0Rev.	Modified Chapters	Modification Description	Issued Dept.	Issued by	Revised Date
1.00		First release	GRMA	Chongling	Aug.30.2010
1.01		Add new PN(C1CPR0-A01)	GRMA	Chongling	Sep.06.2010
1.02		Add new PCBA(C1CPR0-A12)	GRMA	Chongling	Dec.02.2010
1.03		Add new PCBA(C1CPR0-A28)	GRMA	Chongling	Dec.02.2010
1.04		Add new PCBA(C1CPV5-A01)	GRMA	Chongling	Dec.02.2010
1.05		Add new PCBA(C1CQ20-A11)	GRMA	Chongling	Dec.02.2010
1.06		Add new P/N(C1CPR5-A13)	GRMA	Ariel_wang	Dec.17.2010
1.07		Add new PCBA(C1CPV0-A13)	GRMA	Ariel_wang	Dec.30.2010
1.08		Add new PCBA(C1CPV0-A29)	GRMA	Ariel_wang	Dec.30.2010
1.09		Add new PCBA(C1CPR5-A01)	GRMA	Ariel_wang	Jan.12.2011
1.10		Add new P/N(C1CPSA-A01)	GRMA	Ariel_wang	Jan.12.2011
1.11		Add new PCBA(C1CPSA-A11)	GRMA	Ariel_wang	Jan.12.2011
1.12		Add new PCBA(C1CPSA-A21)	GRMA	Ariel_wang	Jan.12.2011
1.13		Add new PCBA(C1CPR5-A23)	GRMA	Ariel_wang	Jan.12.2011
1.14		Add new PCBA(C1CQ20-A32)	GRMA	Ariel_wang	Jan.12.2011
1.15		Add new P/N (C1CPSK-A01)	GRMA	Ariel_wang	Jan.31.2011
1.16		Add new P/N (C1CPSP-A01)	GRMA	Ariel_wang	Mar.3.2011
1.17		Add new PCBA (C1CPSA-A31)	GRMA	Ariel_wang	Mar.18.2011
1.18		Add new P/N(C1CPSZ-A01)	GRMA	Ariel_wang	Apr.2.2011
1.19		Add new PCBA(C1CQ20-A52)	GRMA	Ariel_wang	Apr.8.2011
1.20		Add new PCBA(C1CQ20-A42)	GRMA	Ariel_wang	Apr.8.2011
1.21		Add new PCBA(C1CPR0-A89)	GRMA	Ariel_wang	Apr.8.2011
1.22		Add new PCBA(C1CQR0-A79)	GRMA	Ariel_wang	Apr.8.2011
1.23		Add new PCBA(C1CPSA-A41)	GRMA	Ariel_wang	Apr.11.2011
1.24		Add new PCBA(C1CPSZ-A11)	GRMA	Ariel_wang	Apr.11.2011
1.25		Add new PCBA(C1CPSP-A12)	GRMA	Ariel_wang	Apr.11.2011
1.26		Add new PCBA(C1CPSA-A51)	GRMA	Ariel_wang	Apr.13.2011
1.27		Add new PCBA(C1CPSK-A22)	GRMA	Ariel_wang	Apr.13.2011
1.28		Add new P/N(C1CPSF-A01)	GRMA	Ariel_wang	Apr.14.2011
1.29		Add new P/N(C1CQ25-A01)	GRMA	Ariel_wang	Apr.18.2011
1.30		Add new P/N(C1CPRK-A01)	GRMA	Ariel_wang	Apr.18.2011
1.31		Add new P/N(C1CQX0-A01)	GRMA	Ariel_wang	Apr.19.2011
1.32		Add new PCBA(C1CQ25-A11)	GRMA	Ariel_wang	Apr.25.2011
1.33		Add new PCBA(C1CPRK-A11)	GRMA	Ariel_wang	Apr.25.2011

