Datum: laser head move the original point of the machine slowly. It is mainly used to estimate cumulative error. You should make sure the application of datum switch and lead the switch signal to the controller.

Laser: Laser on/off.

Stop: Stop operation.

Test: The laser head will run along the outline border of the processing data.

Start/Pause: Start/pause the processing operation.
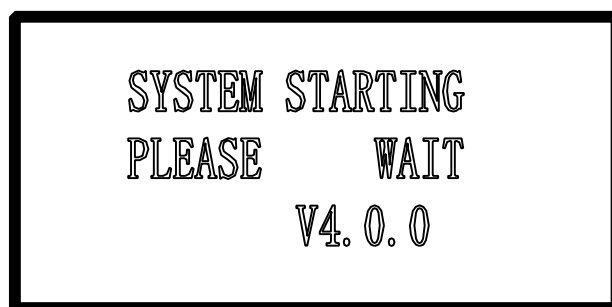
Esc: Escape the current status window.

Menu: Enter accessory interface.

[Z] : Click this button, and then click a△ to▽ move the Z axis. This function needs hardware support.

[↵] : Enter.

7.2.1   Startup Interface

When power on, PAD will show "System starting, please wait" and the version information of the PAD.

```
SYSTEM STARTING
PLEASE       WAIT
      V4.0.0
```

7.2.2   Main Interface

If the communication with the controller is normal, enter the main interface to set parameters. It appears as below:

```
FILE    XXXXXXXX
SPEED  XXX%
POWER  XXX/XXX%
PIECESXXX      DEL
```
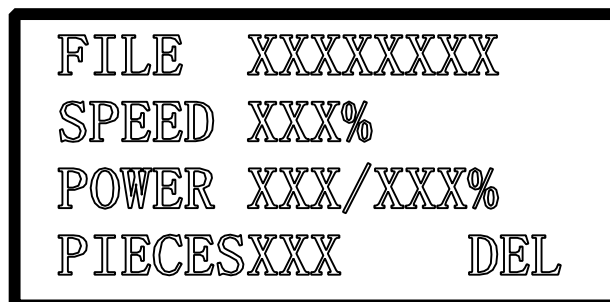
File: name of the current processing file

**Speed**: percentage of speed set in the processing file.

Power: percentage of power set in processing file. The former is the power for the low speed and the latter for the high speed.

Pieces: repeat times of the current processing file.

If the file name is highlighted:

Press ⇐ ⇒ to move the cursor.

Press △ ▽ to modify the highlighted option.

Click [↵] to save the options you have modified.

Press "start/pause" to start the file checked.
Press "Esc", all the options can not be modified (file name is not highlighted). Now press

⇦ ⇨ △ ▽ will move the laser head manually. Press [⏎], you can modify the options again (file name is highlighted.)
Press "Test", the laser head will run along the outline border of the processing data.

7.2.3   Processing interface
Press "start/pause" in the Main Interface (with or without the cursor), start to process the current files. Processing interface appears as below:

```
FILE    XXXXXXXX
SPEED   XXX%
POWER   XXX/XXX%
TIME       XX-XX-XX
```

File: name of the current processing file.
Speed: percentage of the speed set in the processing file.
Power: percentage of power set in the processing file. The former is the power for the low speed and the latter for the high speed.
Time: total time which the processing has carried out.
In processing:
Press ⇦ ⇨ to adjust the processing power (processing power percentage of the high speed).
Press △ ▽ to adjust the processing speed (percentage).
Press "start/pause" to pause or resume the processing.
Press "stop" to end the processing. The interface will display "stop processing", and press "Esc" will bring you back to the modification of the Main Interface.

7.2.4   **Accessory Interface**
Press "Menu", Accessory interface appears as below:

```
CUT CONTROL
LASER SET
JOG SET
LANGUAGE
```

If there is a cursor:
Press " ⇦   ⇨ " move the cursor.
Click "Enter", and the cursor will be put into use.
Then click "Esc", you will be back to the Main Interface.

