

QuieTek

Test Report

Product Name : Rugged Notebook PC
Model No. : S15ABXXXXXX(X=0~9, A~Z, and Blank)

Applicant : Twinhead International Corp
Address : 11F, 550, Ruiguang Rd Neihu, Taipei, Taiwan
11492, ROC

Date of Receipt : 2015/07/26
Issued Date : 2015/08/03
Report No. : SN1507048
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the Government.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date:2015/08/04



Product Name : Rugged Notebook PC
 Applicant : Twinhead International Corp
 Address : 11F, 550, Ruiguang Rd Neihu, Taipei, Taiwan 11492, ROC
 Manufacturer : Twinhead International Corp
 Model No. : S15ABXXXXXX(X=0~9, A~Z, and Blank)
 EUT Voltage : Adapter: 100-240Vac , 50-60Hz , 1.5A
 Trade Name : DURABOOK
 Applicable Standard : COMMISSION REGULATION (EU) No 617/2013
 Test Result : Complied
 Performed Location : Neihu Safety Laboratory
 2F, No. 345, Xinhua 2nd Rd., Neihu District, Taipei City
 114, Taiwan, R.O.C
 TEL:+886-2-8792-6808 / FAX:+886-2-8792-6628

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Laboratory Information

We , **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scopes:

Energy-using Product Directive

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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TABLE OF CONTENTS

Description	Page
1. General Information	5
1.1. UUT Description	5
1.2. Mode of Operation	5
2. Technical Test.....	6
2.1. Summary of Test Result	6
2.2. List of Test Equipment	6
2.3. Measurement Uncertainty	6
2.4. Test Environment	7
3. Power Consumption Test	8
3.1. Test Specification	8
3.2. Test Setup	8
3.3. Eligibility Criteria.....	8
3.4. Test Procedure	9
3.5. Deviation from Test Standard	9
3.6. Test Result	10
3.7. INFORMATION TO BE PROVIDED BY MANUFACTURERS	11
3.8. Test Photo	14
4. EUT Photograph	15

1. General Information

1.1. UUT Description

General Product specification	
Product Name	Rugged Notebook PC
Manufacturer	Twinhead International Corp
Model No.	S15ABXXXXXX (X=0~9, A~Z, and Blank)

Panel	
Viewable Screen Height (in inches)	13.54
Viewable Screen Width(in inches)	7.62
Diagonal Viewable Screen Size (in inches)	15.6
Minimum Luminance (cd/m ²)	187
Maximum Luminance (cd/m ²)	220
As-Shipped Luminance (cd/m ²)	

Component	
System Memory	16GB max
Internal storage	1
Discrete television tuner	N/A
Discrete graphics card	N/A

Power	
Power Adapter	Model: FSP065-REBN2 I/P: 100-240V ac · 50-60Hz · 1.5A O/P: 19V DC; 3.42A

1.2. Mode of Operation

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Idle Mode / Sleep mode / Off mode

2. Technical Test

2.1. Summary of Test Result

- No deviations from the test standards
- Deviations from the test standards as below description:

Energy			
Performed Item	Normative References	Test Performed	Deviation
Power Consumption	COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013	Yes	No

2.2. List of Test Equipment

Typical Energy Consumption / SR1

Instrument	Manufacturer	Model No.	Serial No.	Next Cal. Date
Digital Power Meter	YOKOGAWA	WT210	91LC53034	2015/08/6
Thermo Recorder	AND D	TR-73U	F8060AD2	2015/09/17

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.3. Measurement Uncertainty

Measurement power value greater than or equal to 0.50W : 2% at the 95% confidence level.

Measurement power value less than 0.50W : 0.01W at the 95% confidence level.

2.4. Test Environment

Input power requirements:

Market	Voltage	Voltage tolerance	Maximum total harmonic distortion	Frequency	Frequency tolerance	Applicable
North America, Taiwan	115Vac	±1.0%	5.0%	60Hz	±1.0%	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Europe, Australia, New Zealand	230Vac	±1.0%	5.0%	50Hz	±1.0%	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Japan	100Vac	±1.0%	5.0%	50Hz/ 60Hz	±1.0%	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Ambient condition:

Items	Actual
Ambient Temperature (18°C to 28°C)	23.5°C
Relative Humidity (10% to 80%)	65
Total harmonic distortion of the electricity supply system	Under 2%
Supply voltage	100-240Vac
Supply frequency	50-60Hz
Air speed	≤0.2m/s

Test signal:

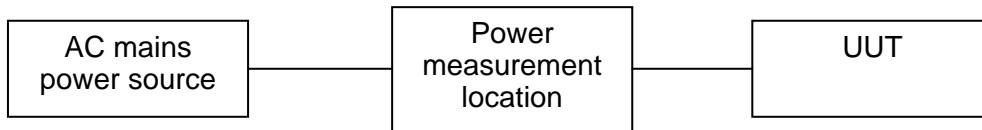
IEC 62087-2011 Dynamic Broadcast-Content Signal” shall be used for testing, as specified in IEC 62087, Ed. 3.0, Section 11.6, “On (average) mode testing using dynamic broadcast-content video signal.

