FRDM Expansion Boards

Flexible, Rapid Development with MCUXpresso

Business Line Advanced Analog | October 2024, V6

Agenda

1. [Advanced Analog Portfolio Summary](#)

2. [FRDM Expansion Boards Index](#)

3. [Technical support and Product Longevity](#)

4. [Summary Released FRDM Expansion Boards](#)

Advanced Analog Portfolio Summary

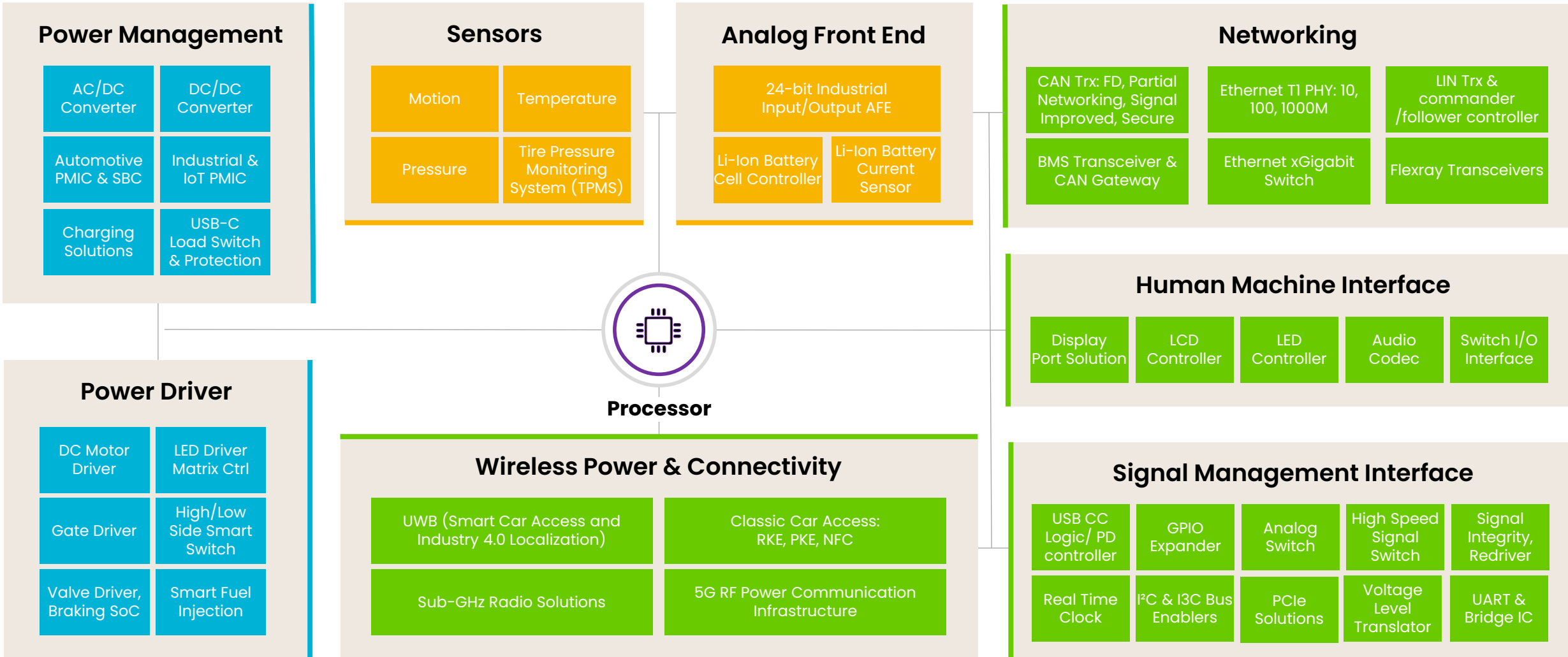## Energy Network - Precision Analog - Data Network
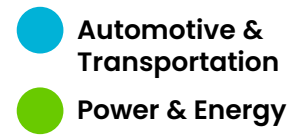
Automotive

Industrial & IoT

Mobile

Comm. Infra

Power Management

AC/DC Converter	DC/DC Converter
Automotive PMIC & SBC	Industrial & IoT PMIC
Charging Solutions	USB-C Load Switch & Protection

Sensors

| Motion | Temperature |
| Pressure | Tire Pressure Monitoring System (TPMS) |

Analog Front End

24-bit Industrial Input/Output AFE

| Li-Ion Battery Cell Controller | Li-Ion Battery Current Sensor |

Networking

| CAN Trx: FD, Partial Networking, Signal Improved, Secure | Ethernet T1 PHY: 10, 100, 1000M | LIN Trx & commander /follower controller |
| BMS Transceiver & CAN Gateway | Ethernet xGigabit Switch | Flexray Transceivers |

Human Machine Interface

| Display Port Solution | LCD Controller | LED Controller | Audio Codec | Switch I/O Interface |

Processor

Power Driver

DC Motor Driver	LED Driver Matrix Ctrl
Gate Driver	High/Low Side Smart Switch
Valve Driver, Braking SoC	Smart Fuel Injection

Wireless Power & Connectivity

| UWB (Smart Car Access and Industry 4.0 Localization) | Classic Car Access: RKE, PKE, NFC |
| Sub-GHz Radio Solutions | 5G RF Power Communication Infrastructure |

Signal Management Interface

| USB CC Logic/ PD controller | GPIO Expander | Analog Switch | High Speed Signal Switch | Signal Integrity, Redriver |
| Real Time Clock | I²C & I3C Bus Enablers | PCIe Solutions | Voltage Level Translator | UART & Bridge IC |

FRDM Expansion Boards Index

Legend:
- 🔵 Automotive & Transportation
- 🟡 Factory Automation
- 🔴 Healthcare
- 🟢 Power & Energy
- 🔵 Home & Building Controls
- ⚫ Communication & Computing

