**ADLINK Technical Document**

| Abstract | How to install Linux drivers for the UD-DASK/X | | |
|---|---|---|---|
| OS | Linux | | |
| Keyword | Linux, UD-DASK/X | | |
| Related Products | USB-1210, USB-1901, USB-1902, USB-1903, USB-2405, USB-2401, USB-7230, USB-7250 | | |
| Date | 2021/08/05 | No. | 202110002 |

● Issue Details:

To build a Linux software application to operate an ADLINK USB DAQ card (e.g. USB-1902), download the Linux drivers and install them. The steps for downloading and installing the Linux drivers are detailed in this document.

● More information:

ADLINK provides pre-built driver binaries for Ubuntu LTS Linux kernels. These binaries are regularly updated and officially supported to work with specific Linux kernels indicated in this document and on the ADLINK website. If you want to use another Linux OS or Linux Kernel, you need to sign the NDA to get the driver source code and build the Linux driver by yourself.
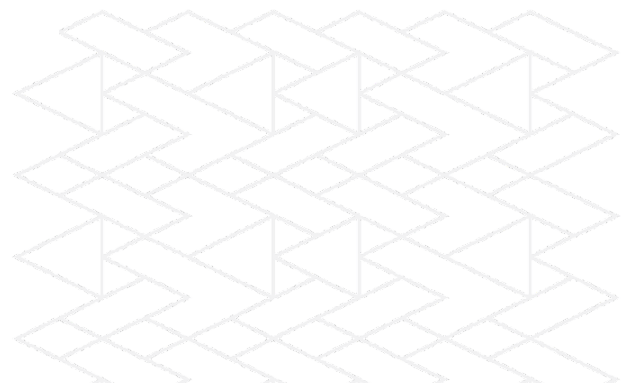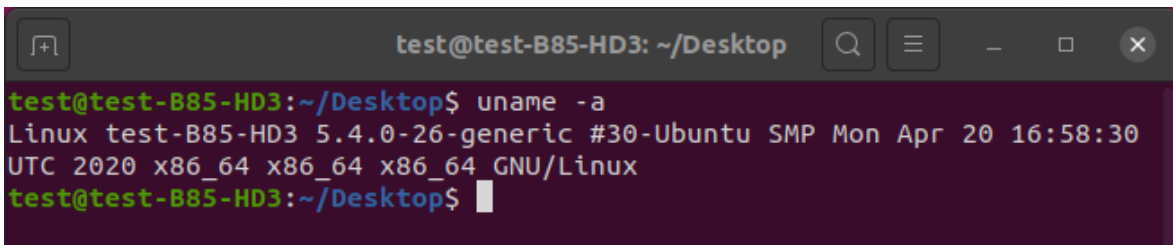
- **Solution:**

**Step 1:**

Find out the system kernel version. Go to the terminal and type "uname -a".

NOTE: ADLINK only supports Linux Kernel version 4.15.0-20-generic, 5.4.0-26-generic, and 5.4.0-47-generic.



**Step 2:**

Go to the official ADLINK website, search for "UD-DASK/X", and download the driver corresponding to your OS and kernel version.

Direct link (login required):
https://www.adlinktech.com/Products/Data_Acquisition/SoftwareandDrivers/UD-DASK_X

Software Download :

USB-1901/1902/1903 Driver

Linux Ubuntu

UD-DASK/X, v21.03 for Ubuntu 18.04 & 20.04 (4.15.0-20-generic, 5.4.0-26-generic, 5.4.0-47-generic)
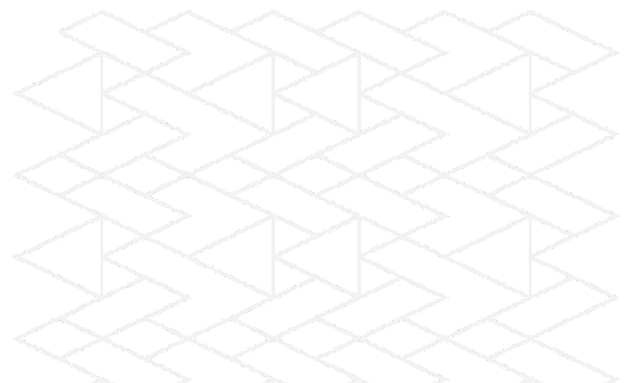(1.06MB)
Upload: 2021-03-24

