中山科學研究院
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Doc. No.	EMCRPT-QA3-99-024
Revision	A

Total pages (including this page): 13

中山科學研究院 測試報告專用章 電磁相容試驗

Title：

RS101 Test Report for LCD Monitor

APPLICANT	Company: iTech Company LLC TEL: 1-888-483-2418 Address: 41758 Christy Street,Fremont CA 94538 USA

附註：

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TESTING REPORT

EQUIPMENT TYPE :	20.1 Multimedia LCD Monitor
MODEL NO. :	WMRM920-PIP
SERIAL NO. :	WMRM920-PIP
BRAND NAME :	N/A
RECEIVED DATE :	April 13, 2010
TESTED DATE :	May 20, 2010
COMPLTED DATE :	May 20, 2010
STANDARDS :	MIL-STD-461F
TEST ITEM :	RS101
PERIPHERY :	Desktop PC without mouse and keyboard
CABLE :	AC Power Cord
POWER CORD :	Unshielding
TEST RESULT :	PASS
NOTE :	Input power AC 110 V
APPLICANT :	iTech Company LLC
ADDRESS :	41758 Christy Street,Fremont CA 94538 USA
TEL :	1-888-483-2418
TESTED LAB :	Electronic Systems Research Division, CSIST EMC Lab., CSIST
LAB LOCATION :	No.15, Shyr-Chi-Tzu , LunTang, Taoyuan 325, Taiwan, R.O.C. Tel.: +886-3-445-9715 Fax.: +886-3-4716878

核准簽名：(報告簽署人/試驗室負責人)/日期
Approved Signature :（Report Signer /Chief of LAB.） Shuenyh Hwang 2010/06/29

CONTENTS

1. SCOPE OF WORK

The 20.1 Multimedia LCD Monitor, manufactured by WinMate Communication, INC., has been tested according to the following specification:

◇ MIL-STD-461F, 10 December 2007, "Requirements for the control of electromagnetic interference characteristics of subsystems and equipment " Army applications for **RS101**

2. TEST LABORATORY

The testing for 20.1 Multimedia LCD Monitor was carried out in the EMC Laboratory at CSIST, Tao Yuan, Taiwan, R.O.C.
Ambient conditions in the test site:

Parameter	Actual	Note
Temperature [℃]	25℃~27℃	
Relative Humidity [%RH]	65%~67%	

For details about the measurement facilities and instruments used, see Chapter 8.

3. TEST PERIOD

The LCD Monitor was received for test on 13 April 2010, and then the test was completed on 20 May 2010.

4. EQUIPMENT UNDER TEST

4.1 Equipment submitted for tests

Overall designation of system/product :

Item	Manufacturer	Model No.
LCD	Samsung	LTM201U1-L01 1600*1200
M/B	iTech	R2A
VGA switch board	iTech	BNCV-100
OSD control board	iTech	MIOSD-110
RS232 board	iTech	PM1102S-200
Inverter board	TPCI	WM2006-25
Power board	ETASIS	EOFP-90M 90W 12V

Hereafter the test sample is referred to as **EUT** (**E**quipment **U**nder **T**est).

4.2 Modes of operation

All tests were carried out with the EUT running in **H pattern**. Video input is *connected by* ***RGBHV-Component*** *port.*

4.3 Modifications during testing

No modification of the EUT was made during the compliance test.

5. EVALUATION OF PERFORMANCE DURING THE TEST

5.1 Criteria of acceptance

To pass the test, the EUT shall meet the following criteria:

Susceptibility test :

◇ Shall not exhibit any malfunction, degradation of performance, or deviation from specified indications, beyond the tolerances indications in the individual equipment or subsystem specification.

6. EMC TESTS

6.1.1 Test specification

The EUT shall not exhibit any malfunction, degradation of performance, or deviation from specified indications, beyond the tolerances indicated in the individual equipment or subsystem specification, when subjected to the magnetic fields shown in Figure 1.

