

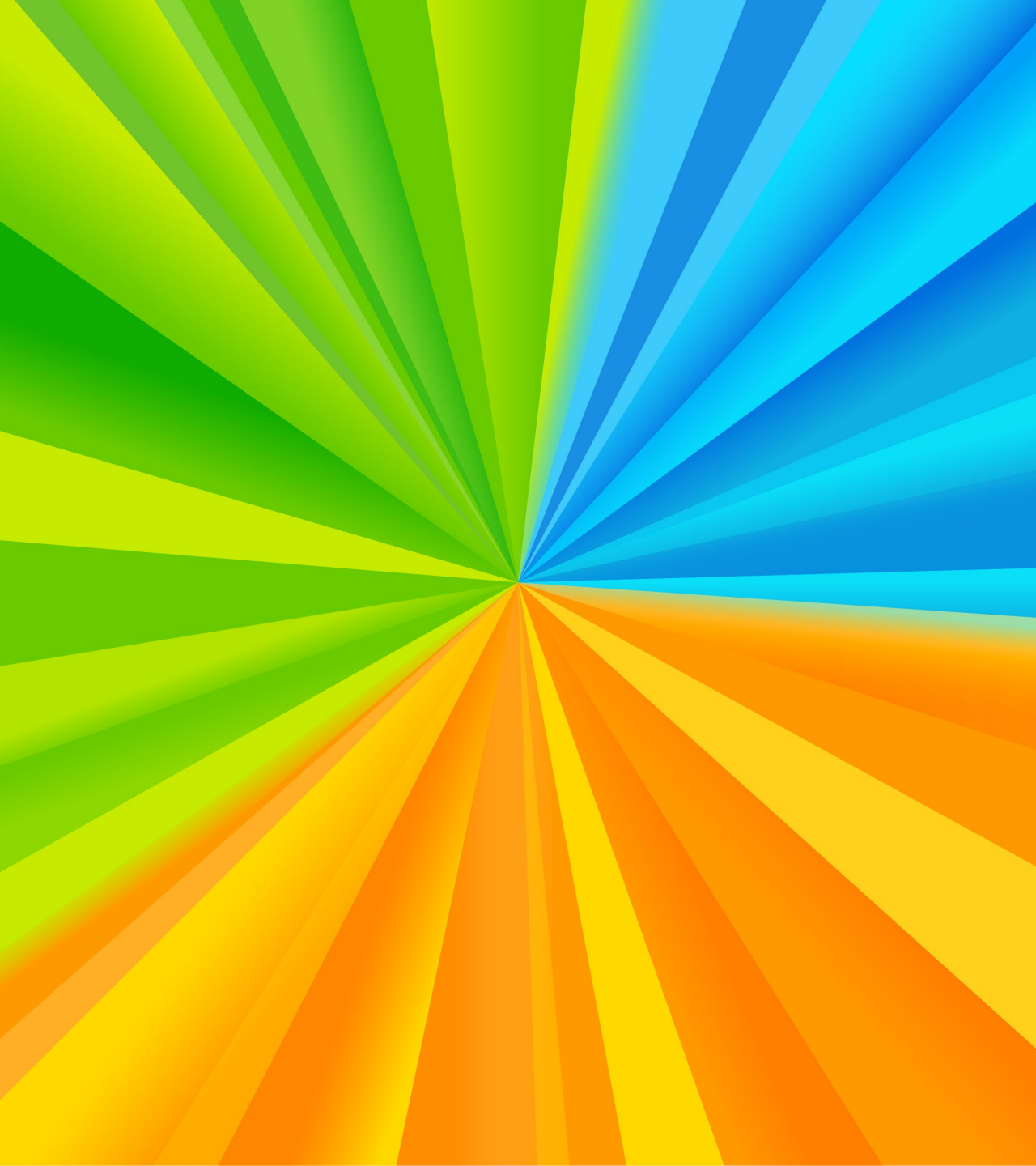


FRDM Expansion Boards

**Flexible, Rapid Development with
MCUXpresso**

Business Line Advanced Analog | January 2025, V8

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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

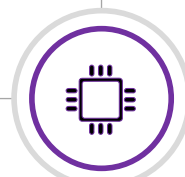
CAN Trx: FD, Partial Networking, Signal Improved, Secure	Ethernet T1 PHY: 10, 100, 1000M	LIN Trx & commander /follower controller
BMS Transceiver & CAN Gateway	Ethernet xGigabit Switch	Flexray Transceivers

Human Machine Interface

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

USB CC Logic/ PD controller	GPIO Expander	Analog Switch	High Speed Signal Switch	Signal Integrity, Redriver
Real Time Clock	I ² C & I ³ C Bus Enablers	PCIe Solutions	Voltage Level Translator	UART & Bridge IC