CUT BDR: laser head will cut the outline frame of the current processing file.

Jog Set: check this option and click [⏎], and then Jog Set Interface appears as below:

```
┌─────────────────────────────┐
│                             │
│      LASER TIME SET         │
│         XXXXXMS             │
│       POWER SET             │
│          XXX%               │
│                             │
└─────────────────────────────┘
```
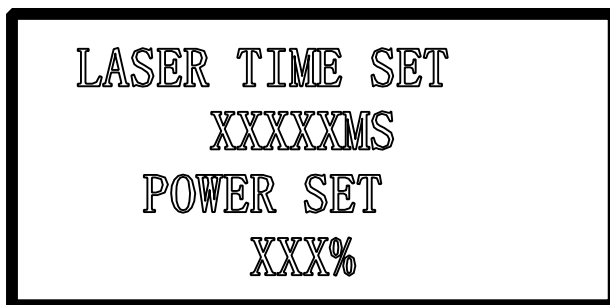
The default value is 0mm, and power is 100%.

If the value in "Laser Time" is 0, the laser will be on when you press the "LAS SET", and off when you stop pressing. If the value in "Time" is not 0, the laser will be on for a certain time as you set when you press "LAS SET" once.

Value in the "Power" determines the laser power in "LAS SET".

Jog set: check this option and click [⏎], Jog Set Interface appears as below:

```
┌─────────────────────────────┐
│                             │
│      DISTANCE SET           │
│                             │
│                             │
│        XXX。X MM            │
│                             │
└─────────────────────────────┘
```
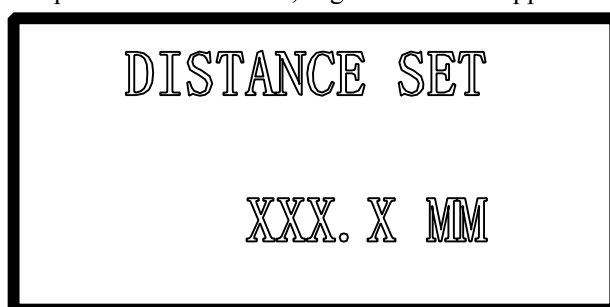
If the value is 0, the laser head will move if you press the down button, and it will stop if you stop pressing. If the value is not 0, the laser will move a certain distance as you set when you press "Jog Set" once.

LANGUAGE: you select language as you prefer: 简体中文, 繁体中文, and English.

```
┌─────────────────────────────┐
│                             │
│         简体中文             │
│         繁体中文             │
│        ENGLISH              │
│                             │
└─────────────────────────────┘
```
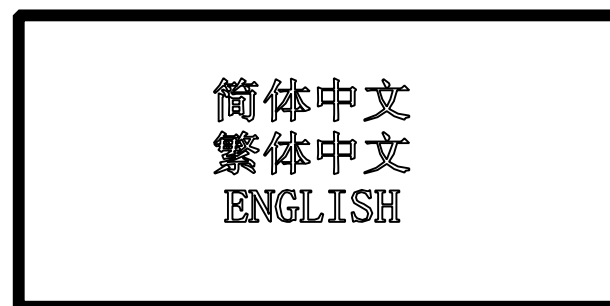
8 Text display Control Panel

