

**1.3.1 Description of EUT Operation**

The Equipment Under Test (EUT) is a Repidtrade (HK) Co., Ltd, AM/FM/AIR Band Scanner Radio.

**1.4 Date of Order**

2004-03-11

**1.5 Submitted Sample(s):**

4 samples per model

**1.6 Test Duration**

2004-03-23 to 2004-04-13

**1.7 Country of Origin**

China

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 7 of 23

### 1.8 Additional Information of EUT

	Submitted	Not Available
User Manual	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Part List	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Circuit Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Printed Circuit Board [PCB] Layout	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC DOC Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## 2.0 Technical Details

### **2.1 Investigations Requested**

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI C63.4: 2003 for FCC Certification.

### **2.2 Test Standards and Results Summary Tables**

EMISSION Results Summary						
Test Condition	Test Requirement	Test Method	Test Result			
			Pass	Failed	N/A	
Radiated Emissions, 30MHz to 1GHz	FCC 47CFR 15.109	ANSI C63.4:2003	Class B	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conducted Emissions on AC, 0.15MHz to 30MHz	FCC 47CFR 15.107	ANSI C63.4:2003	Class B	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: N/A - Not Applicable

### 3.0 Test Results

#### 3.1 Emission

##### 3.1.1 Radiated Emissions (30 – 1000MHz)

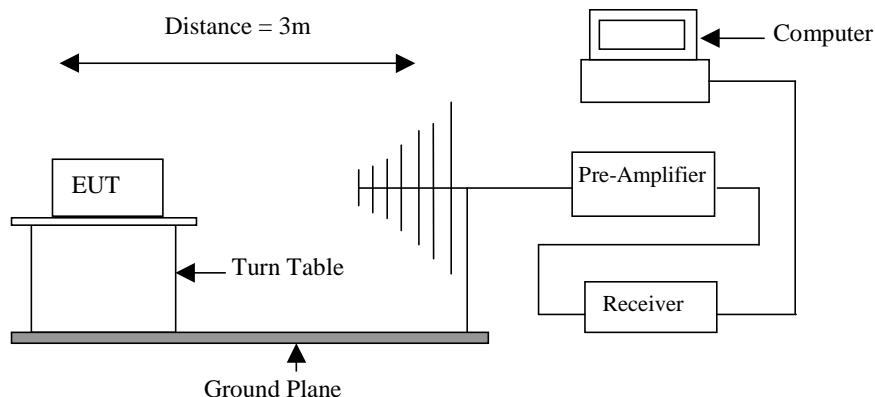
Test Requirement: FCC 47CFR 15.109  
Test Method: ANSI C63.4:2003  
Test Date: 2004-03-26  
Mode of Operation: On Mode

##### Test Method:

The sample was placed 0.8m above the ground plane on the OATS \*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\*: OATS [Open Area Test Site] located at HKSTC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 90657.

