

COM-LN

Intel Atom N450/D410/D510 +ICH8M COM Express CPU

P5 Test Report

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

Issue date	Approval	Test Engineer
2010 / 06 / 30	Jansin Lee	Allen Hsu

Platform Information:

Product Model	COM-LN
Description	Intel Atom N450/D410/D510 +ICH8M COM Express CPU
Test Configuration	<input checked="" type="checkbox"/> New product <input checked="" type="checkbox"/> PCB : COM-LN Rev A1.0 <input checked="" type="checkbox"/> Carrier Board : ECB-916M Rev A2.0 <input checked="" type="checkbox"/> BIOS : CLND 1.00 x64 05/20/2010 // CLNN 1.00 x64 05/20/2010 <input checked="" type="checkbox"/> Chipset : <input checked="" type="checkbox"/> CPU : Onboard Intel Atom N450 / D510 / D410 Processor 1.66GHz <input checked="" type="checkbox"/> North Bridge : CPU included NB (Intel IDA000) <input checked="" type="checkbox"/> South Bridge : Intel ICH8-M <input checked="" type="checkbox"/> VGA Chipset : Intel Atom N450 / D410 /D510 Processor integrated <input checked="" type="checkbox"/> Audio Chipset : Realtek ALC888 High definition audio(For Carrier Board) <input checked="" type="checkbox"/> Ethernet Chipset : Intel 82567V LAN/Intel82573LGigabit Ethernet(For CarrierBoard) <input checked="" type="checkbox"/> I/O Chipset : ICH8M / Winbond W83627HG(For Carrier Board) <input checked="" type="checkbox"/> Remark: P5 Test Report for COM-LN

Item	Device Information	Test Item
PCB Model / Version	COM-LN Rev. A1.0	1~8
BIOS / Version	CLND 1.00 x64 05/20/2010 // CLNN 1.00 x64 05/20/2010	1~8
CPU Type	Onboard Intel Atom N450 / D510 / D410 Processor 1.66GHz	1~8
Memory Type	Transcnd DDR2 SO-DIMM ~ 667 ~ 2GB ~7TE17 D9HNL	1~8
SATA HDD	FUJITSU SATA 2.5" H.D ~ MHW2060BH ~60GB	1~8
Monitor	HANNS.G LCD Monitor HK191H - HSG1049	1~8
Compact Flash	Transcend CF 2 / 4 / 8GB	1~8
OS Install	Windows XP Professional English Version V2002 Service Pack 3	1~8
Power Supply	ATX Power: Delta 350W GPS-350EB-102A	1~8

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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.

Test Result for Certification

1. I/O Peripheral Function Test

I/O Peripheral Function Test –I/O Function	Result		
	Pass	Fail	N/A
PATA Master	X		
PATA Slave	X		
SATA Port 0	X		
SATA Port 1	X		
SATA Port 2	X		
SATA Port 3			X
RAID 0 Function Test			X
RAID 1 Function Test			X
SSD H.D Test	X		
SATA1 / Serial ATA Connector 1	X		
SATA2 / Serial ATA Connector 2	X		
SATA3 / Serial ATA Connector 3			X
SATA4 / Serial ATA Connector 4			X
Compact Flash -Occupied by SATA port	X		
COM 1-232	X		
COM 2-232	X		
COM 2-422	X		
COM 2-485	X		
COM 3-232			X
COM 4-232			X
PS/2 Mouse & Keyboard	X		
Audio Connector	X		
USB 1/2 Ports	X		
USB 3/4 Ports	X		
USB 5Ports - on Carrier Board	X		
USB 6/7/8 Ports			X
USB 2.0 1/2 Ports	X		
USB 2.0 3/4 Ports	X		
USB 2.0 5 Ports - on Carrier Board	X		
USB 2.0 6/7/8 Ports			X
DVI Function			X
CD-In Connector			X
TFT TTL LCD			X
TFT LVDS LCD	X		
TV-out / S Terminal			X
TV-out / AV Terminal			X
Touch Screen – 8 Wire Occupied by USB	X		
Touch Screen – 5 Wire Occupied by USB	X		