It appears as below:
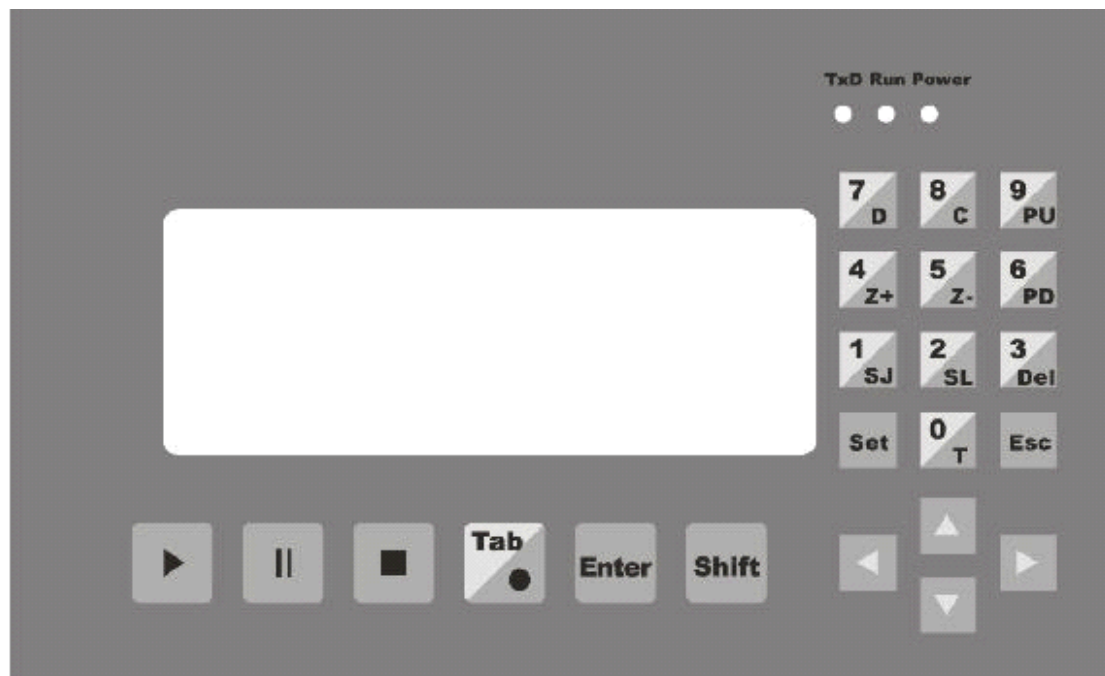
8.1 Main Interface

8.1.1   Introduction of displaying content

File: name of the current file

No.: serial number of the current file.

Speed: percentage of the speed set in the current processing file. It can be modified from 0~100%. The default number is 100%.

Sum: total number of the processing file saved in MPC6535.

Power: percentage of the power in the current processing file. The former is the power for the low speed and the latter for the high speed. It can be modified from 0~100%. The default number is 100%.

Pcs: repeat times of the current processing file. It can be modified from 1~999. The default number is 1.

Complete: operating status of the laser. There are 11 types of operating status, respectively "Complete", "Going BDR", "Cut BDR", "Processing", "Pause", "Datum", "Laser", "Downloading", "Download Complete", "Test U disk", "Unplug U disk". Status content will automatically display the status of the laser.

8.1.2   Introduction of keys on the panel (without cursor activated)

Start: Click this button, Process Interface appears.

Cursor: click this button to activate cursor.

↑、↓、←、→: Click the button, and laser will correspondingly move up, down, left, and right.

1/SJ: press this button, Jog Set Interface appears.

2**/SL**: press this button, Laser Set Interface appears.

3/Del: press this button to delete the current file.

4/Z+: press this button, laser head will move toward the positive direction of the Z-axis.

5/Z–: press this button, laser head will move toward the negtive direction of the Z-axis.

6/PD: press this button, the next file with the serial number lessen 1 appears.

7/D: press this button, the laser head will datum.

8/C: press this button, and then the laser will cut the border line with 100% power.

9/PU: press this button, the last file with the serial number added 1 appears.

The other keys are invalid.

8.1.3   Introduction of keys on the panel (with cursor activated)

Cursor: press "Cursor" again, and the cursor will move to the next modifiable parameter, that is, Speed-Power (slow)-Power (quick)-Sum. Press "Cursor" when the cursor is in "Sum", it will disappear. Every parameter with the cursor activated can be modified by the number key on the right of the control panel. Click "Enter" after modification.

