AN-01 DemoRad
Getting Started

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1 Getting Started

This application note shows how to access the DemoRad DSP board from Matlab. The class only implements the basic functions for configuring and operating the 24-GHz radar system. Therefore, it is the starting point to implement your own applications.

The aim of the tutorial is to:

- test USB connection from Matlab to the DSP board and
- read the software version of the board.

The application note demonstrates how to setup a connection to the DemoRad board and how to display the status information of the board in the command window of Matlab. At first the DemoRad must be powered on and connected to the PC with the USB cable. In addition the folders `@Adf24Tx2Rx4`, `@DemoRad`, `@UsbAdi`, `@DevAdf5904`, `@DevAdf5901`, and `@DevAdf4159` which contain the source code of the classes are added to the Matlab path. Moreover, the mex file `DemoRadUsb`, which implements the USB device driver must be added to the Matlab path. Afterwards a object of the class `Brd` can be generated

```
Brd = Adf24Tx2Rx4();
```

Reading the Software Version

After a valid object `Brd` has been generated the software version of the DSP framework can be displayed in the command window of Matlab.

```
Brd.BrdDispSwVers();
```

If the board can be accessed the software revision, the software identification number, and the hardware identification number are printed in the Matlab command window.

```
------------------------------------------------------------------
FPGA Software UID
DemoRad::Connect true
 Sw-Rev: 1-0-0
 Sw-UID: 42
 Hw-UID: 1
------------------------------------------------------------------
```

Deleting the Object

If the object `'Brd'` is deleted, the connection to the board is closed and the USB driver is closed.

Troubleshooting

- USB driver not installed
  Verify that *ADI Vendor Specific USB Device* is displayed in the Device Manager of windows. If not intall the USB driver first.
- No Matlab 64-Bit version
  The mex file `DemoRadUsb` only works with 64-Bit versions of Matlab.