

DATA SHEET

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Application notes
I²C Specific information

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Application notes

APPLICATION NOTES

The following abstracts are of the application notes that can be found printed in-full in Philips Semiconductor's Data Handbook IC20 *80C51-based 8-bit microcontrollers*, ordering code 9397 750 00963.

AN422 - Using the 8XC751 microcontroller as an I²C-bus master

The 83C751/87C751 combines the benefits of a high-performance microcontroller with on-board hardware supporting the I²C-bus interface, and thus allows systems to be completely software defined. This article shows how best to connect the microcontroller to an I²C-bus configuration, describes the 8XC751 I²C hardware and gives a programming example demonstrating a bus-master code.

AN425 - Interfacing the PCF8584 I²C-bus controller to 80C51 family microcontrollers

This application note describes how to use the PCF8584 I²C-bus controller with the 80C51 family of microcontrollers. A typical way of connecting the PCF8584 to an 80C31 is given, and some basic software routines are described showing how to transmit and receive bytes in a single master system. There is also an example of how to use these routines in an application that uses the I²C circuits on an I²C demonstration board.

AN95068 - C routines for the PCF8584

This application note demonstrates how to write a driver in C for the Philips PCF8584 I²C-bus controller IC and includes a set of application interface routines to quickly implement a complete PC multimaster system application.

The driver supports polled or interrupt driver message handling, slave message transfers and multimaster system applications. Furthermore, it is suitable for use in conjunction with real-time operating systems like OS-9 or pSOS+.

AN430 - Using the 8XC751/752 in multimaster I²C applications

This article discusses the most important technical features of the I²C-bus and describes the special I²C hardware interface of the 8XC751/752. The author gives an example of how the microcontroller can be programmed for a multimaster environment along with

details of the software interface for the communications routes.

AN433 - I²C slave routines for the 83C751

The 8XC751 microcontroller can be programmed as an I²C-bus master, slave, or both. This article focuses on its use as a slave and gives a programming example demonstrating the communications routes of the 8XC751 as a slave on the I²C-bus. This example complements the program given in article AN422.

AN434 - Connecting a PC keyboard to the I²C-bus

This application note illustrates the use of the 8XC751 microcontroller to interface a standard PC/AT keyboard to the I²C bus. The application software example easily fits within the 2K-bytes code and 64-bytes data memory provided on the 8XC751.

AN438 - I²C routines for 8XC528

This article presents a set of software routines to drive the I²C interface in 8XC528-type microcontrollers. A description of the I²C interface is given along with examples of how to use these routines in PL/M-51, C and assembly source code.

AN444 - Using the P82B715 I²C extender on long cables

The P82B715 I²C buffer was designed to extend the range of the logical I²C-bus out to 50 m. This application note describes the results of testing the buffer on several different types of cables to determine the maximum operating distance possible. The results are summarized in a table for easy reference.

ETV/AN89004 - PLM51 I²C software interface IIC51 (version 0.5)

This document is a user manual for the I²C software module IIC51, and is intended for Intel PLM51 users who need to control an I²C-bus. There is a general description on the IIC51 software module, although some basic knowledge about I²C and Intel PLM51 is assumed.

EIE/AN91007 - I²C driver routines for 8XC751/1 microcontrollers

This report described the I²C drivers that are written for the 8XC751/2 and explains the structure of the software and

how to use the routines. The software is written around a set of basic routines and a message handler.

The message handles contain no specific 8XC751 code so, by rewriting a set of basic routines, the software example can easily be modified for any other bit level I²C interface.

Programming the I²C interface

This article is taken from Dr. Dobb's Journal and gives a good overview of I²C-bus basics. It describes hardware requirements, building a framework and how to connect to the I²C-bus.

The following application note is printed separately. The full version can be ordered from Philips Semiconductors.

AN94078 - P90CL301 I²C driver routines

This application note demonstrates how to write an I²C-bus driver for the Philips P90CL301 microcontroller and includes a set of application interface software routines to quickly implement a complete I²C multimaster system application.

The driver allows you to link modules to your application software and includes a head-file into the application source programs. A programming example on how to use the driver is also listed in the article.

The driver supports polled or interrupt driven message handling, slave message transfer and multimaster system applications. Furthermore, it is suitable for use in conjunction with real-time operating systems such as pSOS+.

The I²C-bus from theory to practice

This 300-page book covers the I²C-bus history, protocol, applications and development tools, and is intended both for engineering students and professional electronics engineers. The book, and its accompanying software disk, may be ordered directly from the publisher, John Wiley & Son Ltd UK, telephone number +44 (0) 1243 770216, ISDN: 0471962686.