3. Power Consumption Test

3.1. Test Specification

COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013

3.2. Test Setup



3.3. Eligibility Criteria

Measurement requirement	Power Allowance
Maximum lowest power state	0.50 watts
Maximum Sleep Mode Power Requirement (P _{SLEEP_MAX})	3.00 watts
Maximum Off Mode Power Requirement (P _{OFF_MAX})	1.00 watts

The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed:

- (a) Category A computer: 36.00;
- (b) Category B computer: 48.00;
- (c) Category C computer: 80.50;

E_{TEC} shall be determined using the following formula:

$$E_{TEC} = (8760/1\ 000) \times (0.60 \times P_{off} + 0.10 \times P_{sleep} + 0.30 \times P_{idle})$$

The following capability adjustments apply:

- (a) memory: 0,4 kWh/year per GB over base, where base memory is 4 GB;
- (b) additional internal storage: 3 kWh/year;
 - (3) discrete television tuner: 2.1 kWh/year;
 - (4) discrete graphics card (dGfx) (for the first and each additional discrete graphics card (dGfx))

3.4. Test Procedure

Measurement of power consumption of a Display should be conducted as follows:

UUT Preparation

1. Set up the UUT to Off mode, 'Off mode' means the power demand level in the low power mode which cannot be switched off (influenced) by a user, other than through the movement of a mechanical switch, and which may persist for an indefinite period of time when the appliance is connected to the main electricity supply and used in accordance with the manufacturer's instructions. Where Advanced Configuration and Power Interface (ACPI) standards are applicable, off mode usually correlates to ACPI system level G2/S5 ('soft off') state.
2. Set up the UUT to Sleep mode, 'Sleep mode' means a low power mode that a computer is capable of entering automatically after a period of inactivity or by manual selection. In this mode the computer will respond to a wake event. Where Advanced Configuration and Power Interface (ACPI) standards are applicable, sleep mode usually correlates to ACPI system level G1/S3 (suspend to RAM) state.
3. Set up the UUT to Idle state. 'Idle state ' means a state of a computer in which the operating system and other software have completed loading, a user profile has been created, the computer is not in sleep mode, and activity is limited to those basic applications that the operating system starts by default.
4. Power on the UUT and perform initial system configuration, as applicable.
5. Calculate the result.

3.5. Deviation from Test Standard

No deviation.

3.6. Test Result

Product Name	Rugged Notebook PC		
Test Item	Power Consumption		
Measurement of supply voltage/ frequency	AC 240 V / 60.0 Hz		
UUT Serial Number	N/A		
Date of Test	2015/07/27	Test Site	Neihu Safety Lab

Measurement requirement	Power Allowance	Measurement result
Idle Mode Power Value (P_{idle})	--	12.64 watts
Sleep Mode Power Value (P_{SLEEP})	3.00 watts	0.52 watts
Off Mode Power Value (P_{off})	1.00 watts	0.36 watts
Total Energy Consumption (E_{TEC})	85.30 kWh	35.57 kWh
Test Result	PASS	

3.7. INFORMATION TO BE PROVIDED BY MANUFACTURERS

Manufacturers shall provide in the technical documentation and make publicly available on free-access websites the following information:

- (a) product type and category as defined in Article 2 (one and only one category);

Category C

- (b) manufacturer’s name, registered trade name or registered trade mark, and the address at which they can be contacted;

Twinhead International Corp
11F, 550, Ruiguang Rd Neihu, Taipei, Taiwan 11492, ROC

- (c) product model number;

S15ABXXXXXX(X=0~9, A~Z, and Blank)

- (d) year of manufacture;

2015

- (e) E_{TEC} value (kWh) and capability adjustments applied when all discrete graphics cards (dGfx) are disabled and if the system is tested with switchable graphics mode with UMA driving the display;

$E_{TEC} = 82.10$ kWh

- (f) E_{TEC} value (kWh) and capability adjustments applied when all discrete graphics cards (dGfx) are enabled;

$E_{TEC} = 85.30$ kWh

- (g) idle state power demand (Watts);

N/A

- (h) sleep mode power demand (Watts);

3.00 watts

- (i) sleep mode with WOL enabled power demand (Watts) (where enabled);

3.70 watts

- (j) off mode power demand (Watts);