##### Test Setup:

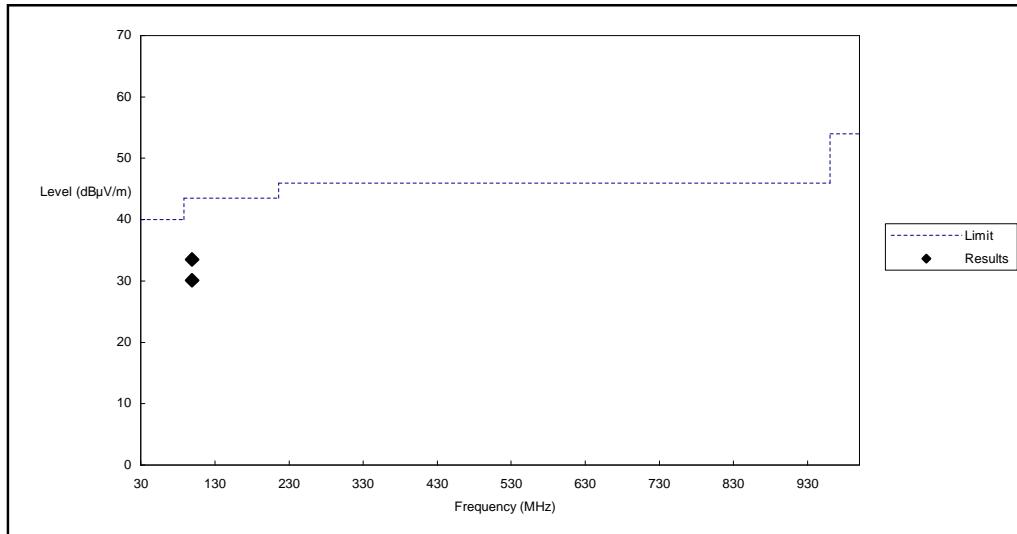


**Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:**

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results: On Mode (FM Radio)**



Radiated Emissions Quasi-Peak						
Tuned Frequency MHz	Emission Frequency MHz	Measured Level@3m dB $\mu$ V/m	Limit .@3m dB $\mu$ V/m	Measured Level@3m $\mu$ V/m	Limit .@3m $\mu$ V/m	E-Field Polarity
88.3	99	33.5	43.5	47.3	150	Horizontal
88.3	99	30.1	43.5	32.0	150	Vertical

Remarks:

IF = 10.70MHz

Calculated measurement uncertainty:  $\pm 4.1$ dB

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

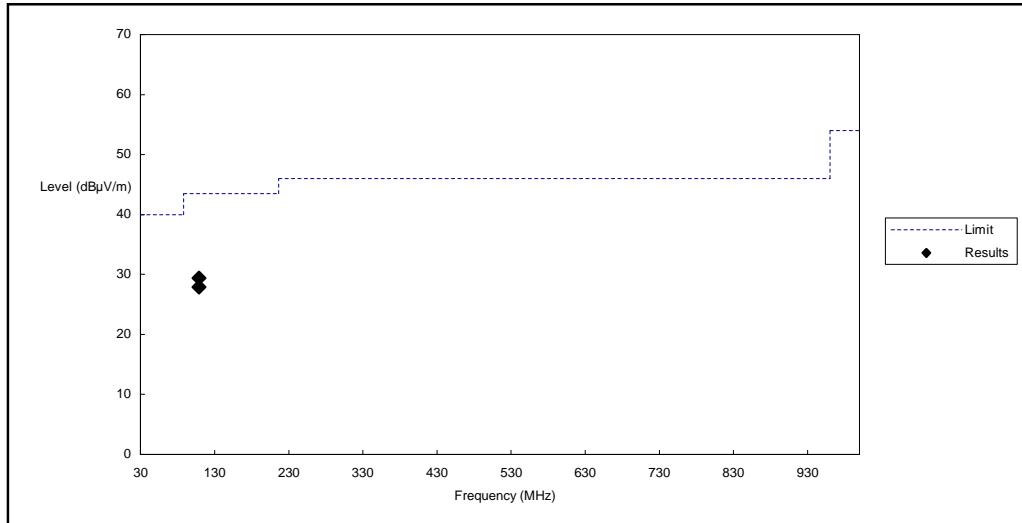
Page 11 of 23

### Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### Results: On Mode (FM Radio)



Radiated Emissions Quasi-Peak						
Tuned Frequency MHz	Emission Frequency MHz	Measured Level@3m dB $\mu$ V/m	Limit .@3m dB $\mu$ V/m	Measured Level@3m $\mu$ V/m	Limit .@3m $\mu$ V/m	E-Field Polarity
98.3	109	29.4	43.5	29.5	150	Horizontal
98.3	109	27.9	43.5	24.8	150	Vertical