UD-DASK/X, v1.01 for Ubuntu 14.04.3 x86_64, Linux Driver and SDK for ADLINK USB DAQ Series
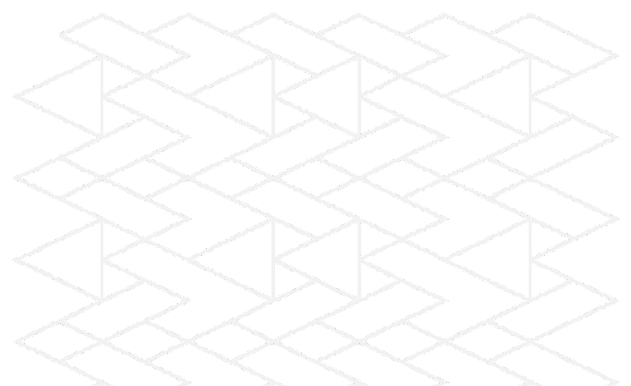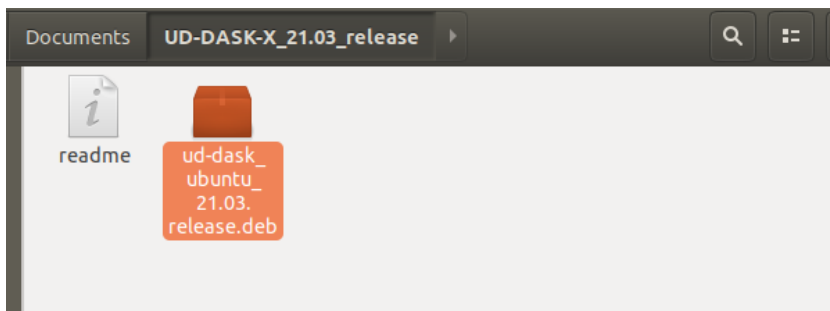(1.40MB)
Upload: 2018-02-05

**Step 3:**

Go to the terminal and type "tar zxvf UD-DASK-xxxxxx.tar.gz" to unpack the .gz file. There are two files in the target folder.

**Step 4:**

Go to the terminal and type "sudo dpkg –i ud-dask_xxxxxx.deb" to install the driver.
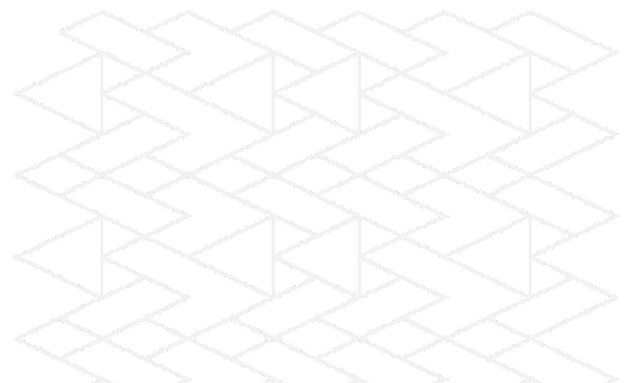
Alternatively, double-click the .deb file in the graphical user interface. Reboot when done.
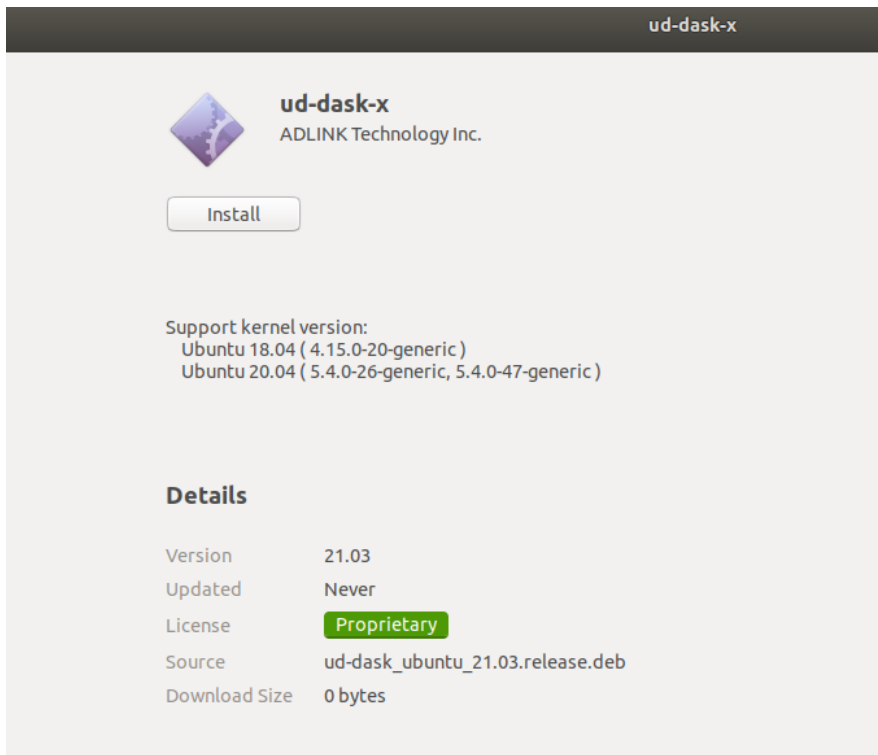