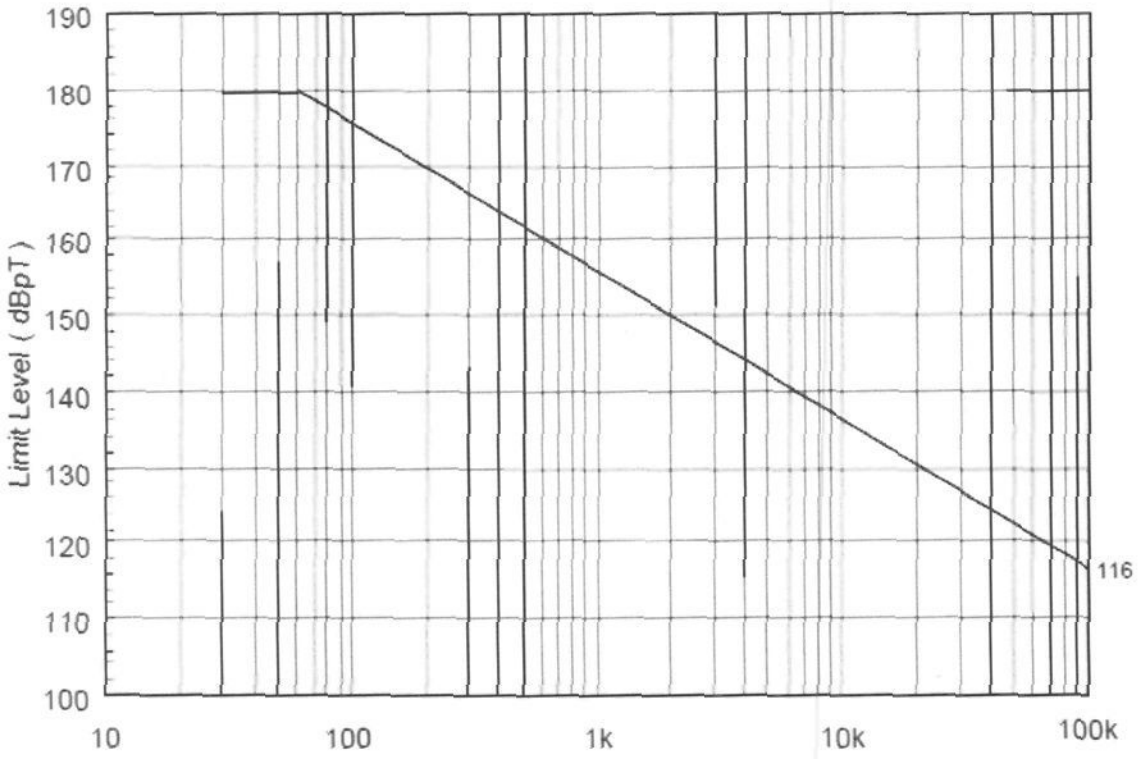


Figure 1. RS101 Limit for all Army Applications.

6.1.2 Test Set-up

Maintain a basic test setup for the EUT as shown in Figure 3 and Figure 4.

Configure the test as shown in Figure 2.

6.1.3 *Test Procedures*

(1) Turn on the measurement equipment and allow sufficient time for stabilization. Turn on the EUT and allow sufficient time for stabilization.

(2) Select test frequencies as follows:

(a) Position the radiating loop 5cm from one surface of the EUT. The plane of the loop shall be parallel to the plane of the EUT's surface.

(b) Supply the loop with sufficient current to produce magnetic field strengths at least 10 dB greater than the applicable limit but not to

exceed 15 amps (183 dBpT).

(c) Scan the applicable frequency range using the scan rates in Table 1.

(d) If susceptibility is noted, select no less than three test frequencies per octave at those frequencies where the maximum indications of susceptibility are present.

(e) Reposition the loop successively to a location in each 30 by 30 cm area on each face of the EUT and at each electrical interface connector, and repeat (2)(c) and (2)(d) to determine locations and frequencies of susceptibility.

(f) From the total frequency data where susceptibility was noted in (2)(c) through (2)(e), select three frequencies per octave over the applicable frequency range.