### Remarks:

IF = 10.70MHz

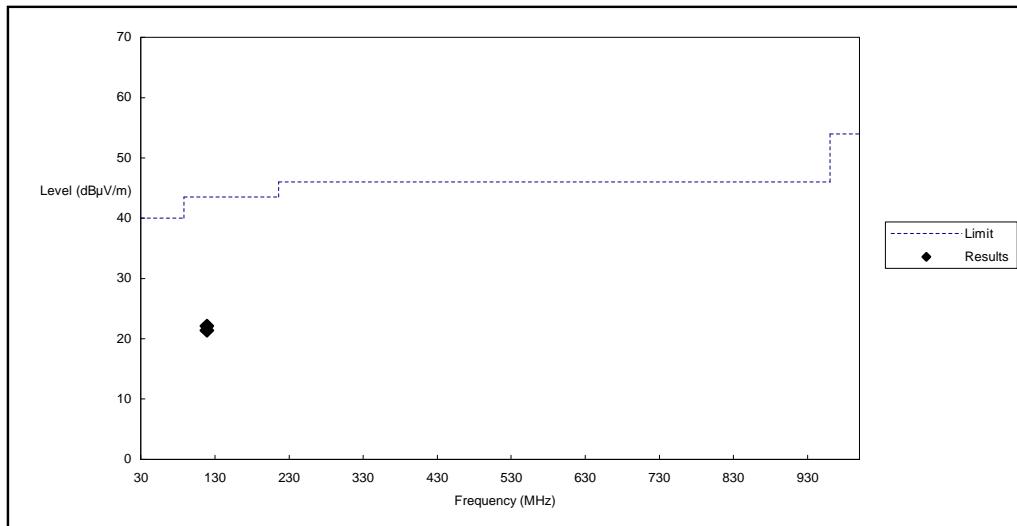
Calculated measurement uncertainty:  $\pm 4.1$ dB

**Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:**

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results: On Mode (FM Radio)**



Radiated Emissions Quasi-Peak						
Tuned Frequency MHz	Emission Frequency MHz	Measured Level@3m dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Measured Level@3m $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
108.3	119	22.1	43.5	12.7	150	Horizontal
108.3	119	21.4	43.5	11.7	150	Vertical

Remarks:

IF = 10.70MHz

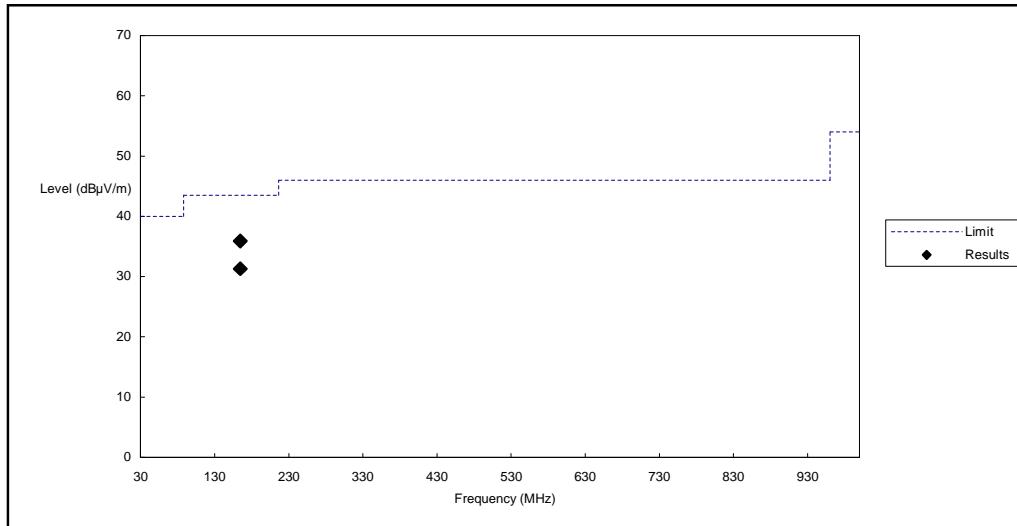
Calculated measurement uncertainty:  $\pm 4.1$ dB

**Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:**

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results: On Mode (Air Band)**



