

# RTC-1000D1

## Rugged Tablet Computer

### P5 Test Report

Summary	<input checked="" type="checkbox"/> <b>Pass</b> <input type="checkbox"/> <b>Fail</b> <input type="checkbox"/> <b>Pass with Deviation</b> <b>Comment:</b> _____			
	<b>Test Result Summary</b>			
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date _____ 2011/4/27	Approval _____ Jansin Lee	Test Engineer _____ Nisam Jone
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## Test Suites Overall Results Summary

No.	Test Category	Test Results
1	OSD Control Function Test	PASS
2	Basic Function Test	PASS
3	Integration Test	PASS
4	Application Test	PASS
5	Time Accuracy Test	PASS
6	O.S. Compatibility Test	PASS
7	BIOS Test	PASS
8	Performance Test	PASS

## Platform Information

Item	Device Information	Test Item	
PCB Model / Version	RTC-1000D1	1,2,3,4,5,6,7,8	
CPU Board	RTC-1000D Rev B0.1	1,2,3,4,5,6,7,8	
Carrier Board	N/A	N/A	
BIOS / Version	RTC-1000D1 BIOS Rev 1.1 (10/27/2010)	1,2,3,4,5,6,7,8	
CPU Type	Intel® Core Duo Processor Yonah ULV 1.2Ghz (U2500) CPU FSB 533Mhz	1,2,3,4,5,6,7,8	
Memory Type	Onboard 1GB RAM	1,2,3,4,5,6,7,8	
SATA HDD	WDC WD800BEVT – 00A23T 80GB	1,2,3,4,5,6,7,8	
SATA DVD-ROM	N/A	N/A	
USB DVD-ROM	N/A	N/A	
LCD Monitor	N/A	N/A	
LVDS	10.2" WSVGA(1024x 600) TFT LCD display w/ LED-backlight	1,2,3,4,5,6,7,8	
Compact Flash	N/A	N/A	
Daughter Board	N/A	N/A	
Expansion Board	N/A	N/A	
Operating System	<input type="checkbox"/> Linux-RedHat 9.0	6-1	
	<input type="checkbox"/> Fedora Core 10 Kernel 2.6.27 請在版本後面加入 kernel		
	<input type="checkbox"/> Windows 7 Ultimate 32/64Bit		6-2
	<input checked="" type="checkbox"/> Windows Embedded Standard SP5		6-3
Power Supply	ATX Power Supply :	1,2,3,4,5,6,7,8	
	AT Power Supply:	1,2,3,4,5,6,7,8	
	DC Adapter : Li SHIN 0335A2065 20V, 3.25A	1,2,3,4,5,6,7,8	
Battery Model	Smart 9 cells Lithium-Ion high-capacity	1,2,3,4,5,6,7,8	
<b>Chipset Information with XP Professional English SP5 32 Bit Driver Version</b>			
Chipset Software	Intel(R) Chipset Device Software: 9.0.0.1008(2008/05/01)		
North Bridge	Intel i945GME		
South Bridge	Intel ICH7-M		
Super IO Chipset	ITE IT8781		
VGA Chipset	Mobile Intel(R)945 Express Chipset Family 6.14.10.4864(2007/08/24)		
Audio Chipset	Realtek ALC888 5.10.0.5772 (2009/01/06)		
Ethernet Chipset	Intel(R)82574L Gigabit Network Connection 10.3.49.0(2008/08/05)		

## Summary Table of contents:

Platform Information.....	2
1. OSD Control Function Test.....	5
2. Basic Function Test .....	7
3. Integration Test.....	10
4. Application Test .....	11
4-1. PCI Slot Function (PCI Adapter Card) Test .....	11
4-2. PCI-Express Function Test .....	11
4-3. Mini PCI Card Compatibility Test .....	11
4-4. CardBus (PCMCIA) Compatibility Function Test.....	11
4-5. Adapter Compatibility- Industry Control Card PC/104, PC/104+, PCI-104 Modules.....	11
4-6. SSD Modules Compatibility Test.....	12
4-7. Peripheral Compatibility- Storage Device Test.....	12
5. Timer Accuracy Test.....	13
5-1. System Clock & RTC Clock Test .....	13
5-2. Booting Timer Test .....	13
5-3. Watchdog Timer Test .....	13
6. O.S. Compatibility Test .....	14
6-1. English CentOS 5.5 – Kernel 2.6.18.3- 194.....	14
6-2. Windows 7 Embedded Standard English Version 32/64Bit.....	15
6-3. Windows XP Embedded Standard English Version 32/64Bit.....	16
7. BIOS Function Test.....	17
7-1. Boot Sequence Test .....	17
7-2. Power Management Test.....	17
7-2.1. APM Power Management Test.....	17
7-2.2. ACPI Power Management Test .....	17
7-3. Power On Function Test.....	17
7-4. Power On after Power Failure Test.....	18
7-5. AAEON Tag Check Utility .....	18
7-6. TPM Function Test.....	18
7-7. IAMT Function Test.....	18
7-8. CAN port Function Test .....	18
7-9. Supervisor / User Password Test.....	18
8. Performance Test .....	19
8-2. Memory Test .....	19