(3) At each frequency determined in (2)(f), apply a current to the radiating loop that corresponds to the applicable limit. Move the loop to search for possible locations of susceptibility with particular attention given to the locations determined in (2)(e) while maintaining the loop 5 cm from the EUT surface, cable or connector. Verify that susceptibility is not present.

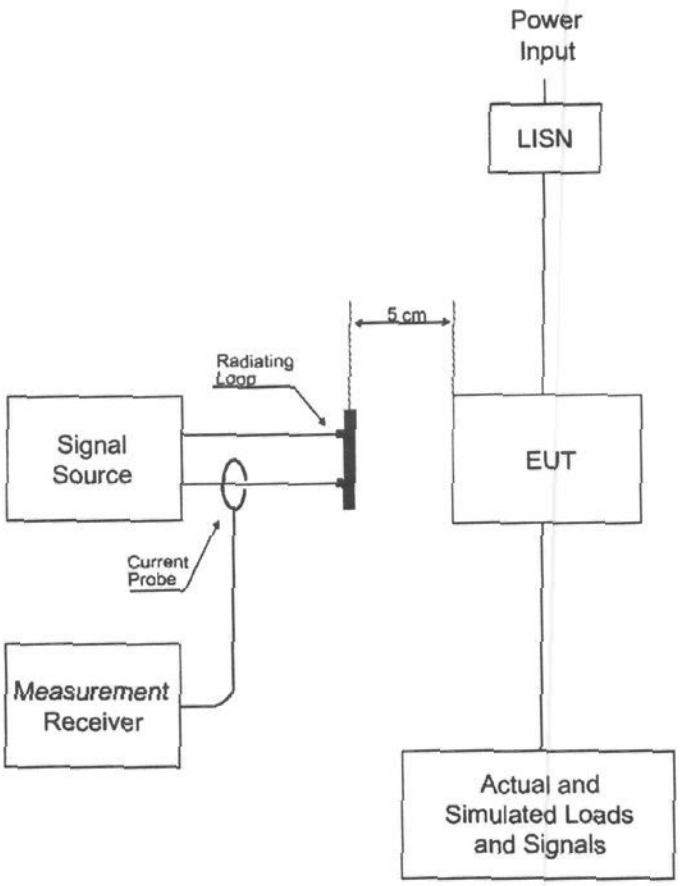


Figure 2. Test Setup for Radiated Magnetic Field Susceptibility

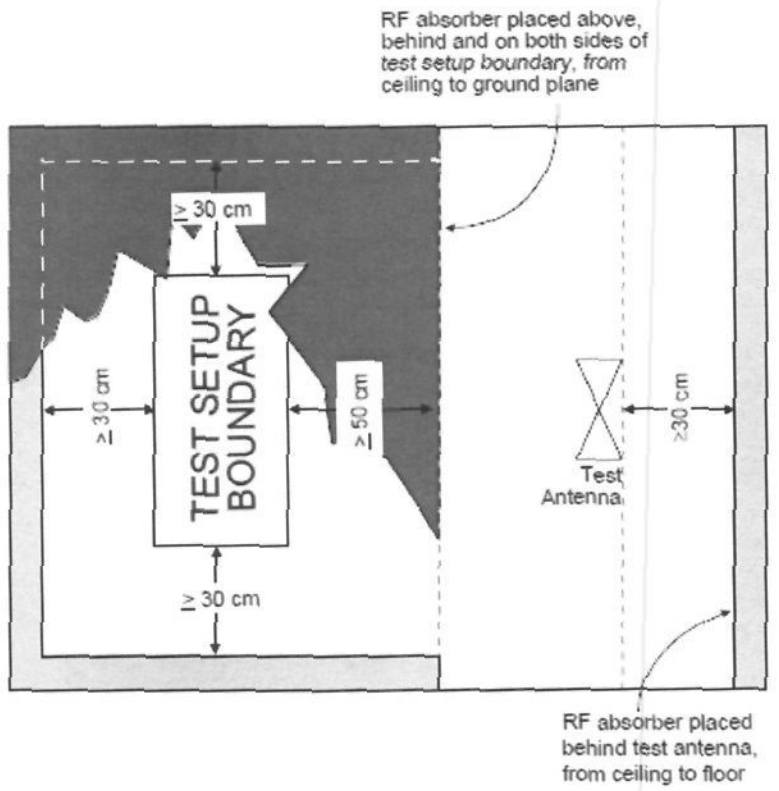


Figure 3. Typical Test Setup in RF Absorber Loading Chamber

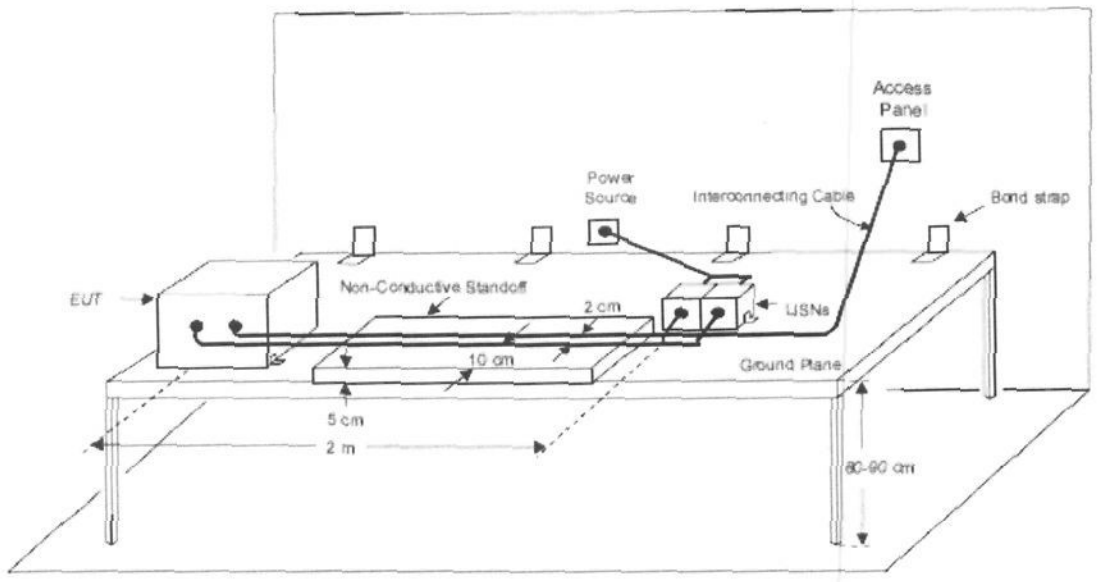


Figure 4. General Test Setup

Table 1. Susceptibility scanning.

Frequency Range	Analog Scans Maximum Scan Rates	Stepped Scans Maximum Step Size
30 Hz - 1 MHz	$0.0333f_o$/sec	$0.05\ f_o$
1 MHz - 30 MHz	$0.00667\ f_o$/sec	$0.01\ f_o$
30 MHz - 1 GHz	$0.00333\ f_o$/sec	$0.005\ f_o$
1 GHz - 40 GHz	$0.00167\ f_o$/sec	$0.0025\ f_o$

7. SUMMARY OF TEST RESULTS

The LCD Monitor, made by iTech Company LLC has been tested according to the following specification:

Test Item	Description	Test Specification for Army	Test Result
MIL-STD-461F, 10 December 2007, Requirements For The Control of Electromagnetic Interference Characteristics of Subsystems and Equipment.			
RS101	Radiated Susceptibility, Magnetic Field, 30 Hz to 100 kHz	RS101-2	PASS