Enter: click this button to confirm the parameter you have modified.

Esc: click this button to clear the parameter to be modified.

The other keys are invalid.

All the parameter set can be saved when power down.

8.2 Jog Set Interface

Press "1/SJ" in the Jog Set Interface, you can input Jog distance from the number keys, and press "Enter" to save it. The default number is 0mm. In this case, laser head will move when you press "1/SJ", and will stop when you stop pressing. If the set number is 100mm, laser head will automatically stop after moving for 100mm once you press the button.

Press "Esc" to go back to the Main Interface. The other keys are invalid.

This parameter mainly to define the jog distance on the four directions: up, down, right, and left.

The precision of this parameter is 0.1mm. It can be saved when power down.

8.3 Laser Set Interface

When the cursor is not activated, press "2/SL" in the Main Interface, Laser Set Interface appears, and you can set the Time and Power of the Laser.

After Laser Set Interface appears, you can press "Cursor" to activate Cursor, you can input "Time" and "Power" from the number keys, and then press "Enter" to save it. The default "Time" is 0ms, and default "Power" is 100 % (range of the "Power" is 0~100%, and range of "Time" is 0~99999ms).

If you input 0 in "Time", the laser will be on when you press this button, and off when you stop pressing. If you set other number, say, 200ms, the laser will be on for 200ms after you press this button.

Click "Esc", you will be back to the Main Interface. The other keys are invalid.

8.4 Processing Interface

When the cursor is not activated, press "Start", Processing Interface will appear. Content of the Text Display are as below:

File: display the name of the processing file.

Speed: display the speed of the processing (speed set in the Main Interface). You can adjust it up

or down (one step) by the ↑, ↓ in processing. The adjust range is 0~100%.

Power: display the power of the processing (power set in Main Interface). You can adjust the power for the high speed up or down by the ←, → in processing (you can not adjust the power for the low speed, but you can only set it in the Main Interface). The adjust range is 0~100%.

Time: display the total for processing.

Status: display the movement status of the laser.

In Processing Interface, functions of the keys on the panel are:

Esc: click this button, and you will be back to the Main Interface.

0/T: click this button, and then the laser will scan the border line.

·/L: click this button, the laser will be on ("Time" and "Power" can be set in the Laser Set Interface).

Start: press this button to start processing. After it starts, this button functions as "Pause/Resume".

Pause/Resume: press this button to pause the processing. Another press will resume the processing.

Stop: press this button to stop processing and the laser head goes back the starting point of the processing.

Note: "Stop" button is the instant stop direction to the system. It will greatly strike the machine when you press it as the machine is running with a high speed. On the contrary, "Pause/Resume" is the slow stop direction to the system. Therefore, if you want to stop processing when the machine is running, first press "Pause/Resume" to pause and then "Stop" to stop processing.

9 Error Alarm Interface

9.1 Error Alarm Interface

Brief

PAD03 (PAD06) Operating Panel will offer real-time display of the Error Alarm of the Control resulted by any improper operation or external signal interruption. If will help the users to identify the reason of the error and correct the operation or eliminate the interruption.

9.2 Soft Limit Stop

Reason: figure to process is beyond the range of the worktable. Usually it happens when the laser head datum and there is no correct docking point for the laser head in the case of immediate output.
Solution: move the laser head to make the figure inside the range of the worktable. You can also uncheck the "√" of the immediate output and download the processing data again.

9.3 Hard Limit Stop

Reason: user checks the immediate output when the laser head doesn't datum, and then the processing range is beyond the worktable and stop when it gets limit signal. It will also happen when there are interruption signal due to the sophisticated surrounding.
Solution: move the laser head to make the figure inside the range of the worktable. If it happens during the processing and doesn't touch the switch, the reason is the interruption, please check the ground wire.

