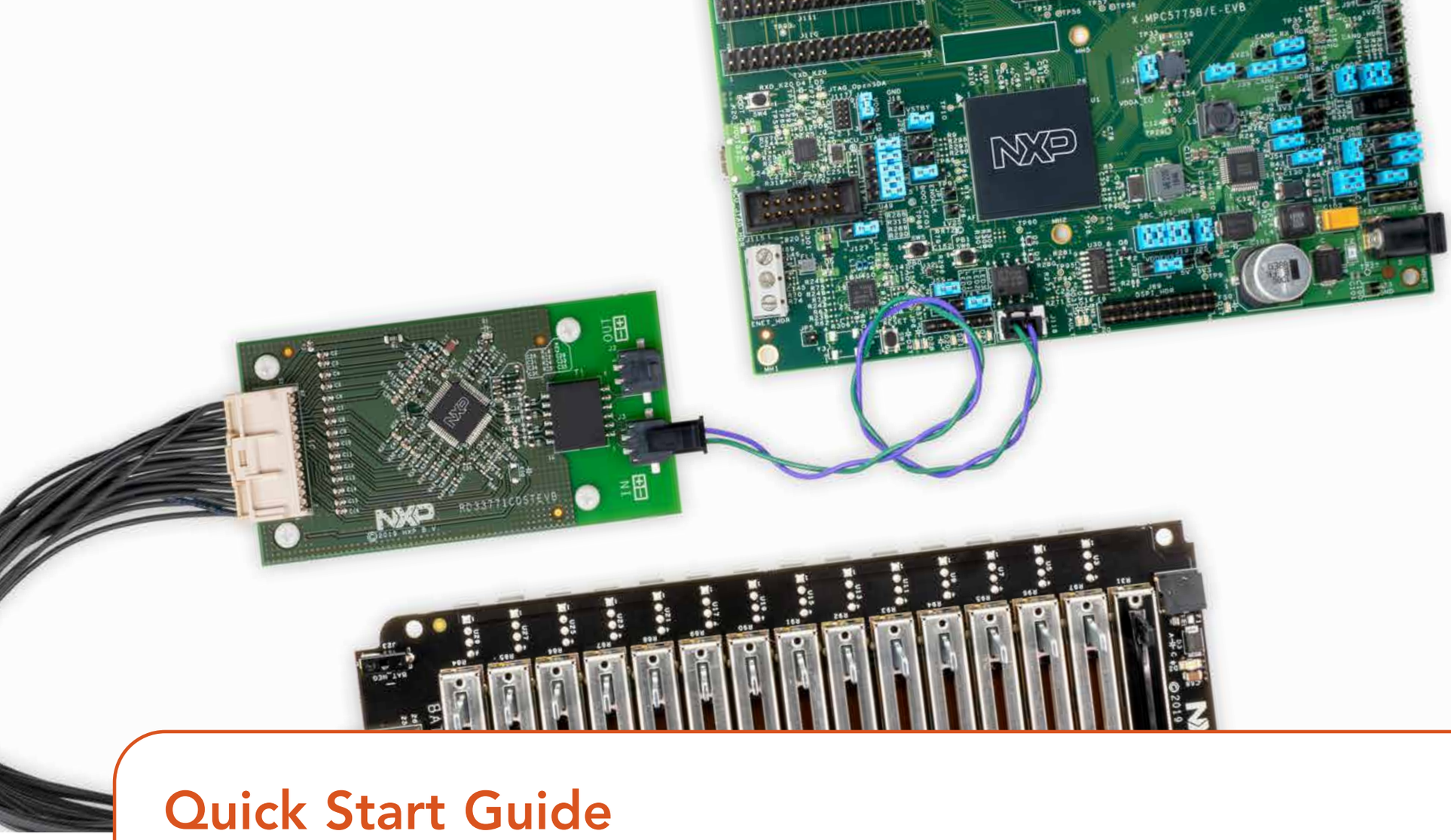


Quick Start Guide

MPC5775E-EVB and MPC5775B-EVB

NXP evaluation boards for inverter and battery management applications.