Authorize by		Review by		Originator By	Chongling

1.34		Add new PCBA(C1CPSA-A61)	GRMA	Ariel_wang	May.9.2011
1.35		Add new PCBA(C1CPSZ-A21)	GRMA	Ariel_wang	May.25.2011
1.36		Add new PCBA(C1CPSK-A34)	GRMA	Ariel_wang	May.30.2011
1.37		Add new PCBA(C1CQX0-A23)	GRMA	Ariel_wang	Jun.8.2011
1.38		Add new PCBA(C1CPSP-A24)	GRMA	Ariel_wang	Jun.8.2011
1.39		Add new PCBA(C1CPSZ-A34)	GRMA	Ariel_wang	Jun.21.2011
1.40		Add new PCBA(C1CQX0-X24)	GRMA	Ariel_wang	Jul.22.2011
1.41		Add new PCBA(C1CPSZ-X34)	GRMA	Ariel_wang	Jul.22.2011
1.42		Add new PCBA(C1CPSZ-A44)	GRMA	Ariel_wang	Aug.12.2011
1.43		Add new PCBA(C1CPSK-U24)	GRMA	Ariel_wang	Aug.19.2011
1.44		Add new PCBA(C1CQ20-A72)	GRMA	Ariel_wang	Sep.13.2011
1.45		Add new PCBA(C1CPR0-A99)	GRMA	Ariel_wang	Sep.13.2011
1.46		Add new P/N(YV0167-A01)	GRMA	Ariel_wang	Oct.11.2011
1.47		Add new P/N(YV016A-A01)	GRMA	Ariel_wang	Nov.8.2011
1.48		Add new PCBA(YV0166-U44)	GRMA	Ariel_wang	Nov.14.2011
1.49		Add new PCBA(C1CPR0-A34)	GRMA	Ariel_wang	Feb.7.2012
1.50		Add new PCBA(C1CPR0-A49)	GRMA	Ariel_wang	Feb.7.2012
1.51		Add new PCBA(C1CPR0-A64)	GRMA	Ariel_wang	Feb.7.2012
1.52		Add new P/N(C1CPRF-A01)	GRMA	Ariel_wang	Feb.7.2012
1.53		Add new P/N(C1CPSU-A01)	GRMA	Ariel_wang	Feb.7.2012
1.54		Add new PCBA(C1CPRF-A11)	GRMA	Ariel_wang	Feb.7.2012
1.55		Add new P/N(YV01J1-A02)	GRMA	Ariel_wang	Mar.9.2012
1.56		Add new PCBA(YV016A-A12)	GRMA	Ariel_wang	Apr.27.2012
1.57		Add new PCBA(YV01J1-A13)	GRMA	Ariel_wang	Oct.9.2012
1.58		Add new PCBA(YV016A-A22)	GRMA	Ariel_wang	Mar.29.2013

1.Objectives

Create test procedure.

2.Scope

Model: ENGTS 450
PN:
C1CPV0(A01&A13&A29)C1CPR0(A01&A12&A28&A34&A49&A64&A79&A89&A99)C1CPV5(A01)C1CQ20(A11&A32&A42&A52&A72)C1CPR5(A13&A01&A23)C1CPSA(A01&A11&A21&A31&A41&A51&A61)C1CPSK(A01&A22&A34&U24)C1CPSP(A01&A12&A24)C1CPSF(A01)C1CPSZ(A01&A11&A21&A34&X34&A44)C1CQ25(A01&A11)C1CPRK(A01&A11)C1CQX0(A01&A23&X24)C1CPRF(A01&A11)C1CPSU(A01)YV0167(A01)YV016A(A01&A12&A22)YV0166(U44)YV01J1(A02&A13)

3.Test Item

3.1 Diagnostic test in DOS
3.2 3DMark06(**contain HDMI test**)
3.3 Temperature test

4.Relevant Document

None.

5.Definition : 1. If the model name contains P, please test HDCP function.

Ex: EAH***/HTDP/512M/A
2. If you test HDMI already, it's unnecessary to test HDCP. The HDMI
contains HDCP function.
3. Please use Nvidia platform (**P5Q&P7H55-M/USB3**) to test in DOS**.**

6. Operation Procedures:

6.1 Attention

6.1.1 To avoid damaging devices or M/B, please turn off A/C power then unplug VGA card.

6.1.2 While unplugging the card, do it in upright direction to avoid damaging slot & golden finger.

6.1.3 If any problem happens, please inform test supervisor. Base on ATX power specification, +5V standby voltage is existed while AC power is connecting. For safety reason, please turn off main power during break time or idling test.

