DEVKIT-S12ZVL
QUICK START GUIDE (QSG)

ULTRA-RELIABLE MCUs FOR
INDUSTRIAL AND AUTOMOTIVE



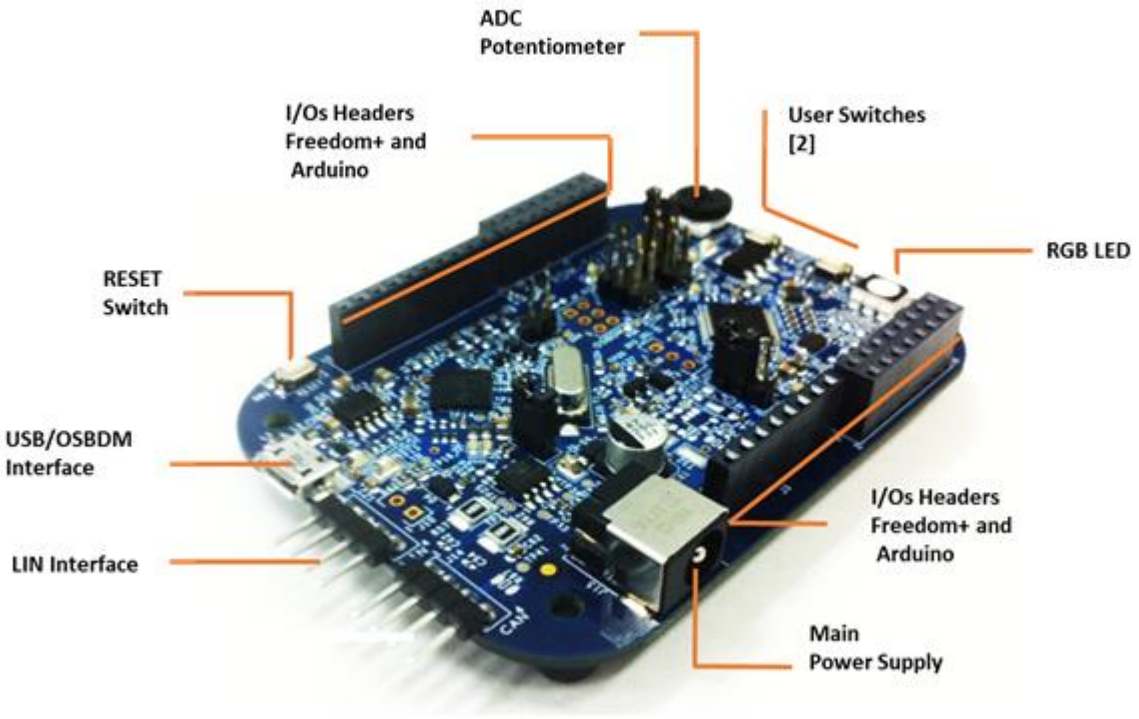
EXTERNAL USE

SECURE CONNECTIONS
FOR A SMARTER WORLD

Get to know the DEVKIT-S12ZVL

The DEVKIT-S12ZVL is an ultra-low-cost development platform for S12 Microcontrollers.

Features include easy access to all MCU I/O´s, a standard-based form factor compatible with the Arduino™ pin layout, providing a broad range of expansion board options, and an USB serial port interface for connection to the IDE, the board has option to be powered via USB or an external power supply.