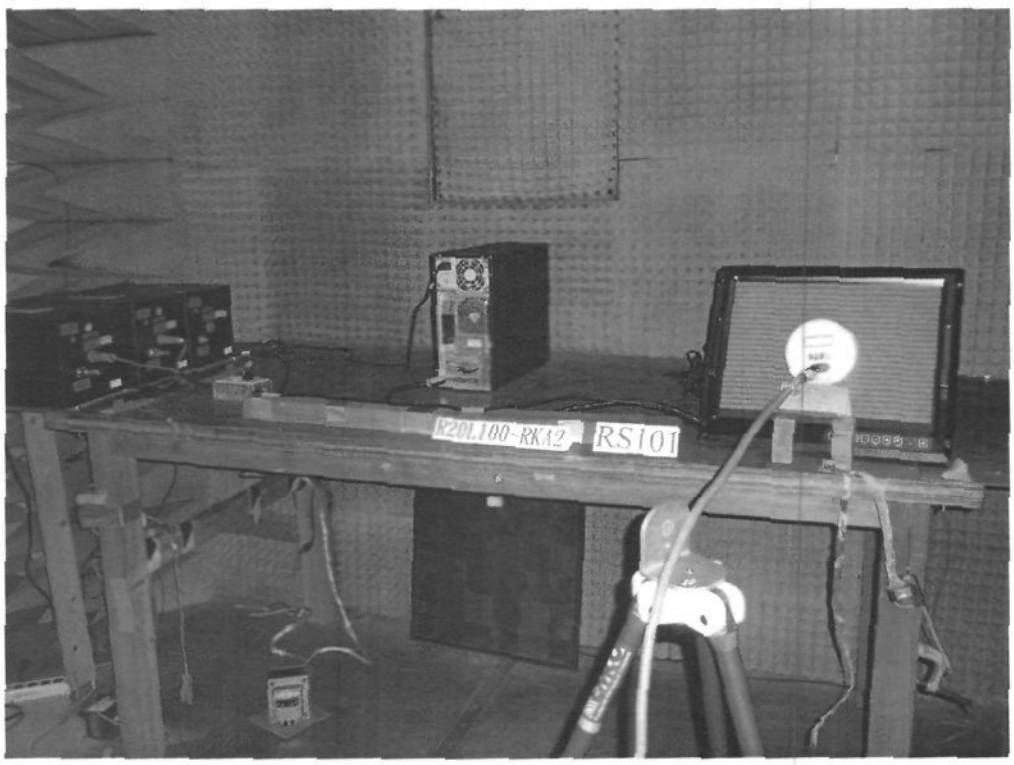
8. TEST FACILITIES AND INSTRUMENTS

The following test facilities and instruments were used during the tests:

Instrument	Manufacturer	Model #	Serial #
Computer	ADVANTECH	610	U000174
Susceptibility S/W	CSIST	MEMC	N/A
Pulse/Function Generator	HP	HP 8116	3134g12769
Amplifier	TECHRON	7560	014745
Radiating Loop	ETS	7605	1037
Oscilloscope	YOKOGAWA	DL1720	12B-10145E
LISN	TEGAM	95300-50	T-128532 T-128534

