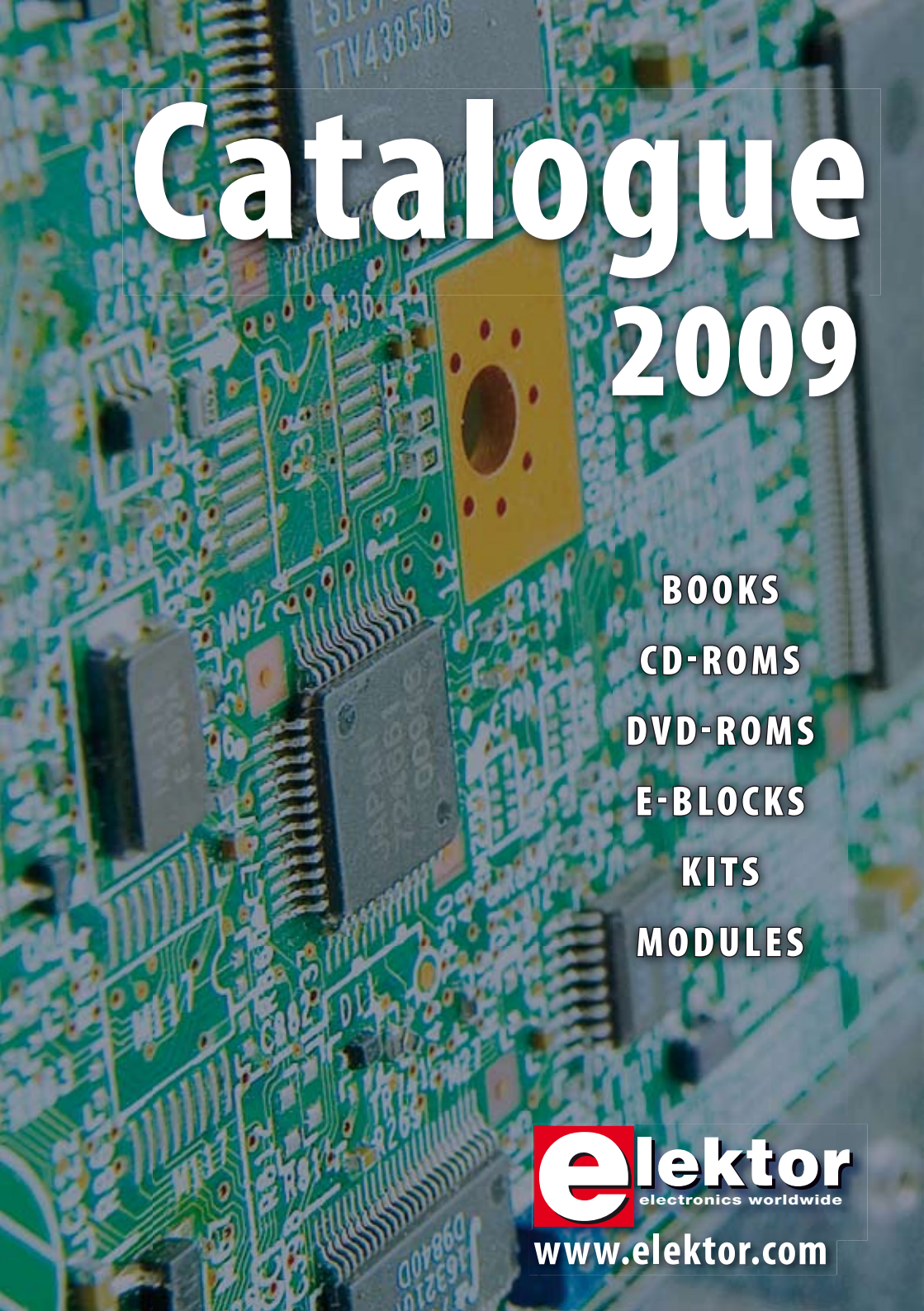

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Electronics

The 30x Circuits Series

The 30x series of Summer Circuit compilation books have been bestsellers for many years. You can use these books not only for building the circuits described, but also as a treasure trove of ideas or circuit adaptions for your own experiments. Many readers have found in these books that new approach, new concept, or new circuit they were looking for.