6.1.4 Some test items should be tested under Windows environment. (Please install windows test environment by yourself).

6.2 Fixture connect

6.2.1 Install Intel P5 CPU & CPU Fan.

6.2.2 Install DDR2 667/800 2GB Memory to DIMM1~4.

6.2.3 Plug PS2 Mouse and PS/2 Keyboard into P5Q&P7H55-M/USB3 Motherboard.

6.2.4 Plug VGA Card ENGTS 450   into PCIEX16.

6.2.5 This card has 6 PIN of Power supply,please connect power con of VGA card &
     Power supply via bundled power cable. (6 PIN of Power supply to 6 PIN of VGA card)
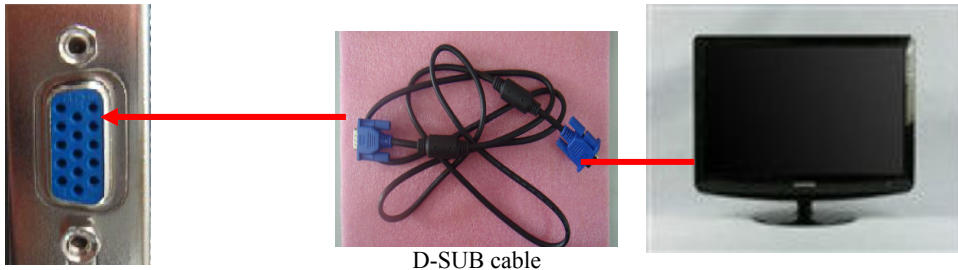

6.2.6 Connect SATA HDD with SATA CON.

6.2.7 Plug 4PIN 12V (1200W) power cable into CON12V.

6.2.8 Plug ATX Power (1200W) on Power Connector.
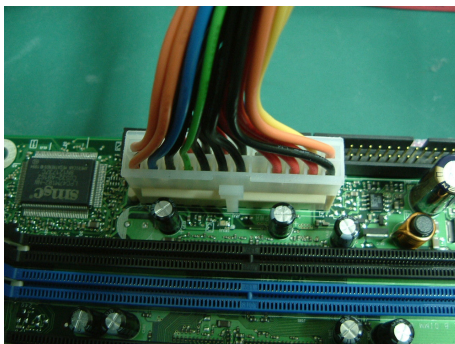
6.3 Diagnostic test in DOS

6.3.1 Please connect LCD monitor & card's D-SUB CON via a D-SUB cable.

D-SUB cable

6.3.2 Press Power Switch then turn on power button.

6.3.3 Press "Del" to enter CMOS setup menu while boot screen is displaying.
   EXIT -> Load Setup Defaults.

6.3.4 System will reboot, select DOS to run test program.
   Path:VBAT\ENGTS450\BATCH\
   Run the test program refer to the prompt.

6.3.5 Memory test
   If you want to test memory, please run mats.exe.
   Path:VBAT\ENGTS450\25620\
   Path:VBAT\ENGTS450\450GREEN\(For YV01J1-A0*/A1*)
   Path:VBAT\ENGTS450\25632A\(For YV016A- A2*)

6.3.7 BIOS flash
   Please use the following command to flash bios and notice the size of character.
   Path: VBAT\ENGTS450\BIOS
   Command:nvflash xxx.rom -4 -5 -6 -A -y
   Notice:
   If you can not flash bios because of the bios locked, please use nvflash.exe /r to unlock bios. And then, please use nvflash.exe /w to lock bios after updating latest bios.

6.3.8 Please connect LCD monitor & card's DVI CON via a DVI cable.
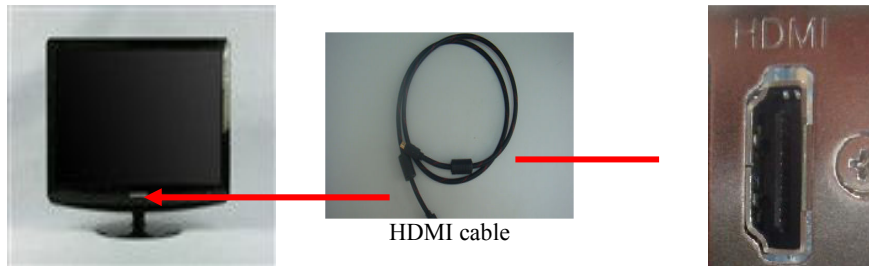(Please refer to step 6.3.2&6.3.4)

Dual link DVI cable
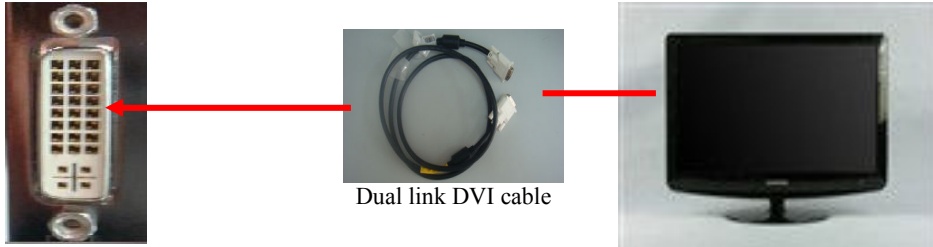
6.3.9 After finish DOS testing, please enter Windows environment to test 3DMark.

