ECMG Worldwide Certification Solutions
ECMG-Worldwide-Certification-Solution, Inc.
684 West Maude Avenue Sunnyvale, CA 94085
www.ecmg-global.com

EMI Test Report

On Model Name: PQ Touch Screen
Model Numbers: MTSIR321*
Brand Name: PQLabs
Trade Mark: PQLabs

FCC ID: WQ2MTSIR321

Prepared for Shanghai Pingqi Technology Ltd.

According to FCC Part 15, Class B

Test Report #:	*SHA-0809-8064-FCC*
Prepared by:	*Cloud Feng*
Reviewed by:	*Harry Zhao*
QC Manager:	*Paul Chen*

Test Report Released by: Paul J. Chen

Paul Chen *2008, October 10*

Date

Test Location

Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

Test Site Location: *ECMG Worldwide Certification Solution, Inc. (China)*
Building 2, 1298 Lian Xi Road,
Pu Dong New Area, Shanghai,
P.R. China 201204

Tel: *86-21-51909300*
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FCC Registration Number: *172634*

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Reproduction Clause

Administrative Data

Test Sample : PQ Touch Screen

*Model Numbers : MTSIR321**

Model Tested : MTSIR3210

Trade Mark : PQLabs

Serial Number : Engineering Sample

Date Tested : 2008, September 28th

Applicant : Shanghai Pingqi Technology Ltd.
Room 304, Xiehe Building, Lane 814, No. 17,
North Zhongshan Road, Zhabei District,
Shanghai, China

Telephone : 86-21-56556010

Fax : 86-21-56058965

Manufacturer : Shanghai Pingqi Technology Ltd.
Room 304, Xiehe Building, Lane 814, No. 17,
North Zhongshan Road, Zhabei District,
Shanghai, China

EUT Description

Shanghai Pingqi Technology Ltd., models MTSIR3210 (referred to as the EUT in this report) is a Touch Screen.

The highest frequency generated by the EUT is 72 MHz, so the frequency range tested is from 30MHz – 1000MHz.

Type of Deriver

The "" in the MTSIR321* = 0,1,2*
All the other models are identical to the original model MTSIR3210 except for the color of the appearance.

Test Summary

The Electromagnetic Compatibility requirements on model MTSIR3210 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests				
Specifications	***Description***	***Test Results***	***Test Point***	***Remark***
FCC Part 15.107 (150kHz – 30MHz)	*Conducted Emission*	***For MTSIR3210:*** *Passed by 17.54 dB of QP* *Passed by 22.68 dB of AVE*	*AC Input Port*	*Attachment 1*
FCC Part 15.109 (30MHz – 1000MHz)	*Radiated Emission*	***For MTSIR3210:*** *Passed by 4.40 dB of QP*	*Enclosure*	*Attachment 2*

Test Mode Justification

This device complies with Part 15 Class B of the FCC rules. The system was tested in the activating mode.

EUT Exercise Software

The software USBEVNT.exe runs on windowsXP, which was used to exercise the EUT during testing.

No other data was transmitted to the EUT during testing.

Equipment Modification

Any modifications installed previous to testing by Shanghai Pingqi Technology Ltd. will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.

Test System Details

EUT	
Model Number:	**MTSIR321***
Model Tested:	**MTSIR3210**
Trade Mark:	**PQLabs**
Input Voltage:	**USB 5V**
Serial Number:	**Engineering Sample**
Description:	**PQ Touch Screen**
Manufacturer:	**Shanghai Pingqi Technology Ltd.**

