

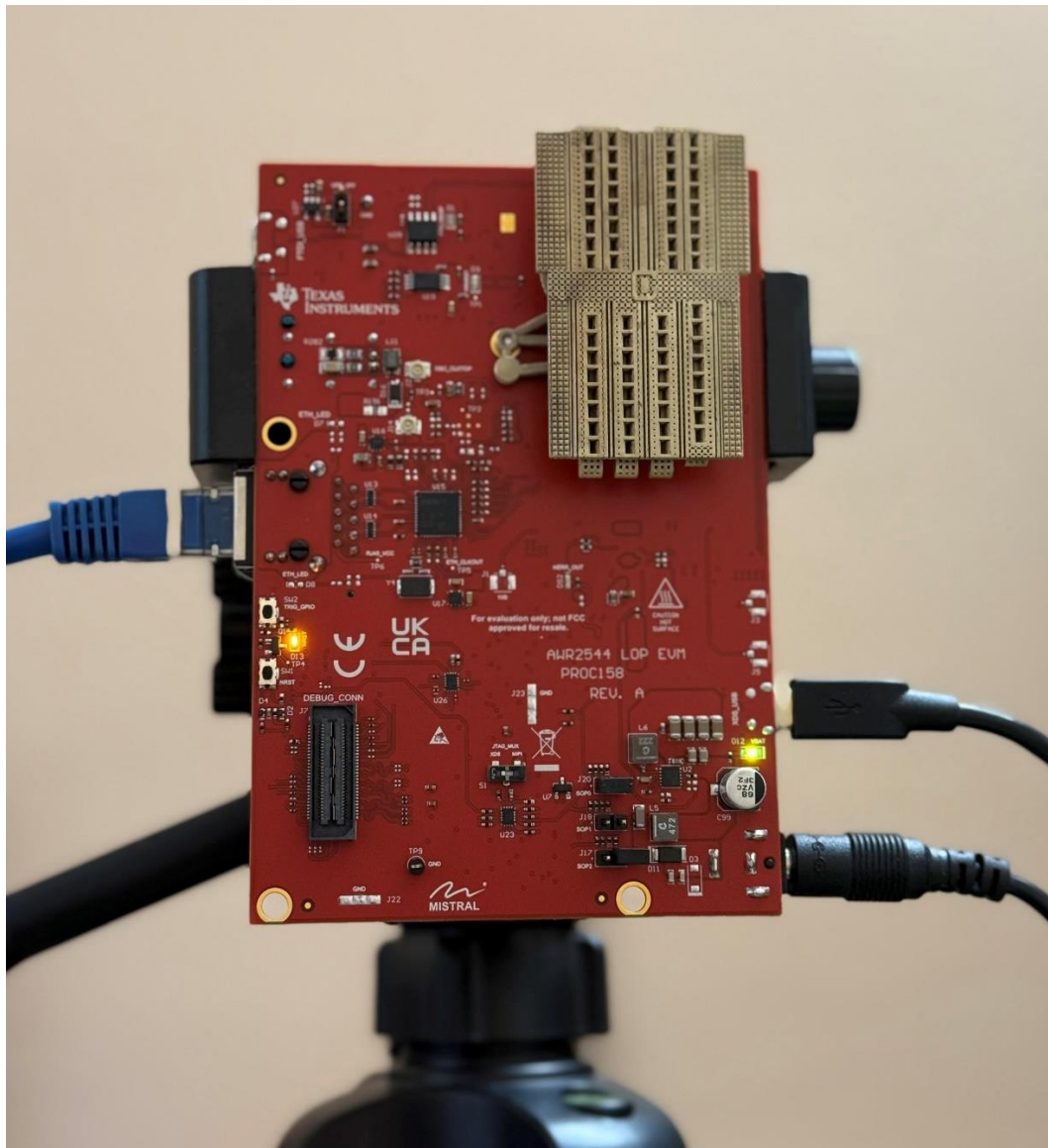
AWR2544 - mmWave Visualizer Demo Setup

By Quoc Lam – V1.0

Hardware Setup

Please make sure AWR2544 hardware is programmed with awr2544 demo application. Following the picture below for the hardware setup:

1. Power supply 12V-2.5A
2. Plug XDS_USB cable
3. SOP mode 4 – functional mode
4. S1 – XDS selection, S2 – FTDI_SPI selection
5. Ethernet cable connect directly from RJ45 connector of AWR2544 EVM to host PC




Host PC Setup

AWR2544 Demo visualizer can only run on ubuntu OS, tested on ubuntu 20.04 LTS

Some prerequisites to be installed:

1. xTerm terminal
2. A browser extension, called the TI Cloud Agent Bridge, must be installed separately to enable the browser to communicate with the main application
3. Install TCloudAgent (download and install **TCloudAgent.run**)

Name	Size	Modified	Star
 ticloudagent.run	33.9 MB	15:16	☆

4. Issue permission to the serial port

The issue with the permissions for `/dev/ttyACMO` can be permanently solved by adding yourself to the `dialout` group.




