

# **ASUS Customer Service Center**

# **RMA Pretest user Manual**

Motherboard

Rev. 1.0

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#### **ASUS Pretest Fixtures Pack Rev. 1.00**

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Please read this document carefully; it contains important information about the "ASUS Pretest Fixtures Pack (Rev. 1.00)". Topics include:

- Customer Benefit
- Customer Responsibility
- Package Contents

#### **Customer Benefit**

Customers who have purchased the "ASUS Pretest Fixtures Pack" will obtain the advantage as shown below:

- 1. Process RMA pretest on-site.
- 2. Process troubleshooting efficiently.
- 3. Reduce NDF(No Defect Found) rate and save shipping cost.

Save TAT(Turn Around Time). ASUS will keep auditing the return NDF rate monthly. If it keeps under 10%, ASUS will provide higher RMA priority and 10 working days of TAT for customers who have done the Pretest.

4. ASUS will provide one year non-periodical software update.

#### **Customer Responsibility**

Any documents, software, fixtures or know-how, which relates to the "ASUS Pretest Fixtures Pack" are belong to ASUS confidential information. Customers must follow the items to purchase this package and than get the advantage from it:

- 1. Sign the NDA(Non-Disclosure Agreement) before purchasing it.
- 2. Following ASUS RMA return procedure and fill in the necessary documents to send the RMA products back to ASUS.
- 3. Provide test report to ASUS for future analysis.
- 4. All testing fixtures are forbidded to be resold.

#### Notice:

Customers who doesn't follow the instruction to fill in & provide the necessary documents won't get

higher RMA priority.ASUS have the right to decide whether to stop providing software updates to customers.

#### Package Contents

<u>User Manual</u>		*1
<u>Test Program CD</u>		*1
<u>Test Fixtures</u>		
15-093004001	M017 CD-ROM TX97 Test CD	*1
22-060000210	CABLE 20P IDC (L:100mm)	*1
22-060000310	PGA 296P SOCK	*1
22-060000320	PGA 370P SOCK	*1
22-060001031	PGA 423P SOCK	*1
22-060001020	PGA 462P SOCK	*1
08-900006600	KLAMATH SIGNAL CARD (1.6m/m,2L,14*4.5cm )	*1
08-900009900	ENG_K7-S2K PIN TO NAME TEST (R1.00,4L,1.6mm,5670*2331)	*1
20-521048260	IR LOOP BACK (1*5)	*1
20-521048270	IR LOOP BACK (2*5)	*1
20-521048280	LAN Fixture	*1
04-220150100	MR MODEM CARD WS-5614DML (SOFTWARE MODEM CARD FCC)	*1
20-201100075	ATX TO AT Cable	*1
22-060001280	AUDIO CABLE (HOUSING*3(BLACK))	*1
22-060001290	AUDIO CABLE ( HOUSING*1B+HOUSING*2W )	*1
70-C1OG10-01	COM PORT-1 (REV1.00)	*1
70-C10G14-02	SWBO-OEM (REV2.00)	*1
70-C10G15-02	SWBO-ASUS (REV2.00)	*1
80-C1G002-0202	ENG_PRT (R2.02)	*1
80-C1G024-0100	ENG_GPORT_A (R1.00)	*1
80-C1OG29-0100	PORT80M (R1.00)	*1

WARNING! Computer components are extremely sensitive to electrostatic discharge (ESD). Before handling any components, be sure to wear an antistatic wrist strap (not included) and touch a grounded object, like the your computer case or any other metal object, to release any built-up static charge.





#### **Pretest operate description**



Visual inspection:

- 1. Inspect M/B have broken,oxidized..... (Please refer Visual inspection description)
- 2. Customer induce or not. (Please refer Customer Induce Description)
- 3. If any M/B components failed to work after inspection, please paste the arrow stacker and write on Diagnostic Card



If Visual inspection is OK. Please plug in the power connector on Motherboard



Plug in CPU test Card on CPU\_Slot(Socket) and Turn on power supply.







Check CPU voltage on CPU test card

Turn OFF Power supply and Remove CPU Test Card

Plug in CPU on Motherboard CPU Slot and CPU FAN connector



Plug in memory on Motherboard DIMM Slot





Plug in Port80M on Motherboard PCI Slot

- Turn on the power supply
  Check post code "C1" is display



- Turn OFF the power supply
  Plug in PS2 Keyboard

Plug in PS2 Mouse

Plug in COM\_ports



Plug in Printer\_port

Plug in Audio\_port

Plug in Audio\_port Loopback tail on Motherboard audio connectors

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Plug in VGA\_port on Motherboard VGA Connector or VGA Card



Plug in Floppy,Hardisk and CD\_ROM on Motherboard Connector

**NOTE:** 

Primary IDE connect Hardisk Secondary IDE connect CD\_ROM



Plug in SWBO\_ASUS on Motherboard Panel Connector

#### NOTE:

Orient the red markings on the PANEL ribbon cable to PIN 1



Push (SWBO\_ASUS) the PWR.SW switch button once will switch on the system and test motherboard function.