1.00 watts

(k) off mode with WOL enabled power demand (Watts) (where enabled);

1.70 watts

(l) internal power supply efficiency at 10 %, 20 %, 50 % and 100 % of rated output power;

N/A

(m) external power supply efficiency;

85% min

(n) noise levels (the declared A-weighted sound power level) of the computer;

300 mV Pk to Pk

(o) the minimum number of loading cycles that the batteries can withstand (applies only to notebook computers);

Carry out 500 cycles charges and discharges at $25\pm 2^{\circ}\text{C}$
 Charge:0.3C ($I_{\text{min}}\leq 0.05\text{C}$)
 Discharge:0.3C (EDV=6.0V)
 Rest time:20 min

(p) the measurement methodology used to determine information mentioned in points (e) to (o);

Adapter spec.
 Battery spec.

(q) sequence of steps for achieving a stable condition with respect to power demand;

See User Manual

(r) description of how sleep and/or off mode was selected or programmed;

See User Manual

(s) sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode;

See User Manual

(t) the duration of idle state condition before the computer automatically reaches sleep mode, or another condition which does not exceed the applicable power demand requirements for sleep

mode;

See User Manual

(u) the length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power demand requirement than sleep mode;

See User Manual

(v) the length of time before the display sleep mode is set to activate after user inactivity;

See User Manual

(w) user information on the energy-saving potential of power management functionality;

See User Manual

(x) user information on how to enable the power management functionality;

See User Manual

(y) for products with an integrated display containing mercury, the total content of mercury as X,X mg;

(z) test parameters for measurements:

— test voltage in V and frequency in Hz,

240V AC; 60Hz

— total harmonic distortion of the electricity supply system,

— information and documentation on the instrumentation, set-up and circuits used for electrical testing.

3.8. Test Photo

Description : Front View of Power Consumption Test Setup

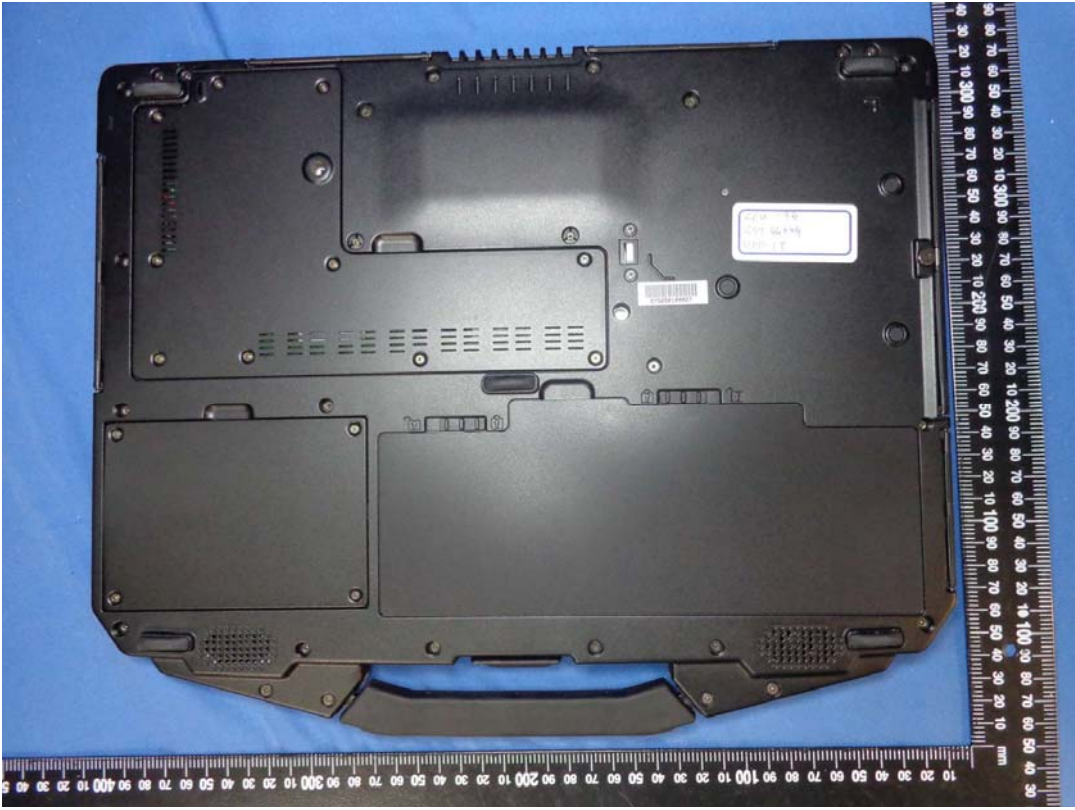


4. EUT Photograph

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) Adapter Photo



-End-