You can do this with:

```
sudo usermod -a -G dialout $USER
```

Logout and then log back in for the group changes to take effect.

5. Install code composer studio and xds100 driver for auto-reset functionality

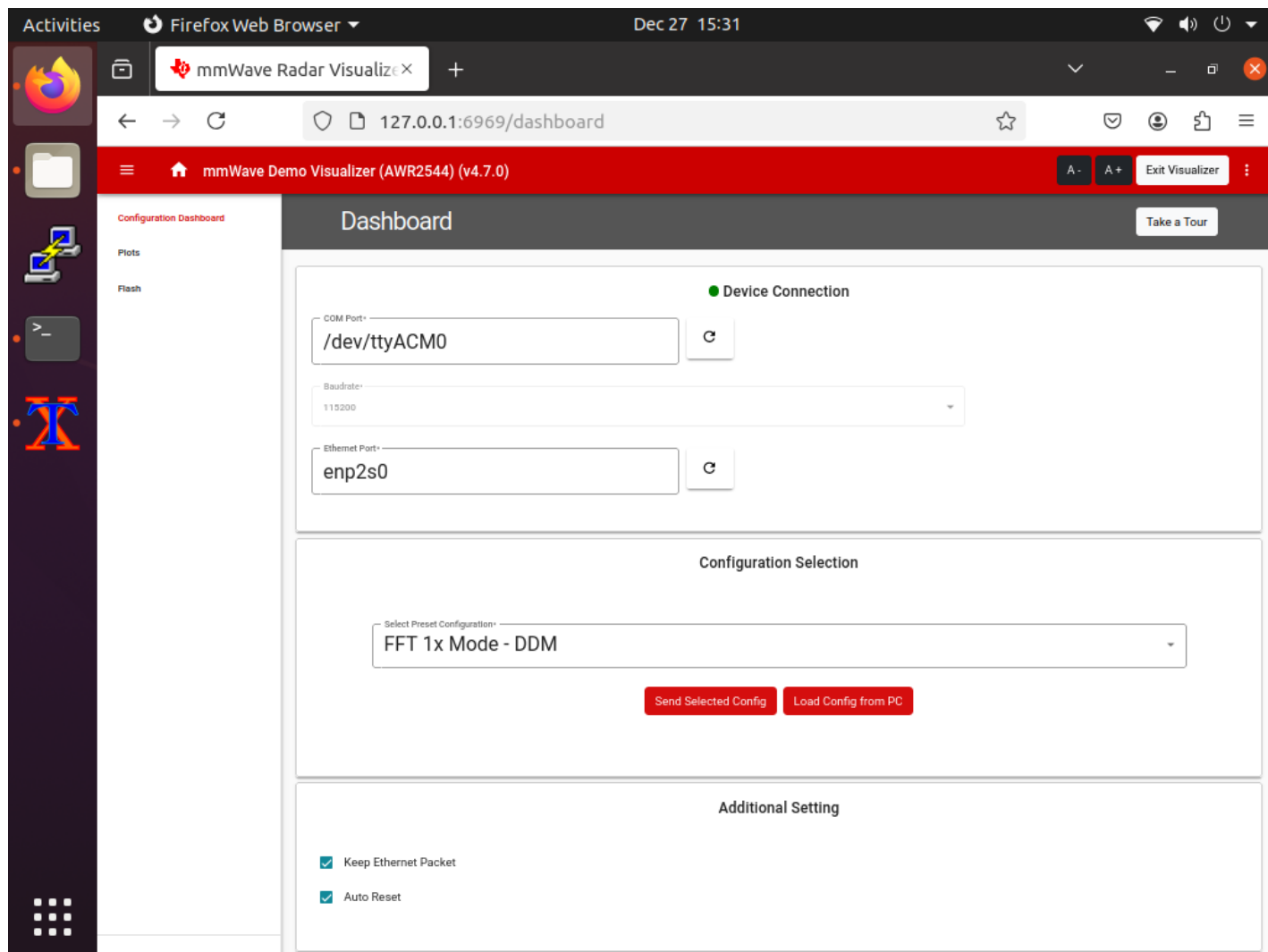
The executable (mmWave_Demo_Visualizer_AWR2544.run) file of the Visualizer can be downloaded from <https://www.ti.com/tool/download/MMWAVE-MCUPLUS-SDK/<version>>.

