User's Manual

for

486DX

VL- BUS Main Board

WeSpeed YourWorld

MB 453

80486 VL-BUS MAIN BOARD with light green pc

470-024531990

MB 453

80486 VL-BUS MAIN BOARD
with light green pc

USER'S MANUAL

Table of Contents

Chapter 1 Introduction
1-1 System Board Feature - 2
1-2 System Board Layout - 3

Chapter 2 Configuration
2-1 Jumper setting and Connector - - - - - - - - - - - - - - - 4
2-2 DRAM Installation - 6
2-3 Cache memory Installation - - - - - - - - - - - - - - - - 7

Chapter 3 AMI BIOS Setup
3-1 Standard CMOS Setup - 9
3-2 Advance CMOS Setup - 10
3-3 Advance Chipset Setup - - - - - - - - - - - - - - - - - - - 11
3-4 Power Management Setup - - - - - - - - - - - - - - - - - - 12
3-5 Power Management Jumper setting - - - - - - - - - - - - 14
3-6 Standard type of hard disk - - - - - - - - - - - - - - - - 15

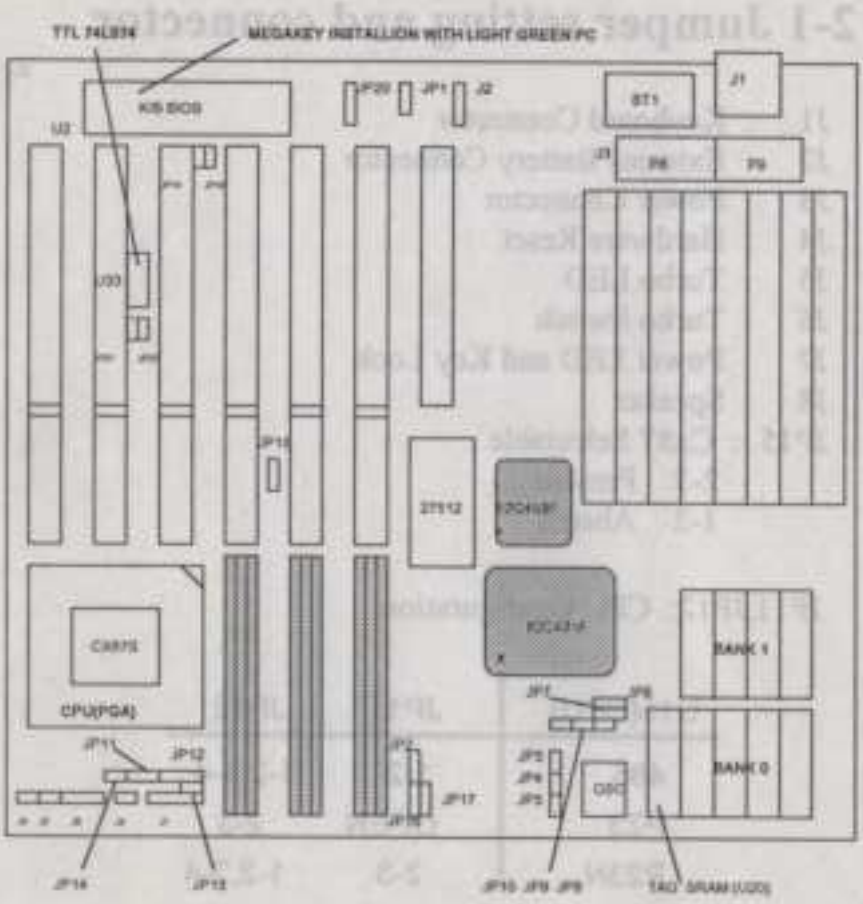
Chapter 4 AWARD BIOS SETUP
4-1 Standard CMOS Setup - 17
4-2 BIOS Features Setup - 18
4-3 Chipset Features Setup - - - - - - - - - - - - - - - - - - - 19
4-4 Power Management Setup - - - - - - - - - - - - - - - - - - 20
4-5 Standard type of hard disk - - - - - - - - - - - - - - - - -22

