







ISO/IEC17025 Accredited Lab.

Report No: FCC 1108019 File reference No: 2012-06-25

Applicant: Technovare Systems, Inc.

Product: Embedded Computer

Brand Name: Technovare TNET PC

Model No: OPS-PCAF-S, OPS-PCAF-H

OPS-PCAF-WS, OPS-PCAF-WH

Test Standards: FCC Part 15 Subpart B: 2009

Test result: It is herewith confirmed and found to comply with the requirements

set up by ANSI C63.4&FCC Part 15 regulations for the evaluation of

electromagnetic compatibility

Approved By

Peny Tang

Terry Tong

Manager

Dated: June 25,2012

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

Shenzhen Timeway Technology Consulting Co., Ltd.

East 5/block 4, Anhua Industrial Zone, No.8 Tairan Rd., Chegongmiao, Futian District, Shenzhen, China

Tel (+86 755)8344 8688

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Special Statement:

Date: 2012-06-25

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

IC- Registration No.: IC5205A-01

adopt any other remedies which may be appropriate."

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-01.

VCCI- Registration No.: R-3015 and C-3332

The EMC Laboratory has been registered and fully described in a report filed with the (VCCI) Voluntary Control Council for Interference. The acceptance letter from the VCCI is maintained in our files. Registration IC No.: R-3015 and C-3332

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Test Report Conclusion

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1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

Address: East 5/Block 4, Anhua Industrial Zone, No.8, Tairan Rd. CheGongMiao, FuTian District,

Shenzhen, CHINA.

Telephone: (755) 83448688 Fax: (755) 83442996

1.2 Applicant Details

Applicant: Technovare Systems, Inc.

Address: 1675 Scenic Ave., Suite 200, Costa Mesa, Ca92626-1451, USA

Telephone: 1-174-966-9099 Fax: 1-174-966-9199

1.3 Description of EUT

Product: Embedded Computer

Manufacturer: Shenzhen JEC Technology Co., Ltd.

Address: Room 1002, Beike Innovation Building, 1077 Nanhai Blvd., Nanshan District,

Shenzhen, Guang Dong Prov., China

Brand Name: Technovare TNET PC

Model Number: OPS-PCAF-S

Additional Model Number: OPS-PCAF-H, OPS-PCAF-WS, OPS-PCAF-WH

Rating: -- Remark: --

1.4 Submitted Sample: 1 Sample

1.5 Test Duration

2011-08-02 to 2012-06-25

1.6 Test Uncertainty

Conducted Emissions Uncertainty = 3.6dB Radiated Emissions Uncertainty = 4.7dB

1.7 Test Engineer

The sample tested by

Print Name: Henry Ding

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2.0 List of Measurement Equipment

2.1 Conducted Emission Test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
EMI Test Receiver	ESH3	860905/006	RS	2012.4.21	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	НР	2012.4.21	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2012.4.21	1Year
LISN	LS16C	10010947251	AFJ	2012.4.21	1Year

2.2 Radiated electromagnetic disturbance test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
EMI Test Receiver	ESVD	100008	RS	2012.4.21	1Year
Coaxial Switch	MP59B	M70585	ANRITSU	N/A	N/A
Spectrum Analyzer	8595E	3441A00893	НР	2012.4.21	1Year
Amplifier	8447D	2727A05017	HP	2012.4.21	1Year
Bilog Antenna	VULB9163	9163/340	Schwarebeck	2012.4.21	1Year
Horn Antenna	BBHA 9120D	9120D-631	Schwarebeck	2012.4.21	1Year

2.3 Auxiliary Equipment

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
Mouse	M-F105		L.SEletron		FCC DOC
Keyboard	KB-0225		IBM		FCC DOC
LCD Monitor	FP51G		BENQ		FCC DOC
U-DISK			Kingston		FCC DOC
NEC TFT LCD Monitor	NECTL40		NEC		FCC DOC
PC	IBM		IBM		FCC ID

2.4 I/O Cable

Cable No.	Port	Connector Type	Cable Type	Cable Length
1	VGA	VGA	Unshielded	1.5
2	AC	IEC	Unshielded	1.5
3	AC	IEC	Unshielded	2.0

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3.0 **Technical Details**

3.1 **Investigations Requested** Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

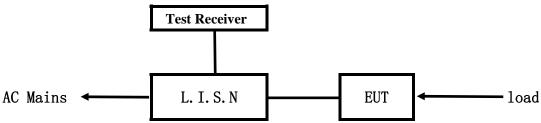
FCC Part 15 Subpart B: 2009

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4.0 Conducted Power line Test