GET TO KNOW THE MPC5775E-EVB BOARD

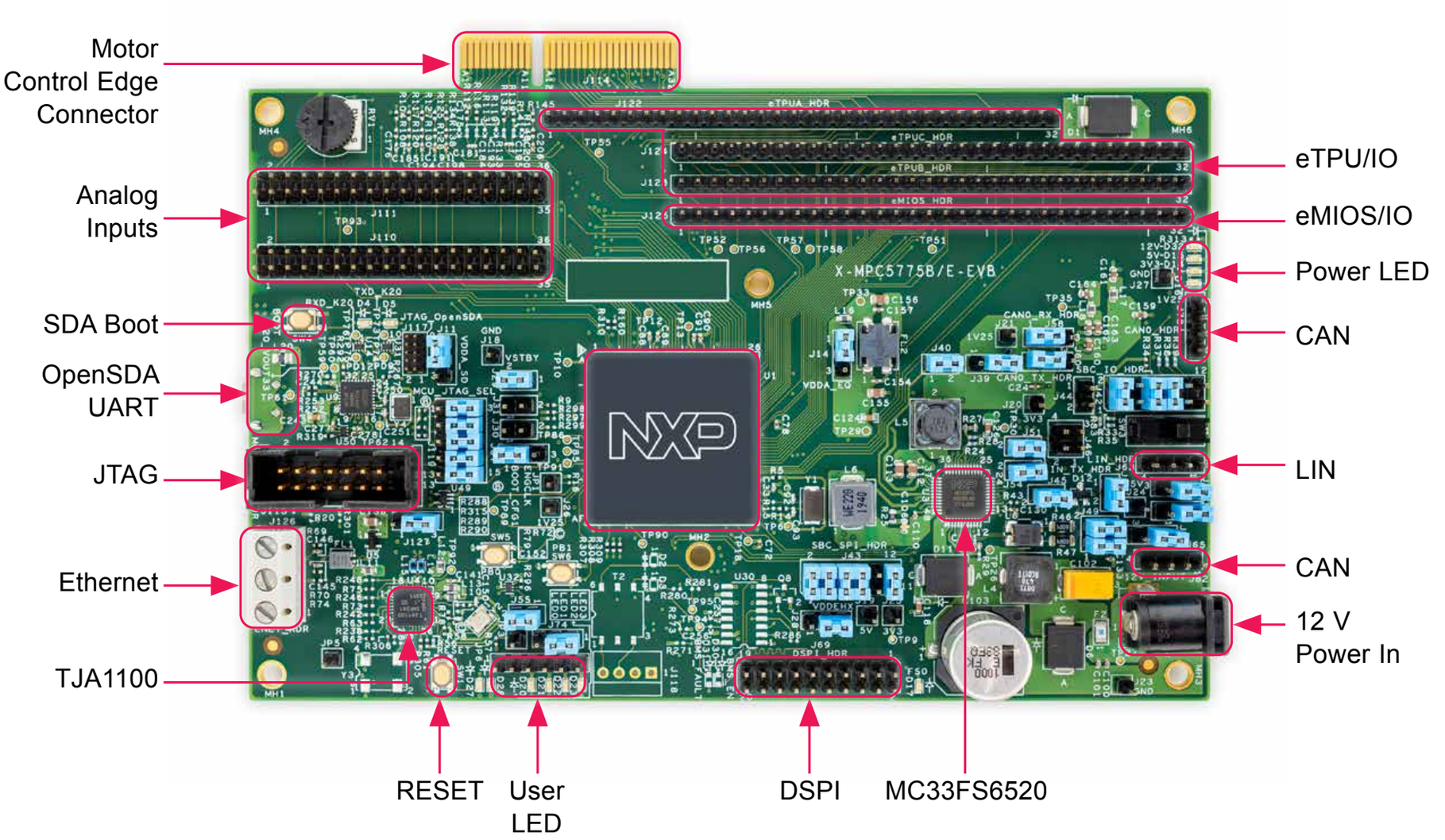


Figure 1: Front side of MPC5775E-EVB

GET TO KNOW THE MPC5775B-EVB BOARD

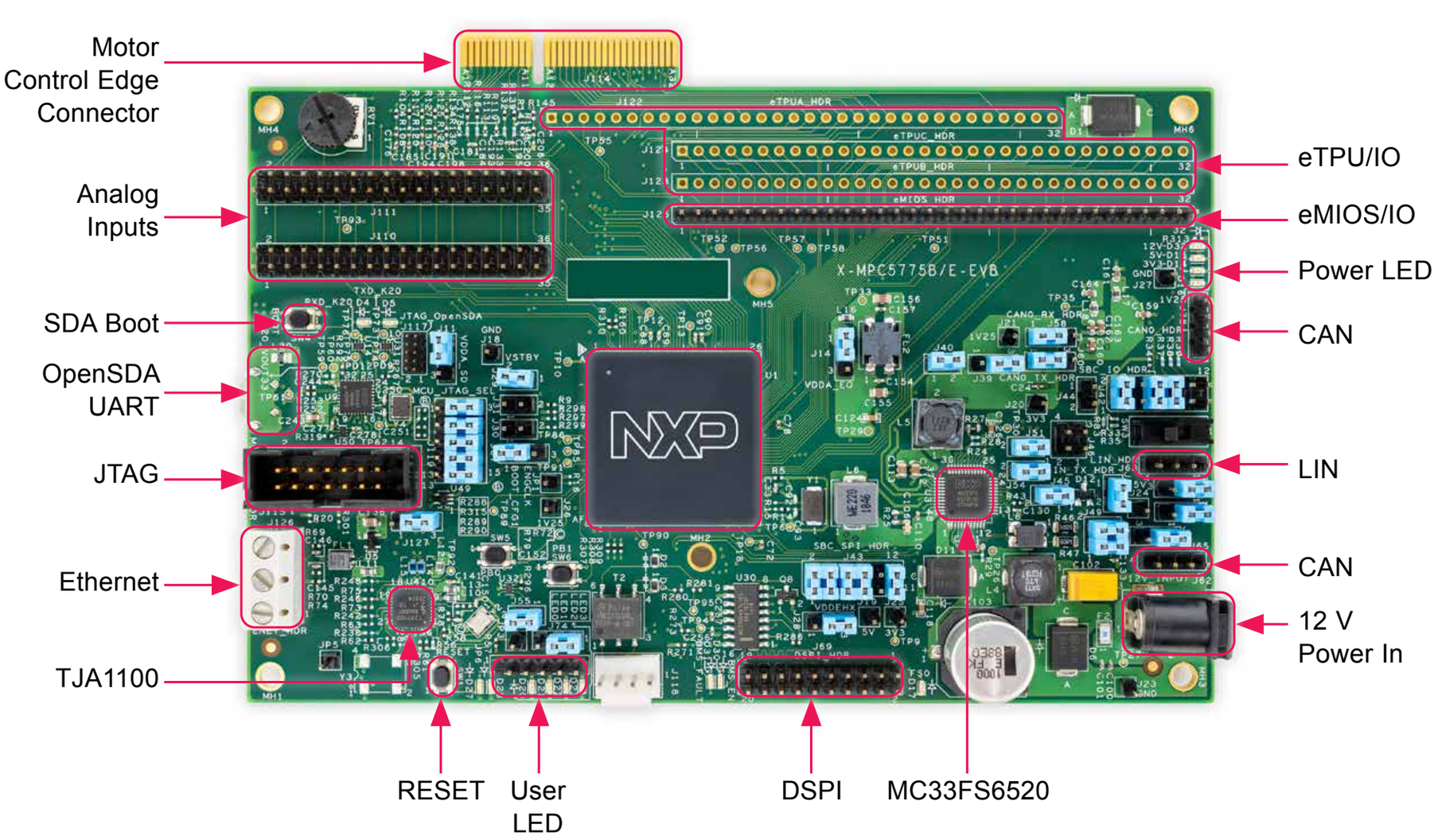


Figure 2: Front side of MPC5775B-EVB

FEATURES OF THE MPC5775E-EVB AND MPC5775B-EVB BOARDS

- SPC5775B (MPC5775B-EVB) or SPC5775E (MPC5775E-EVB) silicon
- Requires 12 V external DC power supply (included in kit)
- MC33FS6520LAE system basis chip (SBC) for the board power supply
- SBC CAN physical interface (selectable [J48/J50] between FlexCAND/ MCAN1 [GPIO246 and GPIO247] or FLEXCANC [GPIO87 and GPIO88])
- Option to select CAN termination (J49)
- SBC LIN physical interface connected to RXDC/TXDC (J51/J54 connected by default).
- Master or slave mode supported (J52 V_{SUP} connection)
- TJA1145T/CAN FD physical interface (selectable between FlexCANA/ MCAN0 GPIO83 and GPIO84] and FlexCANB [GPIO85 and GPIO86])
- TJA1100 automotive Ethernet PHY (physical interface)
- Debug selectable between external debug connection via JTAG or onboard OpenSDA (JTAG to USB interface)
- eMIOS header pins, ADC header pins and DSPI header pins
- MPC5775B-EVB only: MC33664 battery management system (BMS) interface
- MPC5775E-EVB only: eTPU header pins and motor control connector (x PCIe® style edge connector)

