Quick Start Guide

MPC5777C-DEVB

NXP automotive system solution with the highly integrated SPC5777C MCU as well as the advanced MC33FS6520LAE system basis chip and the TJA1100 and TJA1145T/FD Ethernet and CAN FD Physical interface chips

FREEDOM DEVELOPMENT PLATFORM

GET TO KNOW THE MPC5777C-DEVB BOARD

eTPU A/B/C eMIOS

SDADC/eQADC

User LEDs
Motor Control IF

UART

LIN

NEXUS

Ethernet

PS15

Reset SW

JTAG

CANFD
SENT

Power Socket
12V

TJA
1100

DSPI

SPC
5777C

Status LEDs

Power SW
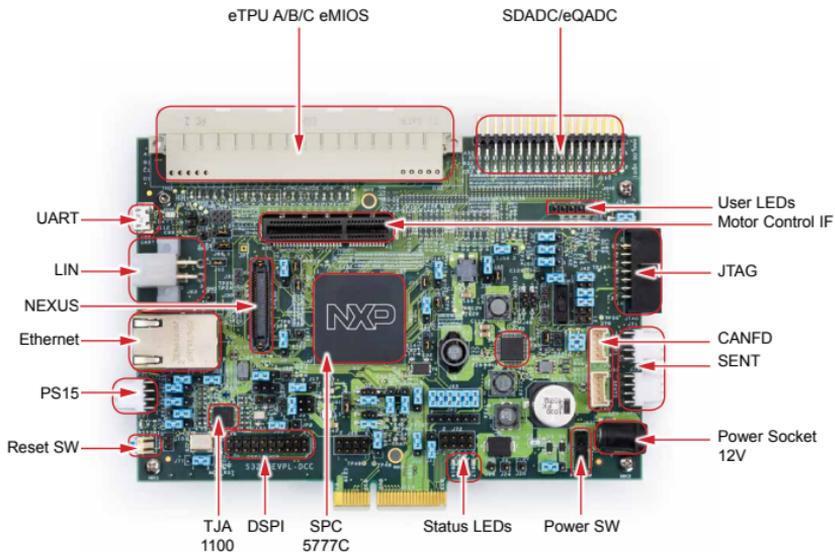
Figure 1: Top elevation of MPC5777C Development Board

MPC5777C-DEVB FEATURES

The standalone development board provides the following features:

- NXP MPC5777C Microcontroller (516 MAPBGA soldered)
- 40MHz onboard clock oscillator circuit for MCU Clocking
- User reset switch with reset status LEDs
- Power switch with Power Indication LEDs
- 4 user LEDs, freely connectable
- Standard 14-pin JTAG debug connector and 50-pin SAMTEC Nexus connector
- Micro USB / UART FDTI transceiver to interface with MCU
- NXP FS65xx Power SBC for standalone operation of MCU
- Single 12 V external power supply input to on-board Power SBC providing all of the necessary MCU voltages; power supplied to the DEVB via a 2.1mm barrel style power jack
- 1 CAN and 1 LIN connector supported by Power SBC
- 1 CAN supported via NXP CANFD transceiver TJA1145
- 1 Automotive Ethernet supported via NXP Ethernet physical interface TJA1100
- Analog/eTPU/eMIOS/DSPI/SENT/PSI5 signals available via on board connectors
- Motor Control Interface to connect with power stage board of MTRCKTSPS5744P Development Kit

MPC5777C-DEVB HARDWARE

The development board includes a complete NXP system solution. Following table describes the NXP components used in the DEVB.

Microcontroller
The SPC5777C offers 264MHz lockstep cores to support ASIL-D, 8 MB of Flash, 512 KB SRAM, CAN-FD, Ethernet, advanced complex timers and a CSE hardware security module.

System Basis Chip
The MC33FS6520LAE is providing robust, scalable power management to the SPC5777C MCU with Fail Silent safety monitoring measures that fit for ASIL D.

Ethernet PHY
The TJA1100 is a 100BASE-T1 compliant Ethernet PHY optimized for automotive use cases. The device provides 100 Mbit/s transmit and receive capability over a single Unshielded Twisted Pair cable.

CANFD PHY
The TJA1145T/FD Automotive 2Mbps CANFD physical layer interface chip

MPC5777C-DEVB PACKAGE

- NXP MPC5777C Automotive Microcontroller board
- 12V Power Supply
- Micro USB Cable
- Universal Power Adapter

STEP-BY-STEP INSTRUCTIONS

This section covers software download, development kit setup, and application control.

1 Download Software

Download installation software and documentation at **nxp.com/MPC5777C-DEVB**.

2 Download Necessary Drivers

Install the FT230x virtual COM port driver. Visit ftdichip.com/drivers/vcp.htm to download the correct driver. Select the virtual COM port (VCP) driver based on your operating system and processor architecture.

3 Install FTDI Driver

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 FTDI driver that has been downloaded.

Restart your machine.

4 Connect the power supply

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

STEP-BY-STEP INSTRUCTIONS CONTINUED

5 **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.

6 **Reset the Board**

Press the Reset button on the Development board. Welcome message will be printed in the Tera Term window as shown below.
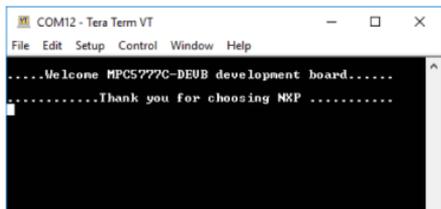
MPC5777C-DEVB REFERENCES

- MPC5777C Reference Manual
- MPC5777C Data sheet
- MPC5777C Errata
- MPC5777C Hardware Requirements/Example Circuits

SUPPORT

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

WARRANTY

Visit **www.nxp.com/warranty** for complete warranty information.

AUTOMOTIVE COMMUNITY:

https://community.nxp.com/community/s32

MPC57XXX COMMUNITIES:

https://community.nxp.com/community/s32/mpc5xxx

Get Started

Download installation software and documentation at **nxp.com/MPC5777C-DEVB**.