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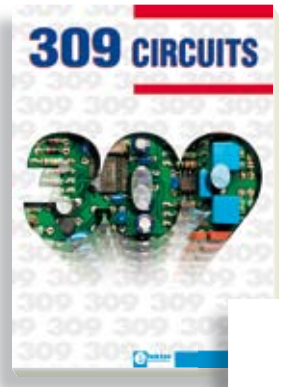
Among many other inspiring topics, the following categories are well presented in these books: test & measurement; RF (radio); computers & peripherals; audio & video; hobby & modelling; microcontrollers; home & garden; power supplies & battery chargers; etcetera.



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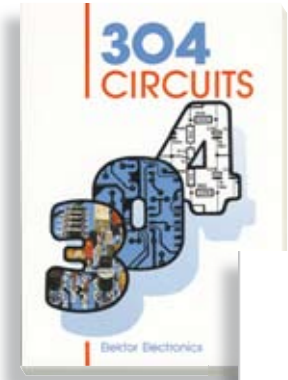

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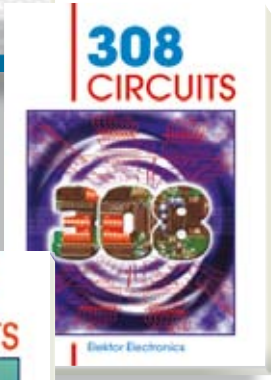

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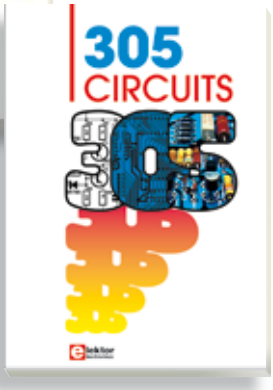

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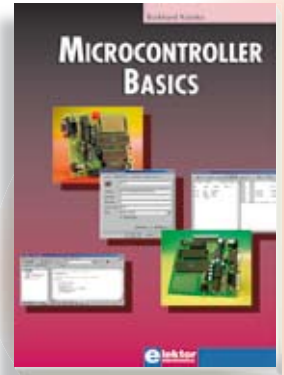
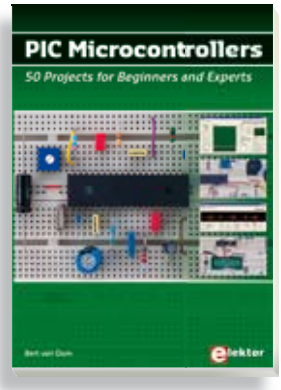
Microcontrollers



Microcontroller Basics

Microcontrollers have become an indispensable part of modern electronics. They make things possible that vastly exceed what could be done previously. Innumerable applications show that almost nothing is impossible. There's thus every reason to learn more about them. This book offers more than just a basic introduction. It clearly explains the technology using various microcontroller circuits and programs written in several different programming languages. In the course of the book, the reader gradually develops increased competence in converting his or her ideas into microcontroller circuitry.

ISBN 978-0-905705-67-5 | 230 pages | £19.95 | US $39.90

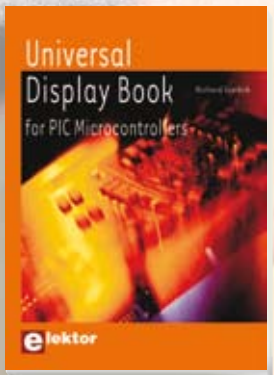


PIC Microcontrollers

50 Projects for Beginners and Experts

This hands-on book covers a series of exciting and fun projects with PIC microcontrollers. You can build more than 50 projects for your own use. The clear explanations, schematics, and pictures of each project on a breadboard make this a fun activity. You can also use this book as a study guide. The technical background information in each project explains why the project is set up the way it is, including the use of datasheets. Even after you've built all the projects this book will still be a valuable reference guide to keep next to your PC.

ISBN 978-0-905705-70-5 | 446 pages | £27.95 | US $55.90

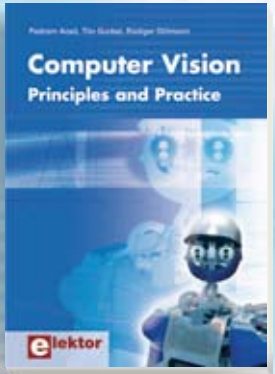


Universal Display Book for PIC Microcontrollers

This book begins with simple programs to flash LEDs, and eventually by stages to use other display indicators such as the 7-segment display and alphanumeric liquid crystal displays. As the reader progresses through the book, bigger and upgraded PIC chips are introduced, with full circuit diagrams and source code, both in assembler and C. In addition, a small tutorial is included using the MPLAB programming environment, together with the EAGLE schematic and PCB design package to enable readers to create their own designs using the book's many case studies as working examples to work from.