Segment	Sub-segment	Device	Board	Link to the slide	Target Application
Power Network	Motor Driver	HB2002 SPI-Programmable H-Bridge Brushed DC Motor Driver	FRDM-HB2002ESEVM	Link	Automotive & Transportation, Power & Energy, Home & Building Controls
	Motor Driver	MC33926 H-Bridge, Brushed DC Motor Driver	FRDM33926PNBEVM	Link	Automotive & Transportation, Power & Energy, Home & Building Controls
	PMIC	PCA9420 Low-Power PMIC	PCA9420UK-EVM	Link	Factory Automation, Power & Energy, Home & Building Controls, Healthcare
	PMIC	PCA9421 Low-Power PMIC	PCA9421UK-EVM	Link	Factory Automation, Power & Energy, Home & Building Controls, Healthcare
Data Network	GPIO Expander	PCAL6416A Low-Voltage Translating 16-Bit I²C-Bus/SMBus I/O Expander	PCAL6416AEV-ARD	Link	Factory Automation, Power & Energy
	GPIO Expander	PCAL9722 22-Bit SPI I/O Expander with Agile I/O Features	PCAL9722HN-ARD	Link	Factory Automation, Communication & Computing
	I²C-Bus Switch	PCA9846 Four-Channel Ultra-Low Voltage, Fm+ I²C-Bus Switch with Reset	PCA9846PW-ARD	Link	Factory Automation, Power & Energy
	I3C-Bus Switch & VLT	P3S0210BQ Dual Bidirectional I3C 1:2 Switch and VLT	P3S0210BQ-ARD	Link	Factory Automation, Power & Energy, Home & Building Controls, Communication & Computing
	LIN Transceiver	SJA1124 Quad LIN Commander Transceiver with LIN Commander Controller	SJA1124EVB	Link	Automotive & Transportation, Power & Energy, Factory Automation
	LED Controller	PCA9957 24-Channel SPI Serial Bus 32 MA/5.5 V Constant-Current LED Driver	PCA9957HN-ARD	Link	Factory Automation, Power & Energy, Home & Building Controls, Healthcare, Communication & Computing
	LED Controller	PCA9959 24-Channel SPI Serial Bus 63 mA/5.5 V Constant Current LED Driver	PCA9959HN-ARD	Link	Factory Automation, Power & Energy, Home & Building Controls, Healthcare, Communication & Computing
	Real Time Clock	PCF2131 Accurate RTC with Integrated TCXO for Industrial Applications PCA2131 Accurate RTC with Integrated TCXO for Automotive Applications	PCF2131-ARD	Link	Automotive & Transportation, Power & Energy, Factory Automation, Home & Building Controls, Healthcare, Communication & Computing
	Real Time Clock	PCF85063A Tiny Real-Time Clock/Calendar with Alarm Function and I²C-Bus	PCF85063AT-ARD	Link	Automotive & Transportation, Power & Energy, Factory Automation, Home & Building Controls, Healthcare, Communication & Computing

Last Updated: October 16, 2024

FRDM Expansion Boards Index

Segment	Sub-segment	Device	Board	Link to the slide	Target Application
Precision Analog	Magnetic Sensor	NMH1000 Ultra-Low Power and Low-Voltage Magnetic Switch	FRDMSTBI-NMH1000	Link	🟡 🟢 🔵 🟠
	Motion Sensor	FXLS8974CF ±2g/±4g/±8g/±16g, Low-Power 12-Bit Digital IoT Accelerometer	FRDM-STBI-A8974	Link	🟡 🟢 🔵 🟠
	Motion Sensor	FXLS8971CF ±2g/±4g/±8g/±16g, Low Power 12-Bit Digital Accelerometer	FRDM-STBI-A8971	Link	🟡 🟢 🔵 🟠
	Pressure Sensor	MPL3115 Absolute Digital Pressure Sensor (20 to 110 kPa)	FRDMSTBC-P3115	Link	🟡 🟢 🔵 🟠
	Temperature Sensor	P3T1085UK I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor P3T1084UK I3C/I²C-Bus ±0.4 °C Accurate Digital Temperature Sensor	P3T1085UK-ARD	Link	🟡 🟢 🔵 🟠 ⚫
	Analog Front End	NAFEx3388 8/4 Channel 24/16 bits ±25 V Universal Input Analog Front-End	NAFE13388-UIM	Link	🟡 🔵

Last Updated: October 16, 2024

About Technical Support

If you have a question about NXP products, you can reach out NXP's Distributors or NXP sales, or NXP can support by online base too!

Support Tickets
Confidential assistance with NXP support professional

Click → Submit a ticket

Live Chat
How can we help?

Click → Live Chat: Online Now

NXP Community
Open forum for technical discussions moderated by NXP experts

Click → Get answers

About Product Longevity

- HERO+ are available for minimum of 10 years or 15 years since product launched date

- Extended periods may be available under certain circumstances

- About each product information, please check Product Longevity in NXP.com

nxp.com

[FRDM33926PNBEVM](#) FRDM Kit for MC33926 H-Bridge Motor Driver

Enabling System Solutions with FRDM Platform

FRDM33926PNBEVM Highlights

Supported Device

[MC33926](#) [H-bridge DC Motor Driver](#)

Target Applications

- Electronic throttle control (ETC)
- Exhaust gas recirculation (EGR)
- Turbo flap control
- Industrial and medical pumps and motor control

Key Features

- Test points to allow signal probing
- Built-in reverse battery protection
- Built-in voltage regulator to supply logic level circuitry
- LEDs to indicate the supply status and direction of motor
- Transient voltage suppressor to handle system level transients

Available Now

2.5" x 3.25" (6.35 cm x 8.25 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[MC33926](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	[MC33926 Driver](#)	[MC33926 Driver](#)

Documents:
[FRDM33926PNBEVM User Guide](#)

For pricing and availability, see the [FRDM33926PNBEVM](#) FRDM Expansion Board page.

FRDM-HB2002ESEVM FRDM Kit for HB2002, Programmable Brushed DC Motor Control

Enabling System Solutions with FRDM Platform

FRDM-HB2002ESEVM Highlights

Supported Device
HB2002 H-Bridge DC Motor Driver

Target Applications

- Electronic throttle control

- Exhaust gas recirculation control (EGR)

- Turbo, swirl and whirl and waste flap control

- Electric pumps, motor control and auxiliaries

Key Features

- Current feedback network for real-time load current monitoring by MCU ADC

- LEDs to indicate the supply status and the direction of the motor

- Low ESR capacitor to reduce ripple in the power supply

- TVS protection diode to handle system level transients

Available Now
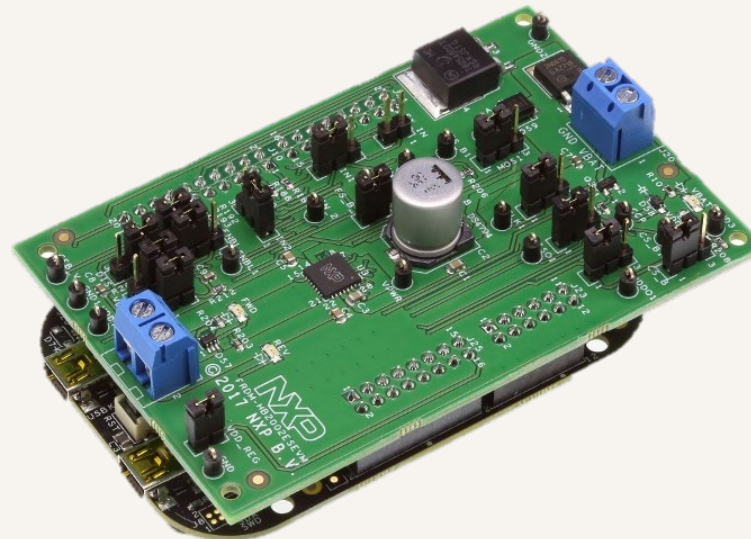
2.5" x 3.2" (6.35 x 8.12 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
HB2002	FRDM-MCXA153 FRDM-MCXN947	HB2002 Driver	HB2002 Driver

Documents:
UM11144 FRDM-HB2002ESEVM evaluation board - User Guide

For pricing and availability, see the FRDM-HB2002ESEVM Development Board page.