**Step 5:**

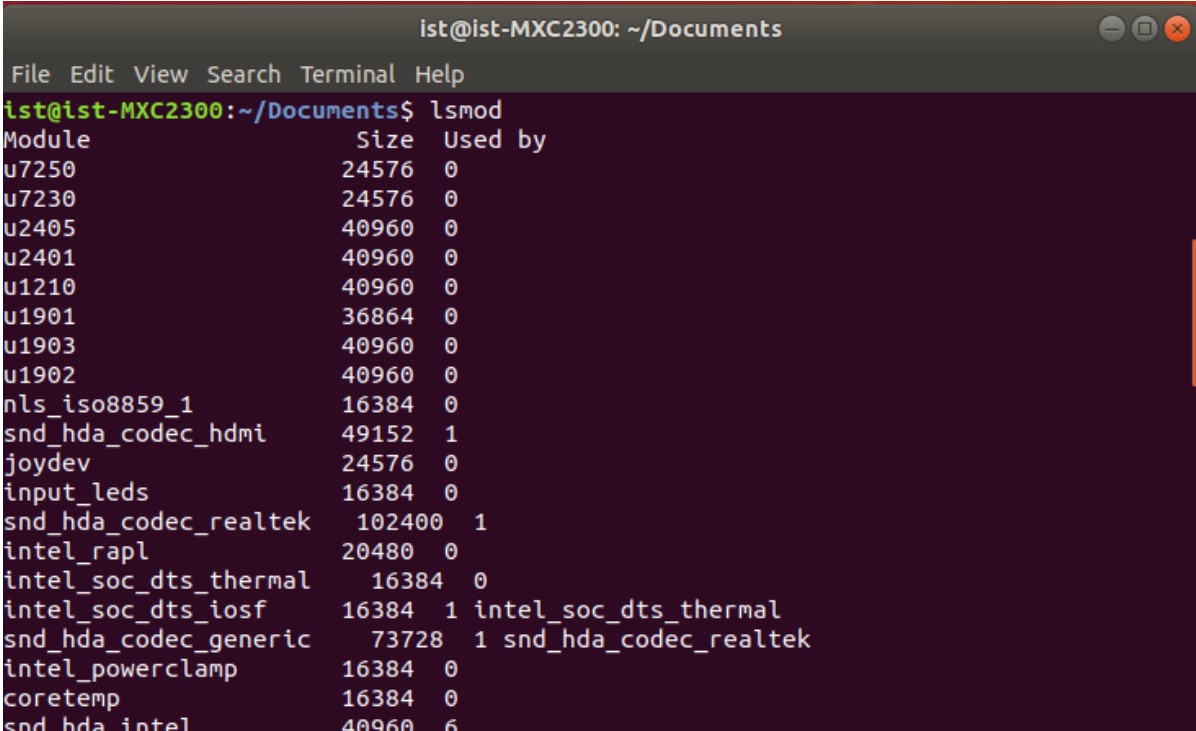After reboot, go to the terminal and type "lsusb" to check if the system detected and allocated resources for ADLINK devices.

