

Quick Start Guide for MSP430FR6047-Based Ultrasonic Water Flow Meter

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ABSTRACT

This guide provides an overview on how to get started quickly with the MSP430FR6047 device for water flow meter solution based on ultrasonic technology.

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1 Introduction

Thank you for requesting the MSP430FR6047 sample kit. This quick start guide reviews the contents of the kit and provides an overview on how to get started quickly with the MSP430FR6047 device for water flow meter solution based on ultrasonic technology.

1.1 Package Contents and Related Documentation

The package includes:

- USS Evaluation Module (EVM) version 2.0 hardware that has the MSP430FR6047 device with interfaces to a transducer pair. Documentation on the EVM detailing all its features is included in the *EVM430-FR6047 Hardware Guide*.[\[1\]](#)
- The Design Center Graphical User Interface (DCGUI) to control the configurable parameters of the transducers and view the results including the Delta Time of Flight (DTOF), Absolute Time of Flight (ATOF), measured Flow Rate and ADC waveforms. Additional documentation on the Design Center is included in the *MSP430FR6047 Ultrasonic Sensing Design Center Quick Start Guide*.[\[2\]](#)
- An Application example project with Code Composer Studio (CCS) or IAR IDE that uses TI's Ultrasonic Sensing Solution (USS) Library and interfaces to the DCGUI. The software architecture of the application is detailed in the *Application Software (SW) Architecture for MSP430FR6047-Based Ultrasonic Water Flow Meter*.[\[3\]](#)
- USS SW Library and the supporting documentation of all the APIs available in the library can be found in the Design Center itself.[\[4\]](#)
- Additional documentation on the measurement results with the RevA MSP430FR6047 silicon are detailed in *MSP430FR6047 and Ultrasonic Software Based Water Flow Meter Measurement Results*.[\[5\]](#) These measurements were performed with pipes and transducers at a nominal 1 MHz excitation frequency and are widely available on the market.

2 References

1. [EVM430-FR6047 Hardware Guide](#)
2. [MSP430FR6047 Ultrasonic Sensing Design Center Quick Start Guide](#)
3. [Application Software \(SW\) Architecture for MSP430FR6047-Based Ultrasonic Water Flow Meter](#)
4. [MSP430 MCUs Ultrasonic Sensing Design Center](#)
5. [MSP430FR6047 and Ultrasonic Software Based Water Flow Meter Measurement Results](#)

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