Touch Screen – 4 Wire Occupied by USB	X		
DIMM Slots	X		
Watchdog IRQ n			X
Watchdog Software Control	X		
CPU FAN Connector	X		
System FAN Connector			X
Front Panel	Result		
	Pass	Fail	N/A
Power on Button	X		
IDE LED	X		
External Buzzer	X		
On Board Buzzer	X		
Reset Switch	X		
Power LED	X		
Jumpers Function	Result		
	Pass	Fail	N/A
CMOS Clear Selection	X		
Backlight Power Selection	X		
Power Connector & Function	Result		
	Pass	Fail	N/A
ATX Power Connector	X		
AT Power Connector	X		
ATX Power Connector(Short PS-ON and GND to simulate AT mode)			X
AC Power			X
LAN Connector & Function	Result		
	Pass	Fail	N/A
LAN Speed LED	LAN1	X	
	LAN2	X	
LAN Active LED	LAN1	X	
	LAN2	X	
LAN Link LED	LAN1	X	
	LAN2	X	
LAN 10/100 Ethernet	X		
LAN 1G Ethernet	X		
PCI Connector & Function	Result		
	Pass	Fail	N/A
Mini PCI Slots	X		
PCI Slots	X		
PCI Express *1	X		
Mini PCI-Express (Mini Card)	X		
Express card Occupied by PCI-Express x1 & USB	X		

2. Power Consumption Test (Run Prime95 Program)

Platform Information

PCB Model / Version / CPU Board	COM-LN Rev A1.0
Carrier Board	ECB-916M Rev A2.0
BIOS	CLND 1.00 x64 05/20/2010 // CLNN 1.00 x64 05/20/2010
Operating System	Windows XP sp3
CPU	Onboard Intel Atom D510 / N450 / D410 Processor 1.66GHz
Memory	Apacer DDR2 SO-DIMM 667 2GB
SATA HDD	Seagate 3.5 SATA H.D 160GB
LCD	HANNS.G LCD Monitor HK191H - HSG1049
Power Supply	ATX Power Supply : Delta 350W GPS-350EB-102A AT Power Supply: N/A

Test Environment	ATX Power: Delta 350W GPS-350EB-102A	AT Power: N/A	Note
Model			
CPU	Atom D510 / N450 / D410	-----	
Normal Mode (+5V)	0.74 / 0.64 / 0.71 A	----- A	
Suspend Mode (+5V)	0.59 / 0.59 / 0.61 A	----- A	
5VSB in Power Off Mode (just for ATX)	0.26 / 0.26 / 0.26 A	----- A	
5VSB in Power On Mode (just for ATX)	0 / 0 / 0 A	----- A	
5VSB in Suspend Mode (just for ATX)	0 / 0 / 0 A	----- A	
Normal Mode (+12V)	1.08 / 0.81 / 1.01 A	----- A	
Suspend Mode (+12V)	0.65 / 0.47 / 0.62 A	----- A	S1
Normal Mode (+3.3V) (just for ATX)	0 / 0 / 0 A	----- A	
Suspend Mode (+3.3V) (just for ATX)	0 / 0 / 0 A	----- A	
Normal Mode (-12V)	----- A	----- A	
Suspend Mode (-12V)	----- A	----- A	
Normal Mode (-5V)	----- A	----- A	
Suspend Mode (-5V)	----- A	----- A	

3. Timer Accuracy Test

System Clock & RTC Clock Test				
Test Method	Margin for error	Result		
		Pass	Fail	N/A
RTC Clock in Power On Mode	±3 second during 24 hours	X		
RTC Clock in Power Off Mode	±3 second during 24 hours	X		
Watchdog Timer Test		Result		
		Pass	Fail	N/A
Time-out Interval	10 sec	X		
	60 sec	X		
	120 sec	X		