ISBN 978-0-905705-73-6 | 192 pages | £23.00 | US $46.00

Robotics



Computer Vision

Principles and Practice

Computer vision is probably the most exciting branch of image processing, and the number of applications in robotics, automation technology and quality control is constantly increasing. Unfortunately entering this research area is, as yet, not simple. Those who are interested must first go through a lot of books, publications and software libraries. With this book, however, the first step is easy. The theoretically founded content is understandable and is supplemented by many practical examples.

ISBN 978-0-905705-71-2 | 320 pages | £32.00 | US $64.00

Programming

Visual Basic for Electronics Engineering Applications

5.0, 6.0, VBA, .NET, 2005

This book is targeted towards those people that want to control existing or self-built hardware from their computer. After familiarizing yourself with Visual Basic, its development environment and the toolset it offers are discussed in detail. Each topic is accompanied by clear, ready to run code, and where necessary, schematics are provided that will get your projects up to speed in no time.

ISBN 978-0-905705-68-2 | 476 pages | £29.95 | US $59.90

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Microcontroller Systems Engineering with Flowcode

45 projects for PIC, AVR and ARM

Flowcode is one of the world's most advanced graphical programming languages for microcontrollers. This book covers a series of exciting and fun Flowcode projects. You can build the projects for your own use. Or you can use the book as a study guide to learn more about microcontroller systems engineering and the PIC, AVR and ARM microcontrollers. The book starts very simply with a tutorial project and step-by-step instructions. As you go along the projects increase in difficulty and the new concepts are explained. Each project has a clear description of both hardware and software with pictures and diagrams, which explain not just how things are done but also why.

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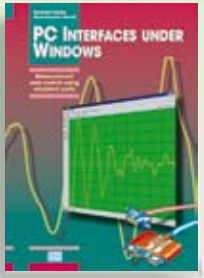

PC Interfaces under Windows

Measurement and control using standard ports

PC Interfaces can be used for more than just the printer, mouse, modem and joy-stick! While it was relatively easy to directly access PC interfaces using a DOS computer, under Windows things are not all that simple. This book shows you how it can be done. The authors describe the DIY construction and programming of a number of highly interesting circuits.

ISBN 978-0-905705-65-1 | 265 pages | £27.95 | US $55.90

Available in February 2009

USB and PS/2 Mouse Interfacing

In Detail

The mouse is one of the best proven, widely used and inexpensive man-machine interfaces ever devised, yet its presence in the world of embedded systems is still a rarity. This book describes in-depth how to connect the mouse into new embedded applications. It details the two main interface methods, PS/2 and USB, and offers applications guidance with hardware and software examples plus tips on interfacing the mouse to typical microcontrollers. If you need to interface an embedded system to a mouse (PS/2 or USB), then this book will prove an invaluble tool. A wealth of clear illustrations enhance this highly readable text.

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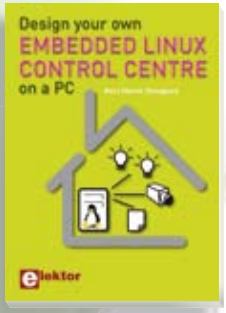
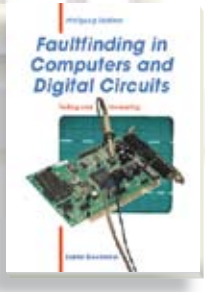


Design your own Embedded Linux control centre on a PC

This book covers a do-it-your-self system made from recycled components. The main system described in this book reuses an old PC, a wireless mains outlet with three switches and one controller, and a USB webcam. All this is linked together by Linux. The book will serve up the basics of setting up a Linux environment – including a software development environment – so it can be used as a control centre. The book will also guide you through the necessary setup and configuration of a webserver, which will be the interface to your very own home control centre.

ISBN 978-0-905705-72-9 | 234 pages | £24.00 | US $48.00



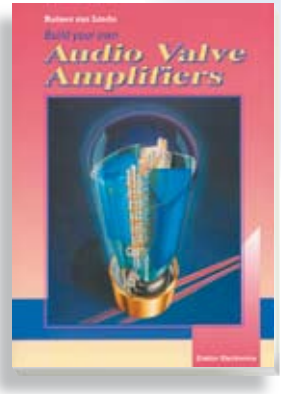
Faultfinding in Computers and Digital Circuits

Testing and Measuring

Modern electronic equipment is characterized by the predominance of digital techniques, high clock rates and complexity. This applies not only to specialized equipment such as microprocessor systems, microcontrollers and "industrial" PCs, but also to consumer items such as personal computers, multimedia devices, digital television and so on. The knowledge and technical skills needed to put such equipment into service, and to maintain it in good working order, go beyond the level of simple self-help tips and basic measurements. The object of this book is to help the reader to acquire this knowledge and understanding.