Processor

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

Power Driver

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

FRDM Expansion Boards Index



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	  
	Motor Driver	MC33926 H-Bridge, Brushed DC Motor Driver	FRDM33926PNBEVM	Link	  
	PMIC	PCA9420 Low-Power PMIC	PCA9420UK-EVM	Link	   
	PMIC	PCA9421 Low-Power PMIC	PCA9421UK-EVM	Link	   
Data Network	GPIO Expander	PCAL6416A Low-Voltage Translating 16-Bit I ² C-Bus/SMBus I/O Expander	PCAL6416AEV-ARD	Link	 
	GPIO Expander	PCAL9722 22-Bit SPI I/O Expander with Agile I/O Features	PCAL9722HN-ARD	Link	 
	I ² C-Bus Switch	PCA9846 Four-Channel Ultra-Low Voltage, Fm+ I ² C-Bus Switch with Reset	PCA9846PW-ARD	Link	 
	I3C-Bus Switch & VLT	P3S0210BQ Dual Bidirectional I3C 1:2 Switch and VLT	P3S0210BQ-ARD	Link	   
	LIN Transceiver	SJA1124 Quad LIN Commander Transceiver with LIN Commander Controller	SJA1124EVB	Link	  
	LED Controller	PCA9957 24-Channel SPI Serial Bus 32 mA/5.5 V Constant-Current LED Driver	PCA9957HN-ARD	Link	    
	LED Controller	PCA9959 24-Channel SPI Serial Bus 63 mA/5.5 V Constant Current LED Driver	PCA9959HN-ARD	Link	    
	Real Time Clock	PCF2131 Accurate RTC with Integrated TCXO for Industrial Applications PCA2131 Accurate RTC with Integrated TCXO for Automotive Applications	PCF2131-ARD	Link	     
	Real Time Clock	PCF85063A Tiny Real-Time Clock/Calendar with Alarm Function and I ² C-Bus	PCF85063AT-ARD	Link	     
	I3C-Bus Hub	P3H244x 4-CH I3C-Bus Hub	P3H2440HN-ARD	Link	  
			P3H2441HN-ARD	Link	  
		P3H2840 8-CH I3C-Bus Hub	P3H2840HN-ARD	Link	  
			P3H2841HN-ARD	Link	  
	4-Bit Translating Transceiver	NTS0304E 4-Bit Dual-Supply Translating Transceiver	NTS0304EUK-ARD	Link	  
	Level Translating Fm+ I ² C-Bus Repeater	PCA9617A Level Translating Fm+ I ² C-Bus Repeater	PCA9617ADP-ARD	Link	  

FRDM Expansion Boards Index



Automotive & Transportation



Factory Automation



Healthcare



Power & Energy



Home & Building Controls



Communication & Computing

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	P3TI085UK I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor	P3TI085UK-ARD	Link	
		P3TI084UK I3C/I²C-Bus ±0.4 °C Accurate Digital Temperature Sensor			
		P3TI755DP I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor	P3TI755DP-ARD	Link	
	Analog Front End	NAFE13388 8/4 Channel 24/16 bits ±25 V Universal Input Analog Front-End	NAFE13388-UIM	Link	

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About Technical Support

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Confidential assistance with NXP support professional

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How can we help?

Click → [Live Chat: Online Now](#)



NXP Community

Open forum for technical discussions moderated by NXP experts

Click → [Get answers](#)

2

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



Product **Longevity**

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](#)

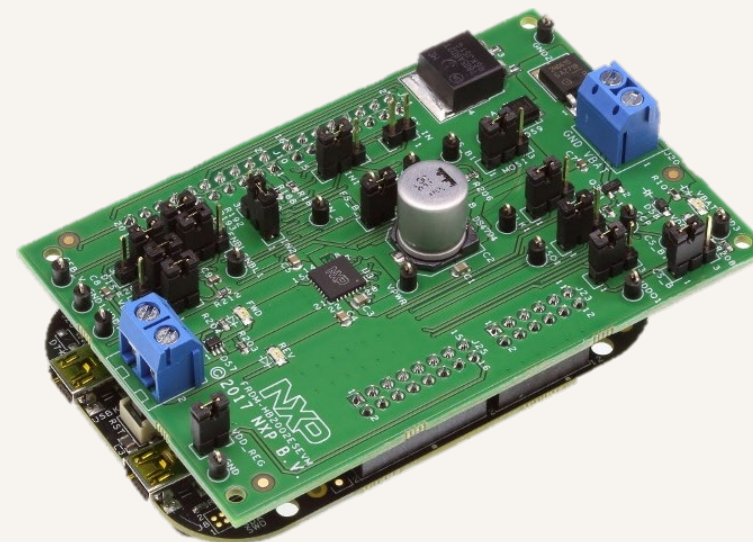
Target Applications

- 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 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. Linear battery charger for charging single-cell Li-ion battery
- 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	FRDM-MCXA153 FRDM-MCXN947	In Development	In Development

Documents:

[UM11216, PCA9420UK-EVM Evaluation Board User Manual](#)

PCA9421UK-EVM FRDM Expansion Board

Enabling System Solutions with FRDM Platform

PCA9421UK-EVM Highlights

Supported Device

[PCA9421 PMIC for Low Power Applications](#)

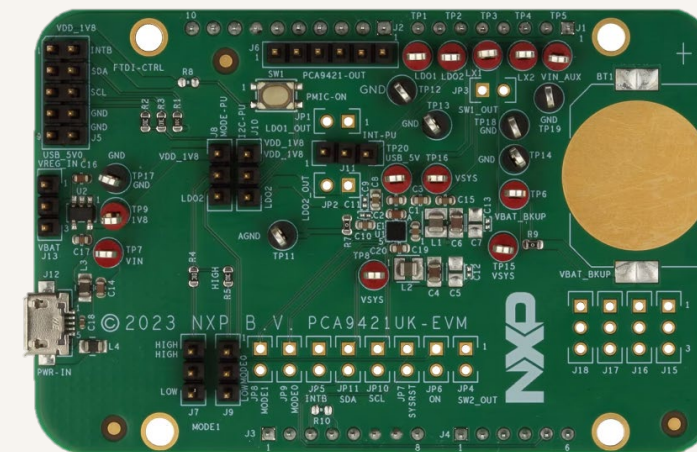
Target Applications

- 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](#)

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](#)