Chapter 1

1-1 SYSTEM BOARD Feature

CPU	: 80486DX(PGA) P23(PGA) P23N(PGA) M6(Cyrix,PGA)
Co-processor	: Cx87(PQFP) for M6 only
Cache memory	: 32KB/64KB/128KB/256KB Selectable
Main Memory	: 32MB max on board Using 256K, 1M, 4M SIMM Support 1/2/4/5/8/16/17/20/32 MB memory
I/O SLOT	: 6 16-bit and 1 8-bit ISA Slots, 3 VL-BUS Slots
BIOS	: AMI, Award or other

1-2 System Board Layout



Chapter 2

2-1 Jumper setting and connector

J1 : Keyboard Connector
J2 : External Battery Connector
J3 : Power Connector
J4 : Hardware Reset
J5 : Turbo LED
J6 : Turbo Switch
J7 : Power LED and Key Lock
J8 : Speaker
JP15 : Cx87 Selectable
2-3 Present
1-2 Absent

JP11,JP12: CPU Configuration

U15(CPU)	JP11	JP12
486	1-2	1-2,3-4
P23	OPEN	2-3
P23N	2-3	1-2,3-4

JP16,JP17 : VESA BUS Jumper

1-2 : Default Setting

2-3 : Delay it for 50MHz

JP13 : VESA BUS Jumper

OPEN : CPU Clock <= 33MHz

CLOSE : CPU Clock > 33MHz

JP1 : Power Good select

1-2 : External Power Good

2-3 : Internal Power Good

JP3,4,5 : CPU Clock select

	JP3	JP4	JP5
25MHz	IN	OUT	OUT
33MHz	IN	IN	IN
40MHz	IN	IN	OUT
50MHz	OUT	OUT	IN

JP19 : Monitor Select

OPEN : Color

CLOSE : Mono

JP20 : Password Clear

OPEN : Normal

CLOSE : Password Clear

2-2 DRAM Installation

The memory is capable of supporting a minimum 1 Megabyte of memory up to total 32 megabytes memory. The 256KB /1MB / 4MB SIMM memory are available.

Each bank consists of 4 sockets for SIMMs and the 80ns or faster (Access time) Page mode DRAM is required. There are two bank of memory (Bank0 and Bank1), but you don't care which one is Bank0 because the BIOS will automatically test which one is Bank0.

Before you even consider altering the memory configuration on your main-board, please read this section as below:

BANK 0	BANK 1	Total Memory
256KBx9	None	1 MB
256KBx9	256KBx9	2 MB
1MBx9	None	4 MB
1MBx9	256KBx9	5 MB
1MBx9	1MBx9	8 MB
4MBx9	None	16 MB
4MBx9	256KBx9	17 MB
4MBx9	1MBx9	20 MB
4MBx9	4MBx9	32 MB

2-3 Cache memory Installation

This mainboard supports Cache SRAM configurations: 32KB,64KB,128KB and 256KB.

Before you even consider altering the CACHE memory configuration on your main-board, please read this section as below:

	CACHE MEMORY SIZE			
	32KB	64KB	128KB	256KB
DATA RAM	8K8*4	8K8*8	32K8*4	32K8*8
TAG RAM	8Kx8	8Kx8	8Kx8	32Kx8
JP6	2-3	1-2	2-3	1-2
JP7	OPEN	OPEN	2-3	1-2
JP8	OPEN	OPEN	OPEN	CLOSE
JP9	OPEN	OPEN	CLOSE	CLOSE
JP10	OPEN	CLOSE	CLOSE	CLOSE

Chapter 3

BIOS SETUP

When the system is first powered on or reset, the BIOS will display a copyright message on the first line of the screen, then the BIOS will perform the diagnostics and initialization. When all of the above tests have been passed, the message

"Press [DEL] key to run SETUP utility"