HARDWARE INCLUDED IN THE PACKAGE

1. One MPC5775E-EVB or MPC5775B-EVB

2. One 12 V Power supply

3. One micro USB cable

4. Standoffs

STEP-BY-STEP INSTRUCTIONS FOR OUT OF BOX EXPERIENCE

1 Download Software

Download installation software and documentation under **"Jump Start Your Design"** at

nxp.com/MPC5775E-EVB

nxp.com/MPC5775B-EVB

2 Connect the USB Serial Cable

Connect the micro USB cable to J116 micro USB port.

Install the driver, if necessary, in order to make the COM port available as an OpenSDA port, which can be checked under "COM & LPT Ports" in Device Manager.

If the driver is available, user will be able to see the "**OpenSDA – CDC Serial Port**." Go to step 4.

Driver download link: http://www.pemicro.com/opensda/

3 To Install OpenSDA Driver Manually

Go to the Device Manager and right-click the COM port detected and select Update Driver Software. Select Browse My Computer for driver software and select the OpenSDA driver that has been downloaded.

Driver download link: http://www.pemicro.com/opensda/

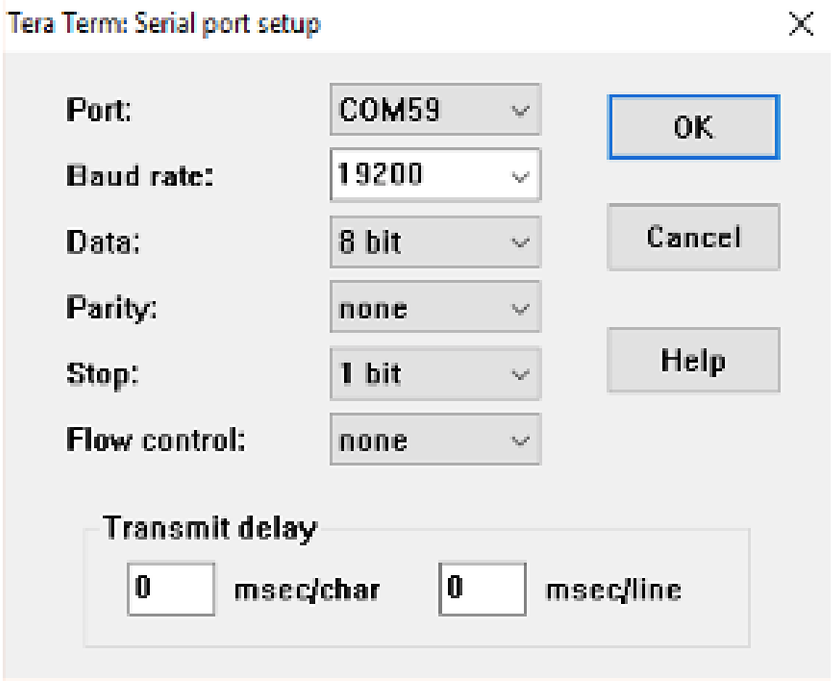
4 Setup Tera Term Console

Open Tera Term on Windows® PC. Select the serial port to which the micro USB of the development board is connected and click OK. Go to Setup>Serial Port and select 19200 as the baud rate.

STEP-BY-STEP INSTRUCTIONS CONTINUED

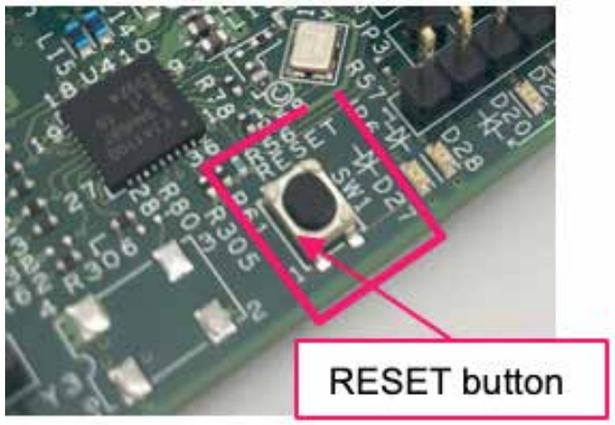
5 Connect the Power Supply

Connect power supply to power socket and micro USB cable to micro USB port on the development board. Make sure the status LEDs D14, D15, D16 and D32 for voltage levels 3.3 V, 5 V, 1.25 V and 12 V supply respectively are glowing green on the board.



6 Reset the Board

After resetting the board by pressing the Reset button (SW1), user will be able to see the following welcome message on the terminal.



7 Run Your First Example Project

Refer to the next slides.

SOFTWARE AND TOOL SUPPORT

Software tools available:

- S32 Design studio for PowerPC from NXP
  - Download and install the NXP S32 Design Studio IDE
  - Built-in example codes available for many NXP power architecture products

Debug tools available:

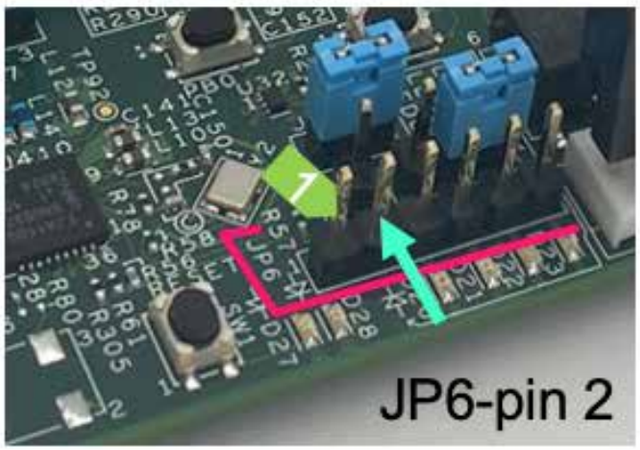
- Onboard Open-SDA using micro USB (default)
- Support Lauterbach, GHS and PE micro tools via JTAG interface