DEVKIT-S12ZVL Features

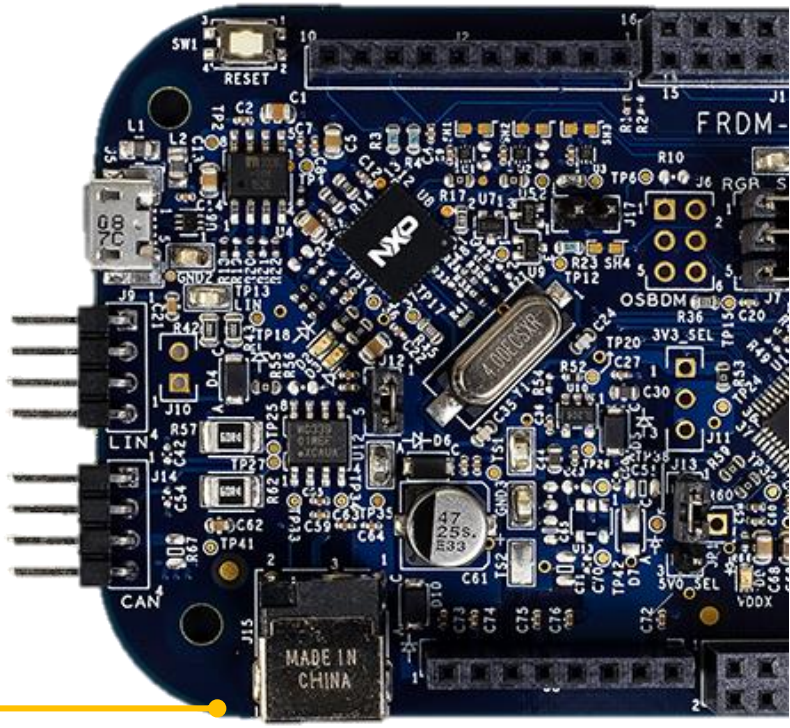
Power Supply and Communications

DESCRIPTION	NAME	PIN
	LIN	**J12-01**
	VBAT	**J12-02**
	NC	**J12-03**
	GND	**J12-04**



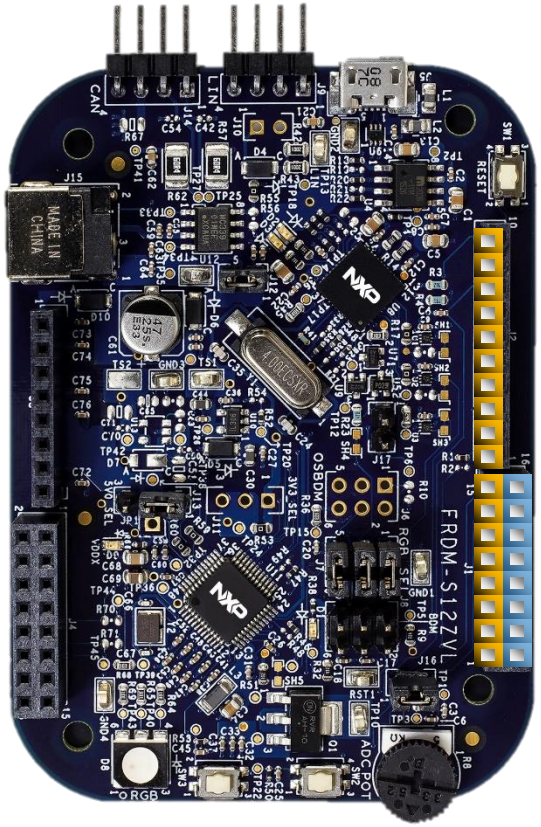
DESCRIPTION	NAME	PIN
	VBAT	**J1-01**
	GND	**J1-03**