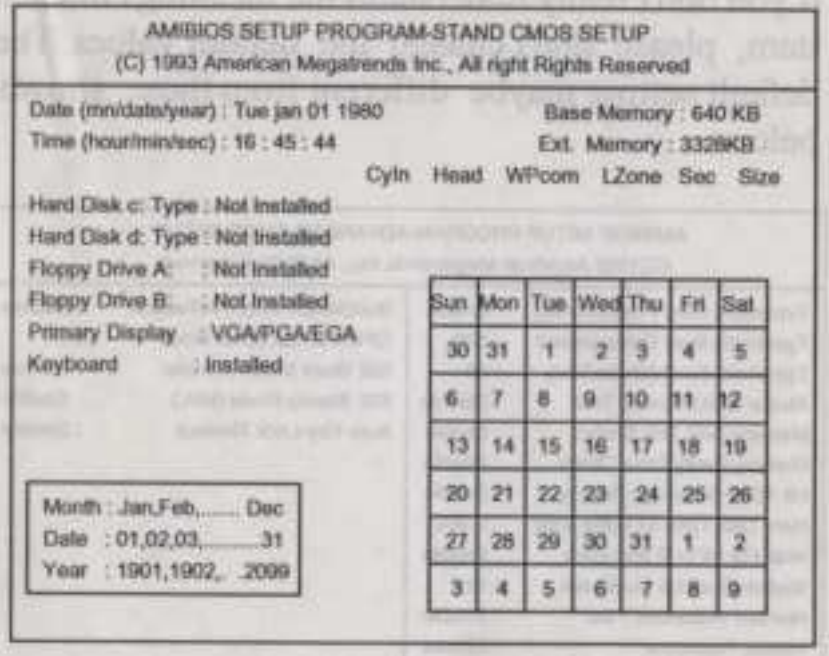
is displayed. If the [DEL] key is pressed, the screen will be cleared and then the following message will be showed:

BIOS SETUP PROGRAM-AMI BIOS SETUP UTILITIES
(C) 1993 American Megatrends Inc., All Rights Reserved

STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIPSET SETUP
POWER MANAGEMENT SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
AUTO DETECT HARD DISK
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

Standard CMOS Setup for Changing Time, Date,Hard Disk Type,etc.
Esc : Exit F2/F3 : Color F10 : Save & Exit

3-1 Standard CMOS Setup



The setup program is completely menu-driven:

1. Use arrow keys to select entry : Data, Time, Hard Disk(C/D),Floppy, Display, and keyboard.

2. Use PgUp/PgDn key to modify the option of each entry.

3. Use Esc to exit this screen.

3-2 Adavnce CMOS Setup

If you don't really understand the meanings of each item, please don't change the default values. The default setting maybe different from those shown below:

AMIBIOS SETUP PROGRAM-ADVANCED CMOS SETUP
(C)1992 American Megatrends Inc., All Right Reserved

Typematic Real Programming	: Enable	BootSector Virus ProTection	: Disable
Typematic Real Delay (msec)	: 500	CPU Internal Clock Mode	: 1X
Typematic Real (Chars/Sec)	: 30	IDE Block Mode Transfer	: Disable
Above 1MB Memory Test	: Disable	IDE Standy Mode (Min.)	: Disable
Memory Test Tick Sound	: Enable	Auto Key-Lock Timeout	: Disable
Memory Parity Error Check	: Enable		
Hit <Del> Message Display	: Enable		
Hard Disk Type 47 RAM Area	: 0:300		
Wait For <F1> If Any Error	: Enable		
System Boot Up Num Lock	: On		
Number Processor Test	: Enable		
Weitek Processor	: Absent		
Floppy Drive Seek At Boot	: Disable		
System Boot Up Sequence	: C: ,A:		
System Boot Up CPU Speed	: High		
External Cache Memory	: Enable		
Internal Cache Memory	: Enable		
Password Checking Option	: Setup		

Note :

"IDE Standby Mode (Min)" can be loaded with values from 1 minute to 255 minutes to setup the Hard disk entering power down mode.

3-3 Advance Chipset Setup

The advanced chipset setup is entirely chipset specific portion and requires full knowledge about the detail definition of UMC chipset . Each option is tightly corresponding with the hardware structure. Without our engineering change notice,we strongly recommend"don't change any contents in advanced chipset setup menu".