PCA9420UK-EVM FRDM Expansion Board
Enabling System Solutions with FRDM Platform

PCA9420-EVB Highlights

Supported Device
PCA9420-PCA9421 PMIC for Low Power Applications

Target Applications

- Hearing Aids and Cochlear Implants

- Low-Power Microcontroller Application

- Vital Signs Monitors

- Audio Subsystems, hearables and smart watch

Key Features

- Targeted to provide a full power management solution for low power microcontroller applications.

- It has I²C programmable Constant Current (CC) and Constant Voltage (CV) values for flexible configuration.

- It also features JEITA compliant charging

- The device integrates two step-down (buck) DC/DC converters which have I²C programmable output voltage.

- Other protection features such as overcurrent protection, under-voltage lockout (UVLO), etc. are also provided

Available Now
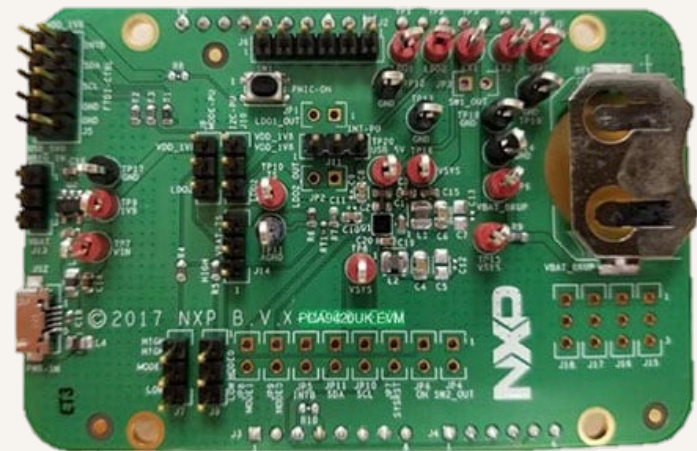
3.2" x 2.1" (8.12 x 5.33 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
PCA9420-PCA9421	FRDM-MCXA153 FRDM-MCXN947	In Development	In Development

Documents:
UM11216, PCA9420UK-EVM Evaluation Board User Manual

For pricing and availability, see the PCA9420UK-EVB FRDM Expansion Board page.

PCA9421UK-EVM FRDM Expansion Board
Enabling System Solutions with FRDM Platform

PCA9421UK-EVM Highlights

Supported Device
PCA9421 PMIC for Low Power Applications

Target Applications

- High-Voltage Battery Management Systems (> 800 V)

- Data Buses and Battery Management

Key Features

- Two step-down DC-DC converters

- Very low quiescent current

- Programmable output voltage regulation

- -40 °C to +85 °C ambient temperature range

- Offered in 5 x 5 bump-array WLCSP and 24-pin QFN package

Available Now
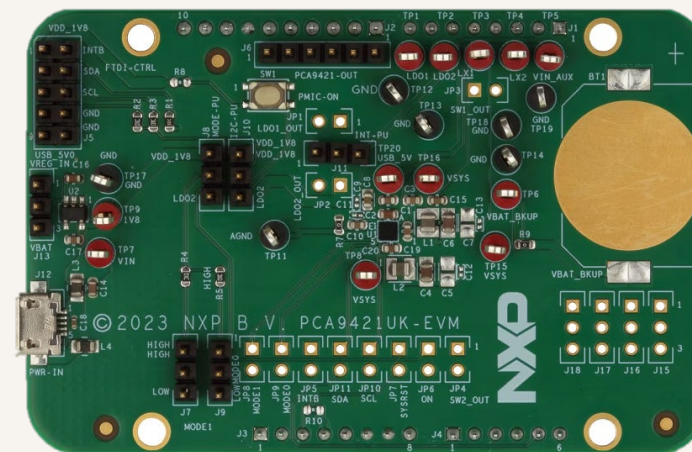
3.2" x 2.1" (8.12 x 5.33 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
PCA9421	MCXN9EVK	In Development	In Development

Documents:
UM11987, PCA9421UK-EVM Evaluation Board User Manual

For pricing and availability, see the PCA9421UK-EVM FRDM Expansion Board page.

[PCAL6416AEV-ARD](#) Arduino® Shield Evaluation Board for PCAL6416A 16-bit GPIO

Enabling System Solutions with FRDM Platform

PCAL6416AEV-ARD Highlights

Supported Device

[PCAL6416A Low-Voltage I²C-Bus/SMBus I/O Expander](#)

Target Applications

- I/O Voltage Translating
- Keypad
- Push Buttons
- Home Sensor

Key Features

- I/O connector for external access to IC input-output pins
- 8 user switches connected to I/O pins of the IC
- 8 user LEDs connected to I/O pins of the IC
- Equipped with Arduino Uno R3 port for direct connection with Arduino devices
- Fully compliant with IMXRT1050, LPCXpresso55S69 and i.MX Mini LPDDR4 EVK boards, including GUI (Windows 10)

Available Now
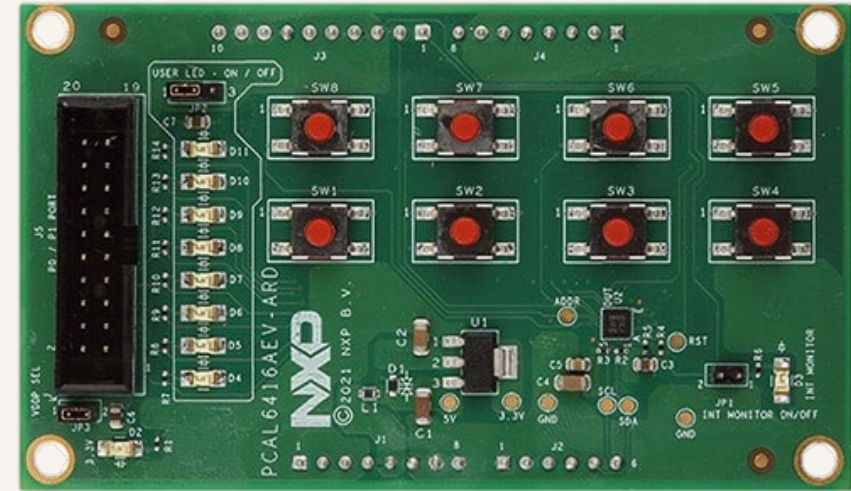
3.7" x 2.16" (9.39 x 5.48 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[PCAL6416A](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	Planned	Planned

Documents:

[UM11704, PCAL6416AEV-ARD Evaluation Board - User Manual](#)
[UM11581 - Arduino Shields GUI and Firmware Installation - User Guide](#)

For pricing and availability, see the [PCAL6416AEV-ARD](#) Development Board page.