9.4 Storage Overload Alarm
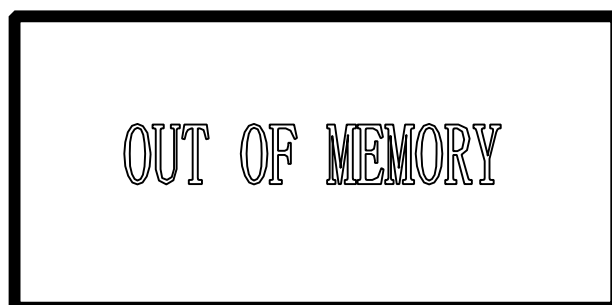
Reason:
1. Total number of the download files is over 32 which are the maximum of the storage.
2. The download file is larger than the storage capacity.
Solution: make sure the download file is not larger than the total storage capacity. Delete useless processing files to release storage space.
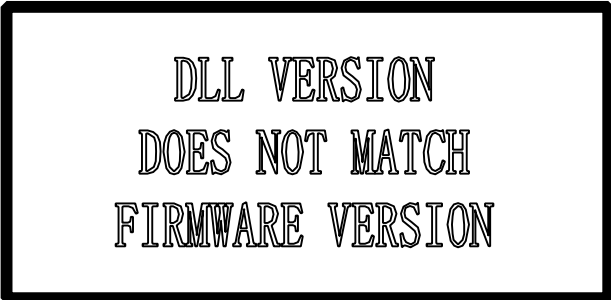
9.5 Config Not Match Firmware

```
INVALID CONFIG
RE-DOWNLOAD
CONFIG FILE
```

Reason: you didn't download the configuration file with the firmware you have updated.
Solution:
1. Open the install catalog of the application, run the version check program to check if the version of the DLL matches the firmware or not. If not, contact the provider to get the matched DLL.
2. Double click the application to download configuration.

9.6 DLL Not Match Firmware

```
DLL VERSION
DOES NOT MATCH
FIRMWARE VERSION
```
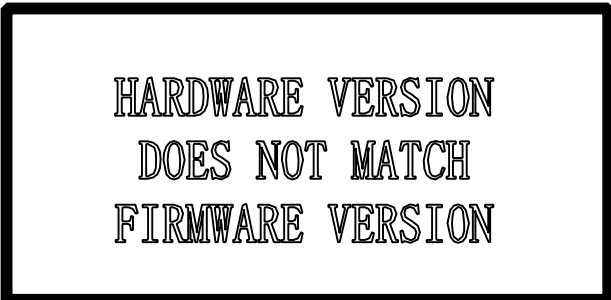
Reason: the DLL used to generate the processing file dose not match the firmware.
Solution: see 10.1

9.7 Hardware Not Match Firmware

```
HARDWARE VERSION
DOES NOT MATCH
FIRMWARE VERSION
```

Reason: hardware does not support the firmware you have undated.

Solution:

Steps: 1. copy the new firmware file (XXXX.FWM and XXXX.HDW) to the root directory of the U disk (FAT16 after formatting, it is suggested there are no other file in the U disk).

2. When the power of the MPC6515/35 is down, plug the U disk and then resume the power provision. The indicator light on the MPC6515/35 main board will keep on after flashes twice (2~5 seconds, depends on the size of the firmware), and the firmware is updating. If there is no indicator light, judge the process by the introduction of the U disk. 6536 can be judged by the indicator light.

3. D1 on the MPC6515 flashing quickly indicates the complete of the updating of the firmware; if there is indicator light, judge the procedure by it. The procedure will take about 15 seconds.

4. Unplug U disk, MPC6515/35 will start the DSP firmware program normally.

If MPC6515/35 does not work after you unplug U disk, there may be error in the updating of the firmware. You can repeat the above steps. If MPC6515/35 still does not work, contact the provider.