Radiated Emissions Quasi-Peak						
Tuned Frequency MHz	Emission Frequency MHz	Measured Level@3m dB $\mu$ V/m	Limit .@3m dB $\mu$ V/m	Measured Level@3m $\mu$ V/m	Limit .@3m $\mu$ V/m	E-Field Polarity
142.9	164.4	35.9	43.5	62.4	150	Horizontal
142.9	164.4	31.3	43.5	36.7	150	Vertical

Remarks:

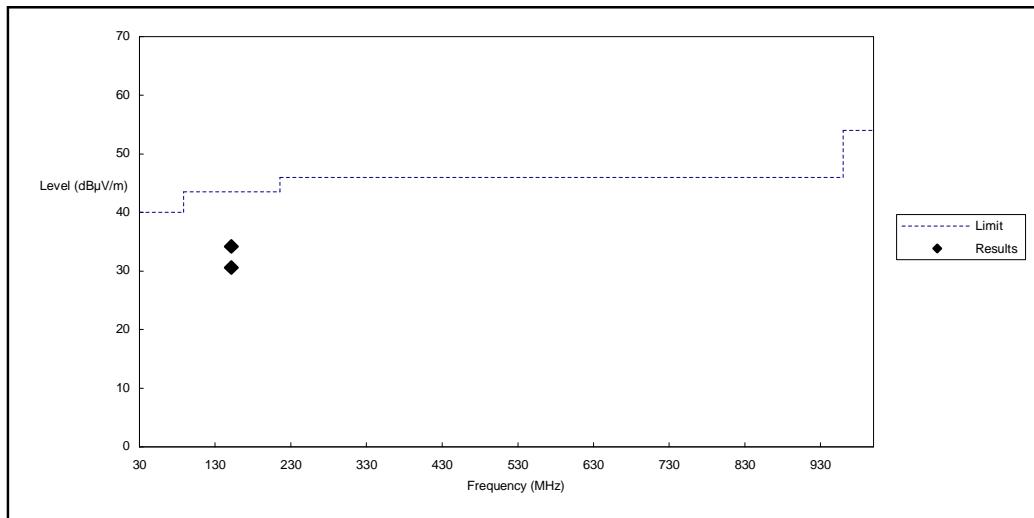
Calculated measurement uncertainty:  $\pm 4.1$ dB

**Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:**

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results: On Mode (Air Band)**



Radiated Emissions Quasi-Peak						
Tuned Frequency MHz	Emission Frequency MHz	Measured Level@3m dB $\mu$ V/m	Limit .@3m dB $\mu$ V/m	Measured Level@3m $\mu$ V/m	Limit .@3m $\mu$ V/m	E-Field Polarity
130.4	151.4	34.2	43.5	51.3	150	Horizontal
130.4	151.4	30.6	43.5	33.9	150	Vertical

Remarks:

