



Quick Start Guide Universal Sensing Module

Universal Analog Sensing Module



Software-configurable analog input solution with versatile sensor support, real-time diagnostics and reliable wired connectivity enabling high-precision sensing and edge intelligence



About the Universal Analog Sensing Module

NXP's universal sensing module is a universal, software-configurable analog input solution designed for high-precision sensing and edge intelligence. It supports versatile sensor inputs (voltage, current, temperature, resistance, pressure, and weight) and ensures reliable wired connectivity via CAN FD, Ethernet, and USB.

With an advanced NAFEI3388 analog front end and an MCX N947 MCU, this module delivers high-accuracy, high-precision data, in addition to real-time diagnostics, anomaly detection, and predictive maintenance for industrial automation, lab instrumentation and smart manufacturing.

Its modular, expandable platform enables seamless integration with AI/ML applications, making it the ideal choice for future-proof industrial sensing.

Step-by-step instructions

1 Order your boards

This solution include two NXP boards, the orderable part numbers are:

[NAFE13388-UIM](#)

[FRDM-MCXX947](#)

2 Connecting the boards

Connect the NAFE13388-UIM shield board to the FRDM-MCXX947 development board as shown in the image.



Evaluating the solution

1. Connect the 15 V power adapter (SMI6B-15-K-P5-ND) to the J7 DC power jack on the NAFE13388-UIM board.
2. Connect the provided USB cable to the FRDM-MCXN947 (MCU-Link USB) kit.
3. Open the "[NAFE13388 universal analog sensing module](#)" firmware repository in Application Code Hub. Select USB connectivity and follow steps 3.1 to 3.7.1 in the GUI guide to configure the AFE and open the web server application.
4. Apply DC voltage on All+ test point on the NAFE13388-UIM board.
5. Click the "Start" button to stream real time samples on the FreeMaster oscilloscope window.



Analog Front End

[NAFEI3388 analog front end](#)
[NAFEI3388-UIM board](#)

MCX N947 MCU

[MCX N947 MCUs](#)
[FRDM-MCXN947 development board](#)



Get started

Download installation software and documentation under “Jump Start Your Design” at nxp.com/USM

Support

Visit nxp.com/support for a list of phone numbers within your region.

Warranty

Visit nxp.com/warranty for complete warranty information.

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