

# FRWY-LS1046A-AC Demo

**Default Boot location: Micro-SD slot. Please insert the Micro-SD card (in the packing box) before power up.**

## Demo Navigator

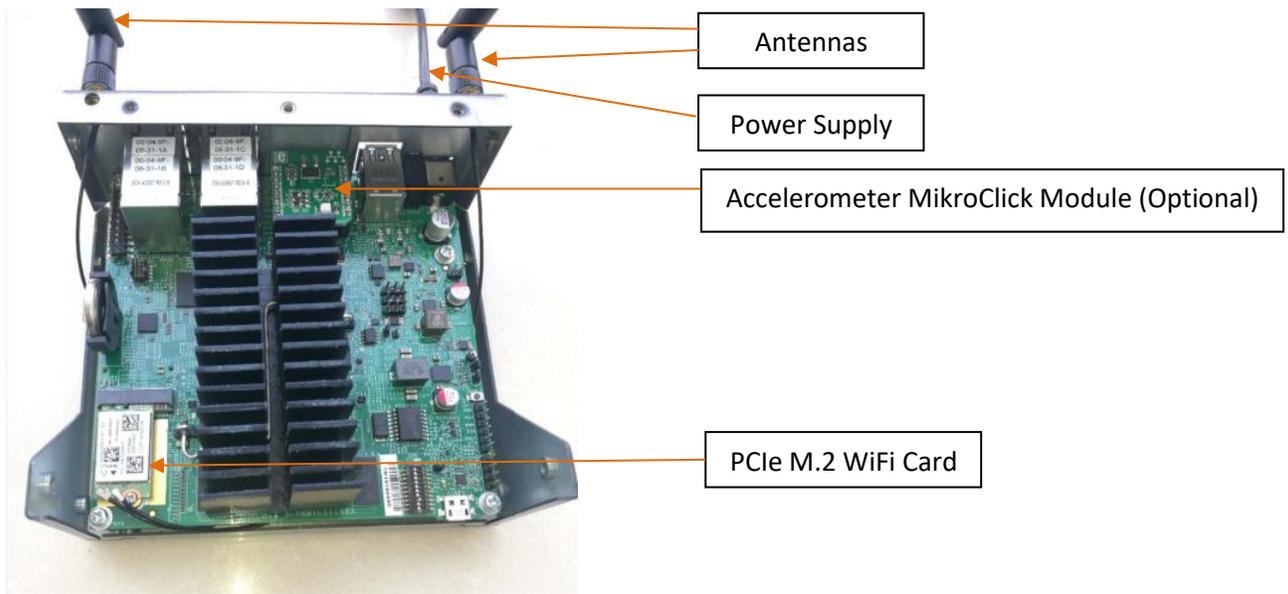
Demoining the board:

Self-running     Demo w/ software     Static-only

Software installation required:

Windows/Android/iPhone App     Web Browser

## NXP Content



## Short Demo/Board Description

The FRWY-LS1046A-AC system is a high-performance edge computing, evaluation, and development platform that supports the QorIQ LS1046A processor capable of supporting more than 40,000 CoreMark performance. The FRWY-LS1046A board supports onboard DDR4 memory, multiple Gigabit Ethernet, USB3.0, MikroBUS and M2\_Type\_E interfaces for Wi-Fi.

The demo showcases high performance with low CPU utilization and low power consumption, data analytics and machine learning capabilities.

## Value Proposition

**LS1046A with 64-bit ARM Cortex-A72 core with broadest range of peripheral and I/O features with the best in class CoreMark/mW ratio.**

- ARM Cortex-A72 core up to 1.6GHz, delivering over 40,000 CoreMark® performance for outstanding performance at exceptionally low power utilization
- The processor integrates four 64-bit Arm® Cortex®-A72 cores with packet processing acceleration and high-speed peripherals to deliver line-rate networking performance with minimal CPU consumption.
- Trust Architecture and software compatibility of QorIQ LS family devices, enabling scalable, secure applications that leverage a common 64-bit software platform

## Demoing Guide

1. Plug in the USB webcam to either one of the two USB ports on FRWY-LS1046A board.
2. Power on the board by plugging in the power supply to the barrel connector with the included 12V power supply.
3. Wait for 2 minutes for the board to boot up and broadcast the Wi-Fi SSID, which comes up automatically.
4. Connect a portable device (mobile phone, tablet, etc.) to the SSID "FRWY-LS1046A-[MAC ADDRESS]", with password "frwyls1046a". The [MAC ADDRESS] can be found as the last four digits of the first Ethernet MAC address labelled on the sticker at the bottom surface of board.
5. Open a web browser on your device and type in [192.168.99.1](http://192.168.99.1) for the address to demonstrate the use cases for Performance Benchmarking, Data Analytics, Machine Learning and Demo Videos.

### Note:

- Please make sure to enable pop-up window for the board URL when launching the Machine Learning demos from your web browser.
- If you are using a mobile phone, please turn off the mobile data as the above URL is local to the board.
- Ethernet port "**1G PORT2**" can also be used to access GUI at the same URL above, in case Wi-Fi is not available on board.



**CPU Performance Benchmarking** – Select CoreMark or Dhrystone to demonstrate the best-in-class CoreMarks/mW and DMIPS performance benchmarks of the LS1046A.

**Data Analytics** – Cold storage demo demonstrates an example of an Edge Computing use case for large-scale refrigeration systems. Indicate the number of refrigerators and how often you want data measurements to be taken.

Sensor demo demonstrates not only large amount of simulated sensor nodes, but also the real sensor running on board via MikroClick bus. Currently accelerometer module is used as real sensor. It can be replaced by any MikroClick module sensor based on need and requirement. All data are monitored, stored and analyzed in real time.

The analytics of various measurements are all done at the edge locally on the LS1046A without having to go to the cloud.

**Machine Learning/Video Analytics** – Demonstrate AI/ML capability through industrial safety & security demo using TensorFlow and people counting demo using YOLO.

**Video Vault** – Showcase a variety of videos streaming from FRWY-LS1046A over the QCA M.2 Wi-Fi card. The videos cover the board introduction and each demo respectively.