High-speed CAN interface

Input/Output Connectors

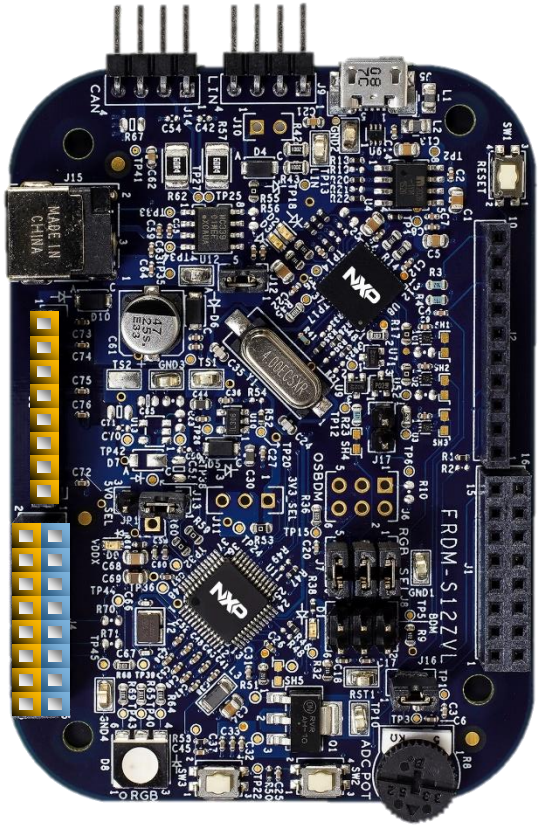


PIN	PORT	FUNCTION	J2
J2-01	PT7	**GPIO**	
J2-02	PP7	**GPIO**	
J2-03	PS3	**SS**	
J2-04	PS1	**MOSI**	
J2-05	PS0	**MISO**	
J2-06	PS2	**SCK**	
J2-07	GND	**GND**	
J2-08	PAD0	**AN0**	
J2-09	PJ0	**SDA**	
J2-10	PJ1	**SCL**	

PIN	PORT	FUNCTION	J1	PIN	PORT	FUNCTION
J1-01	PT4	**RXD1**		J1-02	PT2	**GPIO**
J1-03	PT5	**TXD1**		J1-04	PT3	**GPIO**
J1-05	PP0	**PWM0**		J1-06	PT6	**GPIO**
J1-07	PP1	**PWM1**		J1-08		
J1-09	PP2	**PWM2**		J1-10		
J1-11	PP3	**PWM3**		J1-12		
J1-13	PP4	**PWM4**		J1-14		
J1-15	PP5	**PWM5**		J1-16		

Arduino Compatibility
The internal rows of the I/O headers on the DEVKIT-S12G128 are arranged to fulfill Arduino™ shields compatibility .

Input/Output Connectors

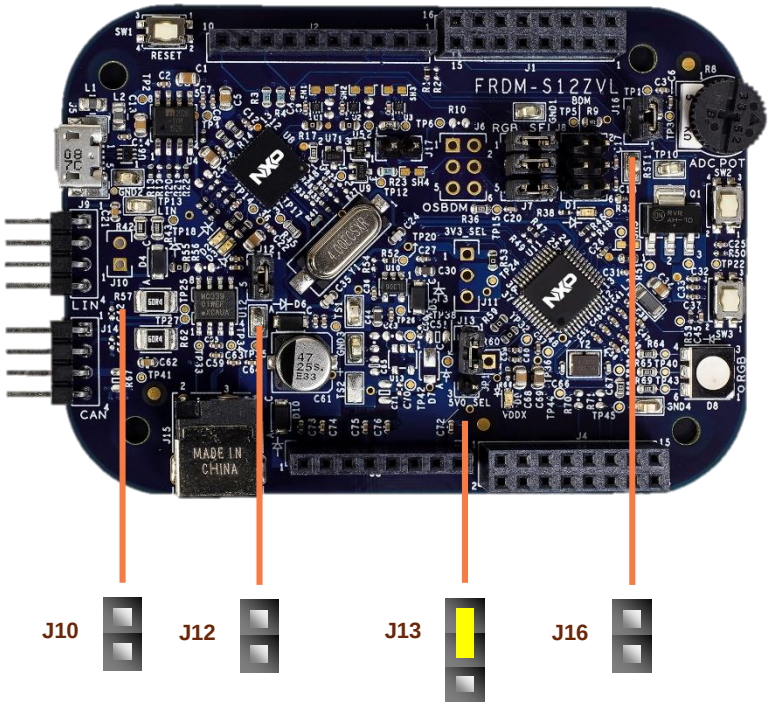


PIN	PORT	FUNCTION	J3
J3-01		**VBAT**	
J3-02		**VDDX**	
J3-03		**RESET_B**	
J3-04		**P3V3**	
J3-05		**P5V0**	
J3-06		**GND**	
J3-07		**GND**	
J3-08		**VBAT**	

