Thundercomm

Empowering Every IoT Device with Our Technology

Thundercomm TurboX RB5 LU

GUI Installation Guide

Rev. V1.0
Sep. 16, 2021

Revision History

Revision	Date	Description
1.0	Sep 16, 2021	Initial release.

About This Document

- Illustrations in this documentation might look different from your product.

- Depending on the model, some optional accessories, features, and software programs might not be available on your device.

- Depending on the version of operating systems and programs, some user interface instructions might not be applicable to your device.

- Documentation content is subject to change without notice. Thundercomm makes constant improvements on the documentation of your computer, including this guidebook.

- Function declarations, function names, type declarations, attributes, and code samples appear in a different format, for example, `cp armcc armcpp`.

- Code variables appear in angle brackets, for example, `<number>`.

- Button, tool, and key names appear in bold font, for example, click **Save** or press **Enter**.

- Commands to be entered appear in a different font, on the host computer use $ as shell prompt, while on the target device use # as shell prompt, for example,

```
$ adb devices
# logcat
```

- Part of the code that does not contain instructions appear in a different format, for example,

```
SUBSYSTEM=="usb", ATTR{idVendor}=="18d1", MODE="0777", GROUP="adm"
```

- Folders and files are formatted in italic, for example, *turbox_flash_flat.sh*.

TURBO X

Table of Contents

Chapter 1. Introduction

This document provides the operating procedure for installing Thundercomm TurboX RB5 LU GUI (Graphical User Interface).

➲ **NOTE:** "TurboX" referred to herein is the English text of our registered trademark **T U R B O ⟨⟩**.

1.1. Image

FlatBuild_TurboX-RB5_xx.xx_LU1.0.R.perf.Post-CS2.r003004

➲ **NOTE:** Only RB5 platform with 5165 SOM can support LU.

1.2. System account

- Account: root

- Password: oelinux123

Chapter 2. Operating Procedure

2.1. Flash image

Flash image with QFIL tool.

2.2. Configure network

As the company network needs to be certified, it is required to send wireless hotspots to devices from a laptop with internet access to certified company network.

2.2.1. Set Wi-Fi account and password

Option 1. Execute the following command on the device.

```
nmcli dev wifi connect 'test_xkx' password '12345678' iface wlan0
```

> ➲ **NOTE:** If the network still cannot be connected or the current system does not support this command, proceed with Option 2.

Option 2. Follow the steps below.

Step 1. Create the *wpa_supplicant.conf* file on a Windows PC.

wpa_supplicant.c
onf

Step 2. Execute the following command on the command line.

```
adb push wpa_supplicant.conf /data/misc/wifi/
```

Step 3. Execute the following commands on the device.

```
wpa_supplicant -iwlan0 -Dnl80211 -c/data/misc/wifi/wpa_supplicant.conf svc
wifi enable
reboot
```

2.3. Install gnome (on-screen operation)

Execute the following commands to install gnome.

```
# apt-get remove weston*
# apt-get remove wayland*
# apt-get install xorg
# apt-get install gnome
# apt-get install lightdm
```

➲ **NOTE:** Select gdm3 when you need to select from gdm3/lightdm afterwards.

TURBOX

2.4. Remove restriction of root login to GUI

2.4.1. Modify file /usr/share/lightdm/lightdm.conf.d/50-ubuntu.conf

Step 1.Run the following command to modify the file.

```
root@ubuntu:~# vim /usr/share/lightdm/lightdm.conf.d/50-ubuntu.conf
```

Step 2.Open the file and add two lines at the end of the file.

```
greeter-show-manual-login=true
all-guest=false
```

Step 3.Run the following commands to test whether the modification in Step 2 is successful.

```
root@ubuntu:~# cat /usr/share/lightdm/lightdm.conf.d/50-ubuntu.conf
[Seat:*]
user-session=ubuntu
greeter-show-manual-login=true
all-guest=false
```