[PCAL9722HN-ARD](#) PCAL9722 Ultra Low-Voltage Translating 22-Bit SPI I/O Evaluation Board

Enabling System Solutions with FRDM Platform

PCAL9722HN-ARD Highlights

Supported Device
[PCAL9722 Ultra low-voltage 22-Bit SPI I/O Expander](#)

Target Applications

- Battery-Powered Mobile
- Keypad

Key Features

- A complete evaluation platform for the PCAL9722HN with Agile I/O features, interrupt output and reset
- Convenient test points for easy scope measurements and signal access
- Easy to use GUI based software demonstrates the capabilities of the PCAL9722HN
- On-board LEDs, 7 segment display and key switches for PCAL9722HN general purpose I/O evaluation.

Available Now
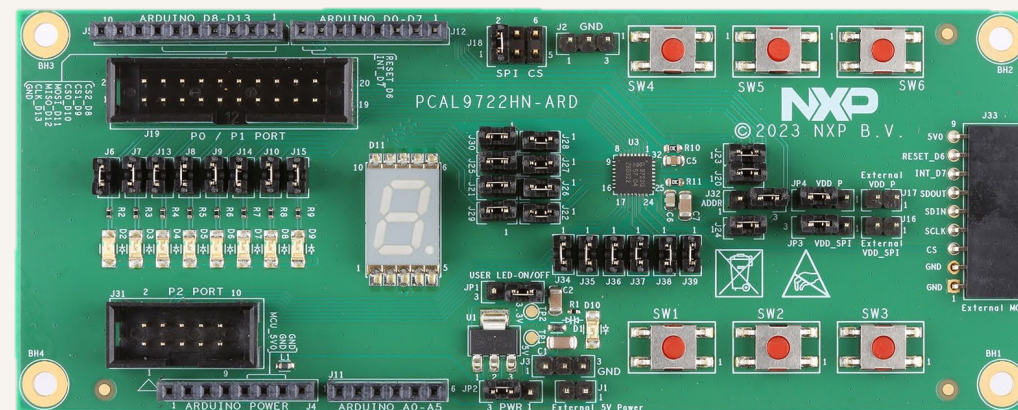
5.75" x 2.25" (14.6 x 5.7 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[PCAL9722](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	Planned	Planned

Documents:
[UM12075, PCAL9722HN-ARD Evaluation Board User Manual](#)

For pricing and availability, see the [PCAL9722HN-ARD](#) Development Board page.

[PCA9957HN-ARD](#) FRDM Expansion Board (Arduino® Shield) for PCA9957 LED Driver

Enabling System Solutions with FRDM Platform

PCA9957HN-ARD Highlights

Supported Device

[PCA9957 24-Channel SPI Serial Bus LED Driver](#)

Target Applications

- LED displays / LED status information / LCD backlights

- RGB or RGBA LED drivers

- Keyboard or keypad backlights

- Smart Assistance Response LED lighting

- Fade-in and fade-out for breathlight control

Key Features

- Use Arduino connector for data and power

- Multiple board connection in stack architecture

- On-board connectors for external LEDs

- Fully compliant with IMXRT1050 EVK board, including GUI (Windows 10)

Available Now
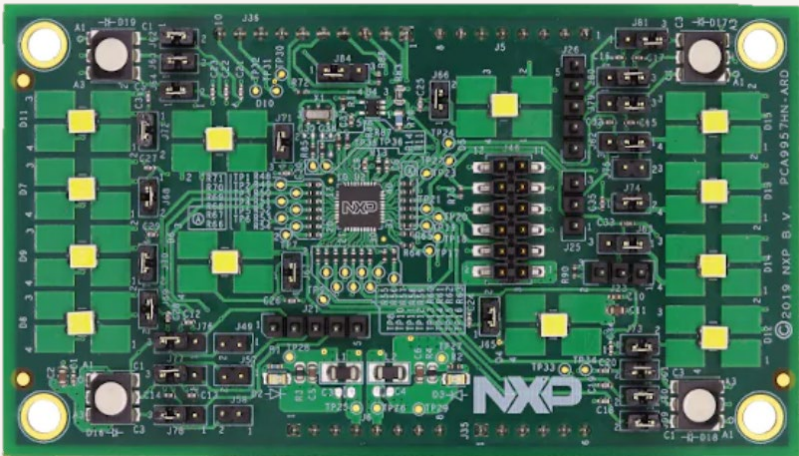
4.0" x 2.4" (10.16 x 6.09 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[PCA9957](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	[PCA9957HN-ARD Driver](#)	[PCA9957HN-ARD Driver](#)

Documents:
[UM11579, PCA9957HN-ARD User Manual](#)
[UM11581, GUI User Manual](#)

For pricing and availability, see the [PCA9957HN-ARD](#) FRDM Expansion Board page.

[PCA9959HN-ARD](#) Arduino® Shield Evaluation Board for PCA9959 LED Driver

Enabling System Solutions with FRDM Platform

PCA9959HN-ARD Highlights

Supported Device
[PCA9959 24-Channel SPI Serial Bus LED Driver](#)

Target Applications

- Keypad backlights
- LED displays
- RGB or RGBA LED drivers
- Smart Assistance Response LED lighting

Key Features

- Combined Arduino port/Fuji connector for data and power
- Onboard LEDs for all 24 outputs of the DUT IC
- Onboard jumpers for LED connection, and short tests
- Onboard connectors for external LEDs
- Compliant with IMXRT1050 , LPCXpresso55S69 , 8MMINILPD4-EVK boards, including GUI for Windows 10

Available Now

3.2" x 2.3" (8.12 x 5.84 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[PCA9959](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	[PCA9959HN-ARD SDK](#)	[PCA9959HN-ARD ACH](#)

Documents:
[UM11623, PCA9959HN-ARD evaluation board - User manual](#)
[UM11581 - Arduino Shields GUI and Firmware Installation - User Guide](#)

For pricing and availability, see the [PCA9959HN-ARD](#)Development Board page.