**Step 6:**
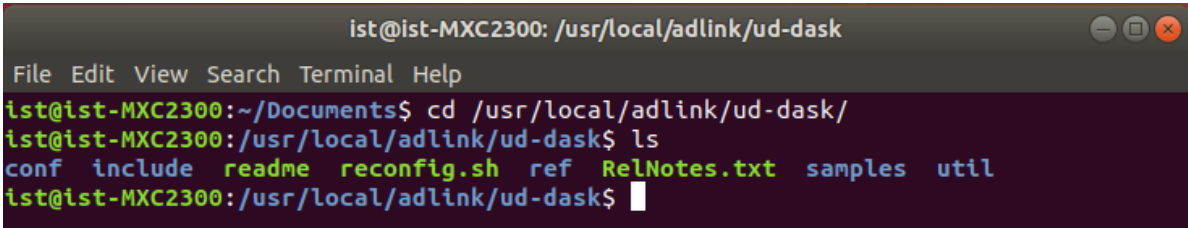
Go to the terminal and type "lsmod" to check the driver service is activated and running in the Linux kernel.



**Step 7:**

The ADLINK software package deploys files such as documents, utilities, and samples to the following folder: *//usr/local/adlink/ud-dask/*
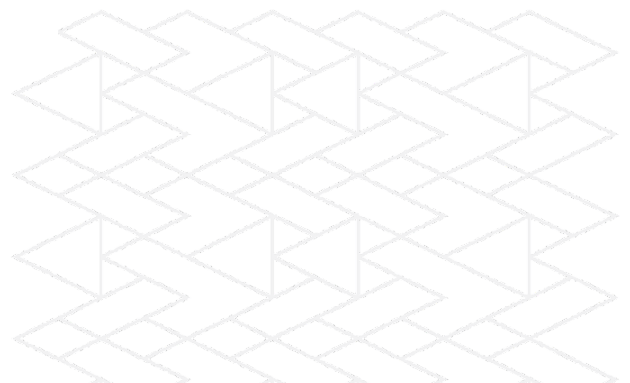
**Step 8:**

Choose a sample program (e.g., *//usr/local/adlink/ud-dask/samples/190x/c190x_AI_DBF*)..
Users can modify the sample program as needed and type "make" to build the executable.
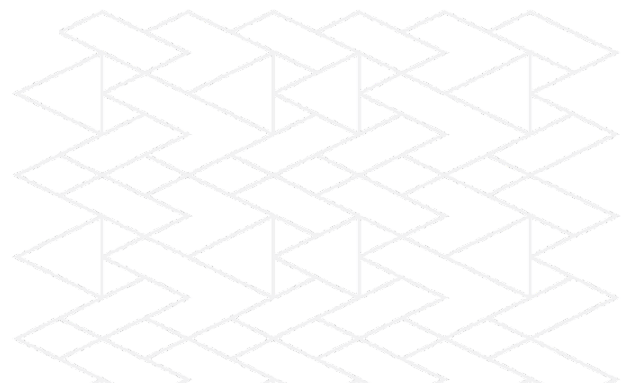
**Step 9:**

Launch the executable and check the output. The image below shows a successful execution of the ADLINK DAQ and the acquired data output to a .dat file.
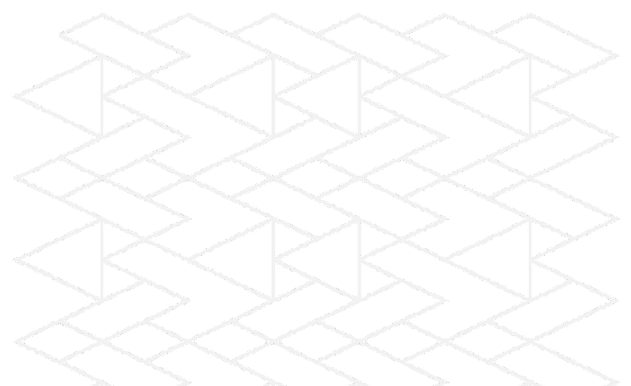
**Step 10:**

If necessary, adjust the data acquisition settings (default: 1 MB, 256 pages). To adjust the settings, go to the terminal and type "./reconfig.sh". Refer to the following images for further details.

   a. Choose "(1) Change to user settings".



   b. Select the card type for configuration.