2.4.2. Enter folder /etc/pam.d and modify files gdm-autologin and gdm-passwd

Step 1.Comment out the following line from file *gdm-autologin*.

```
auth required pam_success_if.so user!=root quiet_success
```

Step 2.Comment out the following line from file *gdm-passwd*.

```
auth required pam_success_if.so user!=root quiet_success
```

Step 3.Run the following commands to validate whether the operation in Step 1 is successful.

```
root@ubuntu:~# cd /etc/pam.d
root@ubuntu:/etc/pam.d# cat gdm-autologin | grep auth
auth requisite pam_nologin.so
#auth required pam_succeed_if.so user != root quiet_success
auth optional pam_gdm.so
auth optional pam_gnome_keyring.so
auth required pam_permit.so
```

Step 4.Run the following commands to validate whether the operation in Step 2 is successful.

```
root@ubuntu:/etc/pam.d# cat gdm-password | grep auth
auth requisite pam_nologin.so
#auth required pam_succeed_if.so user != root quiet_success
@include common-auth
auth optional pam_gnome_keyring.so
```

2.4.3. Modify file /root/.profile

Step 1.Change `mesg n` to `tty -s && mesg n`.

Step 2.Run the following commands to validate whether the operation in Step 1 is successful.

```
root@ubuntu:~# cat /root/.profile
# ~/.profile: executed by Bourne-compatible login shells.

if [ "$BASH" ]; then
if [ -f ~/.bashrc ]; then
. ~/.bashrc
fi
fi

tty -s && mesg n || true
```

2.5. GUI function setting

- Open GUI with the following command:

```
# systemctl set-default graphical.target
```

- Close GUI with the following command:

```
# systemctl set-default multi-user.target
```

2.6. Login screen

Restart Ubuntu and log in to the system with root (User Name: root; Password: oelinux123).
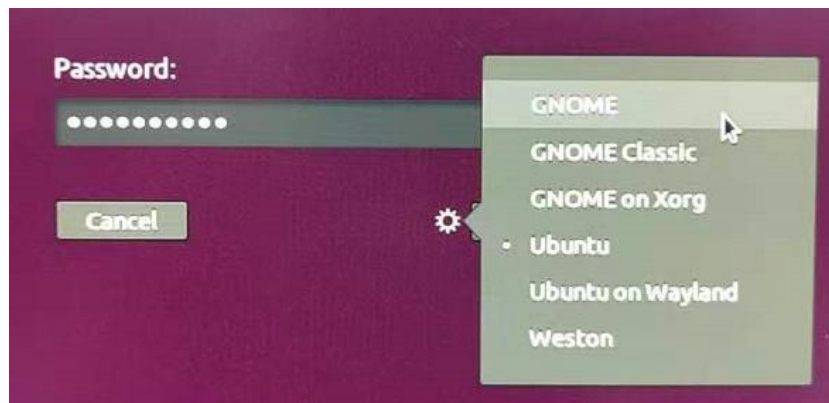
Refer to Figure 2-1 for the login screen.

Figure 2-1.Login Screen

➲ **NOTE:** Make sure to choose "GNOME" in the dropdown list.
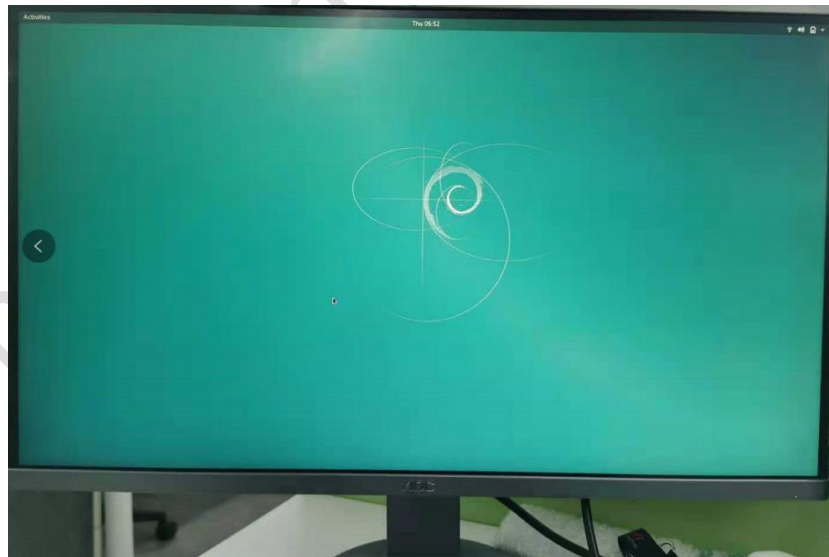
2.7. System desktop