EUT Power Supply
N/A

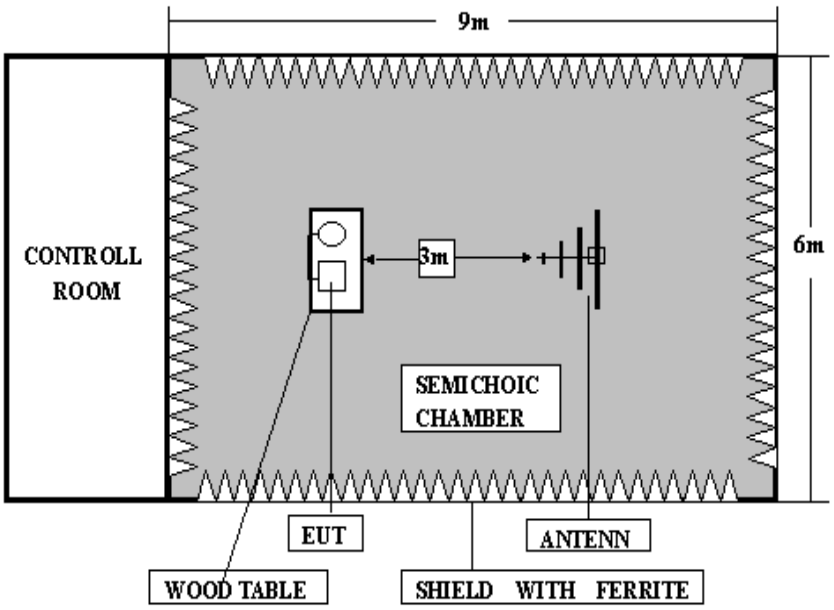
Support Equipment

Description	Model Number	Serial Number	Manufacturer	Power Cable Description
PC	OPTIPLEX 330	HBSF92X	DELL	1.8m unshielded
Monitor	E178FPC	CN0WR979641 807CA7L4C	DELL	1.8m unshielded
Keyboard	L100	CN0RH656658 907C401F9	DELL	N/A
Mouse	MOC5UO	G1D02BPQ	DELL	N/A
Printer converter	45CV	961217	INTEL LIGENT	N/A
Remote control box	IT-251B	N/A	N/A	N/A

Continue on to the next page…

Cable Description					
Description	**From**	**To**	**Length (Meters)**	**Shielded (Y/N)**	**Ferrite (Y/N)**
USB Cable	EUT	PC	1.2m	Y	YX1 (*)
Parallel Cable	Converter	PC	0.5m	N	N
Serial Cable	Remote box	PC	1.5m	N	N
(*) Note: Please refer to the sample photos.					