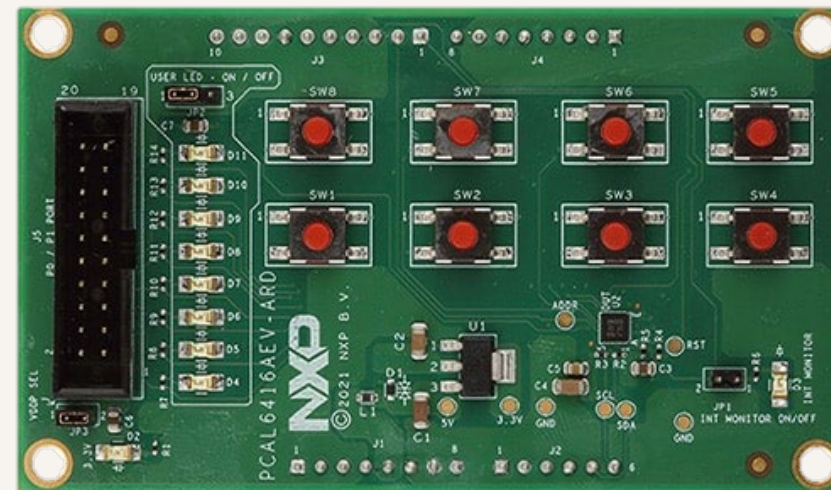
Target Applications

- 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](#)

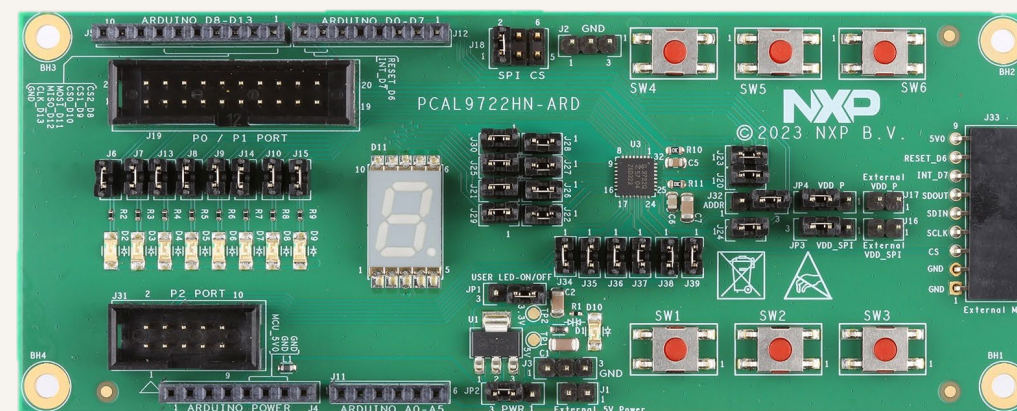
Target Applications

- 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



5.43" x 2.16" (13.79 x 5.48 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](#)

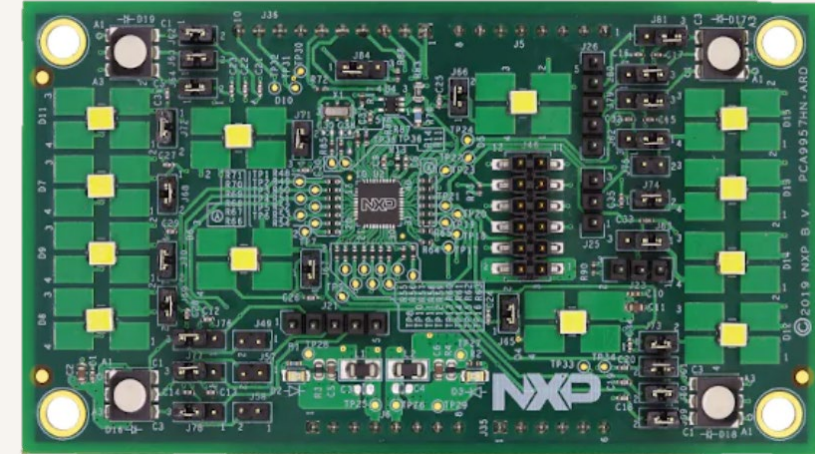
Target Applications

- 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](#)

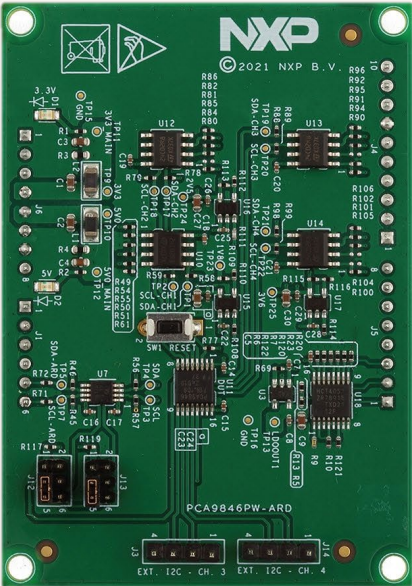
Target Applications

- 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

P3S0210BQ-ARD Highlights

Supported Device

[P3S0210BQ Dual Bidirectional I3C 1:2 Switch and VLT](#)