PCA9846PW-ARD Arduino® Shield board for PCA9846 Ultra-low voltage, I²C-Bus Switch

Enabling System Solutions with FRDM Platform

PCA9846PW-ARD Highlights

Supported Device
PCA9846 Four-Channel Ultra-Low Voltage I²C-Bus Switch

Target Applications

- I²C Bus Multiplexer

- I²C Bus Voltage Level Translator

Key Features

- Onboard I2C-bus external connector (channel 3 and 4)

- Equipped with four I2C EEPROMs for rapid test and measurements

- Equipped with programmable power supply for logic level combination

- Equipped with Arduino Uno R3 port for direct connection with Arduino devices

- Compliant with IMXRT1050, LPCXpresso55S69 and i.MX Mini LPDDR4 boards, including GUI (Windows 10)

Available Now
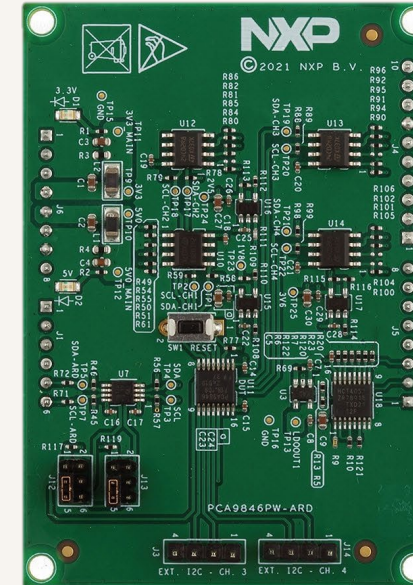
3.3" x 2.3" (8.38 x 5.84 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
PCA9846	FRDM-MCXA153 FRDM-MCXN947	Planned	Planned

Documents:
UM11759, PCA9846PW-ARD Evaluation Board User Manual

For pricing and availability, see the PCA9846PW-ARD Development Board page.

P3S0210BQ-ARD Dual Bidirectional I3C Switch and Voltage Level Translator Evaluation Board

Enabling System Solutions with FRDM Platform

Available Now

4.2" x 2.2" (10.6 x 5.58 cm)

P3S0210BQ-ARD Highlights

Supported Device
P3S0210BQ Dual Bidirectional I3C 1:2 Switch and VLT

Target Applications

- Smart Phone and Mobile Devices

- Networking, server and data center

- Desktop and Laptop Computers

Key Features

- Evaluation board is USB powered so external power supply is not required.

- Evaluation board can be connected to a standard NXP microcontroller board via Arduino interface headers.

- Off the board I²C and I3C target devices can be conveniently connected to the P3S0210 via on-board headers.
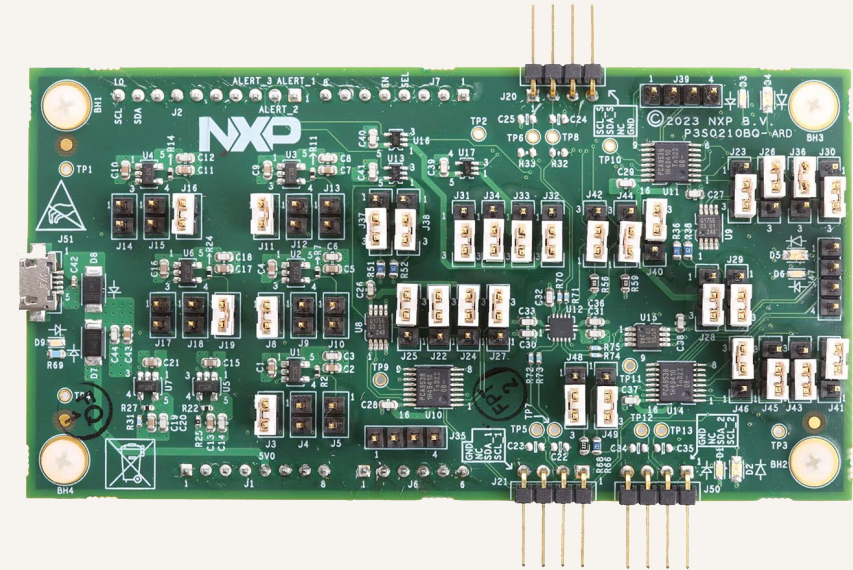
Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3S0210BQ	FRDM-MCXA153 FRDM-MCXN947	Planned	Planned

Documents:
UM11909 P3S0210BQ-ARD User Manual

For pricing and availability, see the P3S0210BQ-ARD Development Board page.

[PCF2131-ARD](#) FRDM Expansion Board (Arduino® Shield) for PCF2131/PCA2131 Real Time Clock

Enabling System Solutions with FRDM Platform

PCF2131-ARD Highlights

Supported Devices

[PCF2131 Accurate RTC for Industrial Applications](#)
[PCA2131 Accurate RTC for Automotive Applications](#)

Target Applications

- Electronic metering for electricity, water, and gas

- GPS equipment

- POS terminal

- Major home appliances

Key Features

- On-board header for direct connection to Aardvark I²C/SPI Host Adapter

- Adjustable power supply for complex tests and verification

- On-board battery holder for battery switch-over circuit test

- On-board jumpers for I²C-bus or SPI-bus selection

- On-board connector and switches for timestamp function tests

- Fully compliant with IMXRT1050, LPCXpresso55S69 and i.MX Mini LPDDR4 EVK boards including GUI (Windows 10)

Available Now
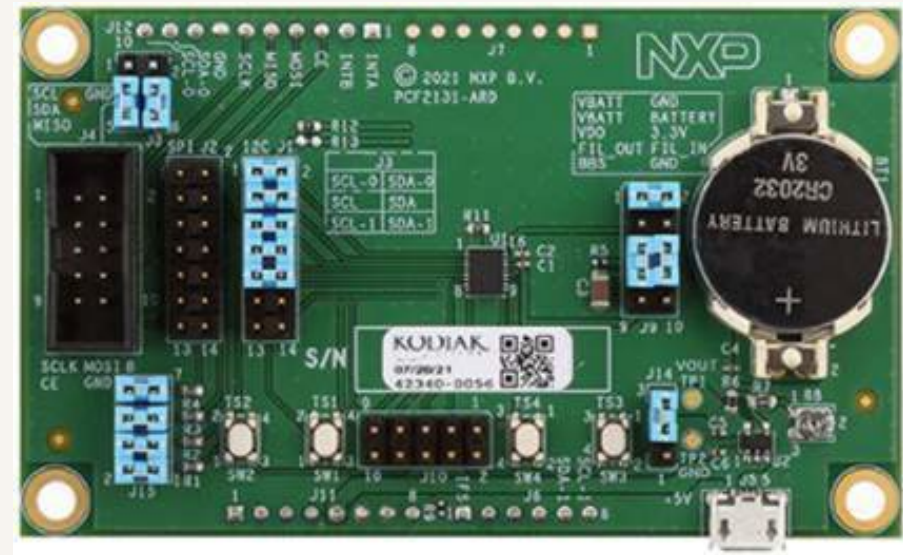
3.5" x 2.0" (8.89 x 5.08 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[PCF2131](#) [PCA2131](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	[PCF2131 Driver](#)	[PCF2131 Driver](#)

Documents:
[UM11597, PCF2131-ARD User Manual](#)
[UM11581, Arduino Shields GUI and firmware installation](#)

For pricing and availability, see the [PCF2131-ARD](#) FRDM Expansion Board page.