There are 3 test results in this document; they are described as follows:

**Pass:** Function worked perfectly

**Fail:** Function failed and must be modified in the next version

**N/A:** Outside of specifications or no test equipment

The test report would be tested and updated after version changed.

●Version Released Records

Date	Version	Item	Note
2010/04/21	P5-1001	1. 調整文字表格前後對齊 2. Modify 新版首頁	
2010/06/01	P5-1001	1. New Test Report	
2010/06/21	P5-1002	1. Add BIOS -> SPI ROM Setting (South Bridge – GPIO)	
2010/09/02	P5-1003	1. Modify All Test Items	

# 1. OSD Control Function Test

## 1-1. OSD Control Test

OSD Control Function	Function			Note
	Pass	Fail	N/A	
Auto			X	
MENU			X	
UP	X			
DOWN	X			
POWER	X			
EXIT			X	

## 1-2. OSD – On Screen Display Test

OSD –On Screen Display	Function			Note
	Pass	Fail	N/A	
Input Source			X	OSD Control by system
PIP Enable			X	
Auto Tune			X	
Backlight	X			
Brightness	X			
Volume Up	X			
Volume Down	X			
Contrast			X	
Color			X	
Quality			X	
Position			X	
Language			X	
Recall			X	
Save Exit			X	
Cancel Exit			X	

## 1-3. OSD Light Test

OSD Control Function	Function			Note
	Pass	Fail	N/A	
Power off	X			
Power on	X			
Stand by	X			Into S1 / S3 and see light function

## 1-4. Modular System Industrial Workstation Function Test

Test Item	Result			Note
	Pass	Fail	N/A	
AC power outlet / inlet	X			
Power On / Off	X			
Power LED	X			
H.D.D LED	X			
CD-ROM drive included			X	
Floppy drive included			X	
Lockable front-panel door			X	
Finger mouse	X			
59 Data-entry&20/24 Function keys	X			

### 1-5. Mechanism construction check

Test Item	Result			Note
	Pass	Fail	N/A	
Case construction check	X			
PCMIC A construction check	X			
CF Card construction check	X			Please check both ( Type I and Type II )
I/O Port connector check	X			Serial port / Parallel port / PS2 connector
USB connector check	X			
Component check	X			

## 2. Basic Function Test

### 2-1. Video Function Test

#### 3-1.1. Single Output Function Test

Note: Pay attention with Full Screen under POST screen and Text Mode.							
Interface	RTC-1000-D1						
VGA	CHIMEI 22SH-L						
External	N/A						
Resolution	VGA			External			Note
	Pass	Fail	N/A	Pass	Fail	N/A	
640X480			X			X	
800X600	X					X	
1024X600	X					X	
1152X864			X			X	
1280X600			X			X	
1280X720			X			X	
1280X768			X			X	
1280X960			X			X	
1280X1024			X			X	
1400X1050			X			X	
1600X900			X			X	
1600X1200			X			X	
1600X1050			X			X	
1792X1344			X			X	
1856X1392			X			X	
1920X1080			X			X	
1920X1200			X			X	
1920X1440			X			X	
2048X1536			X			X	
Rotation	X					X	Rotation ( 0 / 90 /180 /270)

#### 2-1.2. Dual Output Function Test

Selection	Output	Result			Note
		Pass	Fail	N/A	
Dual Display Clone	LVDS + VGA	X			
Dual Display Twin				X	
Extended Desktop		X			

#### 2-1.3. Video Resolution Test

Test points:

1. Power on without inserting any VGA connector until system reaches Windows desktop
2. Plug VGA connector into test machine while system reaches Windows then check VGA driver and display
3. Check VGA output Brightness is normal and it shows "Ghost Image" / "Flicker" or not

	Result			Note
	Pass	Fail	N/A	
In Windows Desktop			X	

## 2-2. Audio Function Test

No Support

Function Test	Result			Note
	Pass	Fail	N/A	
L (Left) Channel	X			
R (Right) Channel	X			
Line In			X	
MICROPHONE			X	
S/P DIF function Test	Input		X	
	Output		X	