# Visual inspect fail description



Visual inspection:

- 4. Inspect M/B have broken,oxidized..... (Please refer Visual inspection description)
- 5. Customer induce or not. (Please refer Customer Induce Description)
- 6. If any M/B components failed to work after inspection, please paste the arrow stacker and write on Diagnostic Card

Paste arrow sticker on damage component

Fill in the Diagnostic card





Paste Diagnostic Card on PCI Solt

#### ASUS TEST PROGRAM INSTALLATION GUIDE

#### 1. Necessary equipments:

- Disk1(Boot disk) for Windows 98 or Windows ME
- Disk2 with Ghost v6.0 program
- Hard drive (at least 2GB)
- One PC with CD\_ROM
- 2. Load the Ghost image to the Hard Drive
  - **a.** Get into BIOS Setup and set "Boot Sequence" to "A, C" (boot from floppy (A:))



- **b.** Restart and boot from FDD with Disk1 (Boot Disk).
- c. Choose "start computer with CD\_ROM support"

1.	Help		
3. 4.	Start computer Start computer Minimal Boot	Hithout	CD-ROM support
Enter	a choice: 2		

- d. Change floppy to Disk2 (with "Ghost v6.0").
- e. Typing "ghost" to execute "Ghost" program.
- **f.** Choose the options: "Local Disk From Image"



g. Choose "local drive" (CD\_ROM drive) to find out the image file.

Look jn: 🖂	) a: Local drive	
	a Local drive	Date
	9 ol Local drive 9 di Local drive	
	e: CD Rom drive	
File <u>pame</u> :		 <u>Open</u>

**h.** Press "**Open**" to load the image file.

.ook jn: 🛛 💽 e: CD Ro	m drive	<b>T</b>
Name	Size	Date
MB0 12.GH0	348,556,132	11-21-2001 09:56:14
ile name:		<u>Open</u>
ile pame:		<u>Qpen</u>

i. Select "local destination drive" and choose "OK"

	Select local destina	ation drive by	ı clicking	on the drive	number		
	Drive	Size(Mb)	Primary	Cylinders	Heads	Sectors	
	1	4125	1	558	240	63	
		<u>0</u> K			<u>C</u> ancel		
i	Choose "VES"	to procee	d with a	tisk load (	transfer CI	) data to hard	drive)
J.	NOBTON Short 6.0	Conurisht (a	5 1999 S	umantee for	noration.	J data to hard	(dilve)
				annen es es	paraman		
	Progress Indicato	or					
		Question:					
1	0%						
		1 🤊 Pr	oceed with	disk load?		:11	
	Percent complete		STINATION OF	ive will be peri	nanentiy overtur	itten.	
	Speed (Mb/min)		Ye	<		No	
	Mb copied						
k.	Choose "Reset	t Compute	er" to re	eboot.			
1	NORTON Ghost 6.0	Copyright (o	) 1999 \$	ymantes Cor	poration.		
	Progress Indicato	or '					
	0%	25	γ.		50%	75%	100%
			· ·	Class C			1000
	Statistics			Lione Lo	отриете		
	Percent complete	100			Clone Completed	Successfully	
	Speed (Mb/min)	137		ě			
1	Mb copied	0					
	Time elapsed	5:05			<u>C</u> ontine	ue	<u>R</u> eset Computer