[PCF85063AT-ARD](#) Arduino® Shield board for PCF85063A Tiny Real-Time Clock

Enabling System Solutions with FRDM Platform

PCF85063AT-ARD Highlights

Supported Device
[PCF85063A Tiny Real-Time Clock/Calendar](#)

Target Applications

- Digital still camera and video camera
- Printers and copy machines
- Mobile equipment
- Battery powered devices

Key Features

- Connector for external access to I²C-bus
- Onboard user switch for oscillator stop test
- Onboard LED for interrupt pin monitoring
- Equipped with Arduino Uno R3 port for direct connection with Arduino devices
- Fully compliant with [MIMXRT1050-EVK](#), [LPC55S69-EVK](#) and [8MMINILPD4-EVK](#), including GUI software control (Windows 10)

Available Now

2.15" x 2.17" (5.46 x 5.51 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[PCF85063A](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#)	[PCF85063A Driver](#)	[PCF85063A Driver](#)

Documents:
[UM11578, PCF85063AT-ARD evaluation board - User guide](#)
[UM11581 - Arduino Shields GUI and Firmware Installation - User Guide](#)

For pricing and availability, see the [PCF85063AT-ARD](#) FRDM Expansion Board page.

SJA1124EVB FRDM Expansion Board (Arduino® Shield) for Quad LIN commander SJA1124

Enabling System Solutions with FRDM Platform

SJA1124EVB Highlights

Supported Device

SJA1124 Quad LIN Commander Transceiver

Target Applications

- Body control
- HVAC
- Ambient mood lighting
- Park assist

Key Features

- SJA1124 is a quad LIN commander IC that supports highly integrated multi-LIN communication.
- For easy LIN channel extension to the available microcontroller, this board features 16 LIN leader channels.
- The EVB is a hardware plug-in board (shield) with standards-based form factor compatible with Arduino® UNO pin layout.
- Power LED indicator, VIO LED indicator, INHN LED indicators

Available Now
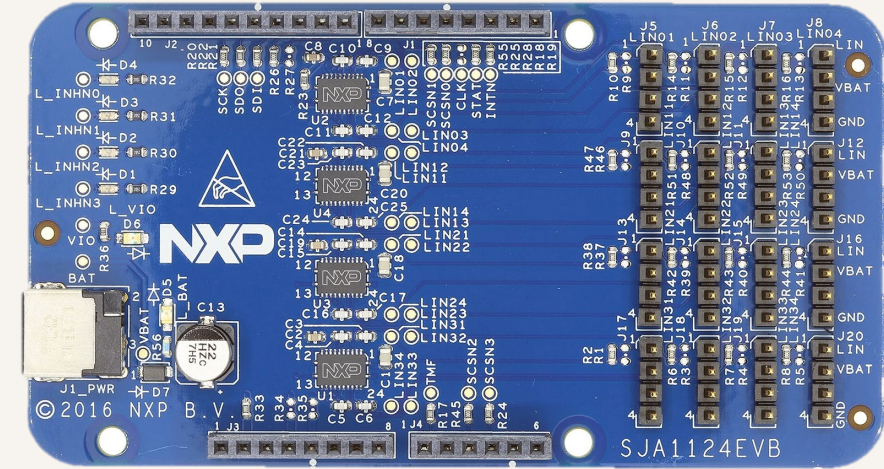
3.90" x 2.10" (9.9 x 5.3 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
SJA1124	FRDM-MCXA153 FRDM-MCXN947	SJA1124 Driver	SJA1124 Driver

Documents:
SJA1124EVB User Guide
SJA1124EVB Schematics

For pricing and availability, see the SJA1124EVB FRDM Expansion Board page.

FRDMSTBC-P3115 Freedom Shield Evaluation Board for MPL3115 Pressure Sensor

Enabling System Solutions with FRDM Platform

FRDMSTBC-P3115 Highlights

Supported Device
MPL3115 Absolute Digital Pressure Sensor (20 to 110 kPa)

Target Applications

- High-accuracy altimetry and barometry

- Smartphones, tablets, and wearable devices

- GPS applications

- Weather station equipment

Key Features

- Compatible with Arduino®® and most NXP® Freedom development boards

- Enables detailed sensor evaluation and development using the Sensor Toolbox – CE software

- Allows Register level analysis, computation of key sensor parameters like Current Consumption, debugging communication protocols like I²C and SPI, data logging etc.

Available Now

2.1" x 2.3" (5.3 x 5.84 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
MPL3115	FRDM-KL27Z FRDM-MCXA153 FRDM-MCXN947	MPL3115 Driver	MPL3115 Driver

Documents:
FRDMSTBC-P3115 Quick Start Guide

For pricing and availability, see the FRDMSTBC-P3115 Sensor Toolbox Development Platform page.

[FRDM-STBI-A8974](#) Freedom Shield Evaluation Board for FXLS8974 Digital IoT Accelerometer

Enabling System Solutions with FRDM Platform

FRDM-STBI-A8974 Highlights

Supported Device

[FXLS8974CF Low-Power 12-Bit Digital IoT Accelerometer](#)

Target Applications

- Asset tracking and equipment monitoring

- Smart metering / tamper detection

- Patient activity monitors and other medical appliances

- Smart home and mobile consumer devices

Key Features

- Compatible with Arduino®® and most NXP Freedom development boards

- Supports I²C and SPI communication interface with host MCU

- Supports hardware configurability to switch accelerometer mode and I²C/SPI interface mode

Available Now
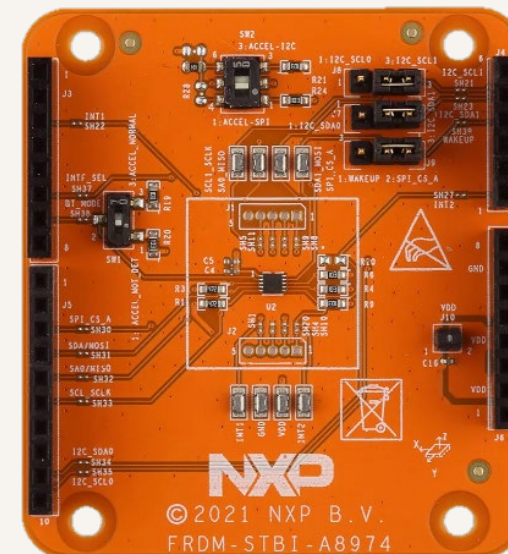
2.1" x 2.3" (5.3 x 5.84 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[FXLS8974CF](#)	[FRDM-MCXA153](#) [FRDM-MCXN947](#) [FRDM-K22F](#)	[FRDM-K22F-A8974](#) [LPCXpresso55S16-A8974](#)	[FXLS897xCF ACH Project](#)

Documents:
[UM11736, FRDM-STBI-A8974 User Manual](#)

For pricing and availability, see the [FRDM-STBI-A8974](#) Sensor Toolbox Development Platform page.