Note: To use JTAG, user need to change the jumper configuration of J119

HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM

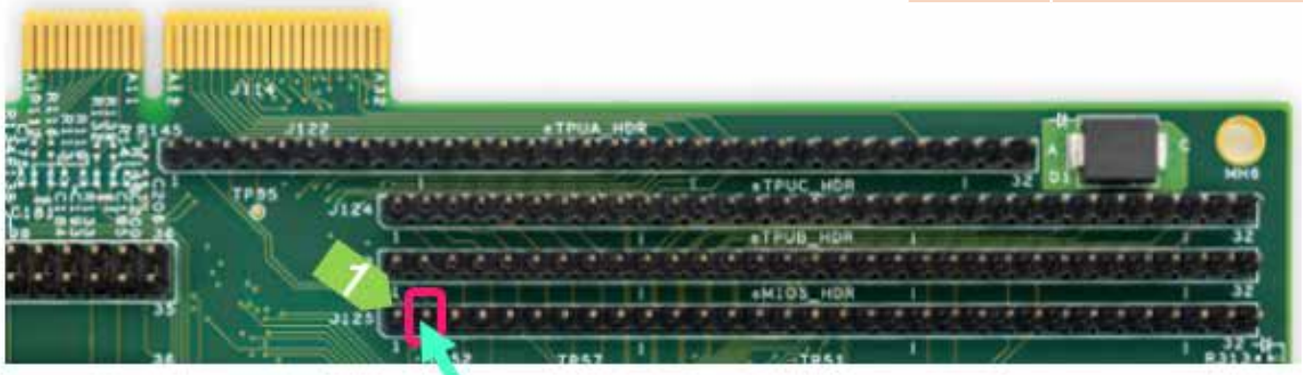
Board configuration for the project

Connect J125-pin 2 to user LED header JP6-pin 2 with jumper wire.



