

# **LPE-C122**

## **LPE-C122 User Manual**

Version: V1.0 2015D25

To properly use the product, read this manual thoroughly is necessary.

## Revision History

Date	Revision	Description
2015/12/25	1.0	Document creation.

## © Copyright 2010 TPM

The product, including the product itself, the accessories, the software, the manual and the software description in it, without the permission of TPM Inc. (“TPM”), is not allowed to be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except the documentation kept by the purchaser for backup purposes.

The names of products and corporations appearing in this manual may or may not be registered trademarks, and may or may not have copyrights of their respective companies. These names should be used only for identification or explanation, and to the owners’ benefit, should not be infringed without any intention.

The product’s name and version number are both printed on the product itself. Released manual versions for each product design are represented by the digit before and after the period of the manual version number. Manual updates are represented by the third digit in the manual version number.

### Trademark

- **MS-DOS** and **Windows 95/98/NT/2000/XP**, **Visual Studio**, **Visual C++**, **Visual BASIC** are registered trademarks of Microsoft.
- **BCB (Borland C++ Builder)** is registered trademark of Borland.
- **MULTIPROG** is registered trademark of KW software.
- Other product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies.

## Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. Disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension card. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the voltage available in your area.
- If the power supply is broken, contact a qualified service technician or your retailer.

## Operational safety

- Please carefully read all the manuals that came with the package, before installing the new device.
- Before use ensure all cables are correctly connected and the power cables are not damaged. If you detect and damage, contact the dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- If you encounter technical problems with the product, contact a qualified service technician or the dealer.

# Contents

**CONTENTS** ..... 5

**1. LPE-C122 INTRODUCTION** ..... 6

    1.1. FEATURES..... 7

    1.2. SPECIFICATIONS..... 7

        1.2.1. Placement of the Board ..... 7

        1.2.2. CAN Bus Pin Assignment (CN1)..... 8

        1.2.3. Terminal Resistors (JP1 & JP2) ..... 9

        1.2.4. Card Number Switch (RSW1) ..... 9

    1.3. CONNECTION CABLE ..... 10

# 1. LPE-C122 Introduction

The Controller Area Network (CAN) is a serial, asynchronous, multi-master communication protocol for connecting electronic control modules, sensors and actuators in automotive and industrial applications.

The LPE-C122 is a dual ports isolated special communication card consisting of CAN controllers. It also performs the error detection, bus arbitration, stuffing and error handling on the CAN-bus

The more detailed introduction of LPE-C122 is in the following subsection. The functional block is illustrated in Figure 1-1.