AUTO Config Function	: Enabled	Memory Remapping	: Enabled
Cache Read Option	: 3-2-2-2	F Segment Shadow RAM	: Cached
Cache write Option	: 2 W.S.	E Segment Shadow RAM	: Disable
DRAM Type	: PageMode	C000-C3FF shadow RAM	: Cached
DRAM Wait State(s)	: 2 W.S.	C400-C7FF shadow RAM	: Cached
Keyboard clock Select	: CPUCLK/5	C800-CBFF shadow RAM	: Disable
AT Clock Select	: CPUCLK/5	CC00-CFFF shadow RAM	: Disable
IO Recover Time	: 7/3 BCLK	D000-D3FF shadow RAM	: Disable
Hold PD Bus	: 2~3T	D400-D7FF shadow RAM	: Disable
Refresh Cycle	: Slow	D800-DBFF shadow RAM	: Disable
CoProcessor Ready	: Delay 1T	DC00-DFFF shadow RAM	: Disable
Check ELBA# Signal	: in T2	Refresh Divider	: 1
Non-Cacheable Block1 Enable	: Disabled	Data Location of Local Bus	: ISA BUS
Non-Cacheable Block-1 Size	: 4MB	LOWA20#,RC Emulation	: None
Non-Cacheable Block-1 Base	: 0KB	Stretch 0WS# Signal Option	: Do Not
Non-Cacheable Block2 Enable	: Disabled		
Non-Cacheable Block-2 Size	: 16MB		
Non-Cacheable Block-2 Base	: 0 KB		

Esc:Exit ↓→↑←:Sel (Ctrl)Pu/Pd:Modify F1:Help F2/F3:Color

F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults

3-4 Power Management Setup

The programmable timers for sequencing of power to system, but the AMI "MEGAKEY" (U2) and TTL 74LS74 (U33) must be installed.

The timers can be loaded with values from 1 minute to 255 minutes. This mode can be extended to external devices. The Standby Mode power savings options are:

. Down CPU Clock to 8 MHz
. Remove the sync signals from the video monitor
(this option requires an intelligent monitor that support standby Mode)

Please don't down CPU clock when system processing any information, such as : formatting diskette

AMIBIOS SETUP PROGRAM - POWER MANAGEMENT SETUP (C)1993 American Megatrends Inc., All Right Reserved	
PC GREEN MODE 2 : Disable	

Wake up the system:

. If the system PASSWORD had not been set up, pressing any key or moving Mouse to Wake up the system.

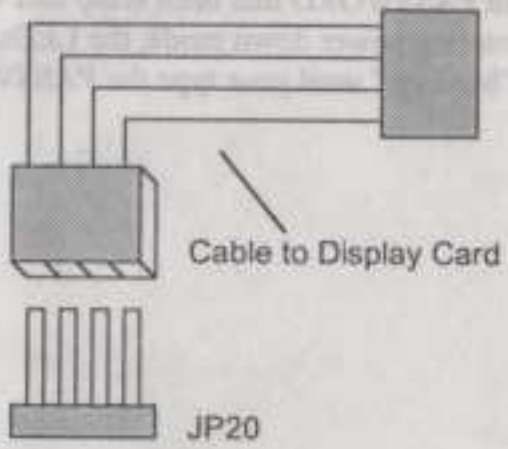
. If the system PASSWORD had been set up, moving mouse to Wake up the system but keyboard can not input data until type the PASSWORD first. [Type PASSWORD also Wake up the system when Mouse is not being used.]

. If the system PASSWORD had been setup and when the system is entering power down mode, the LEDs on Keyboard will "blinking" until your type the PASSWORD.

3-5 Power Management Jumper Setting

NOTE : FOR AMI BIOS ONLY

JP20 : Display card power management
Pin 1 : V-sync
Pin 2 : H-sync
Pin 3 : sync enable
Pin 4 : general purpose I/O