ISBN 978-0-905705-60-6 | 627 pages | £31.15 | US $62.30

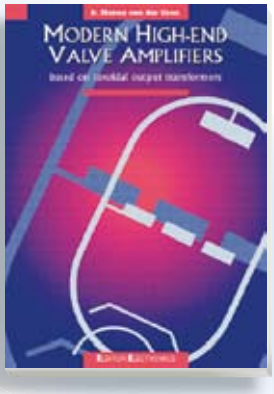
Audio



Build your own Audio Valve Amplifiers

To many people, the thermionic valve or electron tube is history. However, whether it is nostalgia, interest in the technical parameters, the appeal of a gleaming amplifier chassis with softly glowing valves or perhaps the firm conviction that the sound of a valve cannot be bettered, it is a fact that the valve is making a come-back. This book contains, apart from construction projects for preamplifiers, power amplifiers, and amplifiers for musical instruments, information on the operation of electron tubes, while the first chapter gives a short history of the valve.

ISBN 978-0-905705-39-2 | 253 pages | £15.55 | US $31.00



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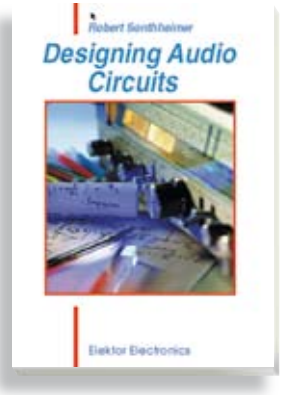
based on toroidal output transformers

Valve amplifiers are regarded by many to be the ne plus ultra when it comes to processing audio signals. The combination of classical technology and modern components has resulted in a revival of the valve amplifier. The use of toroidal-core output transformers, developed by the author (Menno van der Veen) over the past 15 years, has contributed to this revival. The most remarkable features of these transformers are their extremely wide frequency ranges and their very low levels of linear and nonlinear distortion.This book explains the whys and wherefores of toroidal output transformers at various technical levels and offers innovative solutions for achieving perfect audio quality. Do-it-yourself builders, as well as persons who want to gain a deeper technical understanding of the complex world of audio transformers, valve amplifiers and audio signal processing, will find this book a rich and useful source of information.

ISBN 978-0-905705-63-7 | 264 pages | £27.95 | US $55.90



Designing Audio Circuits

How does speech, music, or, indeed, any sound get from the CD to the loudspeaker? This is a question that many people keep on asking and to which this book endeavours to give a comprehensible answer. Understanding the background of the process is a first requirement, which is why the author in the description of single components makes clear what exactly happens in the component. Designing circuits is well nigh impossible without an understanding of the various networks involved in the conversion of the input sound to the sound emanating from a loudspeaker. To this end, the author describes four important basic circuits using an operational amplifier, a component without which modern audio circuits can no longer be imagined. Building circuits, including ancillary and special ones, forms the practical parts of this book.

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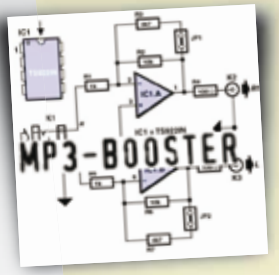

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actuators & sensors mechanical & electronic design

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Software Tools & Hardware Tips

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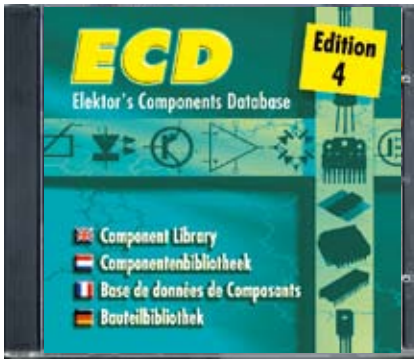

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Kits

Remote Control by Mobile Phone

(November 2008)

Remote control using mobile phones and SMS (Text Messaging) is in great demand but many systems on sale suffer from imperfections. This ingenious design combines powerful capabilities with low technical overheads. It has programmable AC mains switching outlets plus status reports by text message and alarm-activated delivery of GPS data.