Calculated measurement uncertainty:  $\pm 4.1$ dB

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

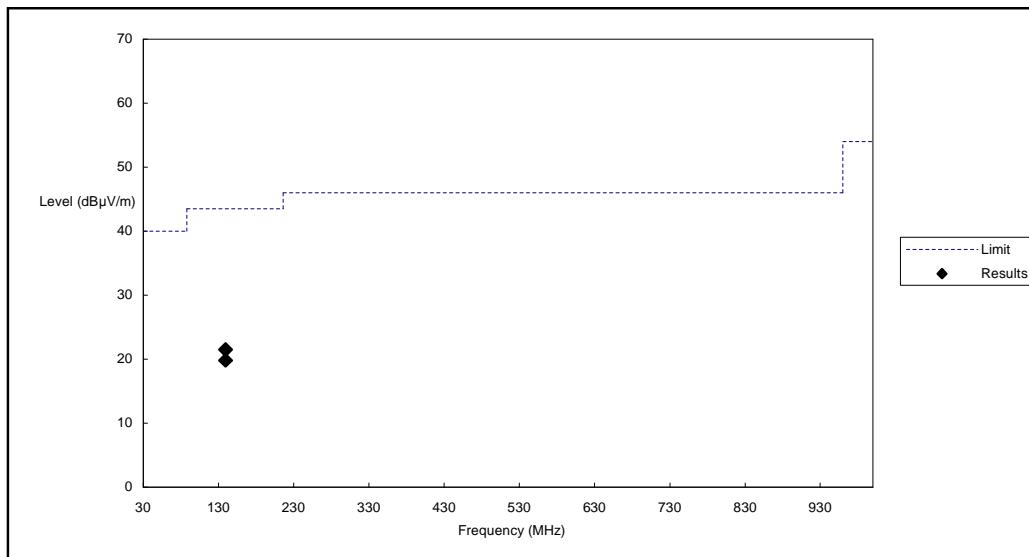
Page 15 of 23

### Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### Results: On Mode (Air Band)



Radiated Emissions Quasi-Peak						
Tuned Frequency MHz	Emission Frequency MHz	Measured Level@3m dB $\mu$ V/m	Limit .@3m dB $\mu$ V/m	Measured Level@3m $\mu$ V/m	Limit .@3m $\mu$ V/m	E-Field Polarity
118	139.4	21.5	43.5	11.9	150	Horizontal
118	139.4	19.8	43.5	9.8	150	Vertical

Remarks:

Calculated measurement uncertainty:  $\pm 4.1$ dB

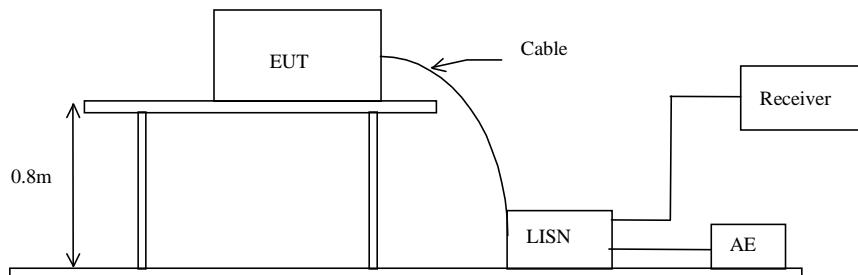
**3.1.1 Conducted Emissions (0.15MHz to 30MHz)**

Test Requirement:	FCC 47CFR 15.107
Test Method:	ANSI C63.4:2003
Test Date:	2004-03-23
Mode of Operation:	On mode

**Test Method:**

The test was performed in accordance with ANSI C63.4: 2003, with the following: an initial measurement was performed in peak and average detection mode on the live line. Any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

**Test Setup:**



Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 17 of 23

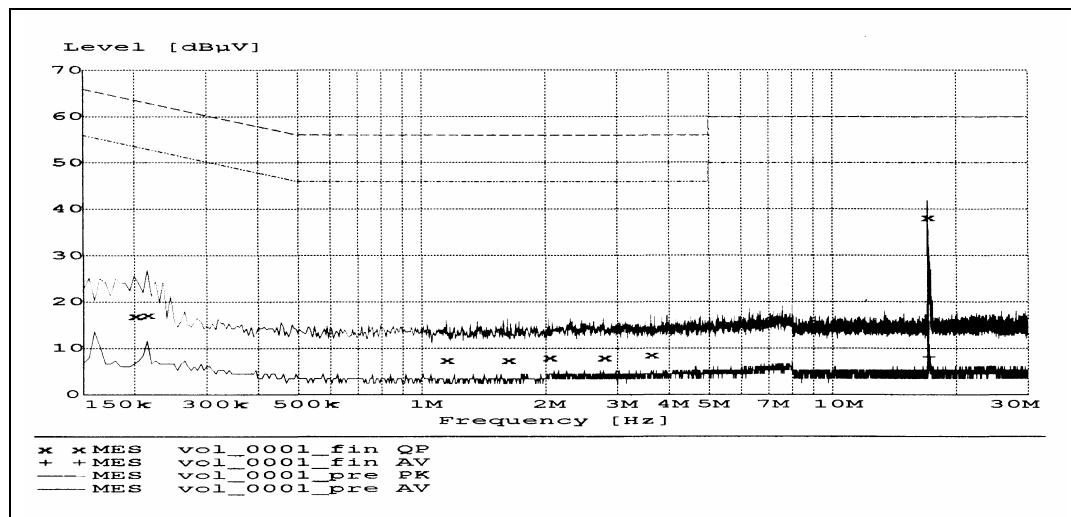
### Limits for Conducted Emissions (FCC 47 CFR 15.107):