4.1 Schematics of the test

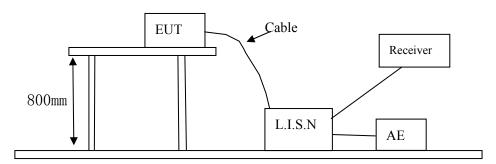


EUT: Equipment Under Test

4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



4.3 Power line conducted Emission Limit

Fraguency (MHz)	Class A Limits dB(μV)		Class B Limits dB(μV)		
Frequency(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
$0.15 \sim 0.50$	79.00	66.00	66.00~56.00*	56.00~46.00*	
$0.50 \sim 5.00$	73.00	60.00	56.00	46.00	
5.00 ~ 30.00	73.00	60.00	60.00	50.00	

Notes:

- 1. *decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

4.4 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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Conducted Emission on Live Terminal (150kHz to 30MHz) A:

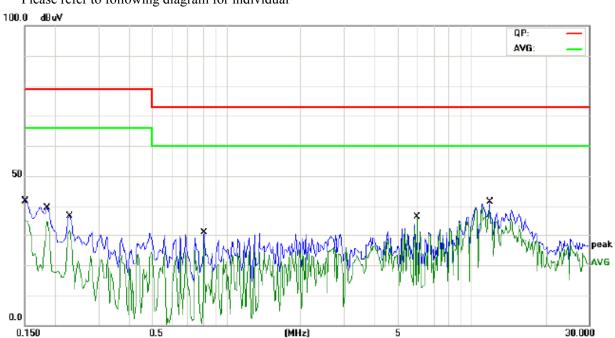
EUT Operating Environment

Temperature: 25 °C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Run EMC test program& Ping LAN

Equipment Level: Class A

Results: Pass



Frequency	Lina	Reading(dBμV)		Limit(dBµV)	
(MHz)	Line	Quasi-peak	Average	Quasi-peak	Average
0.150	Live	37.74	33.46	79.00	66.00
0.185	Live	38.57	32.73	79.00	66.00
0.228	Live	34.54	31.24	79.00	66.00
0.810	Live	28.88	24.11	73.00	60.00
5.988	Live	32.26	25.47	73.00	60.00
11.816	Live	34.10	23.57	73.00	60.00

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

EUT Operating Environment

Temperature: 25 °C Humidity: 75%RH Atmospheric Pressure: 101 KPa

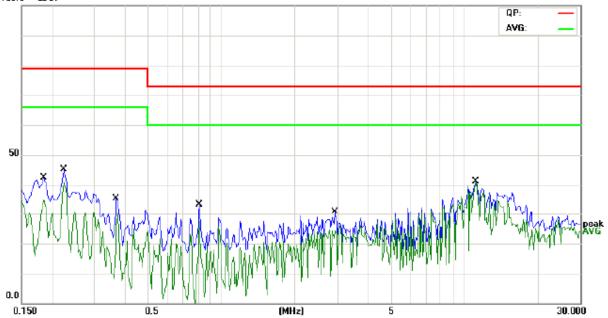
EUT set Condition: Run EMC test program& Ping LAN

Equipment Level: Class A

Results: Pass

Please refer to following diagram for individual

100.0 dBuV



Frequency	Line	Reading(dBμV)		Limit(dBµV)	
(MHz)	Line	Quasi-peak	Average	Quasi-peak	Average
0.185	Neutral	41.31	36.16	79.00	66.00
0.224	Neutral	41.21	39.56	79.00	66.00
0.368	Neutral	29.45	24.98	79.00	66.00
0.810	Neutral	32.78	27.25	73.00	60.00
2.919	Neutral	25.69	19.75	73.00	60.00
11.195	Neutral	31.36	20.86	73.00	60.00

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5.0 Radiated Disturbance Test

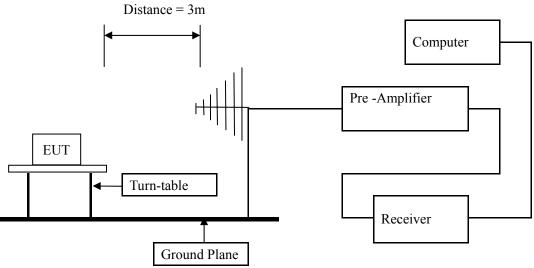
5.1 Schematics of the test



5.2 Test Method and test Procedure:

The EUT was tested according to ANSI C63.4 –2003, The frequency spectrum from 30MHz to 1GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak 0values with a resolution bandwidth of 120KHz. All readings are above 1GHz, peak values with a resolution bandwidth of 1MHz. Measurements were made at 3 meters.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



5.3 Radiated Emission Limit

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	49.00
88-216	3	53.50
216-960	3	56.40
Above 960	3	59.50

Note: The lower limit shall apply at the transition frequencies

5.4 Test result

The frequency spectrum from 30MHz to 1GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All readings are above 1GHz, peak values with a resolution bandwidth of 1MHz. Measurements were made at 3 meters.