Kit of parts, incl. PCB, programmed controller and all parts

Art. # 080324-71 | £54.00 | US $99.00

Communicating with CAN

(October 2008)

The CAN (Controller Area Network) protocol is now over 20 years old, but it's still frequently used these days. It was specially designed for use in environments where you have a lot of electromagnetic interference. Despite the fact that the CAN protocol is a serial protocol, it can't just be connected to (the serial port of) a computer. This all-round USB-CAN adapter is a compact and simple solution. With the help of the accompanying software you can follow all data communications taking place and carry out operations such as filtering and storage at the flick of a (mouse) switch.

PCB, partly populated

Art. # 071120-71 | £54.90 | US $109.80

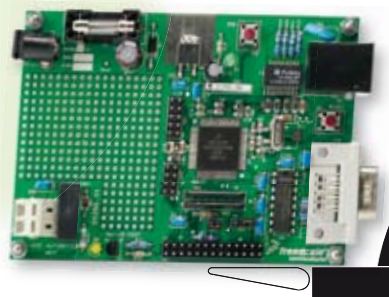
DCC Command Station

(September 2008)

Electronics is making more and more inroads into the domain of model trains. Trains are now controlled with digital codes, and in many cases the entire system can be operated from a computer. Elektor presents a design for the device that forms the heart of a digitally controlled model railway: the DCC Command Station. The computing power in this design is provided by a high-performance ARM7 processor.

Kit of parts incl. programmed ARM module

Art. # 070989-71
£88.50 | US $177.00



Elektor Internet Radio

(April 2008)

In the good old days, you had to modulate audio signals onto an RF carrier so they could be received and demodulated to produce something more or less audible. Nowadays things are different: audio signals are compressed and put into IP packets that are 'streamed', and you can access every Internet radio programme in the world by receiving, buffering and decompressing these packages. This is all very easy with the Elektor Internet Radio. State-of-the-art hardware and all open-source!

PCB, SMD-populated

Art. # 071081-71 | £115.00 | US $230.00

DigiButler

(May & April 2008)

A low-cost home automation server based on a Freescale Coldfire 32-bit microcontroller. The project has been designed with open source in mind and doubles as a powerful Coldfire development system using free CodeWarrior software from Freescale. DigiButler activates electrical appliances in and around the home, accepting on/off commands from a WAP phone, through an Ethernet network or via a webpage at an allocated IP address and with full access security.

Kit of parts including SMD-stuffed PCB, programmed microcontroller, all leaded parts and CD-ROM containing both Elektor articles, TBLCF documentation, datasheets, application notes and source code files

Art. # 071102-71 | £29.00 | US $58.00

Data Logger "deLuxe"

(March 2008)

We have had the pleasure of proposing various data acquisition units over the last few years. This Datalogger "deLuxe" is a nice exercise in product development. It actually utilises an SD card as the media for data storage. The hardware design is compact and that makes the firmware and software features even more interesting.

Kit of parts incl. PCB, programmed controller and display

Art. # 070745-71 | £73.20 | US $146.40

Kits

ECIO PLC

(March 2008)

This ECIO PLC board is suitable for quite complex control and automation projects. An ECIO acts as the brains of the board that has relays, opto-isolators, CAN (!) connectivity and an LCD. All this I/O capacity together with Flowcode allows the board to act as a versatile, powerful PLC. The LCD module is used to display ASCII characters to the user as a means of troubleshooting during the software development stage or for monitoring the system.

Kit of parts incl. PCB, ECIO-module and all other components

Art. # 070786-71 | £76.00 | US $152.00

USB Flash Board

(November 2007)

Flash microcontrollers are easy to program. In the past, program code was usually downloaded via a serial interface, but nowadays many PCs (especially laptops) only have USB ports. This versatile Flash Board provides a solution to this problem. It is built around an AT89C5131A, which is an extended 8051-family microcontroller with an 80C52 core and a Full Speed USB port. As a sort of bonus, the IC has a complete update interface for downloading new firmware. Atmel also provides suitable software in the form of its FLIP program, which is available free of charge.