c. Select "(1) User Config" for configuration.



```
================= Configured Cards ===================
Card Type    Cards      Buffer Size [unit: pages(4KB/page)]
                         AI       AO       DI       DO
-------------------------------------------------------------
USB1902       1          256      256       0        0
USB1903       1          256      256       0        0
USB1901       1          256      0         0        0
USB2405       1          256      0         0        0
USB2401       1          256      0         0        0
USB7230       1          0        0         0        0
USB7250       1          0        0         0        0
USB1210       1          256      0         0        0


=============================================================
(1)USB1902  (2)USB1903  (3)USB1901  (4)USB2405  (5)USB2401
(6)USB7230  (7)USB7250  (8)USB1210
    Select the card type for configuration, or '0' to exit:2


=============================================================
(1)User Config  (2)Reset to Default
    Select the config type for configuration, or '0' to exit:1
```

d. Enter memory pages for AI/AO for your device. After that, you need to check if the setting is correct.



```
***********************************************************************
*****            USB_DASK LINUX Configuration Utility         *****
***********************************************************************


Card_Type : USB1903

 How many USB1903 adapters in your machine : 1
 Memory pages for AI function ( should be < 1024 pages, 1 Mem_Page = 4 KB ) : 51
2
 Memory pages for AO function ( should be < 1024 pages, 1 Mem_Page = 4 KB ) : 51
2
```

e. Check the result of configuration and exit the utility.

```
ist@ist-MXC2300: /usr/local/adlink/ud-dask

File  Edit  View  Search  Terminal  Help
**********************************************************************
*****            USB_DASK LINUX Configuration Utility           *****
**********************************************************************

Card_Type : USB1903

 How many USB1903 adapters in your machine : 1
 Memory pages for AI function ( should be < 1024 pages, 1 Mem_Page = 4 KB ) : 51
2
 Memory pages for AO function ( should be < 1024 pages, 1 Mem_Page = 4 KB ) : 51
2


 The setting for USB1903 :
-----------------------------------------------------------------------
 AI: 512 Pages    AO: 512 Pages    DI: 0 Pages    DO: 0 Pages    for 1 USB1903 Ca
rds

                                           are these correct (Y/N) ? y
```

```
ist@ist-MXC2300: /usr/local/adlink/ud-dask

File  Edit  View  Search  Terminal  Help
=================== Configured Cards ===================
Card Type    Cards      Buffer Size [unit: pages(4KB/page)]
                          AI      AO       DI      DO
-----------------------------------------------------------
USB1902        1         256      256       0        0
USB1903        1         512      512       0        0
USB1901        1         256      0        0        0
USB2405        1         256      0        0        0
USB2401        1         256      0        0        0
USB7230        1         0        0        0        0
USB7250        1         0        0        0        0
USB1210        1         256      0        0        0


=========================================================
(1)USB1902  (2)USB1903  (3)USB1901  (4)USB2405  (5)USB2401
(6)USB7230  (7)USB7250  (8)USB1210
   Select the card type for configuration, or '0' to exit:0
```
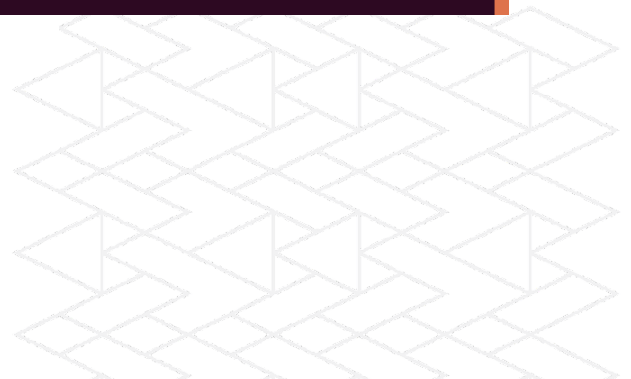
**f.** Reboot the system.

```
 The memory size you configure for your USB-DASK adapters is 2304 Mem_Pages.
[sudo] password for ist:

The SMP information is got from /proc/sys/kernel/version !


=================================================================
Current Config:
 Card   AI       AO       DI       DO       [unit: KB]
 u1901  1024     0        0        0
 u1210  1024     0        0        0
 u2405  1024     0        0        0
 u7230  0        0        0        0
 u1902  1024     1024     0        0
 u7250  0        0        0        0
 u2401  2048     0        0        0
 u1903  1024     1024     0        0


=================================================================
Move Config file...
>>>>> SYSTEM REBOOT REQUIRED <<<<<

Do you want to reboot now? (Y/N)
y
```