I. Restart and change "Boot Sequence" to "C, A" (boot from hard drive(C:)).

EUM POL CREC AHAB	1/15A 8103 (dr28-7>) 3 SETUP U3151TY 9 SWTHART, INC.	BUN PCI/ISA BIOS FZATU ALAKED SUFT	DIDS ({F28-F)) RES SETUF MARE, INC.
STANDARD CHUS SETUP BIOS FEATURES SETUP CHIPSET FEATURES RETUP IONES HVONGENENT RETUP INF AND FCI SETUP LONG BIOS DETNILIES LONG SETUP PETVILIES	BURGAUSEDE FARGUARD USER PAGSAGED 195 HIO AURO OCCERCEDEN SAAS A EXIT SEEDA ISKE A EXIT SEEDA ISKE A EXIT SEEDA	CNU Internal Core Speed : 250MH: Bust Viras Betaction : Exabled Protessor Serial Basker : Rv6 CNU Level 2 Cache : Exabled CNU Level 2 Cache ECC Check: Disobled ULEVEL 2 Cache ECC Check : Di	PCLANA Palette Snoop  : Disable    Video BON BIND Shalow  : Eachied    COMOD - CHEFT Shalow  : Eachied    DMMOD - SHEFT Shalow  : Eachied    DMMOD - SHEFT Shalow  : Disable    DOMOD - SHEFT Shalow  : Disable    Dom UD Mundock Status  : Disable    Down UD Field (Thece)  : Disable    Spennitic Bris  : 200    Secarity Option  : System
Esc : Quit F10 : Sove & Exit Sotup Virus Prote	T.4 + + : Splest   tem (Skift)72 : Change Coller	102 ND Block Hole Sectors : 000 NNX 108 3.N.A.B.T. capability : Dimbial 17-2 Near Function Control: Acto 05-2 Inhord Newry > 641 : Diskled	INC: Quit time: Select its F1 : Nutly PutPlace : Holif F5 : Eld Values (Sbift)F2 : Celur F5 : Load Film Permits F7 : Load Film Permits

m. If you can see the screen below, it means the data has been copied to hard drive successfully.

18-108 6.22 Startop 1	991			
1. NORMAL				
Z. UTHEN				
1. HUMEN EMHORS				
5 LAN_ONBUNHO				
C. LON_CAND Z. UNCALCUITING 1	1680			
Enter a chaice: _				
S-Rupass startup file	s PA≕Comfirm e	ach live of CA	HFIG.SES and d	TRUSKEC BAT IN

2. Visual Inspection should be implemented before Pretest.

#### 3. Execute the Pretest Program

- **a.** Plug in the proper CPU voltage tools and check M/B power supply if it's OK.
- **b.** If the M/B voltage is OK, plug in all the M/B test fixtures and equipments such as CPU, Memory...etc.
- c. <u>Power ON your test system and choose the "HIMEM\_CDROM</u>" option



**d.** Choose the motherboard hot key to execute the proper program for the motherboard series you want to test.

For example: **P2B**, Please key in" **PB**" to execute the P2B series pretest program.

	33 김희왕 영양왕		
PBC_SER	" 3C "	L101	" IP "
P3W_SER	" 3W "	NLX-R & YYRISER	" NX "
P3B_SER	" 3B "	CHECK BAR CODE	" BC "
P3U_SER	" 3U "	DINM, IPANEL	" OT "
PZE_SER	" PE "	USB/MIR_SER	" OT "
P2L SER	" PL "	CIDB CARD	" OT "
PZB SER	" PB "	S370 CARD	" OT "
PZU SER	" PU "	OPLX-M	" OT "
PZZSER	" PZ "	NC 5	" OT "
WMT SER	" <b>W</b> T "	BP4 & BP5	" OT "
MEL_SEB	" ML "	PAT_SEB	" '1T ''
MEB SER	" MB "	CUSL SER	" CL "
MEZINER	" M2. "	TX SER	" TX "
MES SER	" MS "	SPSER	" SP "
MEU SER & CHW	" MU "	XG NEH	" XG "
CUB SER	" СВ "	SDNY SER	" SY "
CHC SER	" CC "	PDA SER	" PA "
CUWSER	" CW "	P5S SER	" PS "
CHO_SER	" CU "	AZ_SER	" A7 "
CUSSER	" CS "	K7 SEB	" K7 "

e. Choose the proper model name to execute the pretest program. For example: Key in "1" for P2B.

******************************	****	******
1 : PZB	*	J : PZB9B-XV (HP)
2 : P2U (WU/LM7U) /UPUX4	*	K : P2D9D-XU (SDCO)
***************************************	***	L : PZB9B-XV (SBCO) (ACPI)
3 : P2B-DS	*	M : P2B9B-XU (ASUS)
4 : PZB-DS (W0/3860)	- 24	N : PZB9B-XV (ASUS) (ACPI)
5 : P2B-D	*	**********************************
******************************	XXXX	0 : P2B M
6 : P2B-LS	- <b>- <del></del></b>	P : P2B-N (WD/A)
7 : P2B LS (W03B60)		Q : PZB M NUDIO TEST
8 : P2B-L		
9 : PZB S		R : P2B UM
A : P2B-S (W0/3860)		S : P2B-UN (WO/A)
R : PZR LS (WHZLON)(WHZS)		T : PZK UM (WHZU)
		U : P2B-UN (W0/U) (W0/A)
C : PZR R		********************************
D : P2B-F (WOZHWM)	*	V : P2B-VT (VIA)
E : PZR F		W : P2R UT /11 (Intel 1108X)
$F : PZB - \cup E$		X : P2B-N (WOLAN)
6 : 1211-02	*	Y :
H : PZB-E		Z : PZB-DZ (WOV)
I : TEST AGP SLUT		
********************************	****	* ~ * * * * * * * * * * * * * * * * * *
Choose one Function :[1,2,3,	4,5,6,	7, N, 9, A, N, C, D, E, F, G, H, F, J, K, L, M, N, N, P, Q, B, S, T,
I.U.W.X.Y.Z17		

# **Visual Inspection**

## **INSPECT BGA CHIPSET**





Check if the BGA chipset has been pulled out by end user.