Kit of parts incl. PCB and all components

Art. # 070125-71 | £37.50 | US $75.00

CO_2 Measurement

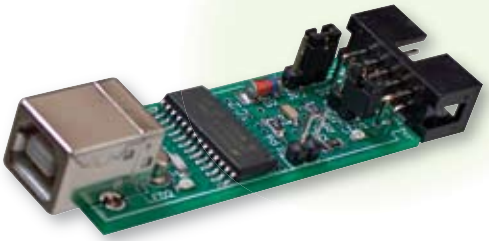
(January 2008)

Carbon dioxide (CO_2) is not just a threat to the environment, it is also an important and often ignored factor in determining air quality in the office and at home. Too high a concentration of CO_2 leads to feelings of tiredness, disturbs concentration, and causes headaches. The Elektor CO_2 meter makes it easy to determine the concentration of carbon dioxide in the air. A microcontroller monitors the measured value and can trigger an alarm or start up a ventilation system when a preset threshold is exceeded.

Kit of parts incl. PCB, Sensor PCB, ATtiny26 and display

Art. # 070802-71 | £107.50 | US $215.00

Kits



USBprog
(October 2007)

A new microcontroller, and yet another new programmer? Anyone involved with microcontrollers today will have a drawerful of printed circuit boards and adaptors for programming various devices. Enter USBprog, which can replace all those with a single unit. As a bonus, it can even be used as a generalpurpose USB I/O port and RS-232 adaptor.

PCB, SMD populated plus other parts

Art. # 060224-71 | £19.90 | US $39.80

4-Channel Logic Analyser
(September 2007)

A logic analyser is indispensable to unravel the time relation between logic signals in a circuit. This instrument is compact and battery-powered. Sampling speed is 2 MHz and sufficient memory is available to store 1024 samples of the measured signal. Logic signals can be viewed on a 64x128 graphic LCD.

Kit of parts incl. PCB, programmed controller, display, case and all parts

Art. # 060092-71 | £79.00 | US $158.00

PIC In-Circuit Debugger/Programmer
(October 2006)

PIC microcontrollers of the 8-bit 16F and 18F family can be found in many devices. A must for users is a means of loading programs and an In-Circuit Debugger (ICD) for tracking down programming errors. This project addresses both of these needs and is not only substantially compatible with Microchip technology's ICD2 module but also significantly cheaper.

Kit of parts incl. PCB, programmed microcontroller and all parts

Art. # 050348-71 | £37.50 | US $75.00

Modules

Elektor SMT Oven

(October 2008)

The Elektor SMT reflow oven will faithfully handle most if not all your soldering of projects using surface mount devices (SMDs). The oven is particularly suited for use not just in Colleges, workshops, clubs and R&D laboratories, but also by the advanced electronics enthusiast. This precious workbench tool is at home where SMD boards have to be produced to a variety of requirements on size, components and soldering materials.

- Selected, tested & certified by Elektor
- Including Elektor-produced user manual
- Fully menu controlled
- Ideal for R&D laboratories, schools, small companies and … electronic enthusiasts
- Product support from Elektor Customer Services

Art. # 080663-91 | £882.00 | US $1525.00

Demo video on www.elektor.com/smtoven

SAPS-400

(June 2008)

The switch-mode power supply unit (SMPSU) is renowned for its efficiency but notorious for its design complexity, compared with its predecessor the linear supply. With the SAPS-400 we offer a powerful, adjustable symmetrical supply that's ideal for lightweight audio power amplifiers and happily sits in less than a quarter of the space taken by a comparable supply of conventional design.

PCB, populated and tested, ready-mounted in aluminium U profile

Art. # 070688-91 | £159.00 | US $318.00

Modules

The ATM18 project

(April 2008)

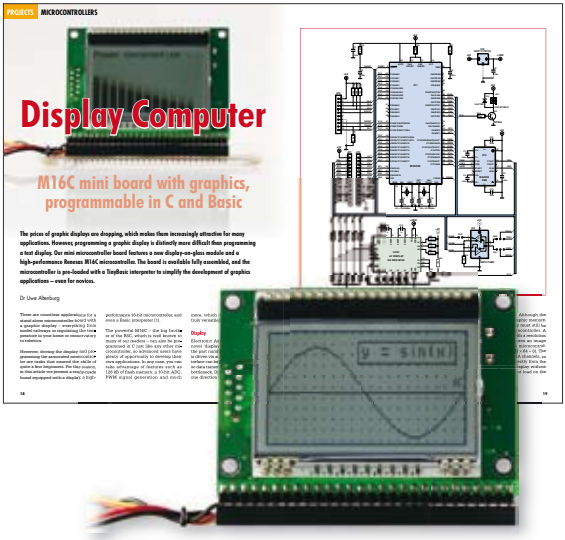
ATM18 was developed jointly by Elektor and Computer:club2 (www.cczwei.de). Each month, the latest developments and applications of the ATM18 system are presented by Wolfgang Rudolph of Computer:club2 in a TV broadcast on the German NRW-TV network. Elektor is pleased to support the project through articles in the magazine, ready-stuffed boards supplied through the Elektor Shop, supplementary information, software downloads and the forum at www.elektor.com.