[FRDMSTBI-NMH1000](#) Freedom Shield Evaluation Board for NMH1000 Magnetic Switch

Enabling System Solutions with FRDM Platform

FRDMSTBI-NMH1000 Highlights

Supported Device
[NMH1000 Ultra-Low Power and Low-Voltage Magnetic Switch](#)

Target Applications

- Electronic system wake-up

- Tamper detection

- Laptop lid open / closed

- Door or window open / closed

Key Features

- Compatible with Arduino®® and most NXP® Freedom development boards

- The FRDMSTBI-NMH1000 can be paired with NXP MCU boards of your choice

Available Now
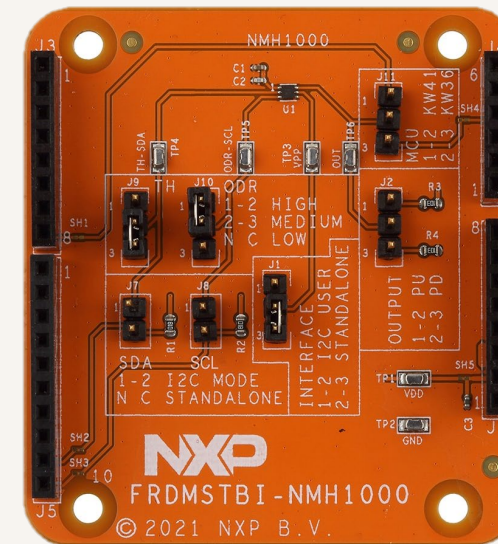
2.1" x 2.3" (5.3 x 5.84 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
[NMH1000](#)	[FRDM-KE15Z](#) [FRDM-MCXA153](#) [FRDM-MCXN947](#)	[FRDMKE15-NMH1000](#)	[NMH1000 ACH Project](#)

Documents:
[UM11835, FRDMSTBI-NMH1000 User Manual](#)

For pricing and availability, see the [FRDMSTBI-NMH1000](#) Freedom Shield Evaluation Board page.

FRDM-STBI-A8971 Freedom Shield Evaluation Board for FXLS8971 Digital Accelerometer

Enabling System Solutions with FRDM Platform

FRDM-STBI-A8971 Highlights

Supported Device
FXLS8971CF Low Power 12-Bit Digital Accelerometer

Target Applications

- Precision Inclinometer, Tilt Sensing

- Camera Stabilization

- Remote Patient Monitoring

- Equipment Monitoring and Asset Tracking

Key Features

- Compatible with Arduino®® and most NXP Freedom development boards

- Supports I²C and SPI communication interface with host MCU

- Supports hardware configurability to switch accelerometer mode and I²C/SPI interface mode

- Support multiple test points on the board

Available Now
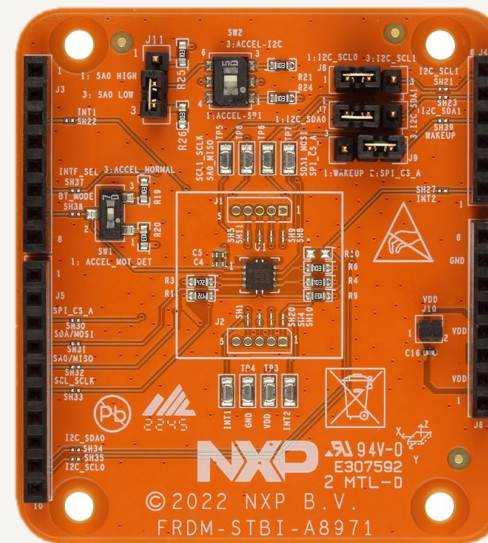
2.1" x 2.3" (5.3 x 5.84 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
FXLS8971CF	FRDM-MCXA153 FRDM-MCXN947	LPCXPRESSO55S16-A8971	FXLS897xCF ACH Project

Documents:
UM11910, FRDM-STBI-A8971 User Manual

For pricing and availability, see the FRDM-STBI-A8971 Sensor ToolBox Development Board page.

P3T1085UK-ARD FRDM Expansion Board (Arduino® Shield) for P3T1085/P3T1084 Temperature Sensor

Enabling System Solutions with FRDM Platform

P3T1085UK-ARD Highlights

Supported Devices

P3T1085UK I3C/I²C-Bus Accurate Digital Temperature Sensor
P3T1084UK I3C/I²C-Bus Accurate Digital Temperature Sensor

Target Applications

- Portable devices

- System thermal management

- Industrial controllers

- PC/Notebook/Servers/SSD

Key Features

- Use Arduino connector for data and power

- Easy to use GUI based software demonstrates the capabilities of the P3T1085UK/P3T1084UK

- On-board temperature sensor for system thermal management experiments

- Convenient test points for easy scope measurements and signal access

Available Now
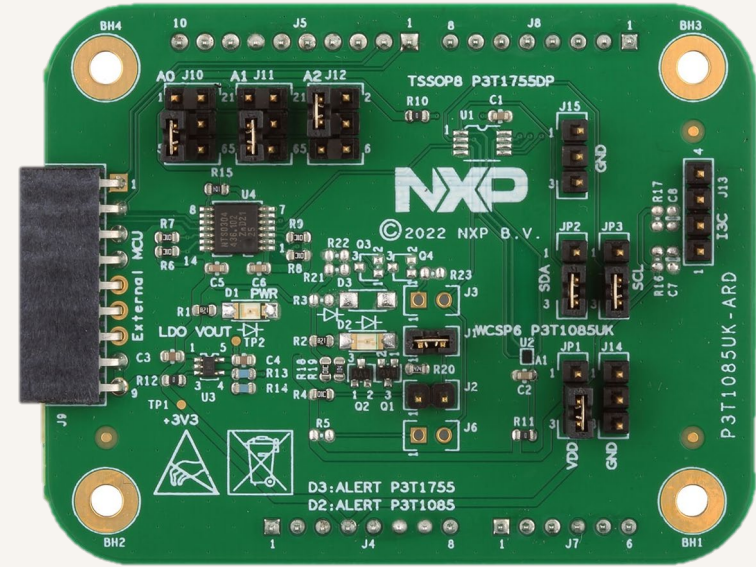
3.0" x 2.4" (7.62 x 6.0 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3T1085UK P3T1084UK	FRDM-MCXA153 FRDM-MCXN947	P3T1085 Driver	P3T1085 ACH

Documents:
UM11766, P3T1085UK-ARD User Manual

For pricing and availability, see the P3T1085UK-ARD FRDM Expansion Board page.