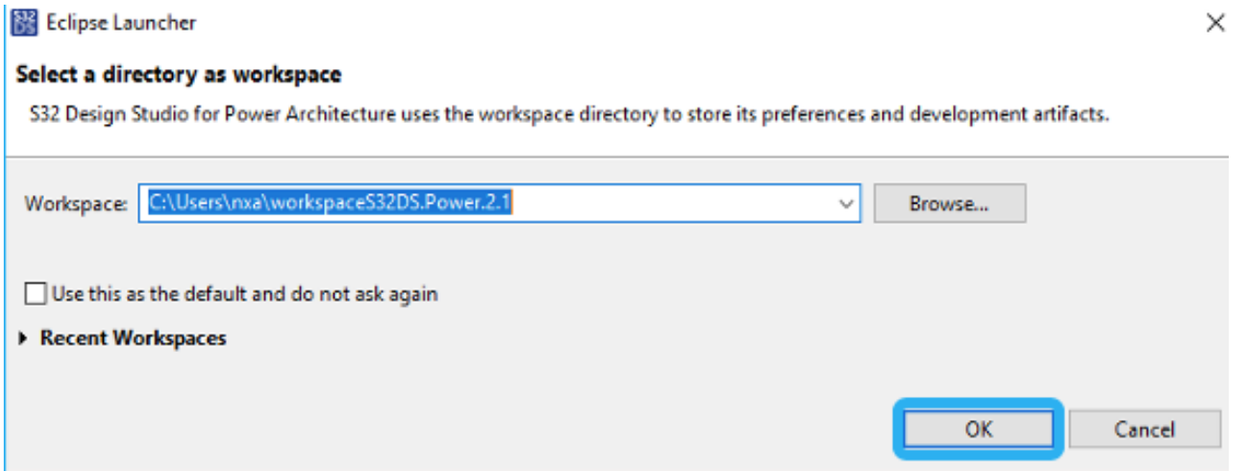
LED header JP6

PIN	DESCRIPTION
1	5 V
2	LED D20
3	LED D21
4	LED D22
5	LED D23
6	GND

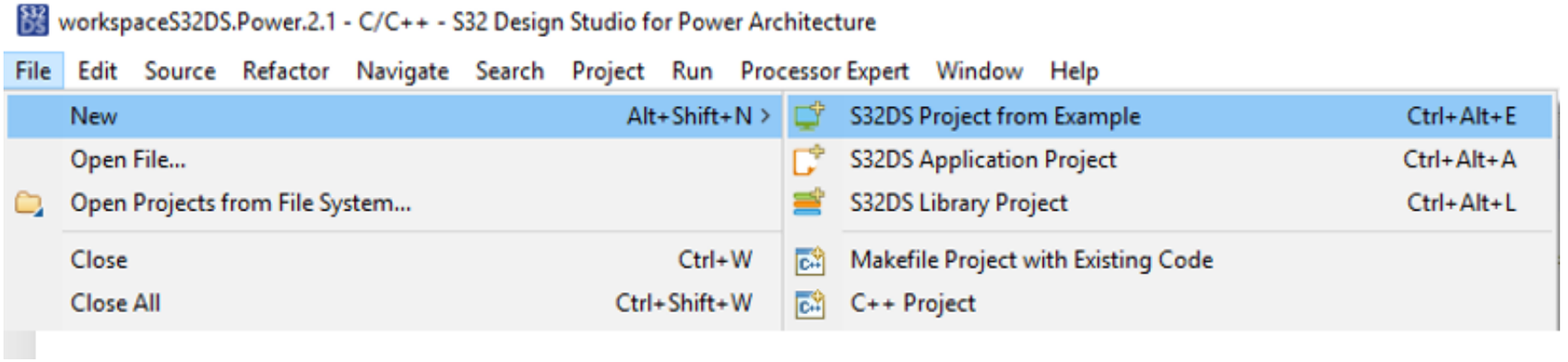


HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM CONTINUED

1. Run Design Studio for Power Architecture®.
2. Make or select a workspace then Click “OK”.

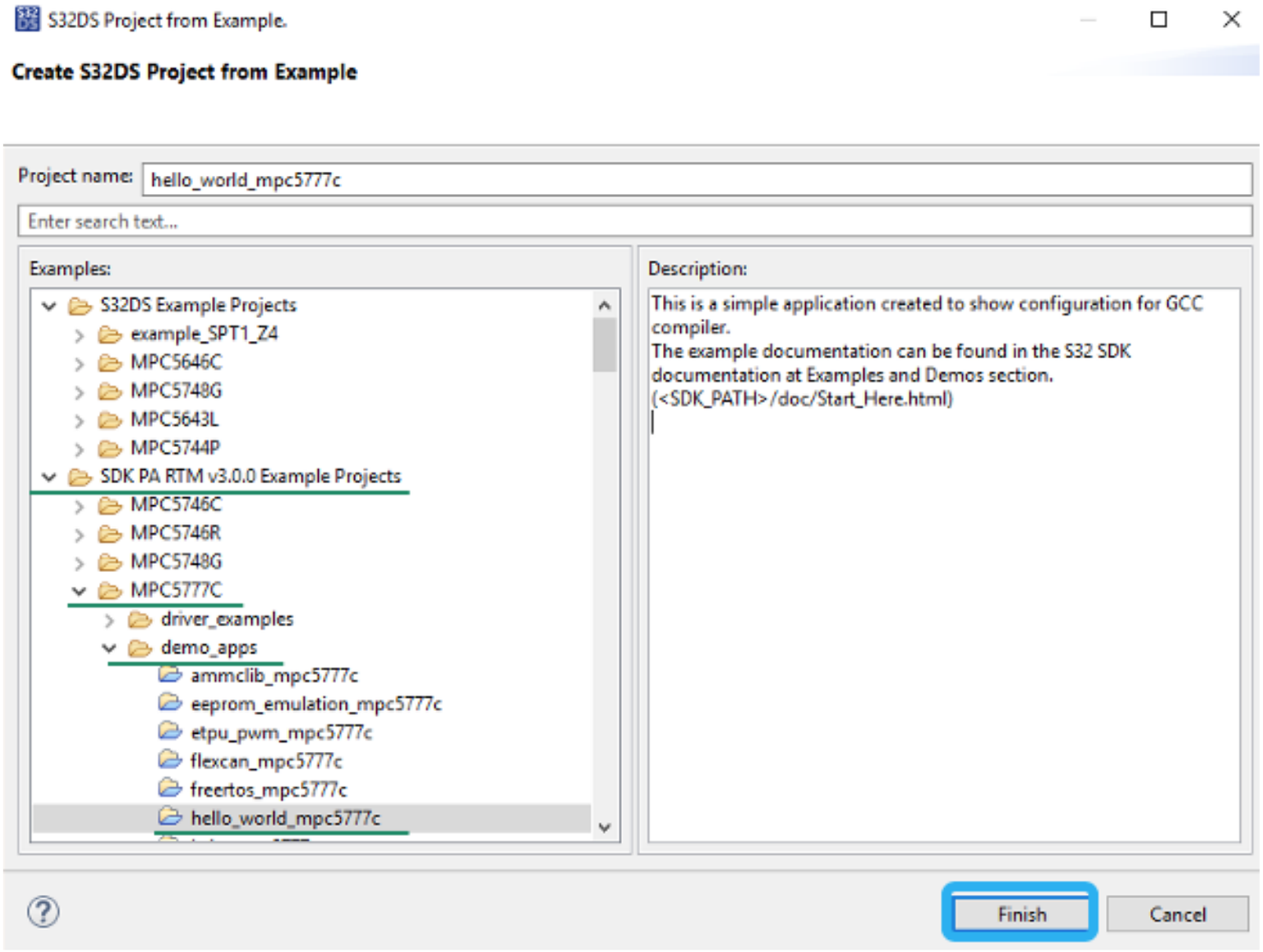


3. Start a “New” -> “S32DS Project from Example” from the File menu.



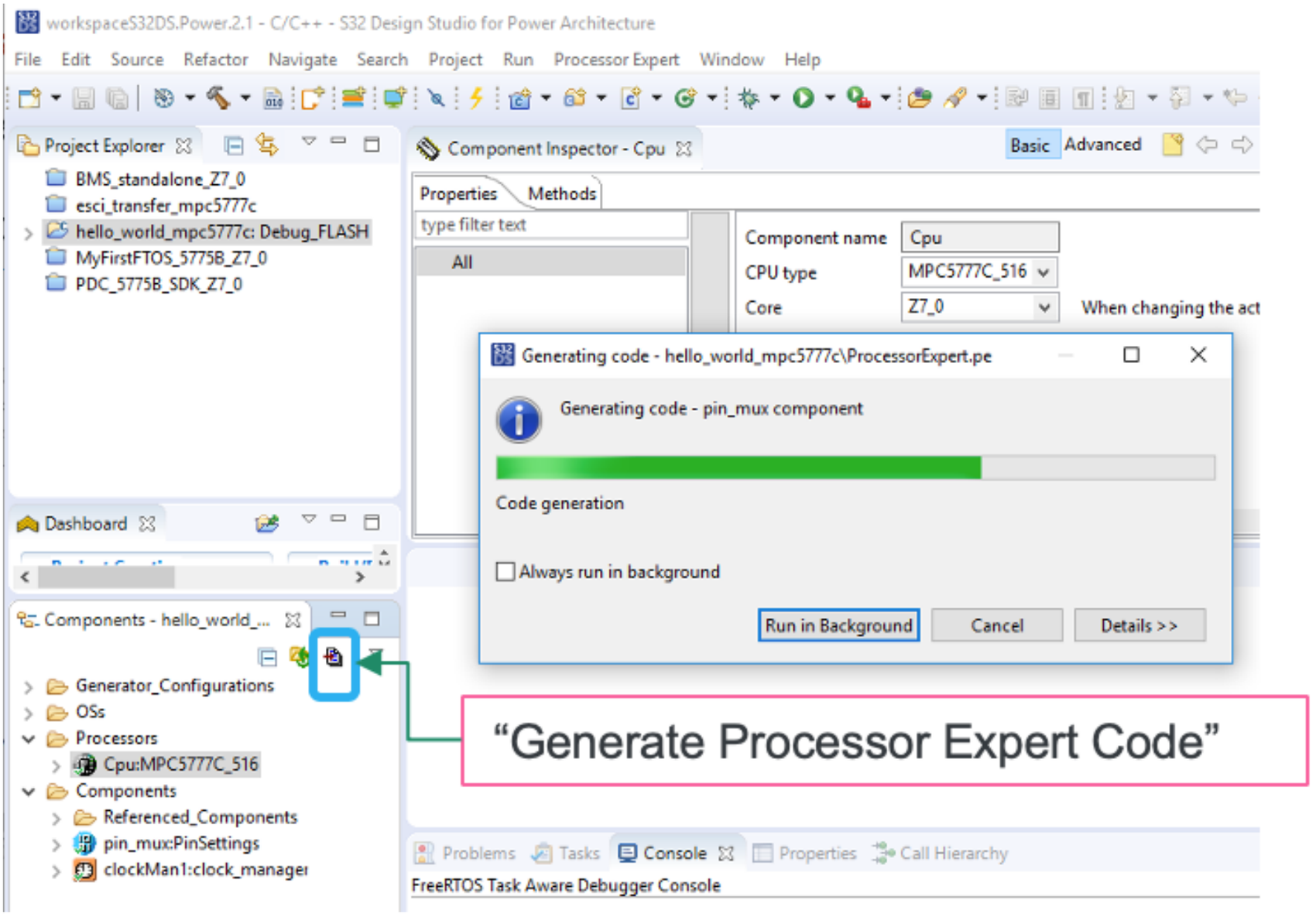
HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM CONTINUED

4. Scroll down to the "SDK PARTM v3.0.0 Example Projects," select "MPC5777C" and then select "Hello_world_mpc5777c". Then click "**Finish**."