6.4 3DMark test(contain HDMI test)

6.4.1 Please install 3DMark program by yourself.

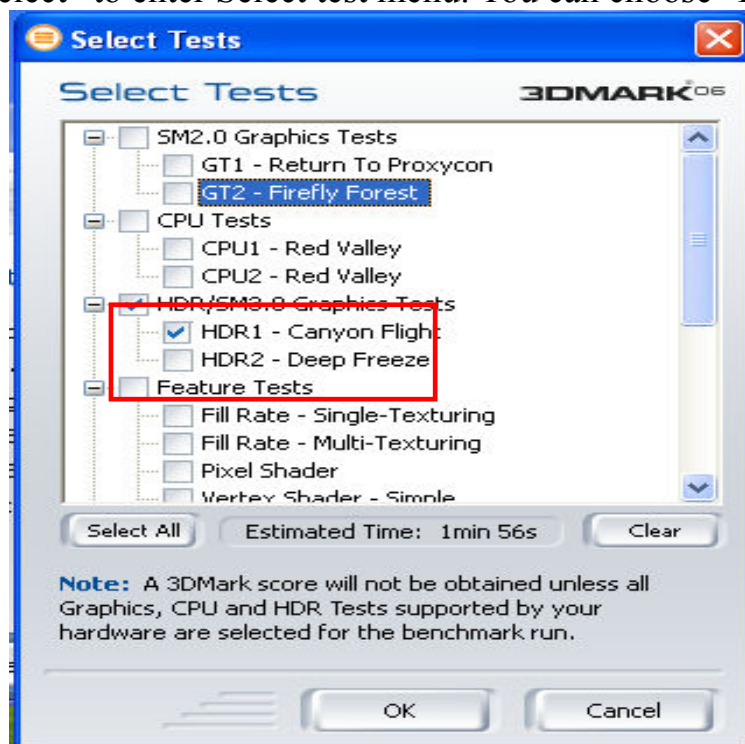6.4.2 Please connect VGA card to LCD via HDMI cable.

HDMI cable

HDMI CON

6.4.3 Please install VGA card driver in Windows(You must use individual driver of this card).

6.4.4 Please run 3DMark06 base on this card (please test 1 cycle).

6.4.5 Press "Select" to enter Select test menu. You can choose "HDR1" for default setting.

6.4.6 Press "Demo" to enter Demo menu. You can choose "Sounds" for default setting.
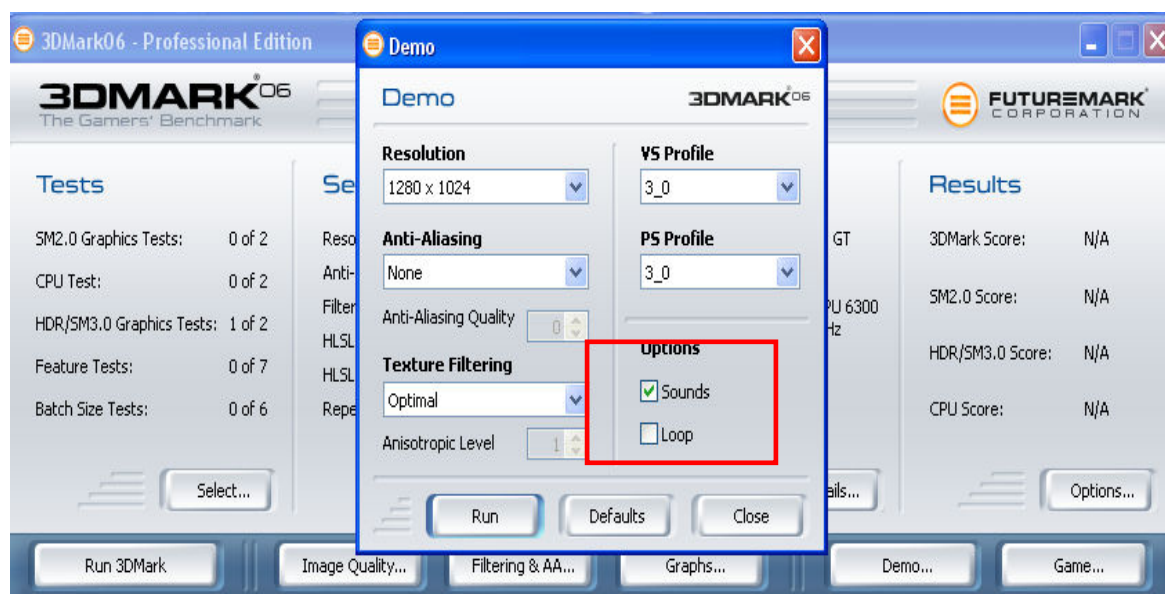
6.4.7 Please pay attention to check if there is flickering, discolor, crash and so on.
If there's no problem, it can be judged OK!