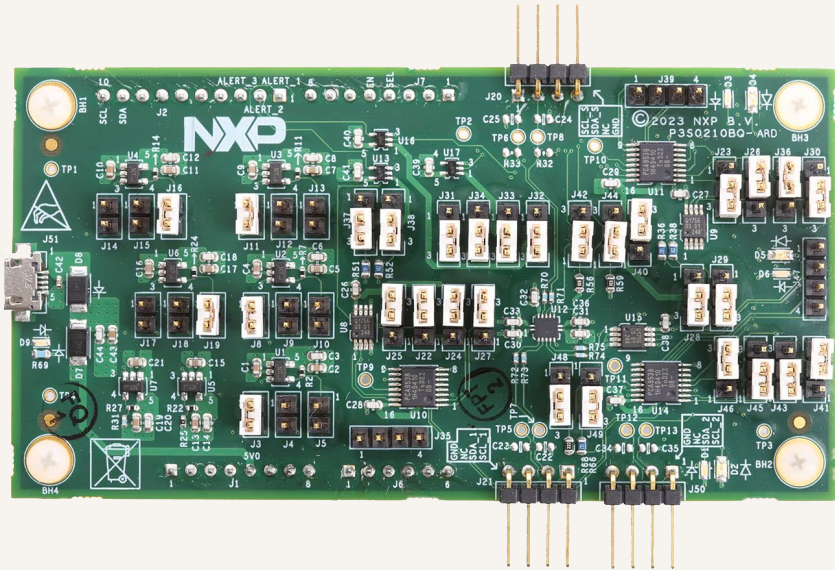
Target Applications

- 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.

Available Now



4.2" x 2.2" (10.6 x 5.58 cm)

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](#)

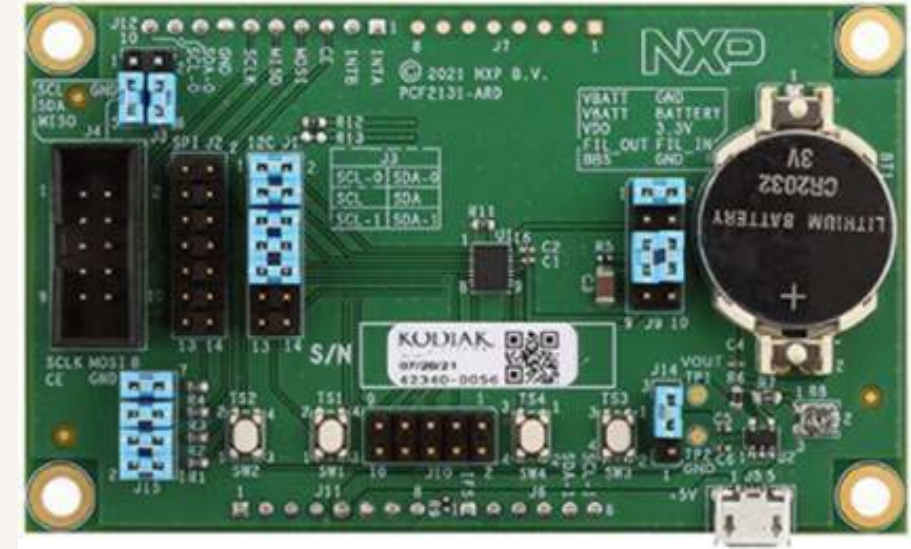
Target Applications

- 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](#)

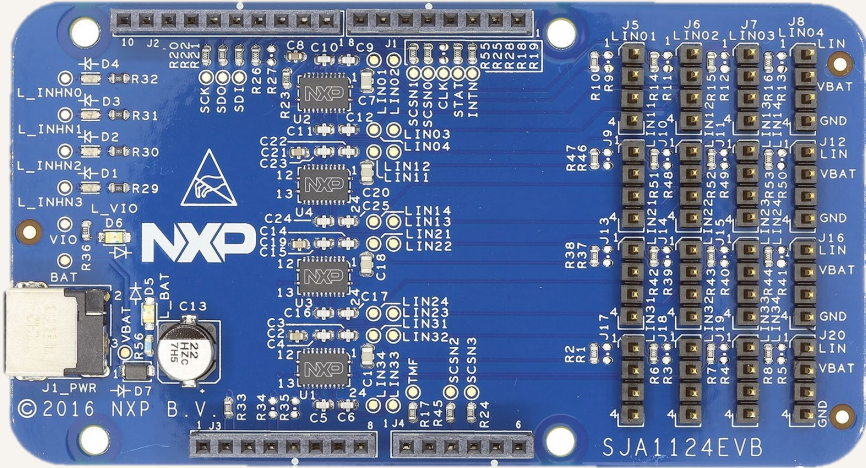
Target Applications

- 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.

NTS0304EUK-ARD

Level Shifter Evaluation Board

Enabling System Solutions with FRDM Platform

NTS0304EUK-ARD Highlights

Supported Device

[NTS0304E 4-Bit Dual-Supply Translating Transceiver](#)

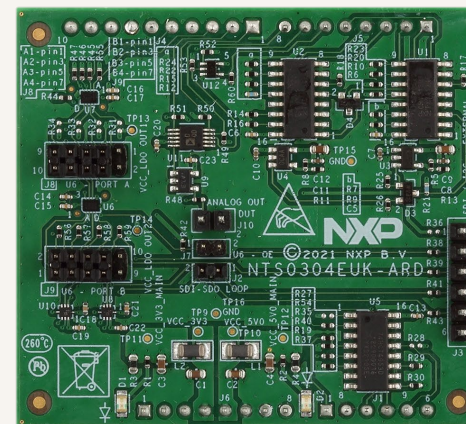
Target Applications

- Smartphone
- Digital Cameras
- Tablet PCs
- Motherboards

Key Features

- Equipped with SPI / I²C digital potentiometer for rapid test and measurements
- Equipped with Arduino Uno R3 port for direct connection with Arduino devices
- Low Voltage, Dual Supply 4-Bit Bidirectional Level Shifter
- Device automatically switches direction from A to B or from B to A without requiring a direction control pin.
- Fully compliant with IMXRT1050 EVK board, LPCXpresso55S69 dev. board and i.MX Mini LPDDR4 EVK board, including GUI (Windows 10)

Available Now



2.32" x 2.1" (5.89 x 5.33 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
NTS0304E	Not applicable	Not applicable	Not applicable

Documents:

[UM11762, NTS0304EUK-ARD evaluation board - User Manual](#)

For pricing and availability, see the [NTS0304EUK-ARD](#) FRDM Expansion Board page.

