LP-8x21 and LP-9x21 OS_Image Update Guide

(v1.2)

LP-8121

1-slot Linux Based PAC with Cortex-A8 CPU (RoHS)

LP-8421

4-slot Linux Based PAC with Cortex-A8 CPU (RoHS)

LP-8821

8-slot Linux Based PAC with Cortex-A8 CPU (RoHS)

LP-9221

2-slot Linux Based PAC with Cortex-A8 CPU. Metal Case (RoHS)

LP-9421

4-slot Linux Based PAC with Cortex-A8 CPU. Metal Case (RoHS)

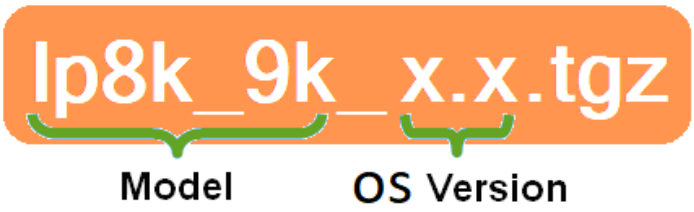
LP-9821

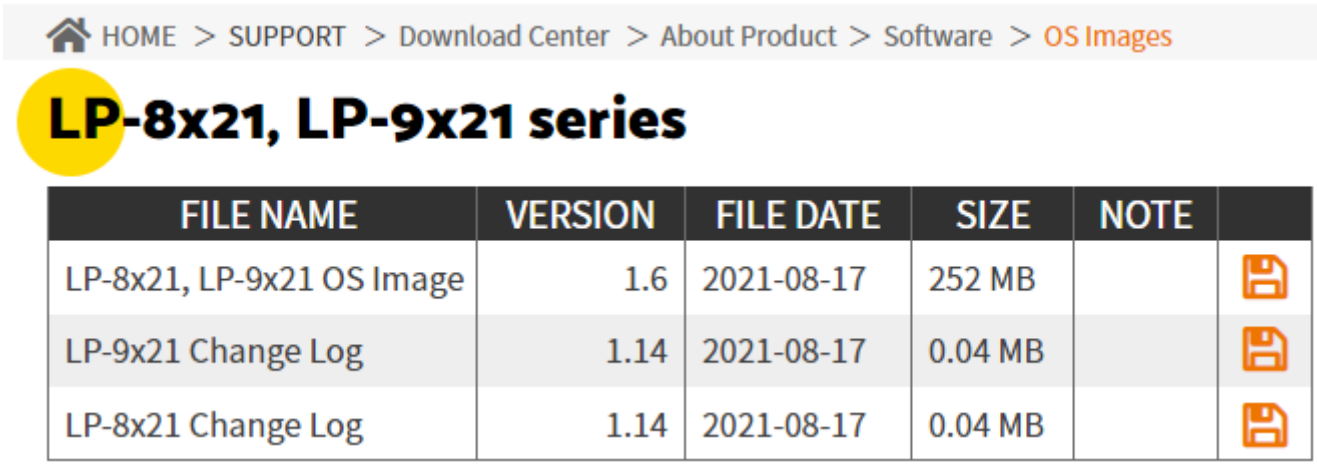
8-slot Linux Based PAC with Cortex-A8 CPU. Metal Case (RoHS)

1.【Download OS Image】

Please download the OS Image (lp8k_9k_x.x.tgz) from below web link:

https://www.icpdas.com/en/download/show.php?num=986&model=LP-8421





FILE NAME	VERSION	FILE DATE	SIZE	NOTE	
LP-8x21, LP-9x21 OS Image	1.6	2021-08-17	252 MB		
LP-9x21 Change Log	1.14	2021-08-17	0.04 MB		
LP-8x21 Change Log	1.14	2021-08-17	0.04 MB		

After decompressing the lp8k_9k_x.x.tgz file, user can find six files. The detail information of six files, please refer to below description:

Contents of lp8k_9k_x.x.tgz	
File Name	**Description**
MLO	The boot loader files of U-Boot
u-boot.img	
uEnv.txt	
uImage	The image of Linux kernel
rootfs.ubi	The root files of Linux OS
version	The release version of Linux OS and Linux kernel

Please note:
The flash and microSD disk have a finite number of program-erase cycles. Important information should always be backed up on other media or storage device for long-term safekeeping.

2.【Preparation】

(1) Preparation tools as below：

- ✓ Power Supply: +10 to +30V_{DC} (E.g., DP-665)

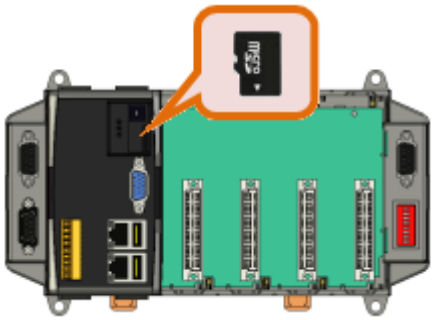
  See https://www.icpdas.com/en/product/guide+Accessories+Power__Supplies+Power__Supply for a full list of the available accessories.
- ✓ USB card reader for microSD card × 1 (Fig. 1)
- ✓ microSD card × 1 (Fig. 2)

Fig.1 USB card reader

Fig.2 microSD card

Important notes regarding microSD cards

1. Ensure that the microSD card is properly dismounted before unplugging it.
2. Do not power off or reboot the device while data is being written to or read from the microSD card.
3. The **first partition of microSD** card must be formatted with a **FAT16/FAT32** file system.
4. Scan and repair the microSD card if necessary.
5. Ensure that you perform a backup of any important files, before attempting to update the OS image.
6. **DO NOT** power off or reboot the controller while the OS image is being updated, as this may result in the OS image becoming corrupted, which may cause the controller to malfunction.