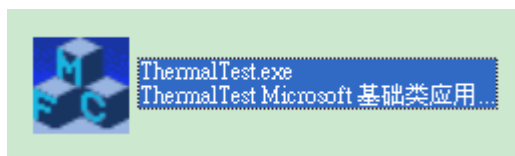6.4.8 Please listen to voice carefully to check whether it outputs sounds. If not, HDMI test fail.

6. 4.9 If test OK, please test **Temperature test**.
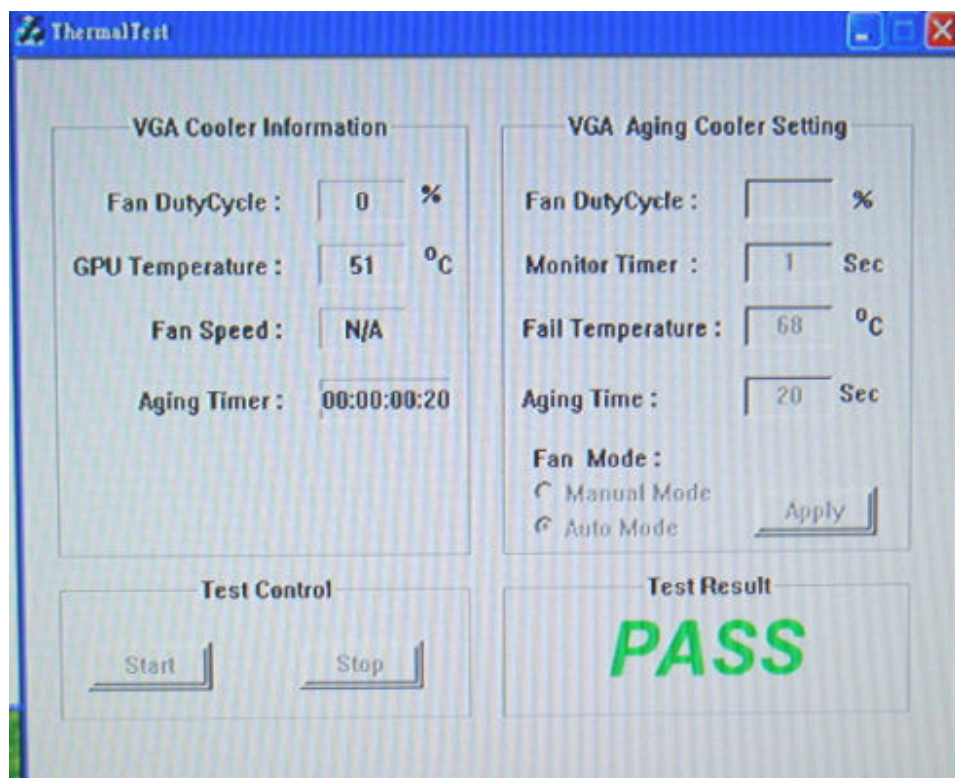
6.5 Temperature test