4. Network HUB / LAN Connection Test

Location		LED Type				Result		
						Pass	Fail	N/A
LAN1 LED		Link / Speed LED				X		
		Active LED				X		
LAN2 LED		Link / Speed LED				X		
		Active LED				X		
Location	Speed	HUB Type	Cable Length	HUB Speed	Onboard LAN Speed	Result		
						Pass	Fail	N/A
Onboard LAN1	10/100/1000 Mbps	D-Link DGS-1008T	100M	1GBps	1000	X		
		Accton DeskTop-3005	100M	100 MBps	100	X		
		SVEC FD916H (10 Mbps HUB)	100M	10 MBps	10	X		
Onboard LAN2	10/100/1000 Mbps	D-Link DGS-1008T	100M	1GBps	1000	X		
		Accton DeskTop-3005	100M	100 MBps	100	X		
		SVEC FD916H (10 Mbps HUB)	100M	10 MBps	10	X		

5. Hardware Compatibility

CPU Compatible Test							
CPU Type	FSB	Prime95 Version	Result				
			Pass	Fail	N/A		
Onboard Intel Atom D510 / N450 / D410 Processor 1.66GHz	667 MHz	V.259	X				
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
Transcend DDR2 SO-DIMM 1GB	Transcend TQ123EJF6 T073	667	1GB	V4.10	X		
Transcend DDR2 SO-DIMM 2GB	Micron 7TE17 D9HNL	667	2GB	V4.10	X		
Transcend DDR2 SO-DIMM 2GB	SEC 752 HCE6 K4T1G084QQ	667	2GB	V4.10	X		
Audio Basic Function Test					Result		
					Pass	Fail	N/A
System Sound					X		
CD_In							X
CD_In Sound Recorder							X
Play Sound Recorder					X		
Line Out					X		
Line In					X		
Line In Sound Record					X		
MIC Speaker			Condenser		X		
MIC Sound Recorder			Condenser		X		
Audio 5.1 Channel with S/P DIF Function Test					Result		
					Pass	Fail	N/A
2-channel mode for stereo speaker output					X		
4-channel mode for 4 speaker output							X
6-channel mode for 5.1 speaker output							X
8-channel mode for 7.1 speaker output							X
S/P DIF function Test		Input					X
		Output					X
On Board TV Function Test					Result		
					Pass	Fail	N/A
NTSC		AV Terminal					X
PAL							X
NTSC		S Terminal					X
PAL							X
On Board LCD Function Test							

TFT LCD	Type	Voltage	Result		
			Pass	Fail	N/A
LVDS	AUO G065VN01 V.0 / 6.5" / 640x480 / 18bit (4:3)	3.3V	X		
	AUO G065VN01 V.0 / 6.5" / 640x480 / 24bit (4:3)	3.3V			X
	Data Image 7" / 800*480 / 18bit (16:9)	3.3V	X		
	AU G084SN05 V.3 / 8.4" / 800*600 / 18bit (4:3)	3.3V	X		
	AU B104SN02 V.0 / 10.4" / 800*600 / 18bit (4:3)	3.3V	X		
	AUO G084SN05 v7 / 8.4" / 800*600 / 24bit (4:3)	3.3V			X
	AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3)	3.3V	X		
	AU M150XN07 V.2 / 15" / 1024x768 / 24bit (4:3)	5V			X
	Toshiba /12.1"/1280 x 768 x 18bit (16:9)	5V	X		
	AU M170EG01 V.D/ 17"/ 1280*1024 / 48bit (4:3)	5V			X
	AU M170XW01 V.1 / 17" / 1280x768 / 24bit (16:9)	5V			X
	AUO T260XW02 / 26" / 1366x768 / 24bit	5V			X
	AU M201UN02 V.5 / 20.1" / 1600x1200x48bit	5V			X
	AUO T370HW01 / 37" / 1920x1080 / 48bit	12V			X
	AUO M190PW01 V0 / 19"/1440X900/48 bit	5V			X