Configuration of Tested System

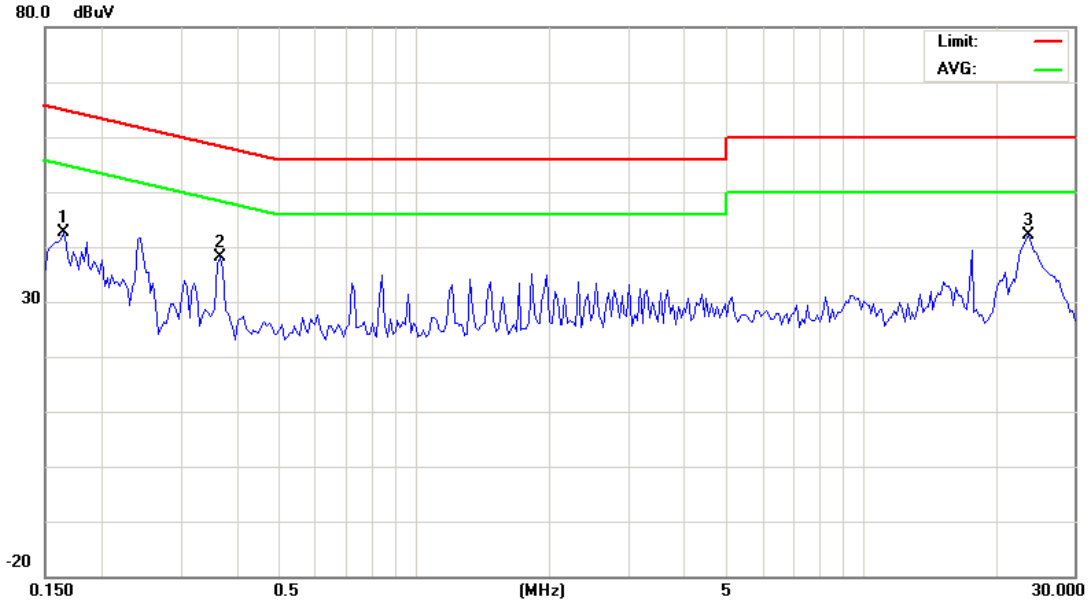


ATTACHMENT 1 - CONDUCTED EMISSION TEST RESULTS

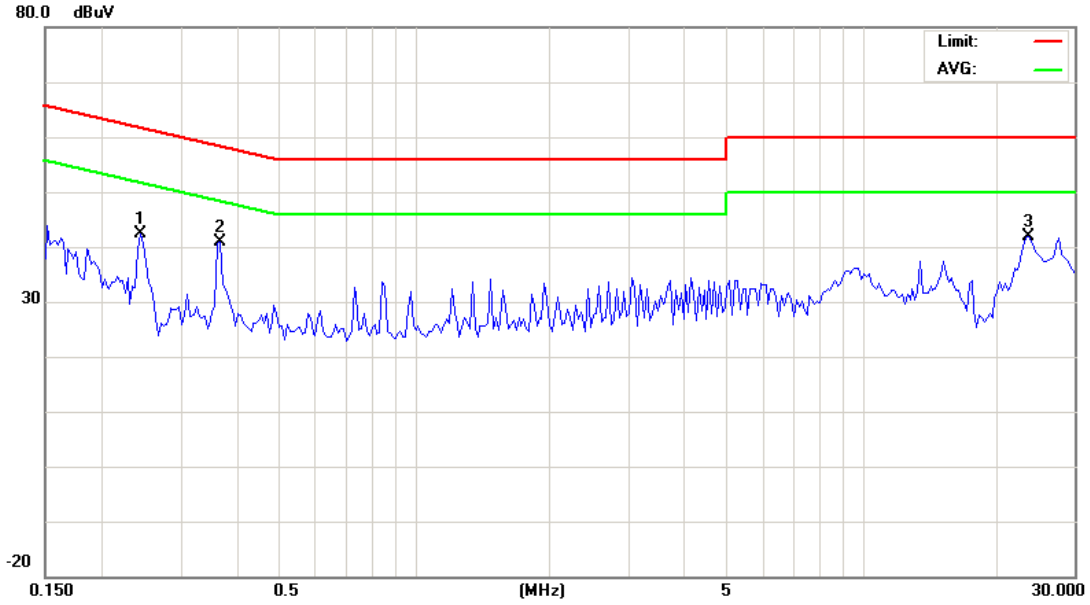
CLIENT:	Shanghai Pingqi Technology Ltd.	**TEST REFERENCE:**	FCC Part 15 subpart B Class B
MODEL TESTED:	MTSIR3210	**PRODUCT:**	PQ Touch Screen
MODEL NUMBERS:	MTSIR321*		
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	ITE equipment
TEMPERATURE:	22°C	**HUMIDITY:**	54%
ATM PRESSURE:	102.1Pa	**GROUNDING:**	None
TESTED BY:	Cloud Feng	**DATE OF TEST:**	2008, September 28

SETUP METHOD:	ANSI C63.4-2003
TEST PROCEDURE:	a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface. b. Connect EUT to the power mains through a line impedance stabilization network(LISN) c. The LISN provides 50ohm coupling impedance for the measuring instrument d. Both sides of AC line were checked for maximum conduced interference. e. The frequency range from 150KHz to 30MHz was searched.. f. Set the test-receiver system to Peak Detect Function and Specified bandwidth. g. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported.
TESTED RANGE:	150kHz to 30MHz
TEST VOLTAGE:	120VAC/60Hz
RESULTS:	**For MTSIR3210:** The EUT meets the requirements of test reference for Conducted Emissions on line N by 17.54 dB of Quasi-Peak detector and by 22.68 dB of Average detector. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

For MTSIR3210:



Line L Conducted Emission Graph



Line N Conducted Emission Graph

Line L (Hot Lead)								
Signal	**Frequency (MHz)**	**Corrected QP Level (dBuV)**	**Limits QP (dBuV)**	**Margin QP (dB)**	**Frequency (MHz)**	**Corrected AVE Level (dBuV)**	**Limits AVE (dBuV)**	**Margin AVE (dB)**
1	0.165	42.59	65.22	-22.63	0.165	23.41	55.22	-31.81
2	0.369	38.22	58.52	-20.30	0.369	16.23	48.52	-32.29
3	23.636	42.11	60.00	-17.89	23.636	15.17	50.00	-34.83
Line N (Neutral Lead)								
Signal	**Frequency (MHz)**	**Corrected QP Level (dBuV)**	**Limits QP (dBuV)**	**Margin QP (dB)**	**Frequency (MHz)**	**Corrected AVE Level (dBuV)**	**Limits AVE (dBuV)**	**Margin AVE (dB)**
1	0.245	42.47	61.93	-19.46	0.245	26.49	51.93	-25.44
2	0.369	40.98	58.52	-17.54	0.369	25.84	48.52	-22.68
3	23.636	41.92	60.00	-18.08	23.636	16.22	50.00	-33.78
Note: All readings are using a bandwidth of 9 kHz, with a 30 ms sweep time. A video filter was not used.								

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
LISN	R&S	ESH3-Z5	844249/018	12/04/07	12/03/08
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY: Cloud Feng _____ **REVIEWED BY:** Hang Zhao _____