PIN	PORT	FUNCTION	J4	PIN	PORT	FUNCTION
J4-02				J4-01	PAD7	**AN7**
J4-04				J4-03	PAD6	**AN6**
J4-06				J4-05	PAD5	**AN5**
J4-08				J4-07	PAD4	**AN4**
J4-10				J4-09	PAD3	**AN3/SDA**
J4-12	PL0	**HVI0**		J4-11	PAD2	**AN2/SCL**
J4-14	PAD8	**AN8**		J4-13	PAD1	**AN1**
J3416	PAD9	**AN9**		J4-15	PAD0	**AN0**

Arduino Compatibility
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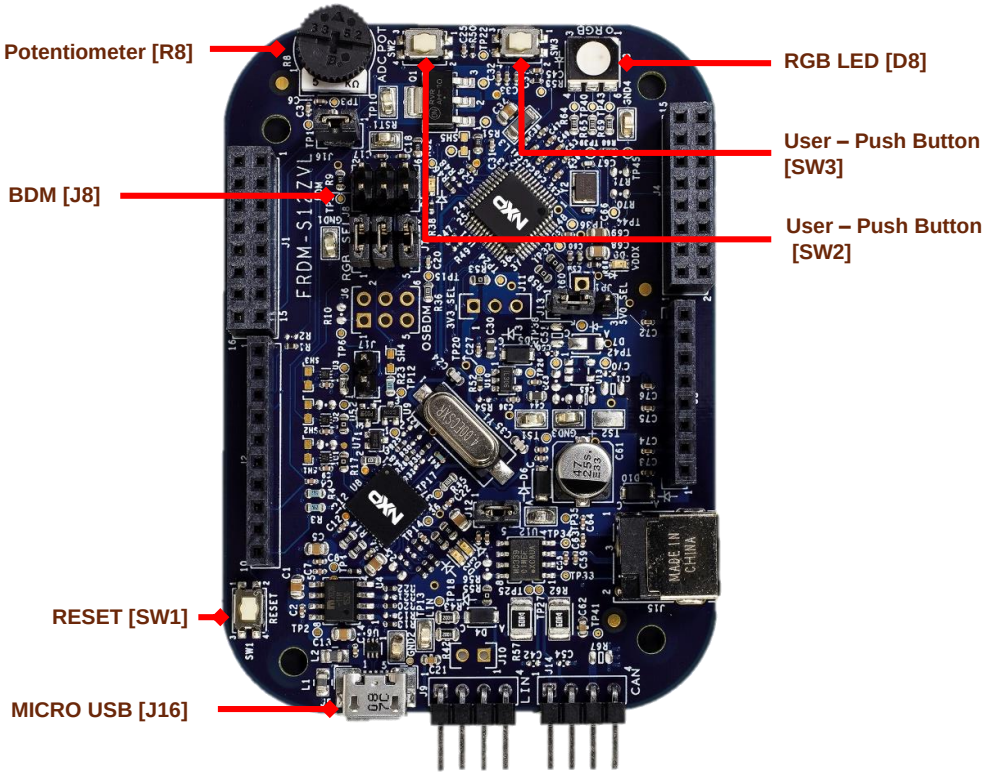
Default jumpers



REF	POSITION	DESCRIPTION
J10	OPEN	Enable LIN Master mode
J12	1 - 2	Supply the board with different voltage supply
J13	1 - 2	Shield is being powered from VDDX (MCU)
	2 – 3	Shield is being powered from USB port
J16	1 - 2	ADC potentiometer is routed to AN2

CAUTION:
When powered from the USB bus, do not exceed the 500mA maximum allowable current drain. Damage to the target board or host PC may result.