PCI Slot Function (PCI Adapter Card) Test

Model	Type	Result		
		Pass	Fail	N/A
CHANTECH NVIDIA GeForce4 MX440-8X	VGA Card	X		
Creative Sound BLASTER Live5.1	Sound Card	X		
ADAPTEC Ultra160 SCSI ASC-29160	SCSI Card	X		
I-VIEW CP-1400AS (with Age STD-477FAI CCD)	Capture Card	X		
Intel GD82559 10/100 Mbps Fast Ethernet Adapter	LAN Card	X		
3Com 3C905C-TXM ETHERLINK 10/100 PCI	LAN Card	X		
D-Link DWL-520+ Wireless LAN	LAN Card	X		
D-Link DU-520 USB 2.0	USB Hub Card	X		
Tekram TR-822 Serial ATA 150 [SA-001] + SATA HDD Seagate ST3120026AS 120GB	SATA Card	X		

ISA Slot Function Test

	Result		
	Pass	Fail	N/A
NE2000 Compatible LAN Card (RTL8019AS)			X
Adaptec AHA-1510/20/22B SCSI Card			X

PCI-Express Function Test

Model	Result		
	Pass	Fail	N/A
SUNIX SATA1414 VER 1.1 PCI-Express x1 SATA Card	X		
SksKonnnect SK-9E21D 10/100/1000 Base-T Adapter PCI-Express x1 LAN Card	X		
Adaptec AAR-1430SA SATAII HostRAID Controllers PCI-Express x4 RAID Card			X
ASUS EAX1600PRO/TD/256M/A (ATI Chipset) PCI-Express x16 VGA Card			X
WinFast PX6200 TC TDH PCI-Express x16 VGA Card			X

SunBox 34mm Giga LAN Express Card	X		
Ralink RT2571WF WLAN Mini Card(USB Interface)	X		
HDD Compatibility Test			
Model	Result		
	Pass	Fail	N/A
Western Digital 3.5" IDE H.D~ WD800BB ~ 80GB	X		
Seagate 3.5" IDE H.D ~ ST3160812A ~160GB	X		
Seagate 3.5" SATA H.D ~ ST3160811AS ~ 160GB	X		
FUJITSU 2.5" SATA H.D ~ MHW2060BH ~ 60GB	X		
IDE Cable Function test			
IDE Model	Result		
	Pass	Fail	N/A
40 Pin Cable ATA100	X		
44 Pin Cable ATA33			X
80 Pin Cable ATA100	X		
USB Function Test			
USB Basic Function Test	Result		
	Pass	Fail	N/A
USB Controller	X		
USB 2.0 Controller	X		
USB Keyboard Support	X		
USB Mouse Support	X		
USB 1.1 Compatible Test	Result		
	Pass	Fail	N/A
USB 1.1 Compatible Test	X		
USB 2.0 Compatible Test	Result		
	Pass	Fail	N/A
USB 2.0 Compatible Test	X		
USB 2.0 Function Test	Result		
	Pass	Fail	N/A
Install Windows XP Professional from HighSpeed Device: USB2.0 DRW-1604P-D/WHT/G/ASUS	X		
USB Device Full Loading Test			
Model	Result		
	Pass	Fail	N/A
Mitsumi FLL3.5 D353GUE/FUE	X		
USB HDD 20GB	X		
USB Card Reader	X		
USB Mouse	X		
USB Flash drive Transcend 2GB	X		