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A: Radiated Disturbance (30MHz----1000MHz)

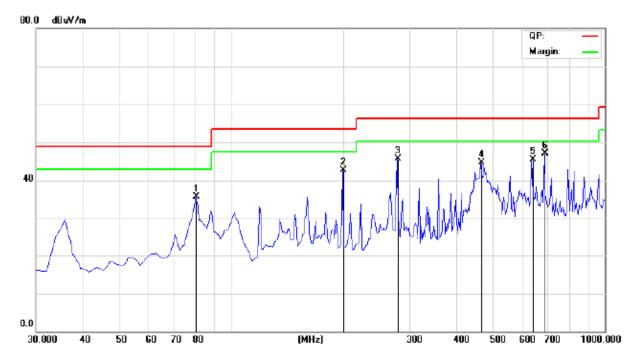
EUT Operating Environment

Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Run EMC test program& Ping LAN

Equipment Level: Class A

Results: Pass



Frequency (MHz)	Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dBµV/m)
80.541	35.62	Н	49.00
199.118	42.63	Н	53.50
278.817	45.71	Н	56.40
465.431	44.75	Н	56.40
640.380	45.58	Н	56.40
692.865	47.09	Н	56.40

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B: Radiated Disturbance (30MHz----1000MHz)

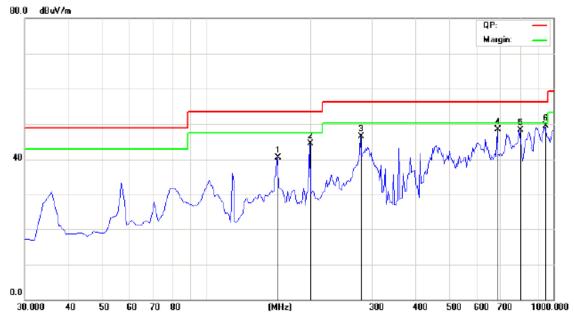
EUT Operating Environment

Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Run EMC test program& Ping LAN

Equipment Level: Class A

Results: Pass



Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
160.240	40.48	V	53.50
199.118	44.60	V	53.50
278.817	46.41	V	56.40
692.865	48.49	V	56.40
799.779	48.24	V	56.40
951.402	49.57	V	56.40

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C: Radiated Disturbance (1000MHz----6000MHz)

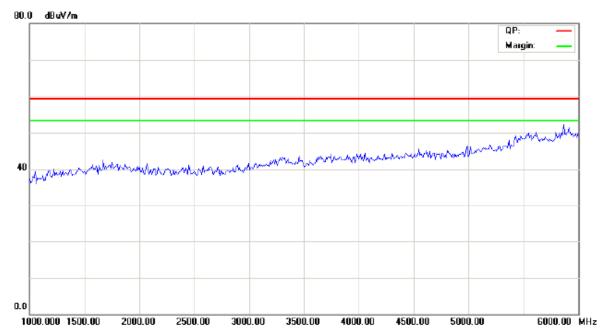
EUT Operating Environment

Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Run EMC test program& Ping LAN

Equipment Level: Class A

Results: Pass



Frequency (MHz)	Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dBµV/m)
-	-	Н	-
-	-	Н	-

⁻The test data shows much less than the limit, no necessary take down the records.

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D: Radiated Disturbance (1000MHz----6000MHz)

EUT Operating Environment

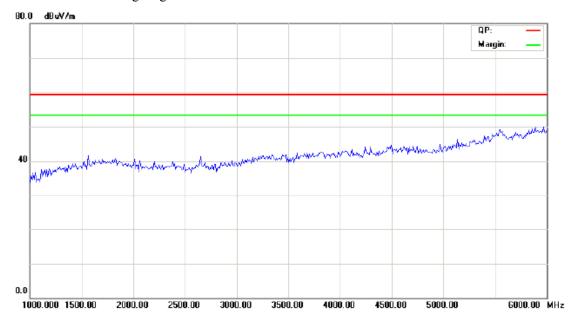
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Run EMC test program& Ping LAN

Equipment Level: Class A

Results: Pass

Date: 2012-06-25



Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
-	-	V	-
-	-	V	-

⁻The test data shows much less than the limit, no necessary take down the records.

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6.0 FCC Label

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location: On the product body

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7.0 Photo of testing

Conducted test View--7.1





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7.2 Radiated emission test view--





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7.3 Photo for the EUT

Front View



Back View



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Side View



Interior View



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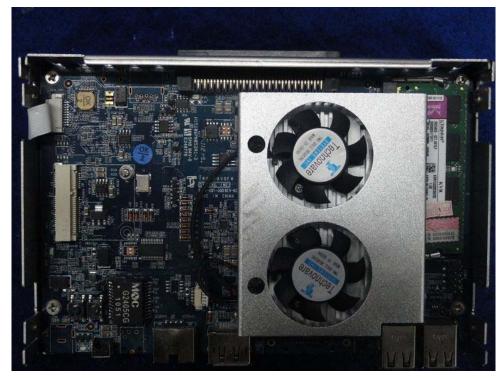
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Interior View



Interior View



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Interior View





-End of the report-

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