

Electronics WORLD

THE ESSENTIAL ELECTRONICS ENGINEERING MAGAZINE



Special Report: Low Power Design:

- New field-programmable analogue array
- Line-based compressive sensing
- Energy harvesting

 ANALOG
DEVICES

 POWER BY
LINEAR™

INSIDE THIS ISSUE



Latest

- ▶ Silicon breakthrough will lead to new high-performance bendable electronics

Embedded

- ▶ MicroPython and the Lonely32

Digitisers

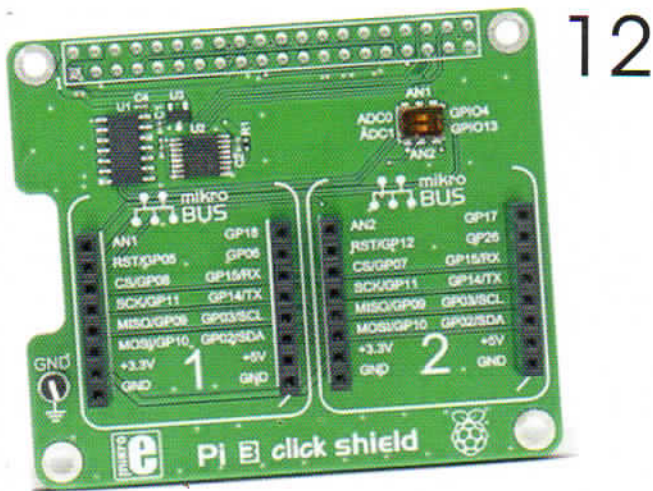
- ▶ Using probes and sensors with modular digitisers

Also inside:
* CURRENT-MODE
FULL BALANCED
NTH-ORDER
LEAPFROG LADDER
FILTER

CONTENTS

REGULARS

- 04 > **Trend**
Future trends in the battery industry
- 05 > **Technology**
- 42 > **Products**

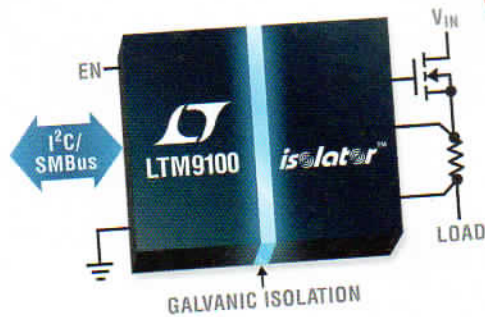


COLUMNS

- 06 > **Digitisers**
By Oliver Rovini and Greg Tate, Spectrum Instrumentation
- 08 > **PCB cleaning**
By Mike Jones, MicroCare
- 12 > **Embedded design**
By Dr Dogan Ibrahim, Near East University, Cyprus
- 16 > **MCUs**
By Lucio di Jacio, Microchip Technology



Cover
supplied by
ANALOG DEVICES
See p10-11



FEATURES

- 19 > **Micropower zero-drift op-amp enables wireless current sense**
By Kris Lokere, Strategic Applications Manager, Signal Conditioning Products, Analog Devices
- 22 > **CDTA-based resistorless current-mode full balanced nth-order leapfrog ladder filter**
By Jun Xu, Hunan University, China
- 26 > **Line-based compressive sensing for low-power visual applications**
By Mansoor Ebrahim, Sunway University, Malaysia, and Syed Hasan Adil, Daniyal Nawaz and Kamran Raza, Iqra University, Pakistan
- 30 > **Design of low-power DC-DC converters for energy harvesting**
By Maurizio di Paolo, Technical Writer based in Italy
- 33 > **A fully-restored 26-T full adder for energy-efficient arithmetic applications**
By Dr. Shabbir Majeed Chaudhry, Assistant Professor, Department of Electrical Engineering at the University of Engineering and Technology in Taxila, Pakistan
- 37 > **Applications for a new field-programmable analogue array based on current differencing transconductance amplifiers**
By Haizhen He and Rongming Luo, Hunan University, Changsha, China

Disclaimer: We work hard to ensure that the information presented in Electronics World is accurate. However, the publisher will not take responsibility for any injury or loss of earnings that may result from applying information presented in the magazine. It is your responsibility to familiarise yourself with the laws relating to dealing with your customers and suppliers, and with safety practices relating to working with electrical/electronic circuitry – particularly as regards electric shock, fire hazards and explosions.