Frequency Range [MHz]	Quasi-Peak Limits [dB $\mu$ V]	Average [dB $\mu$ V]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

\* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram labelled as (QP and AV).

### Result: FM Mode



Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 18 of 23

### Results: FM Mode

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dB <sub>U</sub> V	Limit dB <sub>U</sub> V	Level dB <sub>U</sub> V	Limit dB <sub>U</sub> V
Live	0.215	17.1	63	-*-	-*-
Live	1.620	7.4	56	-*-	-*-
Live	2.040	8.0	56	-*-	-*-
Live	2.775	8.0	56	-*-	-*-
Live	4.636	-*-	-*-	4.6	46
Neutral	0.200	16.9	64	-*-	-*-
Neutral	1.150	7.4	56	-*-	-*-
Neutral	3.620	8.5	56	-*-	-*-
Neutral	17.080	-*-	-*-	8.1	50
Neutral	17.095	38.1	60	-*-	-*-

### Remarks:

Calculated measurement uncertainty:  $\pm 2.8\text{dB}$   
-\*- Emission greater than 30dB below limit line.

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 19 of 23

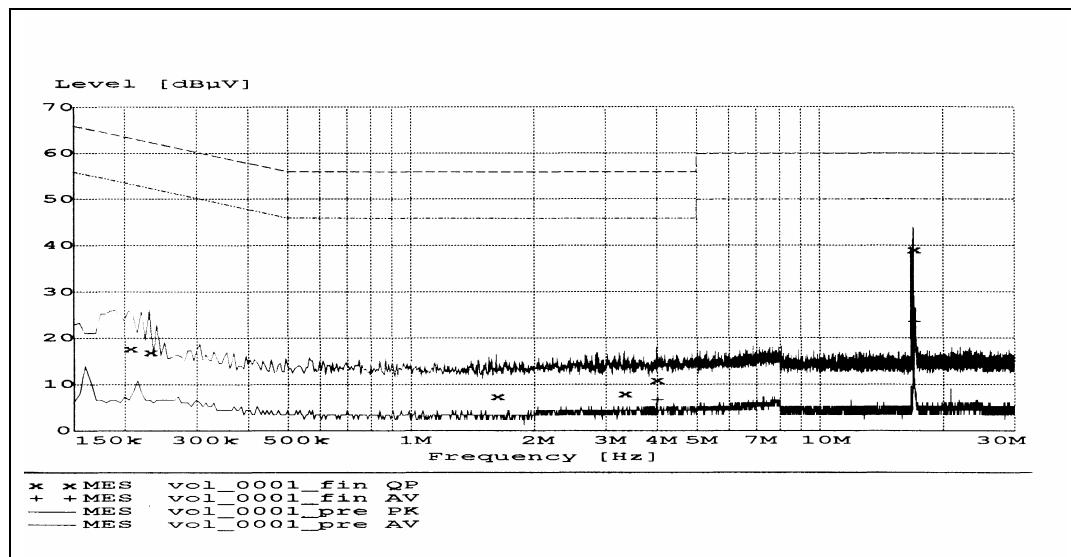
### Limits for Conducted Emissions (FCC 47 CFR 15.107):

Frequency Range [MHz]	Quasi-Peak Limits [dB $\mu$ V]	Average [dB $\mu$ V]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

\* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram labelled as (QP and AV).