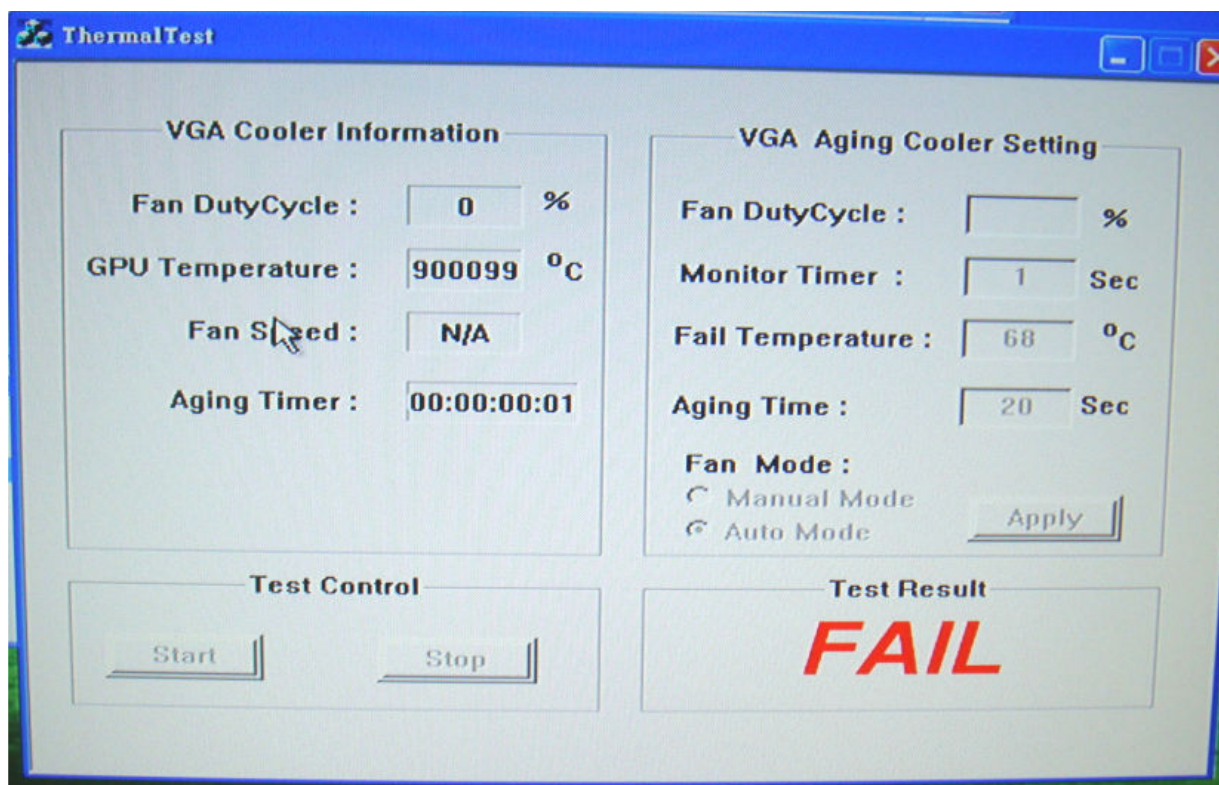6.5.1 Please copy Thermaltool(1.0.05) to Windows by yourself.

6.5.2 Please run ThermalTest.exe.

6.5.3 If test ok, show pass.

6.5.4 If test fail, show fail.

6.5.5 If test OK, NTF test.

7 Appendix

NO#	Equipment Description	ASUS Part#	Supplier	Quantity	Remarks
1	SAMSUNG 2232MW			1	
2	USB MOUSE			1	
3	PS/2 KEYBOARD			1	
4	ATX POWER SUPPLY(1200W)			1	
5	INTEL Celeron E1200			1	
6	Intel CPU Intel(R) Core(TM)2 CPU		local	1	
7	Heat sink + FAN	22-240000160		1	
8	APACER 800MHz 1G			2	
9	DDR3 1333 2G	20-TT2605618	local	4	
10	SATA HDD			1	
11	SATA HDD Cable	14-000107070		1	
12	PCIEX16 VGA CARD			1	
13	D-SUB extend cable (Buying a local D-SUB cable by yourself)			1	
14	Dual link DVI cable (Buying a local DVI cable by yourself)			1	
15	HDMI extend cable (Buying a local HDMI cable by yourself)			1	
16	TV extend cable (Buying a local TV cable by yourself)			1	
17	DVI-HDMI	04G460002400 /04G460002450		1	

18	**HDMI to MINI HDMI cable** **(Buying a local cable by yourself)**			**1**	
19	**LCD "Y" Cable**	**14-010230000**		**1**	
20	**P5Q**	**80-MIB4P0-G0A01**		**1**	
21	**P7H55-M/USB3 MB** **(From C1CPSK-A34 and after)**	**80- MIBBKA-***		**1**	