PCA9617ADP-ARD Arduino Shield Level Translating Fm+ I²C-Bus Repeater Evaluation Board

Enabling System Solutions with FRDM Platform

PCA9617ADP-ARD Highlights

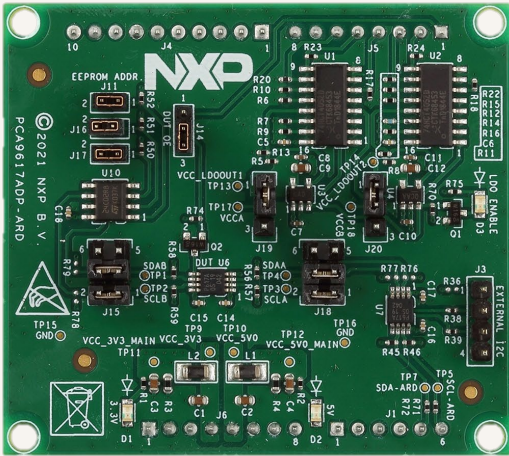
Supported Device
[PCA9617A Level Translating Fm+ I²C-Bus Repeater](#)

Target Applications

- I²C-bus and SMBus applications

- Key Features**
- Equipped with I²C EEPROM for rapid test and measurements
 - Equipped with Arduino Uno R3 port for direct connection with Arduino devices
 - Allows bidirectional voltage-level translation and I²C-bus repeater
 - Supply voltage: Vcc(A) 0.8 V to 5.5 V, Vcc(B) 2.2 V to 5.5 V
 - Icc(A): 50 uA(max)
 - Fully compliant with IMXRT1050 EVK board, LPCXpresso55S69 dev. board and i.MX Mini LPDDR4 EVK board, including GUI (Windows 10)

Available Now



2.44" x 2.16" (6.19 x 5.4 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
PCA9617A	Not applicable	Not applicable	Not applicable

Documents:
[UM11763 PCA9617ADP-ARD - User Manual](#)

For pricing and availability, see the [PCA9617ADP-ARD](#) FRDM Expansion Board page.

P3H2840HN-ARD (In Development)

I3C Hub Arduino® Shield Evaluation Board

Enabling System Solutions with FRDM Platform

P3H2840HN-ARD Highlights

Supported Device

P3H2840HN (In Development)

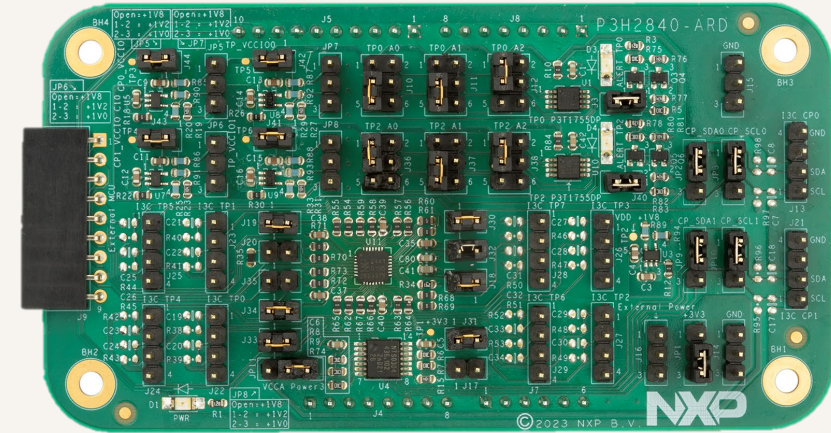
Target Applications

- Intel / AMD server platforms
- ARM based SoC for AI and datacenter equipment

Key Features

- 2x I3C hub controller with eight target ports
- Eight target ports configurable to I3C/I²C/SMBus or GPIO
- Integrated LDO
 - Controller port operating at 1.0 V, 1.2 V, or 1.8 V
 - Target port operating at 1.0, 1.2 V, 1.8 V, or 3.3 V
- 4 x 4 mm QFN28 package with 0.4 mm lead pitch

In Development



4" x 2.2" (10.16 x 5.58 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3H2840HN	In Development	In Development	In Development

Documents:
[In Development](#)

P3H2841HN-ARD (In Development)

I3C Hub Arduino® Shield Evaluation Board

Enabling System Solutions with FRDM Platform

P3H2841HN-ARD Highlights

Supported Device
P3H2841HN (In Development)

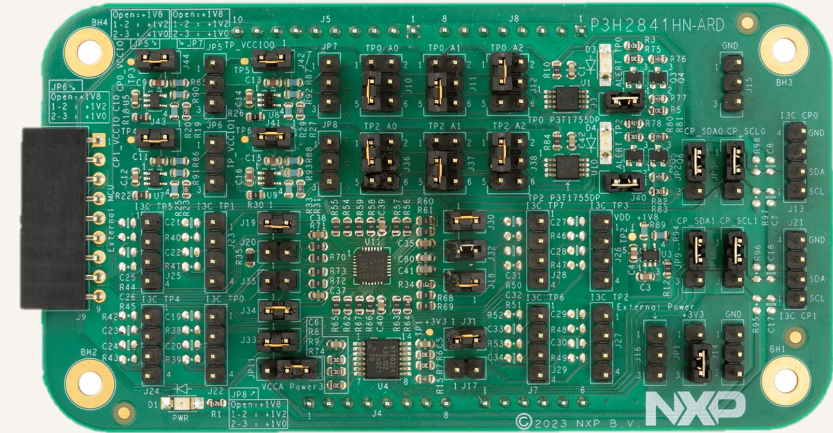
Target Applications

- Intel / AMD server platforms
- ARM based SoC for AI and datacenter equipment
- Network Cards and Industrial Systems