Floppy Disk Controller Function Test		Result			
		Pass	Fail	N/A	
Copy and compare file between C: and A / B:				X	
Change Floppy to None value				X	
Swap FDD				X	
Peripheral Compatibility-Storage Device					
Model	Interface	Result			
		Pass	Fail	N/A	
FUJITSU MCB3064SS	SCSI			X	
IOMega ZIP 100 parallel port	Parallel			X	
IOMega ZIP100MB Internal ATAPI Drive	IDE			X	
DOC				X	
Type-I CF	Fix / PIO Mode	X			
Type-I CF	Fix / UDMA Mode	X			
Digital I/O Connector Test		Result			
		Pass	Fail	N/A	
Input Address: N/A		X			
Output Address: N/A		X			
VCC: (5V)		X			
DIO-1 Function Test		X			
DIO-2 Function Test				X	
Adapter Compatibility- Industry Control Card PC/104, PC/104+, PCI-104 Modules					
Interface	Model	Type	Result		
			Pass	Fail	N/A
PC/104	AAEON PCM-5600	Modem Module			X
	AAEON PCM-3115B	PCMCIA Module			X
PC/104+	AAEON PCM-3430	SCSI Module			X
PCI-104	AAEON PCM-FA00	Mini-PCI Converter			X
	AAEON PCM-3794	SCSI Module			X
	AAEON PCM-3730	Intel 82559 LAN Module			X
PCI/104 Express	AAEON PER-123				X
On-Board RAID Function Test					
Model	Interface	Result			
		Pass	Fail	N/A	
Set SATA HDDs as RAID 0	SATA			X	
Set SATA HDDs as RAID 1	SATA			X	
Set SATA HDDs as RAID 10	SATA			X	
Set SATA HDDs as RAID 5	SATA			X	
COM Function Test		Result			
		Pass	Fail	N/A	

COM Port Burn In Test overnight		X		
Disk On Module [DOM] Compatibility Test				
Model	Interface	Result		
		Pass	Fail	N/A
Transcend / TS512MDOM40V / 512MB	IDE 40 Pin	X		
Transcend / TS512MDOM44V / 512MB	IDE 44 Pin			X
Mini PCI Card Compatibility Test				
Model	Interface	Result		
		Pass	Fail	N/A
PCI 10/100 LAN Mini PCI Card (Model:PER-C10L)	LAN	X		
GM-101 WLAN 11b/g 54Mbps Mini PCI Card (Model: VNT6655AM)	WLAN	X		
ADLINK mPCI-8750 ATI Rage XL Mini PCI VGA Card	VGA	X		
COM/LPT Ports & RS-232/422/485 Function Test		Result		
		Pass	Fail	N/A
RS-422 for COM2		X		
RS-485 for COM2		X		
COM1		X		
COM2		X		
COM3				X
COM4				X
COM5				X
COM6				X
LPT1				X
LPT2				X
Card Bus(PCMCIA) Compatibility Function Test				
Model	Result			
	Pass	Fail	N/A	
Intel PRO/Wireless 2011B LAN PC Card (WPC2011BWW)			X	
PQI 16MB Compact Flash Adapter (64MB PQI CF Card inserting)			X	
Kingston datapack DP-PCM2 / 2GB (PC Card Typell HDD)			X	
PCi GW-NS54SG Cardbus Adapter Wireless LAN Type-II			X	

6. O.S. Compatibility Test

Installation Operation System Compatibility Test			Result		
			Pass	Fail	N/A
[] Linux-Red Hat 9.0 or [X] Fedora Core 12 -Kernel 2.6.31			X		
Windows Vista TM Ultimate English Version					X
Windows Vista TM Ultimate x64 Edition English Version					X
Windows XP Professional English Version V2002 Service Pack 3			X		
Windows XP Professional English Version /Standard x64 Edition					X
Windows 2000 Professional English Version V5.00.2195 Service Pack4					X
Windows Server 2000 English Version					X
Windows Server 2003 English Version / Standard Edition 5.2.3790					X
Windows Server 2003 English Version /Standard x64 Edition					X
Utility and Driver Test					
OS	Drivers Version		Result		
			Pass	Fail	N/A
Linux-Fedora 10 Kernel- 2.6.27	Chipset Software	Default Driver	X		
	Graphics Media	Default Driver	X		
	LAN Driver	Default Driver	X		
	Audio Driver	Default Driver	X		
Windows Vista TM Ultimate English Version	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Vista TM Ultimate x64 Edition English Version	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows XP Professional English Version V2002 Service Pack 3	Chipset Software	Intel(R) Chipset Device Software ~ 9.1.1.1009 ~ 03/09/2009	X		
	Graphics Media	Intel(R) Graphics Media Accelerator 3150 ~ 6.14.10.5182 ~ 11/11/2009	X		
	LAN Driver	Intel(R) 82567V-3 Gigabit Network Connection ~ 10.1.0.0 ~ 05/28/2009 Intel(R) PRO/1000 PL Network Connection ~ 9.12.13.0 ~ 12/11/2007	X		
	Audio Driver	Realtek High Definition Audio ~ 5.10.0.5672 ~ 07/24/2008	X		
Windows XP Professional x64 Edition English Version Service Pack 2 V2002	Chipset Software				X
	Graphics Media				X