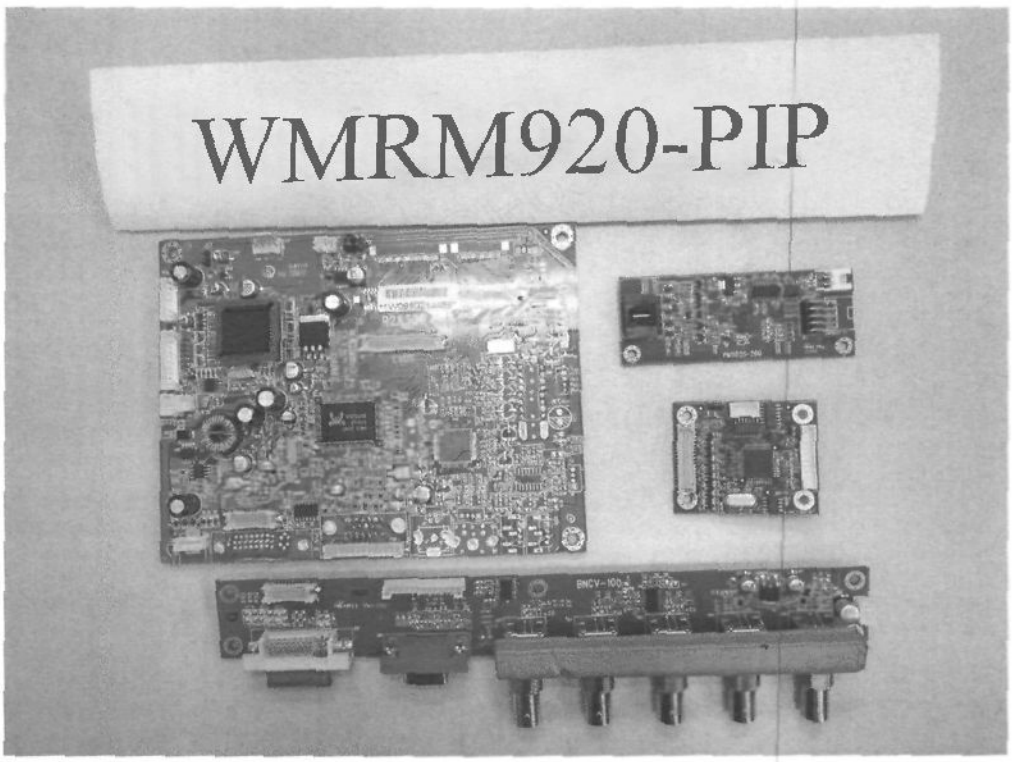
9. ATTACHMENT

9.1 *Photos of Test Setup*

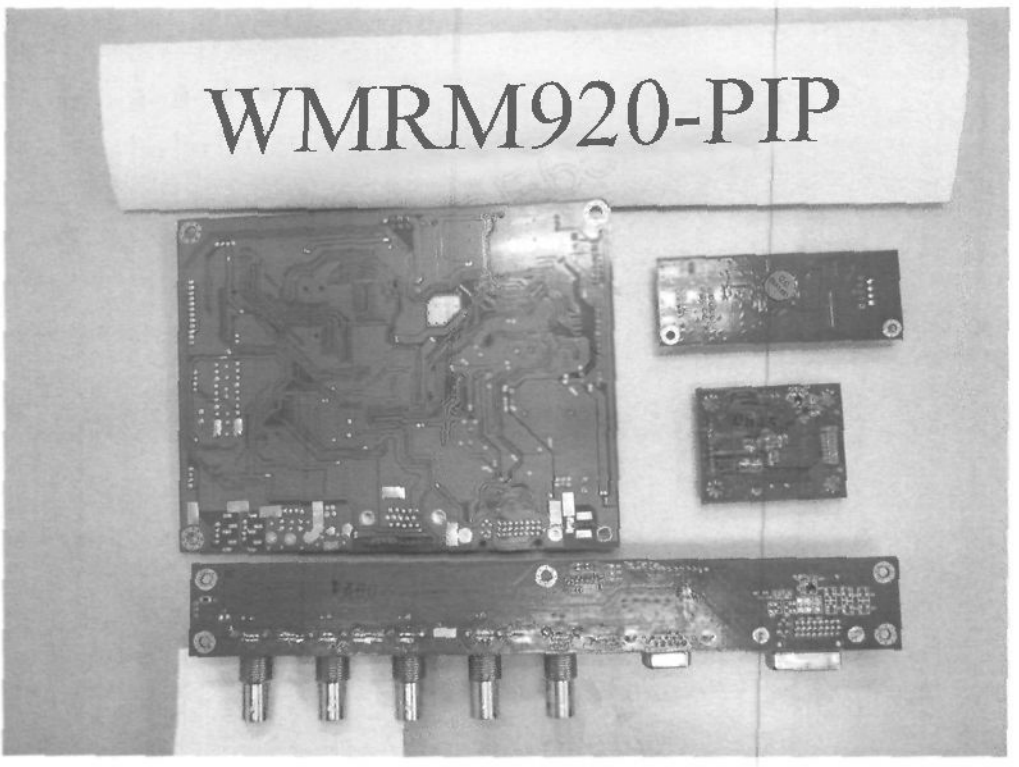


RS101 TEST

9.2 Photos of EUT PCB



EUT (1)



EUT (2)

9.3 Test Data
RS101 :