Key Features

- 2x I3C hub controller with eight target ports
- Eight target ports configurable to I3C/I²C/SMBus or GPIO
- Integrated LDO
 - Controller port operating at 1.0 V, 1.2 V, or 1.8 V
 - Target port operating at 1.0, 1.2 V, 1.8 V, or 3.3 V
- 4 x 4 mm QFN28 package with 0.4 mm lead pitch

In Development



4" x 2.2" (10.16 x 5.58 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3H2841HN	In Development	In Development	In Development

Documents:
[In Development](#)

P3H2440HN-ARD (In Development)

I3C Hub Arduino® Shield Evaluation Board

Enabling System Solutions with FRDM Platform

P3H2440HN-ARD Highlights

Supported Device
P3H2440HN (In Development)

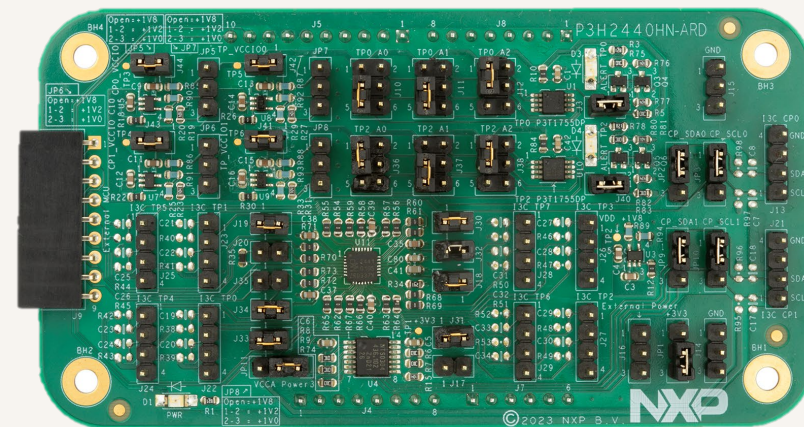
Target Applications

- Intel / AMD server platforms
- ARM based SoC for AI and datacenter equipment

Key Features

- Two controller ports to connect to I3C or I²C/SMBus controller devices: Controller Port 0 (CP0) and Controller Port 1 (CP1).
- 2x I3C hub controller with eight target ports
- Four target ports configurable to I3C/I²C/SMBus or GPIO
- Integrated LDO
 - Controller port operating at 1.0 V, 1.2 V, or 1.8 V
 - Target port operating at 1.0, 1.2 V, 1.8 V, or 3.3 V
- 4 x 4 mm QFN28 package with 0.4 mm lead pitch

In Development



4" x 2.2" (10.16 x 5.58 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3H2440HN	In Development	In Development	In Development

Documents:
[In Development](#)

P3H2441HN-ARD
(In Development)

I3C Hub Arduino® Shield Evaluation Board

Enabling System Solutions with FRDM Platform

P3H2441HN-ARD Highlights

Supported Device
P3H2441HN (In Development)

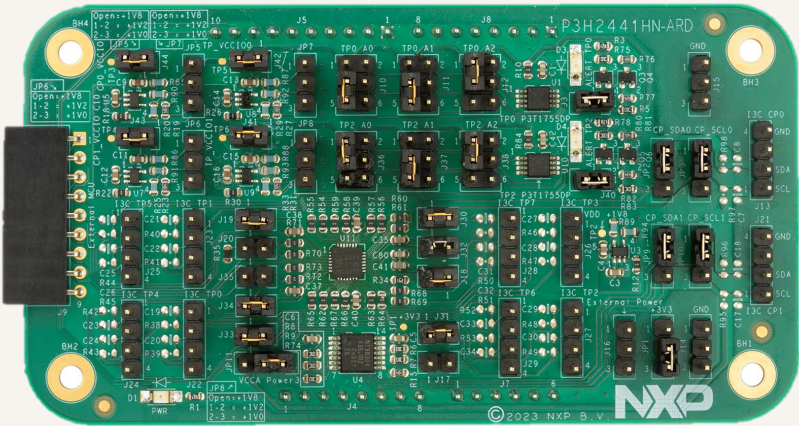
Target Applications

- Intel / AMD server platforms
- ARM based SoC for AI and datacenter equipment

Key Features

- Two controller ports to connect to I3C or I²C/SMBus controller devices: Controller Port 0 (CP0) and Controller Port 1 (CP1). Pre-configured I3C mode only by default.
- 2x I3C hub controller with eight target ports
- Four target ports configurable to I3C/I²C/SMBus or GPIO
- Integrated LDO
 - Controller port operating at 1.0V, 1.2V, or 1.8V
 - Target port operating at 1.0, 1.2V, 1.8V, or 3.3V
- 4 x 4 mm QFN28 package with 0.4 mm lead pitch

In Development



4" x 2.2" (10.16 x 5.58 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3H2441HN	In Development	In Development	In Development

Documents:
[In Development](#)

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](#)