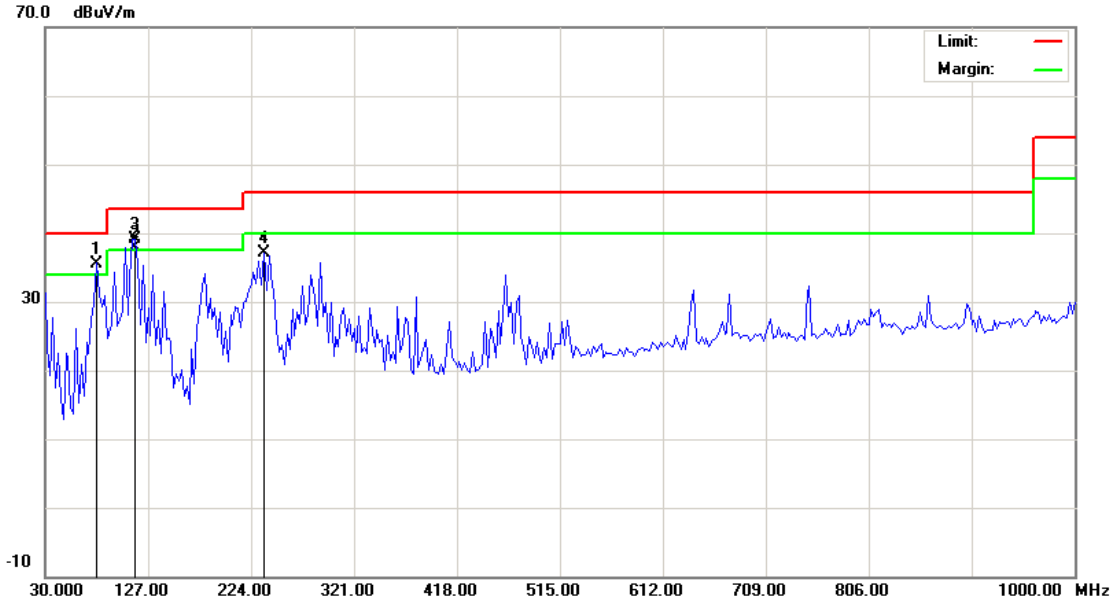
ENGINEER **SENIOR ENGINEER**

ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS

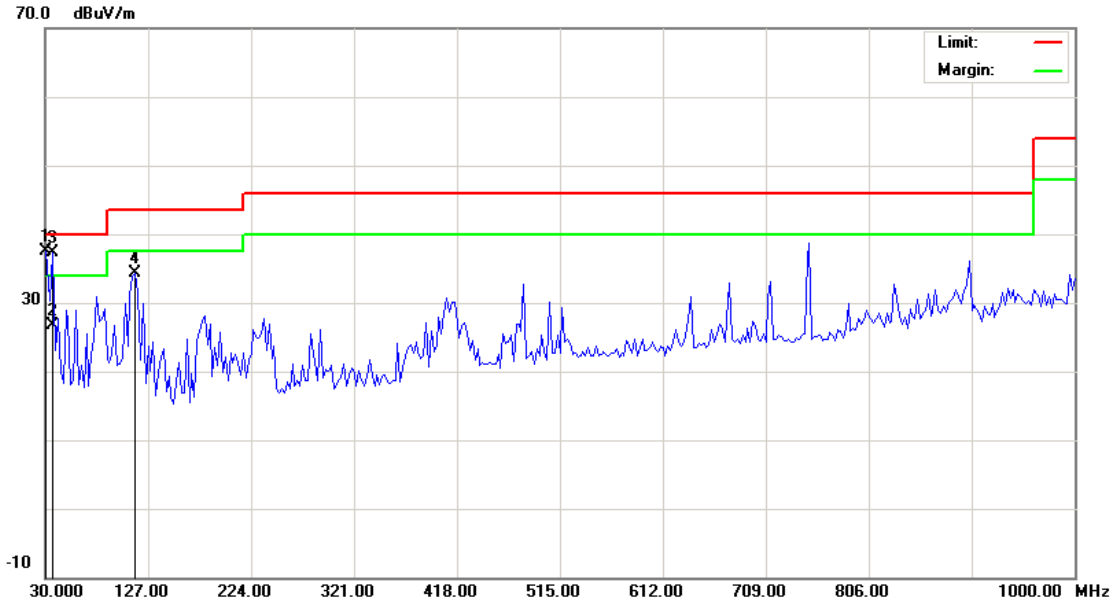
CLIENT:	Shanghai Pingqi Technology Ltd.	**TEST REFERENCE:**	FCC Part 15, Class B
MODEL TESTED:	MTSIR3210	**PRODUCT:**	PQ Touch Screen
MODEL NUMBERS:	MTSIR321*		
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	ITE equipment
TEMPERATURE:	22°C	**HUMIDITY:**	54%
ATM PRESSURE:	101.7Pa	**GROUNDING:**	None
TESTED BY:	Cloud Feng	**DATE OF TEST:**	2008, September 28

SETUP METHOD:	ANSI C63.4-2003
TEST PROCEDURE:	a. The EUT was placed on a rotatable table with 0.8 meters above ground. b. The EUT was set 3 meters from the interference-receiving antenna, which was mounted on the top of a variable height antenna tower. c. For each suspected emission the EUT was arranged to its worst case and turn table (from 0 degree to 360 degree) to find the maximum reading. d. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method in about six maximal points and the results will be reported. Explanation of the Correction Factor are given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TESTED RANGE:	30MHz to 1000MHz
TEST VOLTAGE:	120VAC / 60Hz
RESULTS:	**For MTSIR3210:** The EUT meets the requirements of test reference for Radiated Emissions on Horizontal polarization by 4.40 dB at 78.52 MHz. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

For MTSIR3210:



Field strength Emission Plot (Peak, Max Hold Mode Horizontal)



Field strength Emission Plot (Peak, Max Hold Mode Vertical)

30MHz-1GHz							
Horizontal							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	78.52	8.97	35.60	40.00	-4.40	165	262
2	112.52	10.49	38.00	43.50	-5.50	177	231
3	236.13	14.32	37.18	46.00	-8.82	164	224
Vertical							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	37.01	15.68	26.63	40.00	-13.37	167	106
2	37.27	15.53	33.27	40.00	-6.73	108	147
3	114.87	10.58	34.40	43.50	-9.10	227	129
Set-up/Configuration: ANSI C63.4-2003							
Comments: None							
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.							

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/29/07	11/28/08
Broadband Antenna	Sunol	JB5	A110503	11/29/07	11/28/08
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.					

SIGNED BY: Cloud Feng _____ **REVIEWED BY:** Hanyzhao _____

ENGINEER **SENIOR ENGINNER**