

## QNX BSP for phyCORE-mpc5121e

### FULL Version

### with NAND / SD-Card Support

by IBV - Echtzeit- und Embedded GmbH & Co. KG

Subject: Release Notes  
Version: 1.1.1, QNX 6.4.1  
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## 1. Features

### 1.1. Components of the BASE Version of the BSP

Component	Format	Features, Notes
Startup (BASE version)	Source	◆ Reads out MAC address from U-Boot environment in NOR flash
Serial	Source	◆ Supports MPC5121 controller PSC3, PSC4, PSC5, PSC6
FEC Network	Source	◆ Supports MPC5121 Fast Ethernet Controller (FEC) ◆ 10/100 MBit speed ◆ Half / full duplex mode ◆ MAC address is used from U-Boot environment in NOR flash ◆ Additional library "devnp-shim.so" (part of QNX) is required for use of the driver with "io-pkt"

### 1.2. Components of the FULL Version of the BSP

Component	Format	Features, Notes
Startup (FULL version)	Source	◆ Reads out MAC address from U-Boot environment in NOR flash
USB	Binary	◆ Supports MPC5121 USB HOST Controller USB0 in full-speed mode ◆ Driver is shipped as binary without support
I2C	Source	◆ Supports MPC5121 controller I2C1 and I2C2 in master mode
NOR	Binary	◆ Supports NOR flash on phyCORE-mpc5121e ◆ Driver is for generic NOR flash types and shipped as binary without support
NAND	Source	◆ Supports SLC NAND device Samsung K9K8G08U0B on phyCORE-mpc5121e ◆ NAND devices with MLC technology are not supported
RTC	Source	◆ Supports Real Time Clock on phyCORE-mpc5121e

### 1.3. Optional Driver Modules (not part of FULL Version of the BSP)

GPIO		on request
CAN	Source	<ul style="list-style-type: none"> <li>◆ Supports MPC5121 controller CAN1, CAN2, CAN3, CAN4</li> <li>◆ Supported baud rates: 50k, 100k, 125k, 250k, 500k</li> <li>◆ Setting of sample point</li> <li>◆ The driver can be access via the POSIX interface. read(), write(), select(), devctl() are supported</li> <li>◆ Multiple clients can write to and read from the same CAN device</li> </ul>
SD	Source	<ul style="list-style-type: none"> <li>◆ Supports MPC5121 SDHC controller</li> <li>◆ Due to technological reasons, not arbitrary types of SD cards are supported</li> </ul>

⇒ Please contact IBV for more information

### 1.4. Further BSPs for PHYTEC Boards

A complete list of all available QNX Board Support Packages for embedded boards by PHYTEC Messtechnik GmbH is available at:

[http://www.ibv-augsburg.net/media/pdf/QNX\\_BSP\\_Overview\\_PHYTEC.pdf](http://www.ibv-augsburg.net/media/pdf/QNX_BSP_Overview_PHYTEC.pdf)

## 2. Target System

- ◆ Phytec CPU Module phyCORE-mpc5121e/3-tiny (PCB# 1326.1):
  - ◆ Freescale MPC5121 applications processor, Rev. 3, M36P, 400MHz
  - ◆ 128 MB or 256 MB DDR2-RAM
  - ◆ 32 MB NOR-Flash
  - ◆ 1024 MB NAND-Flash, SLC, Samsung K9K8G08U0B
  - ◆ Bootloader U-Boot 2009.06 (Dec 18 2009 - 08:54:25)
- ◆ Phytec Developmentboard phyCORE-MPC512x, PCM-926 (PCB# 1323.1A)
- ◆ Operating system QNX 6.4.1

## 3. Host Development System

- ◆ QNX Momentics 6.4.1
- ◆ Terminal emulation program (Qtalk, Momentics IDE Terminal, tip, HyperTerminal, etc.)
- ◆ RS-232 serial port or a USB-to-serial adapter, and a straight-through serial cable
- ◆ Ethernet link

## 4. Known Issues for This BSP

- ◆ Card insertion and removal detection isn't implemented in the SD card driver. The SD card has to be inserted prior to starting the driver, and the card must not be removed while the driver is running. Detecting the write protection switch of the SD card isn't implemented in the SD card driver.
- ◆ The usage of some technologies may require special licenses.

## 5. Change History

### 5.1. Changes in Version 1.1.1

- ◆ FEC Network (bugfix): removed memory leak in case of lost RX packets
- ◆ FEC Network (bugfix): re-activate receiving after reading out from RX descriptor ring
- ◆ FEC Network (bugfix): statistic counter are taken from software counter

## 6. Sales / Technical Support

To get this BSP or to obtain technical support for the BSP, please contact:

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