### Results: Air Mode



**Results: Air Mode**

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dB <sub>U</sub> V	Limit dB <sub>U</sub> V	Level dB <sub>U</sub> V	Limit dB <sub>U</sub> V
Live	0.230	16.9	62.0	-*-	-*-
Neutral	0.205	17.7	63.0	-*-	-*-
Neutral	1.620	7.4	56.0	-*-	-*-
Neutral	3.335	8.0	56.0	-*-	-*-
Neutral	3.985	10.9	56.0	6.7	46.0
Neutral	16.985	-*-	-*-	23.5	50.0
Neutral	16.995	39.1	60.0	-*-	-*-

Remarks:

Calculated measurement uncertainty:  $\pm 2.8\text{dB}$   
-\*- Emission greater than 30dB below limit line.

**Appendix A**

**Test Equipment Audit**

**Radiated Emission**

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM007	SPECTRUM ANALYZER	HEWLETT PACKARD	HP85660B	3144A21192	14/03/03
EM008	SPECTRUM ANALYZER DISPLAY	HEWLETT PACKARD	HP85662A	3144A20514	14/03/03
EM009	QUASI PEAK ADAPTOR	HEWLETT PACKARD	HP85650A	3303A01702	14/03/03
EM010	RF PRESELECTOR	HEWLETT PACKARD	HP85685A	3221A01410	14/03/03
EM011	ATTENUATOR/SWITCH	HEWLETT PACKARD	HP11713A	2508A10595	14/03/03
EM012	PRE-AMPLIFIER	HEWLETT PACKARD	HP8449B	3008A00262	14/03/03
EM013	CONTROLLER (COMPUTER), COLOR MONITOR, KEYBOARD & MOUSE FLOPPY DRIVE	HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD	HP9000 HP A1097C HP9133L	6226A60314 3151J39517 2623A02468	CM
EM020	HORN ANTENNA	EMCO	3115	4032	19/07/00
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	04/08/00
EM072	SIGNAL GENERATOR	HEWLETT PACKARD	8640B	1948A11892	N/A
EM083	HKSTC OPEN AREA TEST SITE	HKSTC	N/A	N/A	08/11/02
EM131	PORTABLE SPECTRUM ANALYSER	HEWLETT PACKARD	8595EM	3710A00155	18/12/01
EM145	EMI TEST RECEIVER	R & S	ESCS 30	830245/021	02/08/03
EM194	BICONILOG ANTENNA	EMCO	3142B	1795	14/05/02
EM195	ANTENNA POSITIONING MAST	EMCO	2075	2368	N/A
EM196	MULTI-DEVICE CONTROLLER	EMCO	2090	1662	N/A

**Conducted Emission**

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM078	VARIAC	SHANGHAI VOLTAGE	TDGC-3/0.5	N/A	CM
EM081	SMALL SCREENED ROOM	MIKO INST HK	N/A	N/A	04/10/01
EM119	LISN	R & S	ESH3-Z5	0831.5518.52	31/08/00
EM127	ISOLATION TRANSFORMER 220 TO 300	WING SUN	N/A	N/A	CM
EM142	PULES LIMITER	R & S	ESH3Z2	357.8810.52	04/07/01
EM181	EMI TEST RECEIVER	R & S	ESIB7	100072	28/11/01
EM154	SHIELDING ROOM	SIEMENA MATSUSHITA COMPONENTS	N/A	803-740-057- 99A	02/01/02
EM197	LISN	EMCO	4825/2	1193	08/04/03

Remarks:

CM      Corrective Maintenance  
N/A     Not Applicable or Not Available  
TBD    To Be Determined

Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 22 of 23

### Appendix B

#### Photographs of EUT

Front View of the product



Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



Date: 2004-05-03  
No.: HM150337

## TEST REPORT

Page 23 of 23

### Photographs of EUT

Measurement of Radiated Emission Test Set Up



Measurement of Conducted Emission Test Set Up



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