10 Tool Software

MPC6535 check.exe Tool Software is mainly used to check the controller card is normal or not. It is conducive to find out the reason of the error, including the version match check, general output/input check, original limit switch check and movement check. MPC6535 test program is under the LaserCut53 catalog, and the file name is MPC6535 check.exe. Double click the file will start it.

10.1 MPC6515/35 Version Test

If the version of the controller card does not match the DLL version, it can not work. The version of the controller card can not be changed (unless you update it by "firmware download"), so you have to find the right DLL version. Version Test program is used to check the version of the controller card and DLL to match them.

DLL is under the LaserCut53 catalog, and the name is M05MpcLs_Check.exe. Start the program, dialog box appears as below:
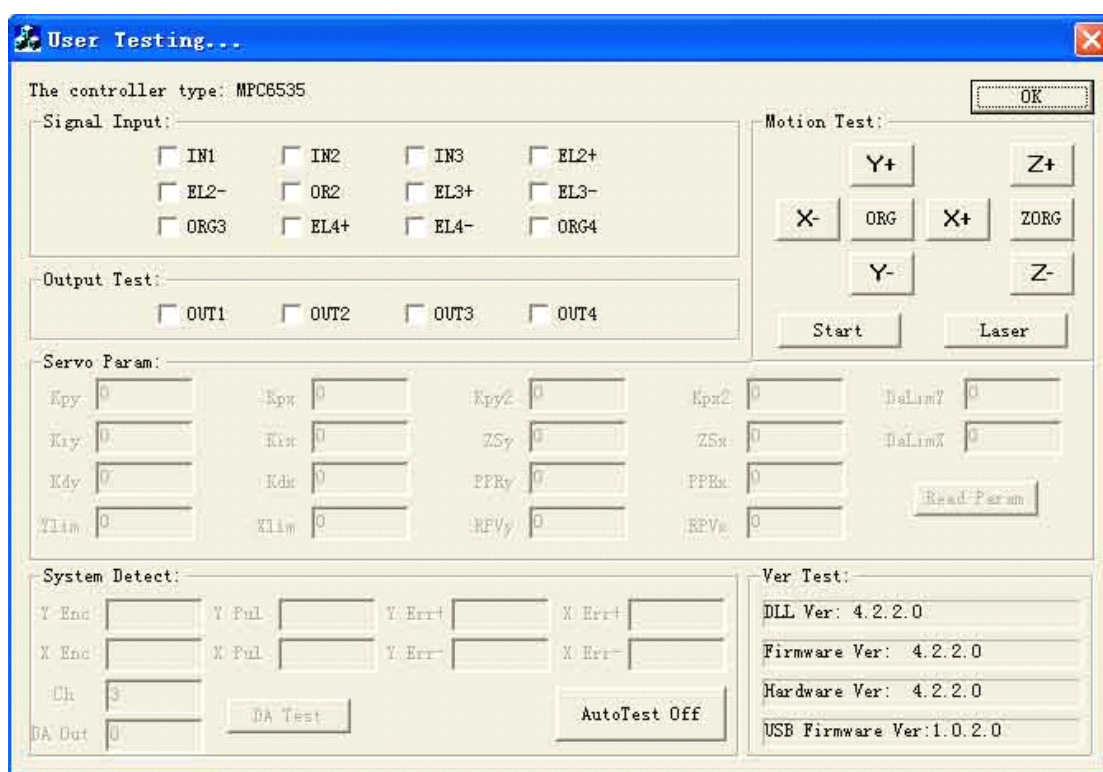
Generally speaking, the first three numbers of the card version and the DLL version are the same. Please offer the provider with the version numbers of the card and the DLL to see whether they are matched or not. Generally there is a readme.txt file in the disk, and you can see the matched version numbers of the card and the DLL in it.

10.2 MPC6535 IO Test

MPC6535 check program can check the IO signal of the controller card. The program will easily find out the reason when the machine does not work. Click "Auto check off" before you carry out