Programming interface and User Peripherals



Peripheral	ID	MCU Port	Description
Buttons	SW2	PP4	User switch (Active high)
	SW3	PP7	User switch (Active high)
	SW1	RESET	RESET Switch
Potentiometers	R8	AN0	Potentiometer connected to ADC port AN0/AN1
LED	D9	PP3	RGB LED - Green
		PP1	RGB LED - Red
		PP5	RGB LED - Blue
	D2	-	OSBDM PWR LED, ON when OSBDM is successfully enumerated as USB device.
	D3	-	OSBDM STATUS LED. ON when OSBDM is successfully transmitting as USB device.
	D9	VDDX	MCU Power LED Indicator. ON when VDDX is regulating to +5V
	D1	RESET	RESET LED Indicator
Communication	J8	-	OSBDM USB
	J9	LIN	LIN Interface

Step-by-Step Installation Instructions

In this quick start guide, you will learn how to set up the **DEVKIT-S12ZVL** board and run the default exercise.



1

Install Software and Tools

Install CodeWarrior Development Studio for S12Z 10.6(Eclipse).

2

Connect the USB Cable

Connect one end of the USB cable to the PC and the other end to the mini-B connector on the DEVKIT-S12ZVL board. Allow the PC to automatically configure the USB drivers if needed.

3

Using the Example Project

The pre-loaded example project utilizes the RGB LED. Once the board is plugged in you can see how the RGB LEDs change the color.

4

Learn More About the S12ZVL

Read the release notes and documentation on the freescale.com/S12ZVL.

- The Processor Expert graphical initialization software included in your CodeWarrior installation will help reduce your time to market
- CodeWarrior for S12Z with examples

Documentation and References

Application Notes

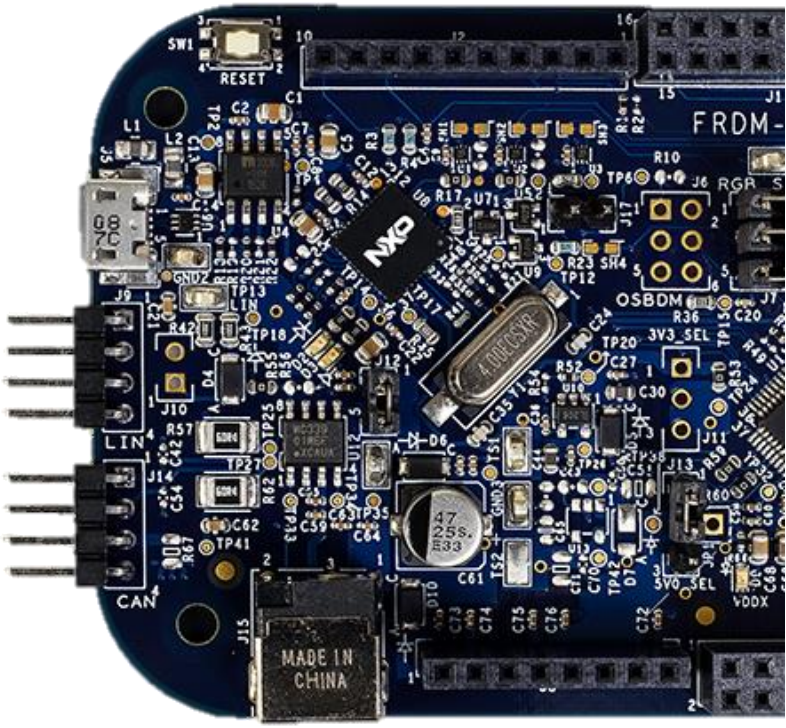
- AN4842, S12ZVL LIN Enabled RGB LED Lighting Application

- AN4841, S12ZVL LIN Enabled Ultrasonic Distance Measurement

- AN5082, MagniV in 24V Applications

Reference Manual and Datasheet

- MC9S12ZVL Family Reference Manual and Datasheet



For more information please visit : www.nxp.com/s12zvl

Development Tools Ecosystem

Compilers
- Codewarrior S12Z
- Cosmic

IDE
- Codewarrior
- Cosmic Zap

Programmers
- P&E
- Cyclone Pro Programmer

Debugger
- CW & P&E S12 Debugger
- Cosmic Zap Debugger
- iSYSTEM winIDEA

Support Tools:
- FREEMASTER run time debugger and for instrumentation/calibration







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