

Interfacing of USRP with Raspberry Pi

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Abstract—This manual shows how to interface USRP B210 with Raspberry pi.

1 INSTALLATION OF UHD FROM SOURCE

In this section the installation of UHD from source on Ubuntu MATE and Raspbian OS explained as following steps.

1.1 Install Dependences

Follow installation instructions for Ubuntu 14.04 in [1]. Copy paste the instructions on the linux terminal and press enter.

1.2 Building and installing UHD from source code

- Update the system condition.

```
sudo apt-get update
```

- Create a directory in the HOME directory of Pi

```
mkdir workarea-uhd
cd workarea-uhd
```

- Cloning of uhd files from github

```
git clone https://github.com/EttusResearch/uhd
cd uhd
```

- Listing out the various releases and checking the release required is present or not. Here need 3.10.1 release.

```
git tag -l
git checkout
release_003_010_001_000
```

- Make another directory in host.

```
cd host
mkdir build
cd build
```

- Creating Cmake files

```
cmake ../
```

- Building of UHD

```
make
```

- conducting some basic tests to verify that the build process completed properly.

```
make test
```

- Installing UHD

```
sudo make install
```

- update the system's shared library cache.

```
sudo ldconfig
```

- Loading the UHD images, This task should performed by going to HOME directory of Pi

```
sudo uhd_images_downloader
```

- Setting of path for images, Sometime this has to be done when ever you reconnect the USRP.

```
export LD_LIBRARY_PATH=
$LD_LIBRARY_PATH:/usr/local/lib
```

- Command to find the details of uhd devices connected to Raspberry pi

```
sudo uhd_find_devices
```

REFERENCES

- [1] E. Research. Building and installing the usrp open-source toolchain (uhd and gnu radio) on linux. [Online]. Available: [https://kb.ettus.com/Building_and_Installing_the_USRP_Open-Source_Toolchain_\(UHD_and_GNU_Radio\)_on_Linux](https://kb.ettus.com/Building_and_Installing_the_USRP_Open-Source_Toolchain_(UHD_and_GNU_Radio)_on_Linux)