

Mirics Limited.			
SDR API Linux Installation			
Applications			
Revision History			
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1 Introduction

This document details the steps required for developers to use the Mirics SDR API on a Linux platform. Developers will also need to make sure that users systems are also correctly setup in order for the Mirics SDR API to work fully.

Please note that Ubuntu 14.04 64bit has been used for the development of this API. It may work on other Linux systems but it will have not been tested. If you would like to feedback your experience on other systems please send an email to sdr.support@mirics.com

2 Overview

There are three parts to this install. The udev system needs to be updated with new rules so that the Mirics device can be read from and written to. Secondly, libusb needs to be installed to be able to be compiled into your application. Then lastly, the API and associated include file need to be included into your application.

3 udev

3.1 Background

udev is the device manager for Linux. Permission files can be added to the system to allow custom control over certain attached USB devices. This is required for the Mirics SDR device.

3.2 Permissions File

The udev system regulates access to attached USB devices. The following contents need to be entered into a file called 66-mirics.rules and this file is a text file that needs to be placed in the /etc/udev/rules.d directory, owned by root with 644 permissions set.

```
SUBSYSTEM=="usb",ENV{DEVTYPE}=="usb_device",ATTRS{idVendor}=="1df7",ATTRS{idProduct}=="2500",MODE="0666"
```

Once this file is in place you should reset the udev system by typing:

```
sudo service udev restart
```

Note: please make sure the device is not plugged in until the udev service has been restarted.

4 libusb

4.1 Background

libusb is a C library that provides access to an attached USB device.

4.2 Download

The libusb install can be downloaded from here:

<http://sourceforge.net/projects/libusb/files/libusb-1.0/libusb-1.0.18/libusb-1.0.18.tar.bz2/download>

Once downloaded, unzip the tarball and follow the installation instructions. More details can be found at <http://www.libusb.org>

5 SDR API

5.1 Functions

Please refer to the SDR API documentation for a list of the available functions and parameters.

5.2 Files

Currently there are two files provided for the Linux install:

libmir_sdr_api_x64.a – 64bit library archive
mir_sdr.h – include file

5.3 Compilation

Here is a suggested simplified Makefile in order to successfully compile the SDR API into your application

```
EXE = mir_test_app

CC = gcc -g
LD = gcc -g
LN = ln

CFLAGS = -fPIC -Wall

INCS = -Ipath_to_include_file

LINKFLAGS =

LIB_OBJS = main.o

all: $(EXE)

$(EXE): $(LIB_OBJS)
    @$(LD) $(LINKFLAGS) -o $(EXE) $(LIB_OBJS) -L/usr/local/lib -L../path_to_api -lmir_sdr_api_x64 \
    \ -lusb-1.0 -lpthread -lc -lm -ldl

%.o: %.c
    @echo "Compiling" $<
    @$(CC) $(CFLAGS) $(INCS) -c $<
```

For more information contact:

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