The series of articles presents a tiny processor module based on an ATmega88 microcontroller, ideal for use at the heart of any number of different projects. We begin with a reaction time tester and quickly move on to more advanced projects such as a precision weather station and a 3D magnetometer.

SMD-populated board with all cables (USB AVR Programmer)
Art. # 080083-71 | £23.50 | US $47.00

PCB, partly populated
(ATM18 Controller module)
Art. # 071035-91
£7.30 | US $14.60

PCB, partly populated
(ATM18-Testboard)
Art. # 071035-92
£27.00 | US $54.00



Display Computer

(May 2008)

Programming a graphic display is distinctly more difficult than programming a text display. Our mini microcontroller board features a new display-on-glass module and a high-performance Renesas M16C microcontroller. The board is available fully assembled, and the microcontroller is pre-loaded with a TinyBasic interpreter to simplify the development of graphics applications – even for novices.

Populated PCB

Art. # 070827-91 | £78.80 | US $157.60

Modules

ElekTrack

(October 2007)

Position determination is all the rage. The manufacturer of the well-known TomTom navigation system has become a publicly traded company, and the alarm systems of expensive cars and other vehicles often positioning systems so they can report where the vehicle is located. However, such systems are rather expensive, so we decided to take the DIY approach and develop our own version, dubbed ElekTrack.

PCB, ready assembled and tested GPS/GSM-antenna, cable and case

Art. # 040161-91 | £249.00 | US $498.00

Stand Alone OBD-2 Analyser

(June 2007)

This handy analyser makes a simple job of rummaging through the information stored by the client-accessible part of your car's computer. It works with all current OBD-2 protocols and can read and erase trouble codes stored in the vehicle and reset the MIL display. All this without the help of a PC or a visit to a service station.

PCB, ready-assembled and tested (case and OBD-2 cable included)

Art. # 070038-93 | £62.50 | US $125.00

Software Defined Radio

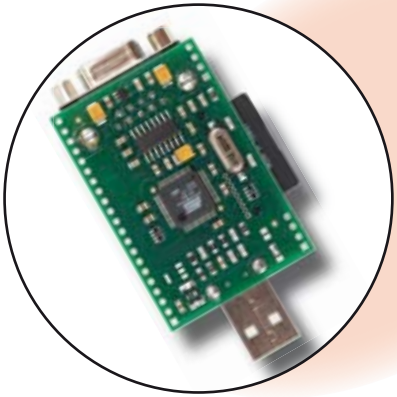
(May 2007)

SD radio receivers use a bare minimum of hardware, relying instead on their software capabilities. The Elektor SDR project (by Burkhard Kainka) demonstrates what's achievable, in this case a multi-purpose receiver covering all bands from 150 kHz to 30 MHz. It's been optimised for receiving DRM and AM broadcasts but is also suitable for listening in to the world of amateur transmissions.

Ready-populated and tested board

Art. # 070039-91 | £74.50 | US $149.00

Modules



USB Stick with ARM and RS232

(November 2006)

This neat stand-alone memory stick can store or transfer data from a microcontroller system in the field to a PC using its built-in USB and RS232 ports. Add to that an LCD and the simple to use data-logging mode is just the icing on the cake!

Assembled and tested board

Art. # 060006-91 | £79.90 | US $149.95

GameBoy Electrocardiogram (GBECG)

(October 2006)

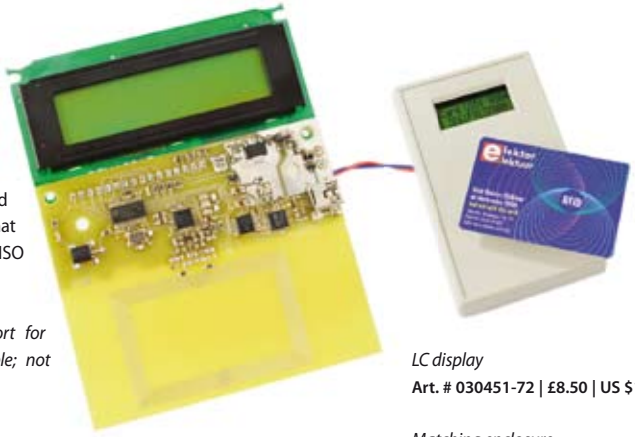
Lots of electronics hobbyist dream of recording an electrocardiogram (ECG) using a circuit built at home. Usually out of technical curiosity, as numerous problems have to be resolved in order to properly sample the heart's electrical activity. Alternatively, some people require personal medical monitoring while under a cardiologist's care. And then it's great to be able to make your own ECG and show it to your GP or clinical staff.