Downloads	Supported products & hardware
mmwave_mcuplus_sdk_04_07_00_01-Windows-x86-Install.exe — 324892 K	MMWAVE MCUPLUS SDK Windows Installer MD5 checksum 78370aa403bf3ff14db7faa761073570 
mmwave_mcuplus_sdk_04_07_00_01-Linux-x86-Install.bin — 305227 K	MMWAVE MCUPLUS SDK Linux Installer MD5 checksum 46a5bbe254f7170ad30f651bb20931c9 
mmWave Demo Visualizer — 0 K	TI Gallery APP for configuring mmWave sensors and visualizing the point cloud objects by SDK demo.
mmWave_Demo_Visualizer_AWR2544_04_07_00.run — 29054 K	Linux based Visualizer for configuring AWR2544 mmWave sensor and visualizing the 1D-FFT data sent over ethernet by SDK demo MD5 checksum e0d8b10bf1bae0f1733936089a046e0c 

To run the application user need to open the terminal at the location and type `./visualizer.run`. When the above executable is run, the Visualizer application opens up in the system default browser with the Home Page as shown below. This page provides links to various documentation that can be referred to while working with the mmWave device and the Visualizer, along with short descriptions of the different application tabs.

Note: Before running the Visualizer application please make sure you have changed the mode for execution. For this, open terminal on visualizer folder and type `chmod +x visualizer.run` on the terminal.

6. Configuration settings: Com Port (/dev/ttyACM0), Com port should be auto-detect by Visualizer
7. Ethernet port (enp2s0), please use *ifconfig* command to identify the ethernet port
8. Set Xterm permission to write output.pcap files and folders (*chmod -R 777 ./*)



9. Configuration Selection: This section enables the configuration of the device with preset config files (*.cfg file). A config file contains a bunch of CLI commands used to configure the device.

```
Terminal
File Edit View Search Terminal Help
sensorStop
Ignored: Sensor is already stopped
Done
mmwDemo: /> flushCfg
Done
mmwDemo: /> dfeDataOutputMode 1
Done
mmwDemo: /> channelCfg 15 15 0 0 0
Done
mmwDemo: /> adcCfg 2 0
Done
mmwDemo: /> adcbufCfg -1 1 0 1 1
Done
mmwDemo: /> lowPower 0 0
Done
mmwDemo: /> profileCfg 0 77 3.5 3.5 23 0 0 19.53125 0 768 40000 0 0 36
Done
mmwDemo: /> chirpCfg 0 5 0 0 0 0 0 15
Done
mmwDemo: /> frameCfg 0 5 128 0 768 50 1 0
Done
mmwDemo: /> compressionCfg -1 1 0 0.5 8
Done
mmwDemo: /> intfMitigCfg -1 15 18
Done
mmwDemo: /> procChainCfg 1 1 6 0 1
Done
mmwDemo: /> adcDataDitherCfg 0 0 1
Done
mmwDemo: /> analogMonitor 0 0 0
Done
mmwDemo: /> calibData 0 0 0
Done
mmwDemo: /> sensorStart
Debug: Init Calibration Status = 0xffe
===== Heap Memory Stats =====
```

10. Plots: This tab shows four RX plots that can be used for further analysis viz., RX1, RX2, RX3, RX4 along with the Frames received.

Activities

Firefox Web Browser

Dec 27 15:31

mmWave Radar Visualiz

+

127.0.0.1:6969/dashboard-plots

☆

mmWave Demo Visualizer (AWR2544) (v4.7.0)

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Exit Visualizer

Configuration Dashboard

Plots

Flash

Terminal

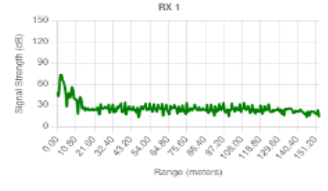
Plots

Frame: 10399

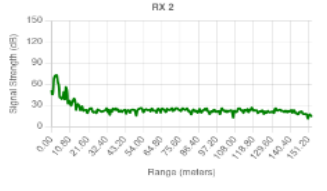
Processing 1D FFT (1 Chirp per frame)

☐ Pause


RX 1



RX 2



RX 3



RX 4