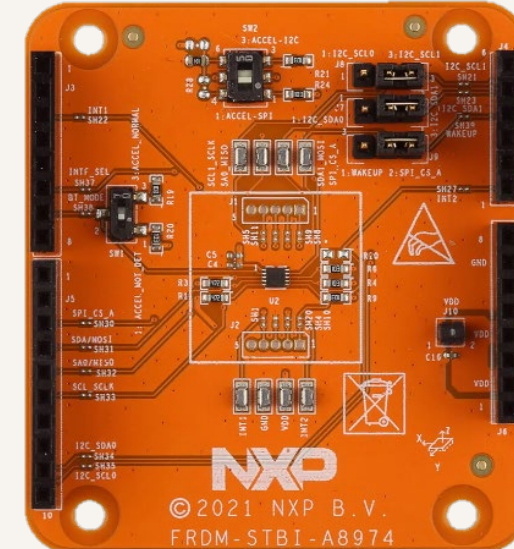
Target Applications

- 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](#)

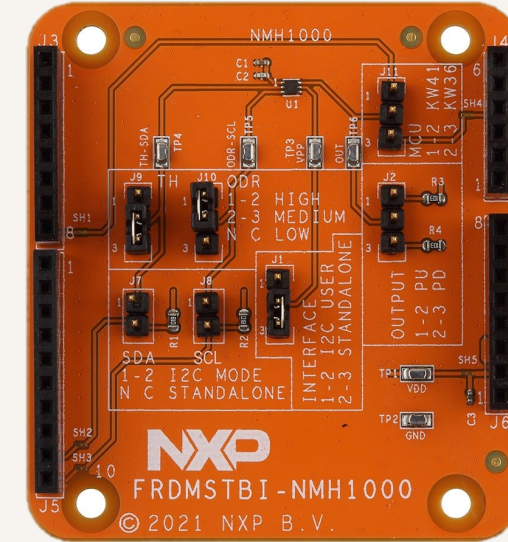
Target Applications

- 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

[Back to Index](#)

FRDM-STBI-A8971 Highlights

Supported Device

[FXLS8971CF Low Power 12-Bit Digital Accelerometer](#)

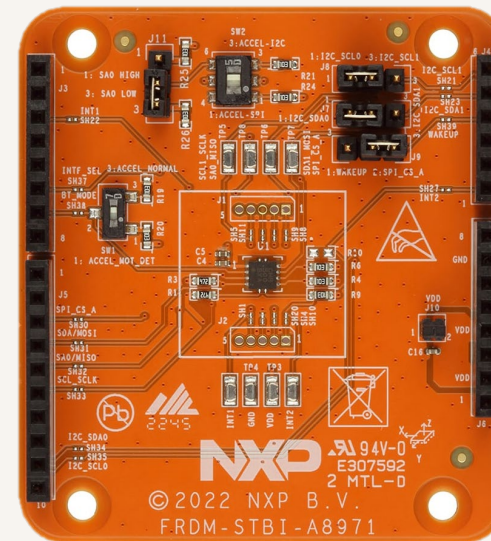
Target Applications

- 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](#)

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](#)

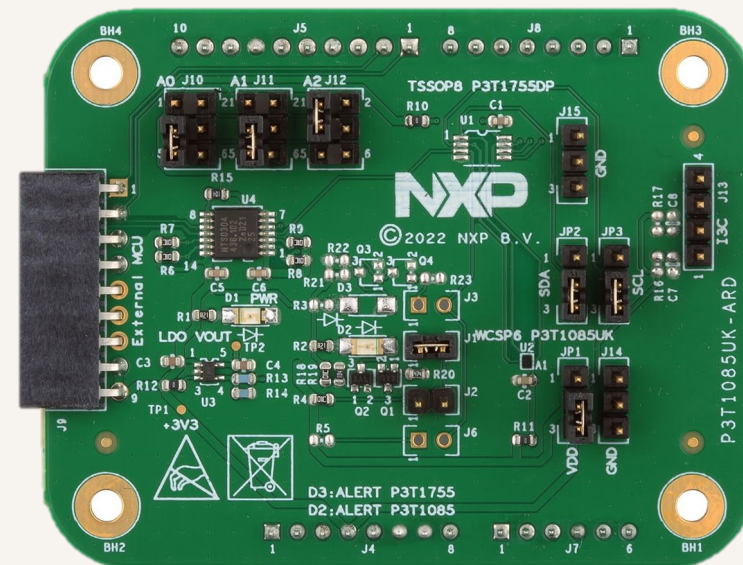
Target Applications

- 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

[NAFEx1388](#) Highly Configurable 8 Channel ± 25 V Universal Input Analog Front-End

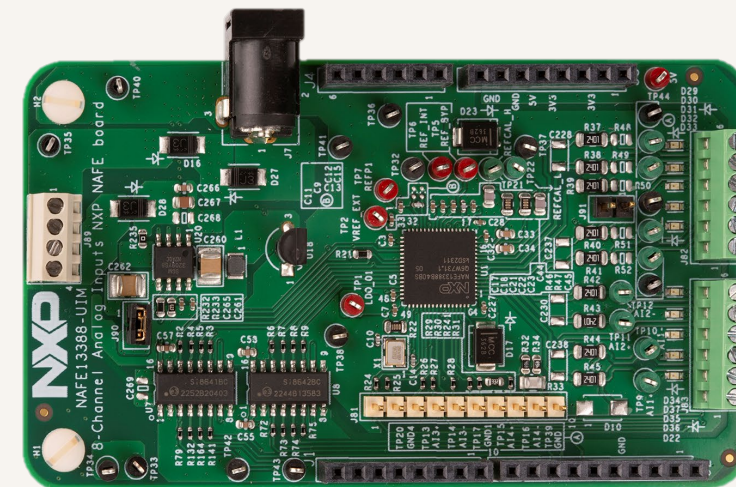
Target Applications

- 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 NAFEx1388	FRDM-MCXN947	NAFE13388 Driver	NAFE13388 Driver