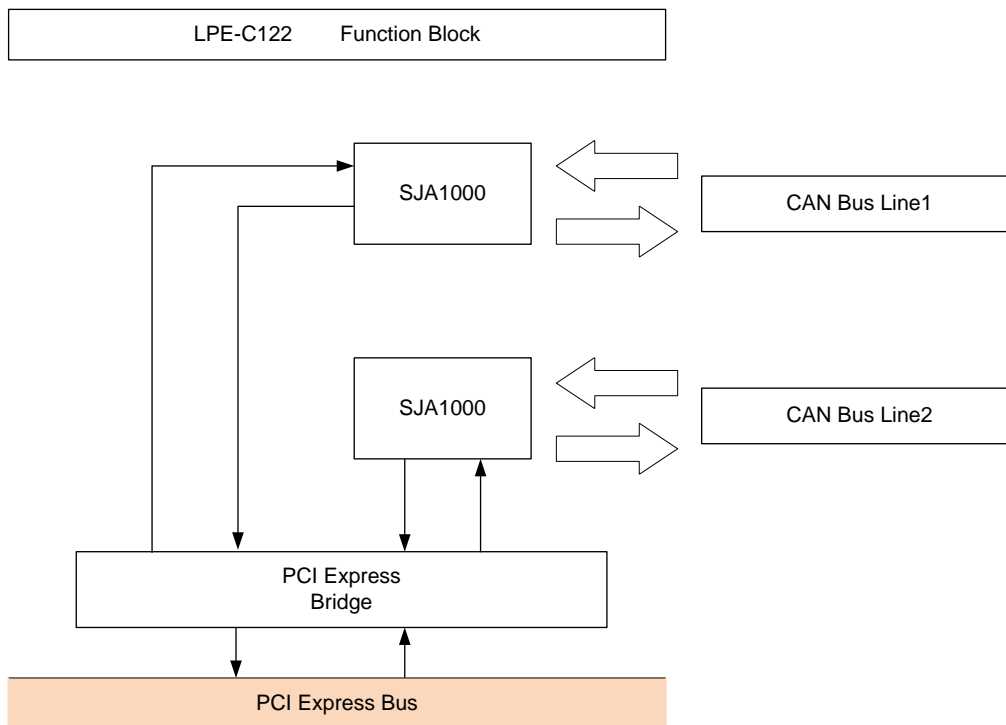


Figure 1-1: LPE-C122 functional block

## 1.1. Features

- PCI Express x1 compliant
- Low profile form factor
- CAN 2.0 A/B Protocol

## 1.2. Specifications

- Two independent CAN communication operation
- Up to 1Mbit/s programmable transfer rate on each port
- Compatible with CAN specification 2.0 parts A and B
- Direct memory mapping to the CAN controllers
- Powerful master interface for CANopen and DeviceNet application layer protocol
- 120 ohm termination resistor selected by jumper
- 3750 VRMS isolation voltage
- DB15 male connector for dual ports

### 1.2.1. Placement of the Board

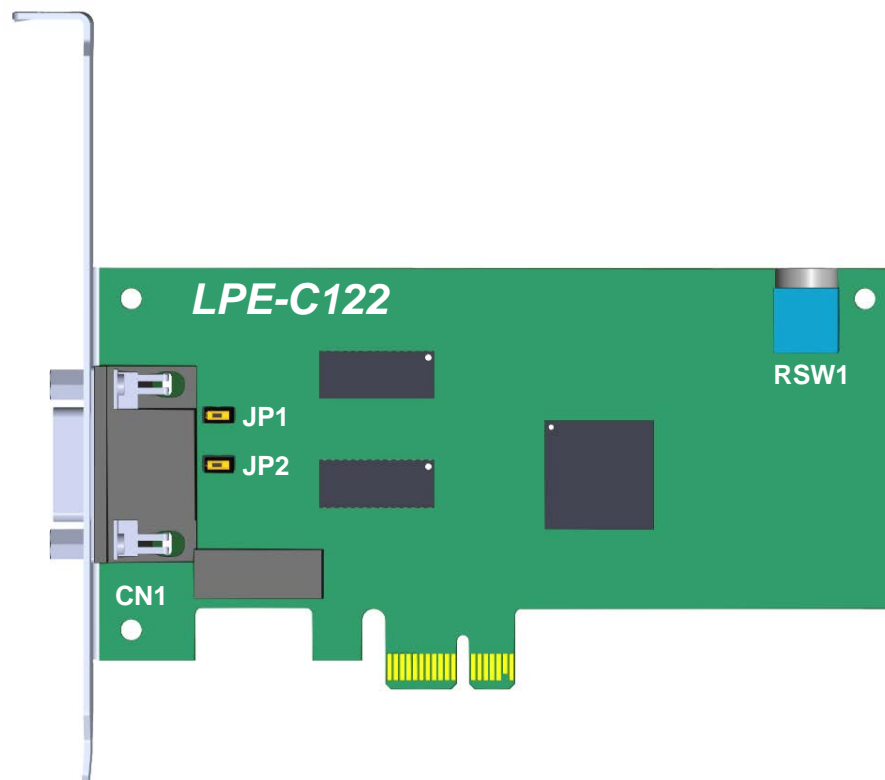


Figure 1-2: placement of LPE-C122 control board

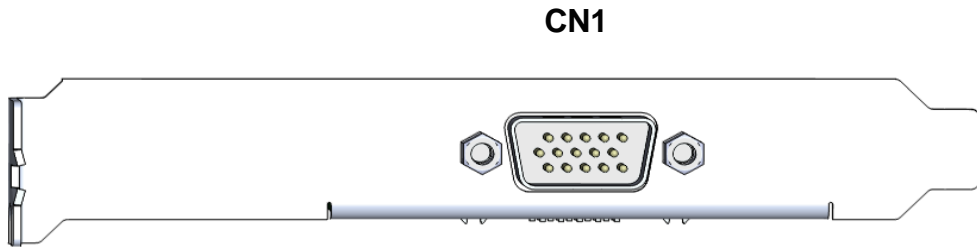


Figure 1-3: I/O interfaces of LPE-C122

Label	Description
CN1	CAN ports, port1 and port2
RSW1	Card ID
JP1	Terminal Resistor for port1
JP2	Terminal Resistor for port2