NAFE13388-UIM 8 -Channel Universal Input AFE Arduino Shield Board (In Development)

Enabling System Solutions with FRDM Platform

NAFE13388-UIM Highlights

Supported Device
NAFEx3388 Highly Configurable 8/4 Channel 24/16 bits ±25 V Universal Input Analog Front-End

Target Applications

- PLC or remote I/O

- Data Acquisition

- Industrial Instruments

- Servo Control

Key Features

- Compact Design

- Arduino UNO connector connects to any NXP FRDM MCU platform

- FRDM compatible

Available Now
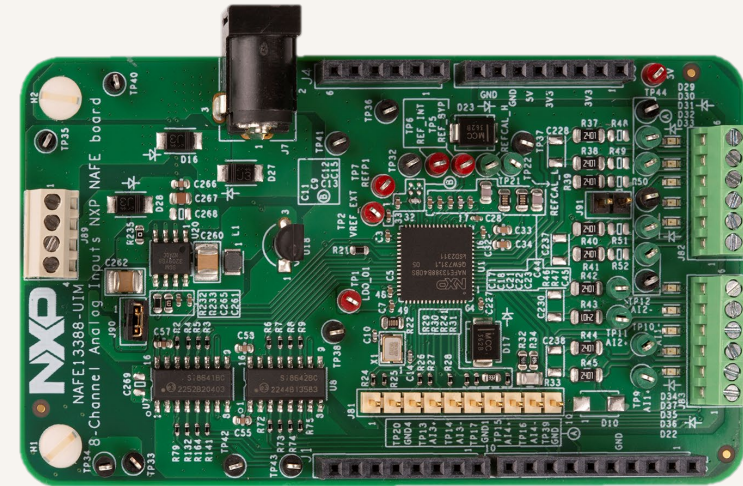
3.5" x 1.96" (8.9 x 5 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
NAFEx3388	FRDM-MCXN947	NAFE13388 Driver	NAFE13388 Driver

Documents:
In Development

For pricing and availability, see the NAFE13388-UIM FRDM Expansion Board page.

Completed and Available Drivers
Summary Released FRDM Expansion Boards

Legend (Target Application):
- 🔵 (cyan) Automotive & Transportation
- 🟢 Power & Energy
- 🟡 Factory Automation
- 🔵 (blue) Home & Building Controls
- 🟠 Healthcare
- ⚫ Communication & Computing

Segment	Device	Board(s)		Driver	ACH (Example Project)	Target Application
Real Time Clock	PCF2131 Accurate RTC with Integrated TCXO for Industrial Applications PCA2131 Accurate RTC with Integrated TCXO for Automotive Applications	PCF2131-ARD	FRDM-MCXA153 | MCXN947	PCF2131 Driver	PCF2131 Driver	cyan, green, yellow
	PCF85063A Real Time Clock	PCF85063AT-ARD	FRDM-MCXA153 | MCXN947	PCF85063A Driver	PCF85063A Driver	blue, orange, gray
Temperature Sensor	P3T1085 I3C/I²C-Bus Temperature Sensor with ±0.5 °C Accuracy	P3T1085UK-ARD	FRDM-MCXA153 | MCXN947	P3T1085 Driver	P3T1085 Driver	cyan, green, yellow, blue, orange, gray
LED Controller	PCA9957 24-CH SPI LED Controller with 32 mA Constant Current Driver	PCA9957HN-ARD	FRDM-MCXA153 | MCXN947	PCA9957 Driver	PCA9957 Driver	cyan, green, yellow
		LED Driver 8 Click				
	PCA9959 24-CH SPI LED Controller with 63 mA Constant Current Driver	PCA9959HN-ARD	FRDM-MCXA153 | MCXN947	PCA9959 Driver	PCA9959 Driver	blue, orange, gray
I3C-Bus Hub	P3H244x 4-CH I3C-Bus Hub			In Development	In Development	yellow, orange, gray
	P3H2840 8-CH I3C-Bus Hub			In Development	In Development	
Analog Front End	NAFE13388 Analog Front End	NAFE13388-UIM	FRDM-MCXN947	NAFE13388 Driver	NAFE13388 Driver	yellow, blue
Motion Sensor	FXLS8974CF 3-Axis Low-g Accelerometer	FRDM-STBI-A8974	FRDM-K22F | FRDM-MCXA153 | MCXN947	FRDM-K22F-A8974 LPCXpresso55S16-A8974	FXLS897xCF ACH Project	green, yellow, blue, orange
		Accel 4 Click	FRDM-MCXA153 | MCXN947			
	FXLS8971CF 3-Axis Low-g Accelerometer with Improved TCO Performance	FRDM-STBI-A8971	FRDM-MCXA153 | MCXN947	LPCXPRESSO55S16-A8971		
Pressure Sensor	MPL3115 Precision Pressure Sensor with Altimetry	FRDMSTBC-P3115	FRDM-KL27Z | FRDM-MCXA153 | MCXN947	FRDMKL27-P3115	MPL3115 ACH Project	green, yellow, blue, orange
		Altitude Click	FRDM-MCXA153 | MCXN947			
Magnetic Sensor	NMH1000 Magnetic Switch	FRDMSTBI-NMH1000	FRDM-KE15Z | FRDM-MCXA153 | MCXN947	FRDMKE15-NMH1000	NMH1000 ACH Project	green, yellow, blue, orange
		Hall Switch 3 click	FRDM-MCXA153 | MCXN947			
Motor Driver	MC33926 H-Bridge Driver	FRDM33926PNBEVM	FRDM-MCXA153 | MCXN947	MC33926 Driver	MC33926 Driver	cyan, green, blue
	HB2002 Brushed DC Motor Driver	FRDM-HB2002ESEVM	FRDM-MCXA153 | MCXN947	HB2002 Driver	HB2002 Driver	
LIN Transceiver	SJA1124 SPI-to-Quad LIN Bridge	SJA1124EVB	FRDM-MCXA153 | MCXN947	SJA1124 Driver	SJA1124 Driver	cyan, green, yellow
PMIC	PCA9420 PMIC for Low-Power MCU Applications	PCA9420UK-EVM		In development	In development	green, yellow, blue, orange
	PCA9421 PMIC for Low-Power MCU Applications	PCA9421UK-EVM				

Last Updated: October 16, 2024