(2) To insert the microSD card into the USB microSD card reader in Windows (or Linux) OS. User can copy the OS image files of LP-8x21/9x21 to **the first partition** of SD card, please refer to below figure:

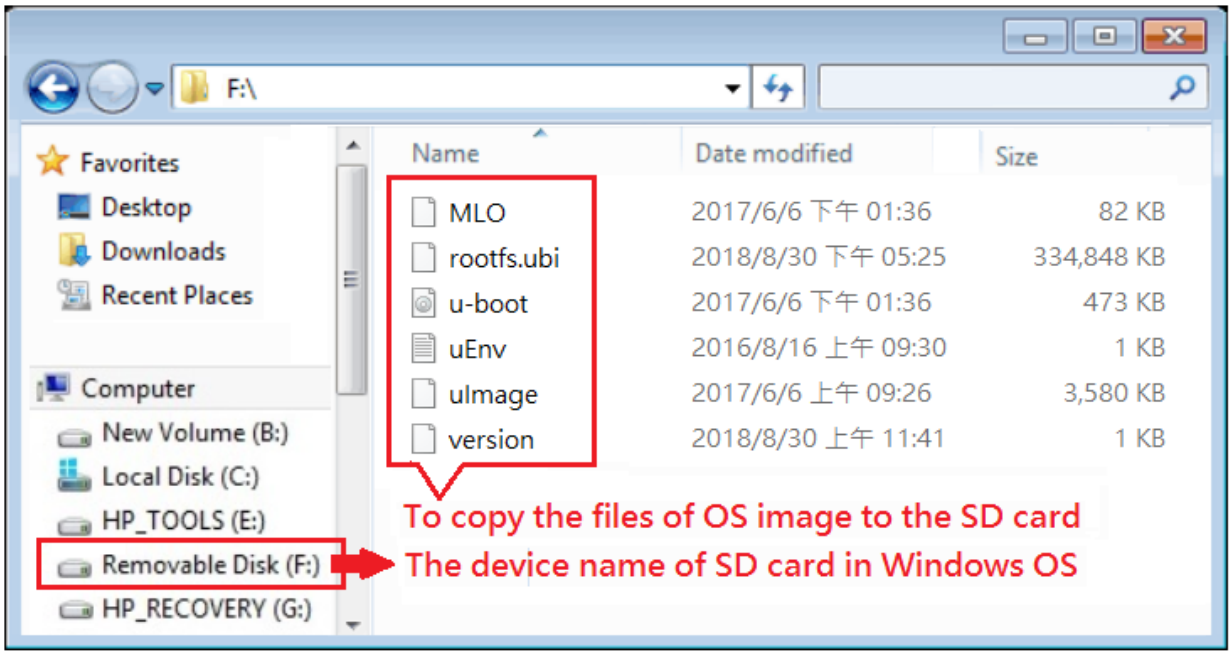


Fig.3 Build Rescue Disk in Windows platform

```
Disk /dev/sdb: 3980 MB, 3980394496 bytes
123 heads, 62 sectors/track, 1019 cylinders, total 7774208 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000
        The device name of SD's first partition is "/dev/sdb1".
   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1   *        2048     2105343     1051648    b  W95 FAT32
root@golden:~#
root@golden:~# mount /dev/sdb1 /mnt
root@golden:~# tar xvf /tmp/lp8k_9k_1.4.tgz -C /mnt
MLO
rootfs.ubi        To decompress the lp8k_9k_xx.tgz to the mount directory of SD card.
u-boot.img
uEnv.txt
uImage
version
root@golden:~#
root@golden:~# ls /mnt
MLO  rootfs.ubi  u-boot.img  uEnv.txt  uImage  version
root@golden:~#
```

Fig.4 Build Rescue Disk in Linux platform

(3) To **turn off the power** to the LinPAC, and insert **microSD card** to the LinPAC.

3.【Update Procedure】

(1) **To turn on the power** to the LinPAC, and the Linux OS would be installed from microSD automatically. The "**PWR**" LED light is on and " **RUN** " LED is goes off when OS is updating. The recovery process may spend 4 ~ 5 minutes.

(2) If loading the Linux OS successfully, the LED "**RUN**" status will be turned on.

LP-8x2x	LP-9x2x
Status of "**RUN**" LED is **red** , and "**PWR**" LED is **green**.	Status of "**RUN**" LED is **green**
	

(3) After the recovery process completed, it is necessary that user should **turn off the power** and **remove the microSD card**.

(4) **Turn on the power**, LinPAC will startup, and the total process is completed (If forgot to remove the microSD card, OS will update again). Connect **Ethernet cable**, **VGA cable** and **USB keyboard** to the LinPAC, user will see the below screen:

Fig.5 Login LinPAC

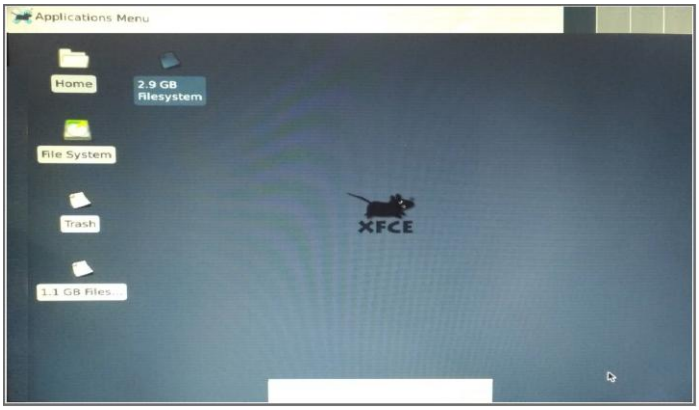


Fig.6 Boot sequence completely