### 1.2.2. CAN Bus Pin Assignment (CN1)

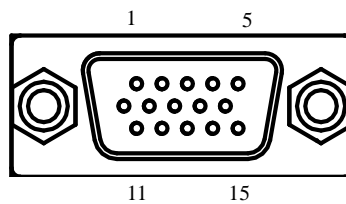


Figure 1-4: DB15 male connector for Can bus port 1 and 2

Pin	Label
2	CANL_1
3	GND
7	CANH_1
11	CANL_2
12	GND
13	CANH_2



### 1.2.3. Terminal Resistors (JP1 & JP2)

A 120 Ohm terminal resistor is installed for each port. You can set the terminator resistor if necessary to match impedance. Each port has a separate resistor.



Figure 1-5: TR jumpers

### 1.2.4. Card Number Switch (RSW1)

If there are 2 LPE-C122 cards installed in the system, it is necessary to specify the ID for each card respectively by configuring the DIP rotary switch as shown below.



Figure 1-6: DIP rotary switch on LPE-C122

Label	Description
#0 ~ #7	Card #0 to card #7
#8 ~ #F	Reserved

### 1.3. Connection Cable

The 15-pin D-Sub connector is used to connect 2 Can bus. Use the CAN bus on the provided “Y Cable from DB15 to Two DB9MM 0.5M” (included in the package).

P/N: 61-12272E2-059

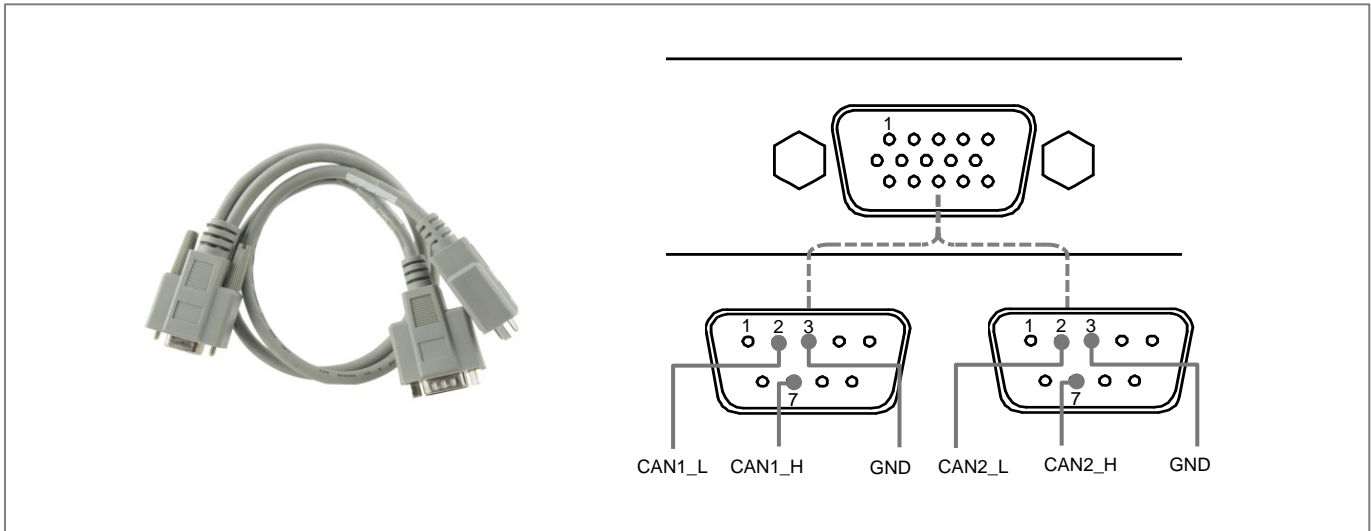


Figure 1-7: Illustration of cable