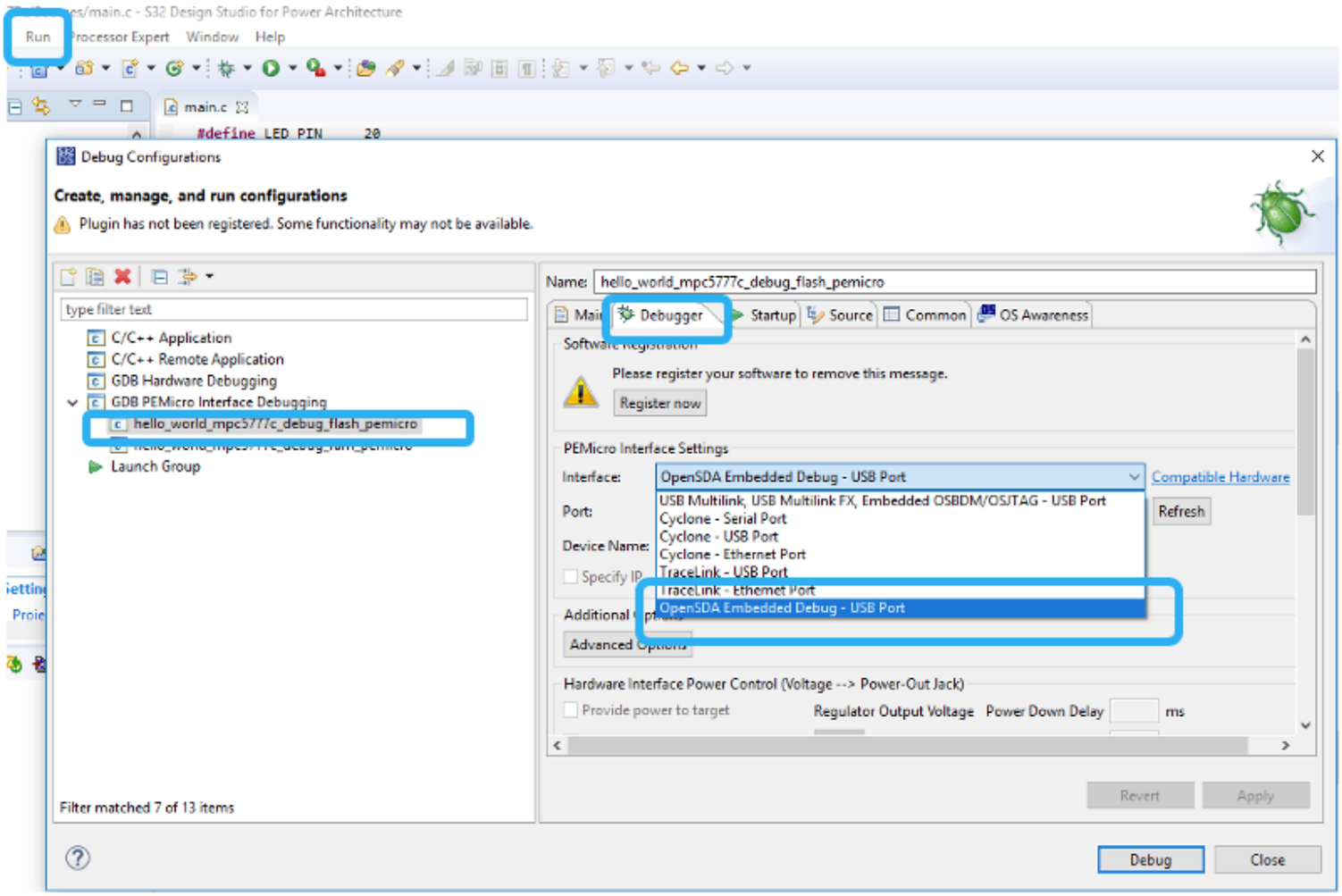
HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM CONTINUED