	LAN Driver				X
	Audio Driver				X
Windows 2000 Professional English Version V5.00.2195 Service Pack 4	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Server 2000 English Version	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Server 2003 English Version Standard Edition 5.2.3790	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Server 2003 English Version Standard x64 Edition	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X

7. BIOS Function Test

Test Item	Result		
	Pass	Fail	N/A
Memory Beep Test	X		
Standard CMOS Setup Test	X		
Boot Sequence Test	X		
Power Management Test			
ATX Power Management Test	X		
AT Power Management Test	X		
Power On Function Test			X
Wake Up Event Test	X		
Power On after Power Failure Test	X		
CMOS Backup / Clear CMOS Test	X		
Boot ROM Test (RPL/PXE)	X		
Supervisor / User Password Test	X		
CRT / LCD / Function Test	X		
TV Standard Function Test			X
Init Display First Function Test			X
On-Chip Serial ATA Function Test	X		
SATA Mode-IDE/RAID Function Test	X		
USB Onboard Device Function Test	X		
BIOS AWDFLASH Program Test	X		

8. Performance Test

Platform Information

CPU Board	COM-LN Rev A0.3 (D510 / D410 /N450)
Carrier Board	ECB-916M Rev A2.0
BIOS	CLND 1.00 x64 05/20/2010 // CLNN 1.00 x64 05/20/2010
Operating System	Windows XP SP3
CPU	Intel Atom D510 / D410 / N450 Processor 1.66GHz
Memory	Transcend DDR2 SO-DIMM ~ 667 ~ 2GB
SATA HDD	Seagate 3.5" SATA H.D ~ 160GB ~ ST3160811AS
CRT	HANNS.G LCD Monitor HK191H - HSG1049 -1440*900
Chipset Software	Intel(R) Chipset Device Software ~ 9.1.1.1009 ~ 03/09/2009
Graphics Media	Intel(R) Graphics Media Accelerator 3150 ~ 6.14.10.5182 ~ 11/11/2009
LAN Driver	Intel(R) 82567V-3 Gigabit Network Connection ~ 10.1.0.0 ~ 05/28/2009 Intel(R) PRO/1000 PL Network Connection ~ 9.12.13.0 ~ 12/11/2007
Audio Driver	Realtek High Definition Audio ~ 5.10.0.5672 ~ 07/24/2008
Power Supply or Adapter	Delta ATX Power 350W GPS-350EB-102A

Test result:

Testing Software	Result	Unit
PCMark2002	(D510 / D410 /N450)	
CPU	2765 / 2743 / 2729	
Memory	7323 / 7275 / 7244	
HDD	1268 / 1429 / 1230	
Final Reality V1.01—BenchMark Test		
2D image	20.46 / 19.33 / 20.54	
3D	3.94 / 3.93 / 3.99	
Bus transfer	36.77 / 30.93 / 37.71	
Overall	13.82 / 12.60 / 14.01	Reality marks
3Dmark2001		
3DMark2001SE Build 330_Benchmark mode	3044 / 3049 / 3031	
Testing Software	Result	Unit
PCMark05		
PCMark	N/A / N/A / N/A	PCMarks
CPU	2019 / 1551/ 1552	
Memory	2522 / 2555/ 2538	
Graphics	840 / 821 / 621	
HDD	4962 / 5251 / 5238	
3Dmark2005		



Computing Platform Service Partner

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COM-LN P5 Test Report

3Dmark Score	349 / 263 / 262	
CPU Score	2247 / 1749 / 1720	