## **INSPECT BGA CHIPSET**





Check if the M/B BGA chipset is lifted.

# **INSPECT M/B PCB**





Check if the M/B PCB is broken.

## **INSPECT M/B BACK PCB**





Check if the PCB trace is broken.

## INSPECT CPU SOCKET





Check if the PCB trace around the CPU socket is broken.

## **INSPECT M/B SLOT**





Check is any PIN on the SLOT is damaged

# **INSPECT SMD CHIPSET AND Capacitance & Register**





Check if any SMD chips, capacitance or register is damaged.

# **INSPECT M/B PCB**





#### Check if the M/B PCB is broken

# **INSPECT M/B SCREW HOLE**





Check if any trace around the screw hole is broken.

## **INSPECT M/B CONNECTOR**





Check if any trace around the battery is broken.

## **INSPECT M/B COMPONENT**





Check if there is any component burnout.

## **INSPECT M/B PCB Oxidize**





Check if the PCB is oxidized.

# **Customer Induce Description**

(If the motherboard belongs to "Customer Induce", it will be returned to the customer without repairing.)

# PCB Trace Scratched (1)





# PCB Trace Scratched (2)





#### **Consecutively three or more traces scratched**

# PCB Oxidation (1)





## PCB Oxidation (2)





If the PCB is oxidized by end user. Ex:Drinks,coffee.....

## PCB Breakage





#### If the M/B PCB is broken by end user.

# PCB Burning (1)





If the M/B or VGA PCB is broken by end user.

# PCB Burning (2)





#### If there is any component burnout by end user.

## **Customer Induced**





Flaws caused by Customers Self-Repairing or removing parts from PCB.

# **Test Tools Introduction**

#### **SWBO-ASUS**



Name: SWBO-ASUS Part Number: 70-C1OG15-02 Function: Check message LED & Reset,SMI,Keylock, PWRON



#### PCI PORT 80M CARD



Name : PCI PORT 80M Part Number : 80-C1PO40-01.02 Function : POST Code Display



## KLAMATH SIGNAL CARD (SLOT 1) CPU



Name : KLAMATH SIGNAL CARD Part Number : 08-900006600 Function:check CPU Voltage&CPU Signal



#### K7 S2K-PIN TO NAME TEST (SLOT A) CPU



Name : K7\_S2K-PIN TO NAME TEST Part Number : 08-900009900 Function : check CPU Voltage&CPU Signal



#### **COM-Port Loopback**



#### **Printer Port Loopback**



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## ENG\_GPORT-A



#### **AUDIO LOOP-BACK (3 Black)**



#### **AUDIO LOOP-BACK(2W+1B)**



#### **MR MODEM CARD**



Name : MR MODEM CARD WS-5614DML Part Number : 04-220150100 Function : Check AMR Interface

CONNECTOR



## **IR LOOP-BACK**



# LAN LOOP-BACK





Name : LAN LOOP -BACK Part Number : 20-521048280 Function : LAN Loop-back test



#### Socket 7 CPU Voltage Test Tools



Vcore (2.0~3.5)

**Function: CPU Voltage test** 

# **SOCKET 370 CPU Voltage Test Tools**



Vcore (2.0v)

Name : PGA 370P SOCK Part Number : 22-060000320 **Function: CPU Voltage test** 



#### **P4 CPU Voltage Test Tools**



#### SOCKET A CPU Voltage Test Tools



#### **CD-ROM Test Tools**



Name: M017 CD\_ROM TX97 Part Number:15-093004001

## M/B FUNCTION TEST



## **CAUTION!**



Please check Mainboard JUMPER SETTING before testing.

#### (1)**CPU frequency jumper setting:**

a. **Jumper Mode**: Set the jumpers following the information printed on the motherboard or on the user manual.

b. **Jumper Free Mode**: Make sure the JEN jumper is on the position of Jumper Free Mode and set all the DIP Switches to OFF.

#### (2)Other Motherboard Function Setting :

Check the onboard Lan ,Audio,SCSI...etc. jumpers and make sure they are **ENABLE**.

# **PS:If the jumper doesn't be set properly, it'll cause test failure.**



CUV4X-V Audio Codec Setting



2 3

Enable (Default)

Disable