5. Click on the "**Generate Processor Expert Code**" icon.



HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM CONTINUED

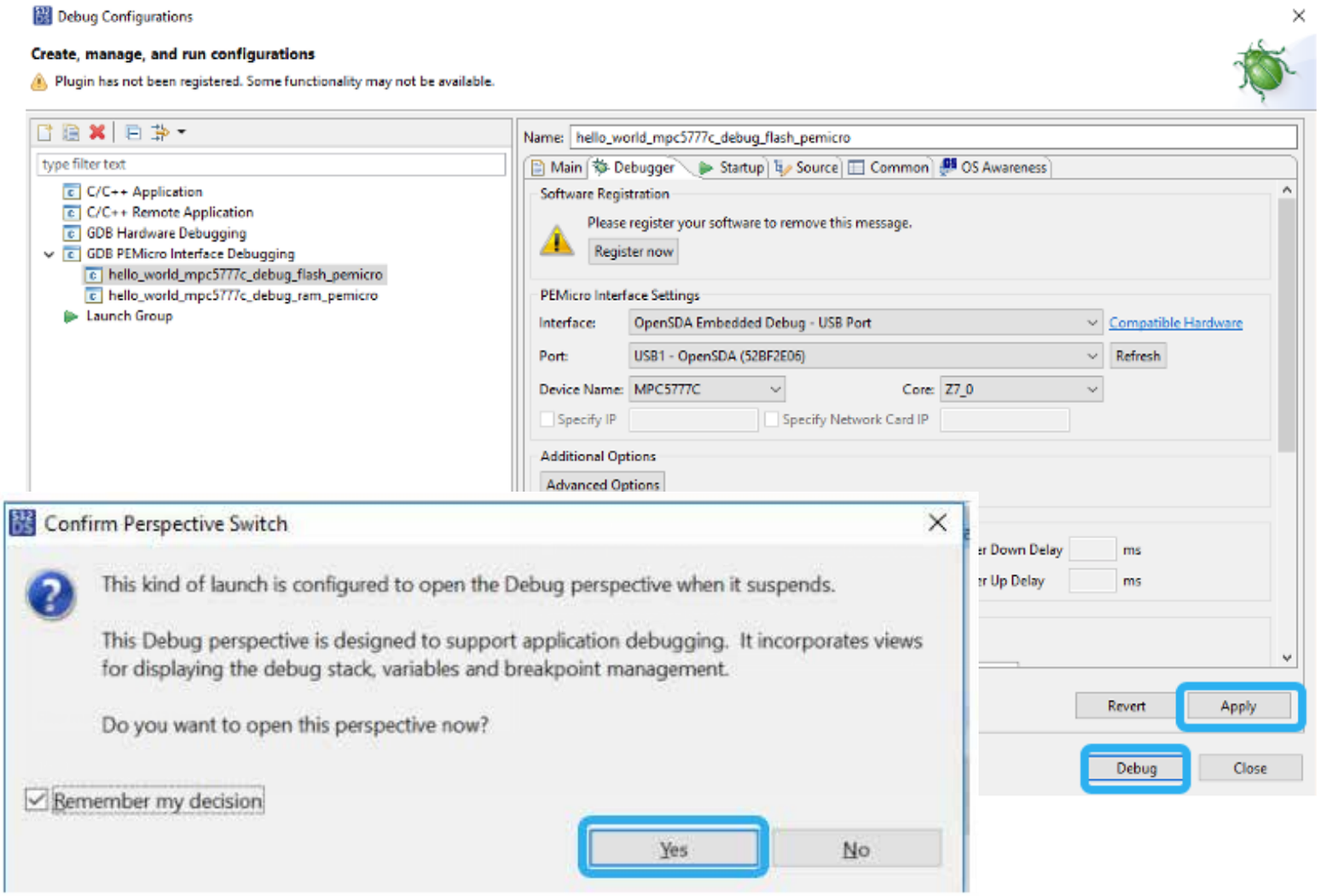
6. Click on "**Run -> Debug Configuration**…"
7. Select "**Debugger**" tab
8. Select the "**OpenSDA Embedded Debug – USB Port**" interface



HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM CONTINUED

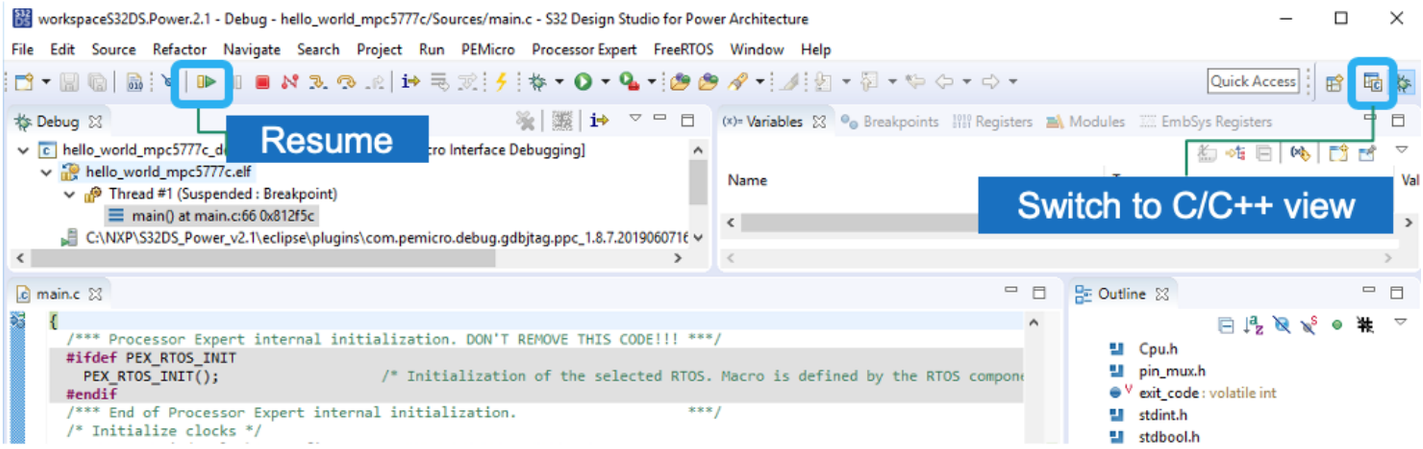
After selecting the "OpenSDA Embedded Debug" interface, if the EVB is connected to the computer, the "Port" should automatically be selected.

9. Click "**Apply.**"
10. Click "**Debug.**"
11. Click "**Yes.**"



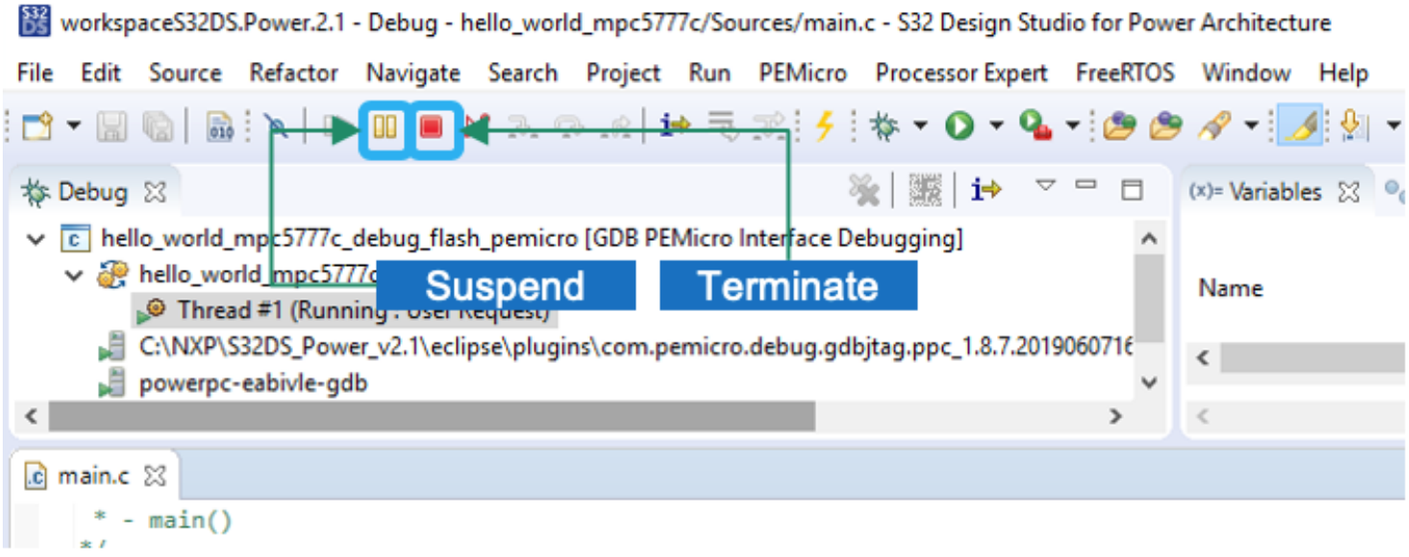
HOW TO RUN YOUR FIRST HELLO WORLD PROGRAM CONTINUED