Documents:

[N-AFE Software-Configurable Analog Front-End Family With Universal Analog Inputs Fact Sheet](#)

P3T1755DP-ARD

Arduino® Shield Evaluation Board

Enabling System Solutions with FRDM Platform

P3T1755DP-ARD Highlights

Supported Device

[P3T1755DP](#) I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor

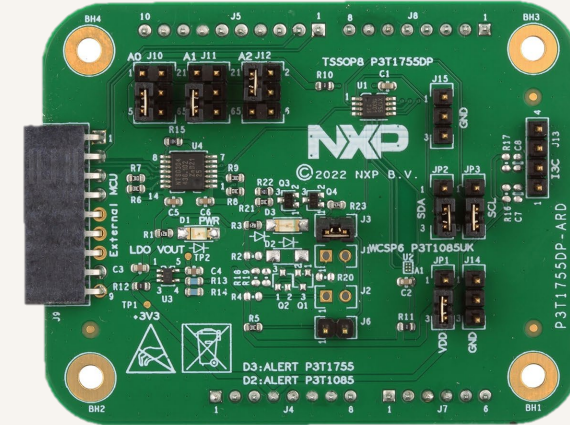
Target Applications

- Automotive: Audio Solutions, High Performance Compute, EV Traction Inverter, HVAC, etc.
- Industrial: Building Energy Management Controller, Safety Detectors, Industrial HMI, ESS, EVSE, etc.
- Communication Infrastructure: Interface ICs for Servers
- Major Home Appliances

Key Features

- A complete evaluation platform for the P3T1755DP I3C, I²C-bus, 0.5 °C accuracy, digital temperature sensor
- Easy to use GUI-based software demonstrates the capabilities of the P3T1755DP
- On-board temperature sensor for system thermal management experiments
- Convenient test points for easy scope measurements and signal access
- USB interface to the host PC
- Power supply from USB port (x2) or external power supply can be used to power P3T1755DP-ARD evaluation board

Available Now



2.80" x 2.20" (7.11 x 5.58 cm)

Device	Compatible Processor Boards	SDK	ACH (Example Project)
P3T1755DP	FRDM-MCXA153 FRDM-MCXN947	P3T1755DP Driver	P3T1755DP Driver

Documents:

[P3T1755DP-ARD Evaluation Board User Manual](#)

Completed and Available Drivers

Summary Released FRDM Expansion Boards

- Automotive & Transportation

Power & Energy
- Factory Automation

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	PCF2131-ARD	FRDM-MCXA153 MCXN947	PCF2131 Driver	PCF2131 Driver	
	PCA2131 Accurate RTC with Integrated TCXO for Automotive Applications					
	PCF85063A Real Time Clock	PCF85063AT-ARD	FRDM-MCXA153 MCXN947	PCF85063A Driver	PCF85063A Driver	
Temperature Sensor	P3TI085 I3C/I ² C-Bus Temperature Sensor with ±0.5 °C Accuracy	P3TI085UK-ARD	FRDM-MCXA153 MCXN947	P3TI085 Driver	P3TI085 Driver	
LED Controller	PCA9957 24-CH SPI LED Controller with 32 mA Constant Current Driver	PCA9957HN-ARD	FRDM-MCXA153 MCXN947	PCA9957 Driver	PCA9957 Driver	
	PCA9959 24-CH SPI LED Controller with 63 mA Constant Current Driver	PCA9959HN-ARD	FRDM-MCXA153 MCXN947	PCA9959 Driver	PCA9959 Driver	
I3C-Bus Hub	P3H244x 4-CH I3C-Bus Hub	P3H2440HN-ARD P3H2441HN-ARD		In Development	In Development	
	P3H2840 8-CH I3C-Bus Hub	P3H2840HN-ARD P3H2841HN-ARD		In Development	In Development	
Analog Front End	NAFEx1388 Analog Front End NAFEx3388 Analog Front End	NAFE13388-UIIM	FRDM-MCXN947	NAFE13388 Driver	NAFE13388 Driver	
Motion Sensor	FXLS8974CF 3-Axis Low-g Accelerometer	FRDM-STBI-A8974	FRDM-K22F FRDM-MCXA153 MCXN947	FRDM-K22F-A8974 LPCXpresso55S16-A8974	FXLS897xCF ACH Project	
	FXLS8971CF 3-Axis Low-g Accelerometer with Improved TCO Performance	AcceI 4 Click FRDM-STBI-A8971	FRDM-MCXA153 MCXN947 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	
		Altitude Click	FRDM-MCXA153 MCXN947			
Magnetic Sensor	NMH1000 Magnetic Switch	FRDMSTBI-NMH1000	FRDM-KE15Z FRDM-MCXA153 MCXN947	FRDMKE15-NMH1000	NMH1000 ACH Project	
		Hall Switch 3 click	FRDM-MCXA153 MCXN947			
Motor Driver	MC33926 H-Bridge Driver	FRDM33926PNBEVM	FRDM-MCXA153 MCXN947	MC33926 Driver	MC33926 Driver	
	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	
PMIC	PCA9420 PMIC for Low-Power MCU Applications	PCA9420UK-EVM	FRDM-MCXA153 MCXN947	PCA9420 Driver	PCA9420 Driver	
	PCA9421 PMIC for Low-Power MCU Applications	PCA9421UK-EVM	FRDM-MCXA153 MCXN947	PCA9421 In Development	PCA9421 In Development	



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