Figure 2-2.System Desktop

2.8. Caution

Upon completion of installation, when you are ready to login, there are multiple desktop programs for your selection; however, only one of them (as shown in Figure 2-2) can be logged in to, while the rest will loop on the login screen, unable to enter the system.

TURBOX

2.9. Known issues

- Unable to open the terminal with **Ctrl**+**Alt**+**T**.

- There is no desktop icon. As confirmed afterwards, this system does have an icon and it is required to drag the desktop left or right.

Appendix 1. Notices

Thundercomm may have patents or pending patent programs covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries to service@thundercomm.com.

THUNDERCOMM PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions; therefore, this statement may not apply to you.

Changes are made periodically to the information herein; these changes will be incorporated in new editions of the publication. To provide better service, Thundercomm reserves the right to improve and/or modify the products and software programs described in the manuals, and the content of the manual, at any time without additional notice.

The software interface and function and hardware configuration described in the manuals included with your development board or system on module might not match exactly the actual configuration of that you have purchased. For the configuration of the product, refer to the related contract (if any) or product packing list, or consult the distributor for the product sales. Thundercomm may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Thundercomm product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Thundercomm or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

The information of this document should not be as any invitation for offer or any advice to the visitors. Please consult the professional comments from the sales consultant prior to do any actions of invest or purchase.

Thundercomm may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Thundercomm Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Thundercomm product, and use of those Web sites is at your own risk. Thundercomm shall not be responsible for the content of the third party.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This document is copyrighted by Thundercomm and the property right of the date mentioned in this document, including but not limited trademarks, patents, copyrights, trade name etc. are not covered by any open-source license. Thundercomm may update this document at any time without notice.

Anyone doesn't have the right to amend, reprint, republication, reproduce, transmit, distribute or any other way to use this document in business or public purpose without the prior written consent by Thundercomm.

E-mail messages sent to Thundercomm via the Internet are not guaranteed to be completely secure. Thundercomm shall not be liable for any loss incurred by the surfer when transmitting any information over the Internet or for any loss incurred by Thundercomm when sending any information over the Internet at your request.

TURBO X

Thundercomm has all rights under other relevant exemptions provided by laws and regulations, and Thundercomm's failure to claim or delay in claiming such rights shall not be deemed to be a waiver of such rights by Thundercomm.

Thundercomm reserves the right of final interpretation of this document.

Appendix 2. Trademarks

Thundercomm and Thundercomm TurboX are trademarks of Thundercomm Corporation or its associate companies in China and/or other countries. Intel, Intel SpeedStep, Optane, and Thunderbolt are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. Microsoft, Windows, Direct3D, BitLocker, and Cortana are trademarks of the Microsoft group of companies. MDP (Mini DisplayPort), DisplayPort, and VESA are trademarks of the Video Electronics Standards Association. The terms HDMI and HDMI High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries. Wi-Fi, Wi-Fi Alliance, WiGig, and Miracast are registered trademarks of Wi-Fi Alliance. USB-C is a registered trademark of USB Implementers Forum. All other trademarks are the property of their respective owners.