12. Finally, click the “Resume” icon as shown below. Then user able to observe the blinking LED D20.



13. Click “Terminate” icon to terminate the program execution.

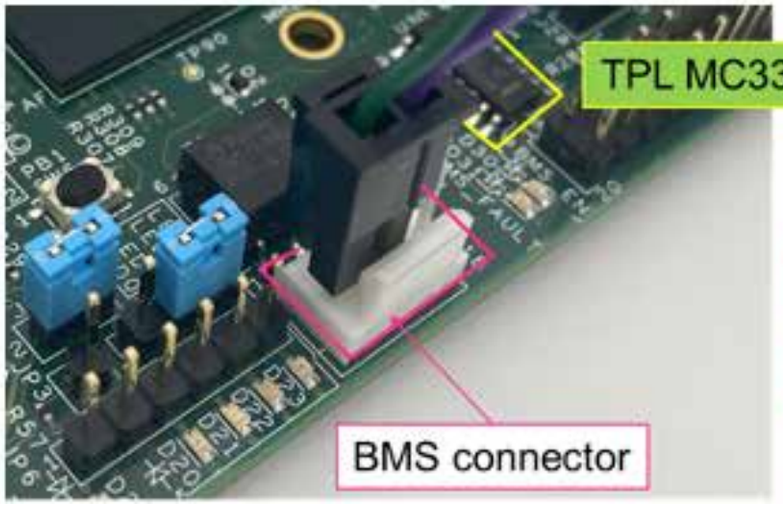
14. Click “C/C++” prospective view to back to program window.

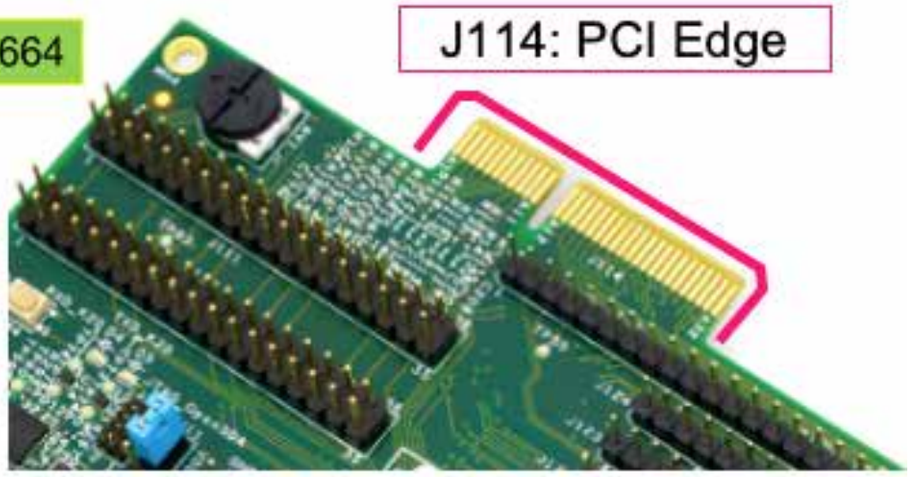


APPLICATION-SPECIFIC CONNECTIONS

- MPC5775B-EVB: Targeted for the Battery management system application evaluation
- MPC5775E-EVB: Targeted for the Inverter application evaluation
- Refer to the AN12875 application note for detailed information on the MPC5775B-EVB and MPC5775E-EVB boards

APPLICATION SPECIFIC ITEM	MPC5775B-EVB	MPC5775E-EVB
Motor control edge connector	Not supported	J114
Battery management connector	J118	Not supported





REFERENCES

For further information on the EVBs, please refer to the following references.

DOCUMENT	DESCRIPTION	LOCATION
MPC5775E RM	MPC5775E/MPC5775B Reference Manual	NXP website
MPC5775E DS	MPC5775E/MPC5775B Data Sheet	NXP website
AN12875	Getting Started with MPC5775E-EVB and MPC5775B-EVB	NXP website
OpenSDA	OpenSDA User's Guide	NXP website
S32DS	S32 Design Studio for Power Architecture v2.1 - Windows/Linux	NXP website
MC33FS6520LAE	MC33FS6520 System Basis Chip (Power Supply and Drivers) Data Sheet	NXP website
FS65SBC-SDK-SW	FS6500/FS4500 Generic Embedded Software Driver (Software Development Kit)	NXP website
TJA1100	TJA1100 100BASE-T1 PHY For Automotive Ethernet	NXP website
TJA1145	High-speed CAN transceiver for Partial Networking	NXP website
MC33664_SDS	Isolated Network High-Speed Tranceiver Short Data Sheet	NXP website
MC33664	Isolated Network High-Speed Tranceiver Full Data Sheet	NXP website
MC33771C	Battery Cell Controller Full Data Sheet	NXP website
RD33771CDSTEVB	Evaluation Board for MC33771C BCC with Isolated Daisy Chain Communication	NXP website
BATT-14CEMULATOR	14-Cell Battery Pack Emulator to Supply MC33771C BCC EVBs	NXP website
HM2102NL	Pulse Electronics Dual BMS Transformer	Pulse Electronics
HM2103NL	Pulse Electronics Single BMS Transformer	Pulse Electronics

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PRODUCT COMMUNITY

Visit **https://community.nxp.com/community/s32/MPC5xxx**

Get Started

Download installation software and documentation under **"Jump Start Your Design"** at

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