JP21 : IRQ 3,5 power management select
1-2 short : IRQ 3
2-3 short : IRQ 5

JP22 : IRQ 4,7 power management select
1-2 short : IRQ 4
2-3 short : IRQ 7

3-6 Standard type of hard disk

Type	Cyln	Heads	W.Pcomp	L.Zone	Sect	Capacity
1	306	4	128	305	17	10MB
2	615	4	300	615	17	21MB
3	615	6	300	615	17	31MB
4	940	8	512	940	17	62MB
5	940	6	512	940	17	47MB
6	615	4	65535	615	17	20MB
7	930	15	0000	000	17	116MB
8	936	16	0000	000	17	124MB
9	900	15	65535	901	17	112MB
10	820	3	65535	820	17	20MB
11	855	5	65535	855	17	35MB
12	855	7	65535	855	17	50MB
13	306	8	128	319	17	20MB
14	733	7	65535	733	17	43MB
15	000	0	0000	000	17	00MB
16	612	4	0000	663	17	20MB
17	977	5	300	977	17	41MB
18	977	7	65535	977	17	57MB
19	1024	7	512	1023	17	60MB
20	733	5	300	732	17	30MB
21	733	7	300	732	17	43MB
22	733	5	300	733	17	30MB
23	306	4	0000	336	17	10MB
24	925	7	0000	925	17	54MB
25	925	9	65535	925	17	69MB
26	754	7	754	754	17	44MB
27	754	11	65535	754	17	69MB
28	699	7	256	699	17	41MB
29	823	10	65535	823	17	68MB
30	918	7	918	918	17	53MB
31	1024	11	65535	1024	17	94MB
32	1024	15	65535	1024	17	128MB
33	1024	5	1024	1024	17	43MB
34	612	2	128	612	17	10MB
35	1024	9	65535	1024	17	77MB
36	1024	8	512	1024	17	68MB
37	615	8	128	615	17	41MB
38	987	3	987	987	17	25MB
39	987	7	987	987	17	57MB
40	820	6	820	820	17	41MB
41	977	5	977	977	17	41MB
42	981	5	981	981	17	41MB
43	830	7	512	830	17	48MB
44	830	10	65535	830	17	69MB
45	917	15	65535	918	17	114MB
46	1224	15	65535	1223	17	152MB

Chapter 4

AWARD BIOS SETUP

When the system is first powered on or reset, the BIOS will display a copyright message on the first line of the screen, then the BIOS will perform the diagnostics and initialization. When all of the above tests have been passed, the message

"Press DEL to enter SETUP, ESC to skip memory test"

is displayed. If the [DEL] key or [ctrl-alt-esc] is pressed, the screen will be cleared and then the following message will be showed:

ROM ISA BIOS (XXXXXXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE. INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVING
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	

4-1 Standard CMOS Setup

Date (mn/date/year) : Tue, Jan 01 1980
Time (hh/min/sec) : 16 : 45 : 44

	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS
Drive C: None (0Mb)	0	0	0	0	0
Drive D: None (0Mb)	0	0	0	0	0

Drive A: : None
Drive B: : None

Video : EGA/VGA

Halt On : All Errors

Base Memory:	640K
Extended Memory:	3328K
Expended Memory:	0K
Other Memory:	128K
Total Memory:	4096K

The setup program is completely menu-driven:

1. Use arrow keys to select entry : Data, Time, Hard Disk(C/D),Floppy, and Display.

2. Use PgUp/PgDn key to modify the option of each entry.

3. Use Esc to exit this screen.

4-2 BIOS Feature Setup

If you don't really understand the meanings of each item, please don't change the default values. The default setting maybe different from those shown below:

ROM ISA BIOS (XXXXXXXX)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Typematic Reat Setting	: Disabled	System BIOS Shadow	: Enabled
Typematic Reat (Msec)	: 250	Video BIOS Shadow	: Enabled
Typematic Reat (Chars/Sec)	: 6	C8000-CBFFF Shadow	: Disabled
Security Option	: Setup	CC000-C7FFF Shadow	: Disabled
Memory Parity Check	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power on Self Test	: Enabled	D4000-D7FFF Shadow	: Disabled
Boot Up NumLock Status	: On	D8000-DBFFF Shadow	: Disabled
Boot Up System Speed	: High	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	E0000-E3FFF Shadow	: Disabled
Boot Sequence	: A, C	E4000-E7FFF Shadow	: Disabled
CPU Internal Cache	: Enabled	E8000-EBFFF Shadow	: Disabled
Gate A20 Option	: Fast	EC000-EFFFF Shadow	: Disabled
External Cache	: Enabled		

4-3 Chipset Features Setup

The Chipset Features Setupis entirely chipset specific portion and requires full knowledge about the detail definition of UMC chipset . Each option is tightly corresponding with the hardware structure. Without our engineering change notice,we strongly recommend"don't change any contents in advanced chipset setup menu".