PCB, ready built and tested

Art. # 050280-91 | £55.20 | US $110.40

Elektor RFID Reader

(September 2006)



RFID cards are becoming increasingly popular in many fields where previously barcodes and chip cards were used. This programmable RFID reader can both read from and write to all types of RFID card that are compatible with the MIFARE and ISO 14443-A international standards.

Ready-built and tested PCB with USB port for connection to the PC. Including USB cable; not including display and enclosure.

Art. # 060132-91 | £44.90 | US $89.80

LC display

Art. # 030451-72 | £8.50 | US $17.00

Matching enclosure

Art. # 060132-71 | £9.50 | US $19.00

Modules

Art. # 040477-91 | £214.00 | US $428.00
SPECIAL OFFER for Elektor subscribers:
£179.00 | US $358.00

Versatile FPGA Module

(March 2006)

Ready-assembled Versatile FPGA Module:

- Altera Cyclone FPGA (12,060 LE's)
- 4 Mbit configuration RAM
- 8 Mbit user RAM (20nS)
- 1 Mbit user FLASH memory
- 80 user I/O lines
- 1 dedicated fast clock input
- 4 dedicated PLL outputs
- Integrated power supply unit
- 50MHz oscillator

Including programming interface, programming cables, connectors and ready-assembled FPGA Prototyping Board

Ready-assembled FPGA Prototyping Board

(March 2006)

Art. # 050370-91 | £179.00 | US $358.00
SPECIAL OFFER for
Elektor subscribers: £144.00 | US $288.00

COMBINED PACKAGE

FPGA Module + Prototyping Board

Art. # 040477-91 + 050370-91 | £330.00 | US $660.00

SPECIAL OFFER for Elektor subscribers: £282.00 | US $564.00

FREE CD-ROM
FPGA Course
in 9 chapters
(see page 12)

Modules

A 16-bit Tom Thumb

(February 2006)

R8C Starter Kit comprising CD-ROM and R8C/13 microcontroller board with SIL pinheaders supplied seperately.

Art. # 050179-91 | £9.95 | US $19.90

Application Board for R8C/13

(March 2006)

The 'base camp' for the R8C/13 microcontroller module.
With 2 x serial I/O, USB, LCD, LED's, analogue I/P, PSU and reset and MODE control.

PCB, ready-assembled and tested
Art. # 050179-92 | £51.50 | US $103.00

Micro Webserver

(July/August 2004)

The Elektor Micro Webserver is a full-fledged node for Internet traffic, despite its quite modest dimensions and complexity. It consists of a microcontroller board with a network interface. Thanks to its compact construction and the versatility of the micro-controller board, the Micro Webserver is an ideal choice for measurement and control applications.

Ready-assembled and tested MSC1210 Board
Art. # 030060-91 | £79.30 | US $158.60

Ready-assembled and tested Network Extension Board
Art. # 044026-91 | £46.75 | US $93.50

COMBINED PACKAGE

MSC1210 board +
network extension +
software +
all related Elektor articles

£117.50 | US $235.00
Art. # 044026-92

Overview

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307 Circuits	978-0-905705-62-0	17.95	38.00	4
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Easy CAN Kit	EB551	317.00	634.00	14
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Easy PIC Kit	EB541	171.80	343.60	16
Easy RFID Kit	EB539	243.70	487.40	15
Easy Zigbee Kit	EB421	475.60	951.20	15
Formula Flowcode Buggy	HP794	85.00	169.00	16
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DCC Command Station	070989-71	88.50	177.00	18
DigiButler	071102-71	29.00	58.00	19
ECIO PLC	070786-71	76.00	152.00	20
Elektor Internet Radio	071081-71	115.00	230.00	19
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Elektor RFID Reader	060132-91	44.90	89.80	25
Elektor SMT Oven	080663-91	882.00	1525.00	22
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SAPS-400	070688-91	159.00	318.00	22
Software Defined Radio	070039-91	74.50	149.00	24
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The ATM18 project: Testboard	071035-92	27.00	54.00	23
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