## 2-3. Touch Panel Function Test

No Support

	Result			Note
	Pass	Fail	N/A	
4 Points Calibration	X			
Clear and Calibrate			X	
Linearization			X	
Draw Test			X	

## 2-4. LAN Function Test

No Support

1000MBps LAN HUB		D-Link DGS-1008D							
100MBps LAN HUB		HP J4095A 24 Ports							
10MBps LAN HUB		SVEC FD916H							
OnBoard LAN1	Intel® 82574L Gigabit Network Connect					MAC Address	00-01-A1-22-24-46		
OnBoard LAN2	N/A					MAC Address	N/A		
LAN Speed	Link / Active LED	Speed LED	LAN 1			LAN 2			Note
			Pass	Fail	N/A	Pass	Fail	N/A	
1000MBps			X					X	
100MBps			X					X	
10MBps			X					X	
Wake On LAN			X					X	
Boot ROM to Novell 4.11 [RPL]					X			X	
LAN Boot (PXE)					X			X	
Internet Browser (DHCP Server)			X					X	



## 2-5. Others Function Test

[ ] No Support

Function Test	Result			Note
	Pass	Fail	N/A	
3G Module (.....)			X	
GPRS (.....)			X	
Wireless LAN (3DSP Wireless 802.11 B+G USB Adapter)	X			
Bluetooth (3DSP WLAN and Bluetooth USB Adapter )	X			

### 3. Integration Test

#### 3-1. USB Port Integration Test

Item	USB Port	Boot			Function(XP)			Note
		Pass	Fail	N/A	Pass	Fail	N/A	
USB HDD		X			X			
USB FDD Mitsumi D353GUE		X			X			
SONY USB2.0 DVD-R/W DRX-830UL		X			X			
USB Hub Test (Connect USB Device) HUB Port1: USB Keyboard / HUB Port2: USB Mouse / HUB Port3: USB HDD								
USB 2.0 HUB PowerSync / USB 2.0 4 Port HU-155					X			

#### 3-2. Digital I/O Port Test

DIO Address ( ___ )	Result			Notes
	Pass	Fail	N/A	
DIO VCC +5V			X	

#### 3-3. COM Port Integration Test

Test Item	Result			Notes
	Pass	Fail	N/A	
Serial Modem Dial Out	X			
Onboard Modem Dial Out	X			
Onboard Modem Ring In			X	
Serial Modem Ring In			X	Test by Modem
Serial Modem +12V			X	Test by Multimeter
Serial Modem +5V			X	Test by Multimeter
BurnIn Test V5.3 Pro	X			

#### 3-4. RS-422 / RS-485 Test

Test Item	Result			Notes
	Pass	Fail	N/A	
RS-422 for COM2			X	Use loopback and WINSSD.exe to test RS-422 in Windows
RS-485 for COM2			X	Use ICP CON I-7044D D/IO Module in Windows(Support Auto flow control)
			X	The communication between the RS-485 pots of two boards is linked by one 100m cable on Windows Terminal

#### 3-5. LPT Port Test

Test Item	Result			Notes
	Pass	Fail	N/A	
XEROX Phaser 3124 Laser Printer			X	

## 4. Application Test

### 4-1. PCI Slot Function (PCI Adapter Card) Test No Support

PCI Card	Function			Note
	Pass	Fail	N/A	

### 4-2. PCI-Express Function Test No Support

PCI-Express x1 (請自行修改 x1 x4 x16)	Function			Note
	Pass	Fail	N/A	

### 4-3. Mini PCI Card Compatibility Test No Support

Mini PCI Card	Function			Note
	Pass	Fail	N/A	

### 4-4. CardBus (PCMCIA) Compatibility Function Test

CardBus (PCMCIA)	Function			Note
	Pass	Fail	N/A	
Broad Lanner GW-NS54SG 54M Wireless Cardbus	X			
D-Link AirPlus DWL-G650 Wireless Cardbus Adapter	X			
Accton EN2220A Ethernet Cardbus PC Card	X			

### 4-5. Adapter Compatibility- Industry Control Card PC/104, PC/104+, PCI-104 Modules

#### 4-5.1. Device List: PC/104 Module No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
AAEON PCM-3660				

4-5.2. Device List: PC/104+ Module  No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
AAEON PCM-3430				

4-5.3. Device List: PCI-104 Module  No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
AAEON PCM-3730				

4-5.4. Device List: PCI/104 Express Module  No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
AAEON PER-123				

4-6. SSD Modules Compatibility Test

SSD HDD Compatibility Test:

Cable Type:  IDE  SATA2  MLC  SLC  No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
Transcend SSD 16G - TS16GSSD25S				

4-7. Peripheral Compatibility- Storage Device Test

4-7.1. Disk on Chip (DOC) Test  No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
DOC 2000 Model	16MB			M-System / MD2200-D16
DOC 2000 Onboard Address	CC00			
	D000			
	D400			
	D800			
	DC00			
	Disable			

4-7.2. Disk on module (DOM) Test  No Support

Test Item	Result			Notes
	Pass	Fail	N/A	
Transcend / TS512MDOM40V / 512MB / IDE 40 Pin				
Transcend / TS512MDOM44V / 512MB / IDE 44 Pin				

## 5. Timer Accuracy Test

### 5-1. System Clock & RTC Clock Test

Under Room Temperature: 26 °C

Item Function	Time Interval	Margin for error	Actual	Result			Note
				Pass	Fail	N/A	
RTC Clock in Power On Mode	24 hrs	+/-2 sec	-1 Sec	X			
RTC Clock in Power Off Mode	24 hrs	+/-2 sec	-1 Sec	X			

### 5-2. Booting Timer Test

Installation	Actual	Note
System Booting Time	7.84 Sec	Press the Power Button till "Beep" Sound appears

### 5-3. Watchdog Timer Test

Use Function as below: WD.EXE

[ ] No Support.

Under Room Temperature: 26°C / DOS Mode

Time-out interval	Margin for error	Actual	Result			Note
			Pass	Fail	N/A	
10 sec	+/- 10%	10.2 Sec	X			Software provided by Aaeon S/W
60 sec	+/- 10%	60.3 Sec	X			

## 6. O.S. Compatibility Test

### 6-1. English CentOS 5.5 – Kernel 2.6.18.3- 194

[ X ] No Support

Driver Information:

Chipset Software	
Graphics Media	
LAN Driver	
Audio Driver	

Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
Kernel 2.6.18.3- 194				Type uname -a

Test Result:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Display Function Test</b>				
VGA -- Full Screen				
<b>Network Function Test</b>				
Connect to Internet – LAN 1				
Connect to Internet – LAN 2				
<b>Base Function Test</b>				
Mouse Test				
Keyboard Test				
CD-ROM Test				
USB 2.0 Removable Devices				
<b>X Windows Application</b>				
Start Button Office				Office function
X-Window				Startx – Desktop in Linux
<b>Command Test On Text Mode: Attention Delay Phenomenon.</b>				
uname -a				Show information
Shutdown				Init 0 or shutdown -h now
Restart the Computer				Init 6 or shutdown -r now
Halt				Power Off Mode
ls / clear .....; cd /dev /ls -l				Command instruction

## 6-2. Windows 7 Embedded Standard English Version 32/64Bit

[ ] x32 Driver Information:

[X] No Support

Chipset Software	
Graphics Media	
LAN Driver	
Audio Driver	

### Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows 7 Ultimate ACPI Mode				

### Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
<b>Single Display</b>				
VGA -- Full Screen				
DVI-- Full Screen				
HDMI-- Full Screen				
<b>Boot - Windows 7 Ultimate Advanced Options Menu</b>				
Safe Mode				
<b>Basic Function Test</b>				
PS/2 Mouse and Keyboard				
USB Mouse and Keyboard				
COM Port Mouse detect				
LPT1				
USB 2.0 Removable Devices				
<b>LAN Function Test</b>				
LAN1 --- Auto				
LAN2 --- Auto				
<b>Audio Function Test</b>				
Line Out Test				
Line In Test				
Microphone Test				
S/P DIF Test				
<b>Start Menu</b>				
Log off User				
Shut down				
Standby				
Restart				
Hibernate				

### 6-3. Windows XP Embedded Standard English Version 32/64Bit

x32 Driver Information:

Chipset Software	Intel(R) Chipset Device Software: 9.0.0.1008(2008/05/01)
Graphics Media	Mobile Intel(R)945 Express Chipset Family 6.14.10.4864(2007/08/24)
LAN Driver	Intel(R)82574L Gigabit Network Connection 10.3.49.0(2008/08/05)
Audio Driver	Realtek ALC888 5.10.0.5772 (2009/01/06)

No Support

x64 Driver Information:

Chipset Software	
Graphics Media	
LAN Driver	

#### Install OS to SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows XP ACPI Mode	X			

#### Test Results:

Test Item	Result			Note
	Pass	Fail	N/A	
Single Display				
VGA -- Full Screen	X			
Boot - Windows XP Advanced Options Menu				
Safe Mode	X			
Basic Function Test				
PS/2 Mouse and Keyboard			X	
USB Mouse and Keyboard	X			
COM Port Mouse detect			X	
LPT1			X	
USB 2.0 Removable Devices	X			
LAN Function Test				
LAN1 --- Auto	X			
LAN2 --- Auto			X	
Audio Function Test				
Line Out Test	X			
Line In Test			X	
Microphone Test	X			
S/P DIF Test			X	
Start Menu				
Log off User	X			
Shut down	X			
Standby	X			
Restart	X			
Hibernate	X			



## 7. BIOS Function Test

### 7-1. Boot Sequence Test

Test Item	Result			Note
	Pass	Fail	N/A	
Floppy			X	
Hard Disk	X			
Removable (All Device Priority)			X	
CDROM			X	
USB HDD	X			
USB Floppy	X			
USB CD-ROM	X			
LAN [ Boot From LAN First ]			X	
Disable	X			
Check "Halt on" item – All error but K/B	X			

### 7-2. Power Management Test

#### 7-2.1. APM Power Management Test

Test Item	Setting Test	Result			Note
		Pass	Fail	N/A	
Suspend Mode	Function Test	X			
Power Button	Delay 4 Sec	X			Soft-Off By PWRBTN
Power Button	Instant-Off	X			Soft-Off By PWRBTN

#### 7-2.2. ACPI Power Management Test

Test Item	Result			Note
	Pass	Fail	N/A	
Enable ACPI Auto Configuration			X	
Enable Hibernation	X			
ACPI - S1 (POS)			X	Resume from PS/2 keyboard or mouse.
	X			Resume from USB keyboard or mouse.
ACPI - S3 (STR)	X			
Suspend Disable			X	

### 7-3. Power On Function Test

Test Item	Result			Note
	Pass	Fail	N/A	
Password	X			
Hot KEY			X	
MOUSE Move & Click			X	
MOUSE Click			X	
Any KEY			X	
BUTTON ONLY	X			

#### 7-4. Power On after Power Failure Test

Test Item	Result			Note
	Pass	Fail	N/A	
Off			X	
On			X	
Former-Sts (Auto)			X	

#### 7-5. AAEON Tag Check Utility

Test Item	Result			Note
	Pass	Fail	N/A	
Check AAEON BIOS OK	X			AONCHECK.EXE

#### 7-6. TPM Function Test

Test Item	Result			Note
	Pass	Fail	N/A	
No Change	X			
Clear	X			
Enable & Active	X			
Disable & Disactive	X			Detect TPM device under Windows.

#### 7-7. IAMT Function Test

Test Item	Result			Note
	Pass	Fail	N/A	
IAMT Function			X	

#### 7-8. CAN port Function Test

Note: Sets the interrupt for each port. Be sure that this setting matches the IRQ

Basic Function Test					
Test Item	Interrupt: Polling or IRQ	Result			Note
		Pass	Fail	NA	
CAN1 transmits CAN2	CAN1:			X	
	CAN2			X	
CAN2 transmits CAN1	CAN2:			X	
	CAN1:			X	

#### 7-9. Supervisor / User Password Test

Test Item	Result			Note
	Pass	Fail	N/A	
Supervisor Password	X			
User Password	X			

## 8. Performance Test

### 8-1. Performance Test

Test Result: (Display set 1400\*1050 test)

Testing Software	Scope		Note
	AAEON	Ref.	
<b>PCMark2002</b>			<b>Only for XP</b>
CPU	4084	-	
Memory	9757	-	
HDD	1324	-	
<b>Benchmark (A)</b>	-		

Test Result: (Display set 1024\*600 test)

Testing Software	Scope		Note
	AAEON	Ref.	
<b>3Dmark2003 v360</b>			<b>Only for XP</b>
3Dmark Score	1079	-	
CPU Score	406	-	
<b>Benchmark (A)</b>	-		
<b>3Dmark2005 v130</b>			<b>XP and Windows 7</b>
3Dmark Score	369	-	
CPU Score	2638	-	
<b>Benchmark (B)</b>	-		
<b>Average Efficiency</b>	-		

Testing Software	Scope		Note
	AAEON	Ref.	
<b>Final Reality V1.01—BenchMark Test</b>			<b>XP and Windows 7</b>
2D image	24.52	-	
3D	5.36	-	
Bus transfer	56.06	-	
Overall	18.71	-	<b>Reality marks</b>
<b>Benchmark (A)</b>	-		

### 8-2. Memory Test

Test Item	Result			Note
	Pass	Fail	N/A	
MEM v4.10 Overnight Test	X			