ROM ISA BIOS (XXXXXXXX)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	LOWA20# Emulation	: Disabled
Cache Read Burst	: 3-2-2-2	RC Reset Emulation	: Disabled
Cache Write Wait State	: 1WS	System BIOS Cacheable	: Disabled
DRAM Type	: Normal Page	Video BIOS Cacheable	: Disabled
DRAM Wait State	: 2 WS	Non-Cacheable Block 1	: Disabled
Keyboard Clock	: 9.5 MHz	Block 1 Start Address	: 0K
AT Clock	: CPUCLK/8	Block 1 Size Address	: 16K
IO Recovery For ISA/PCB	: BCLK: 8/3		
DMA/Master Cycle	: HOLD 2-3T		
Slow Refresh	: Disabled		
Memory Remap	: Disabled		

4-4 Power Management Setup

The Standby Mode power savings options are:

. HDD Standby Timer :
The Hard disk entering power down mode.
. Display Power Down :
The display screen will be closed.
. System Slow Down :
Down CPU Clock to 8 MHz

ROM ISA BIOS (XXXXXXXX)
POWER MANAGEMENTSETUP
AWARD SOFTWARE, INC.

POWER MANAGEMENT : Disabled	
HDD Standby Timer : Disabled	
Display Power Down : Disabled	
System Slow Down : Disabled	

POWER MANAGEMENT Timer Selection :

Disabled : All function disabled

Min Power saving :

HDD Standby Timer : 15 Min
Display Power Down : 15 Min
System Power Down : 55 Sec

Max Power saving :

HDD Standby Timer : 1 Min
Display Power Down : 1 Min
System Power Down : 10 Sec

User Defined :

HDD Standby Timer : Disabled-15 Min
Display Power Down : Disabled-15 Min
System Power Down : Disabled-55 Sec

Wake up the system:

Pressing any key or moving Mouse to Wake up the system.

4-5 Standard type of hard disk

Type	Size	Cylinders	Heads	Sec	W-Pcomp	L-Zone
1	10MB	306	4	17	128	305
2	20MB	615	4	17	300	615
3	30MB	615	6	17	300	615
4	62MB	940	8	17	512	940
5	46MB	940	6	17	512	940
6	20MB	615	4	17	None	615
7	30MB	462	8	17	256	511
8	30MB	733	5	17	None	733
9	112MB	900	15	17	None	901
10	20MB	820	3	17	None	820
11	35MB	855	5	17	None	855
12	49MB	855	7	17	None	855
13	20MB	306	8	17	128	319
14	42MB	733	7	17	None	733
15	Reserved					
16	20MB	612	4	17	0	663
17	40MB	977	5	17	300	977
18	56MB	977	7	17	None	977
19	59MB	1024	7	17	512	1023
20	30MB	733	5	17	300	732
21	42MB	733	7	17	300	732
22	30MB	306	5	17	300	733
23	10MB	977	4	17	0	336
24	40MB	1024	5	17	None	976
25	76MB	1224	9	17	None	1023
26	71MB	1224	7	17	None	1223
27	111MB	1224	11	17	None	1223
28	152MB	1024	15	17	None	1223
29	68MB	1024	8	17	None	1023
30	93MB	918	11	17	None	1023
31	83MB	925	11	17	None	1023
32	69MB	1024	9	17	None	926
33	85MB	1024	10	17	None	1023
34	102MB	1024	12	17	None	1023
35	110MB	1024	13	17	None	1023
36	119MB	1024	14	17	None	1023
37	17MB	1024	2	17	None	1023
38	136MB	1024	16	17	None	1023
39	114MB	918	15	17	None	1023
40	40MB	820	6	17	None	1023
41	42MB	1024	5	17	None	1023
42	65MB	1024	5	26	None	1023
43	40MB	809	6	17	None	852
44	61MB	809	6	26	None	852
45	100MB	776	8	33	None	775
46	203MB	684	16	38	None	685
USER						