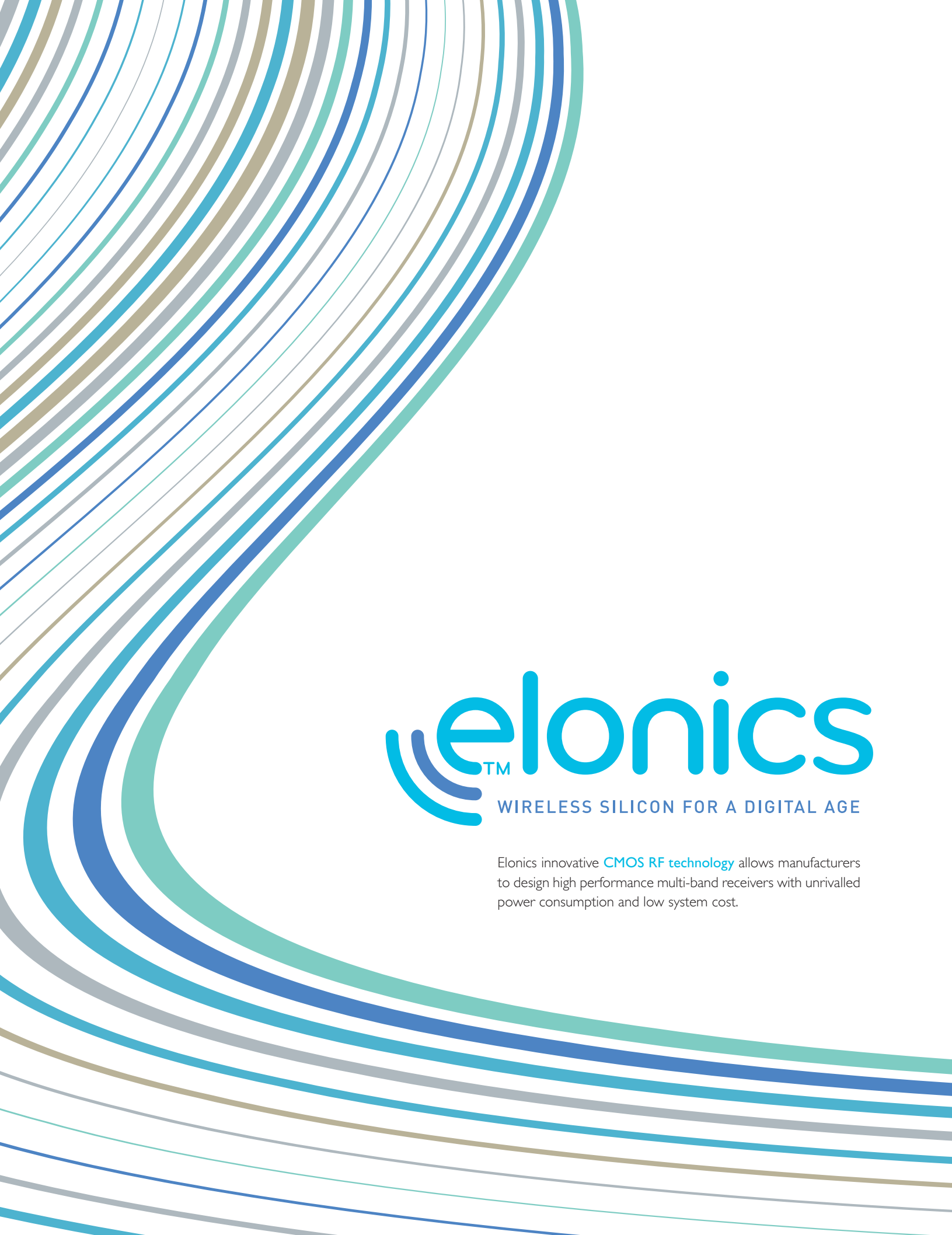


Elonics innovative **CMOS RF technology** allows manufacturers to design high performance multi-band receivers with unrivalled power consumption and low system cost.

WIRELESS SILICON FOR A DIGITAL AGE

Elonics is a fabless semiconductor company founded in 2003 specialising in the development and supply of multi-band radio frequency (RF) IC products.

Modern, portable consumer electronics increasingly demand multiple RF connections to support cellular transceivers for voice communications and a new generation of multi-media services from mobile TV to global positioning systems (GPS). The market desires a universal, single handheld device capable of supporting multiple wireless standards in a small, low-power and cost-effective package. Traditional portable receiver systems require multiple tuners resulting in increased cost, printed circuit board (PCB) area and power consumption.

Globally, digital TV and radio is rapidly dominating the terrestrial broadcast landscape. However, different political perspectives and spectrum allocation issues around the world have created a situation where there are multiple broadcast standards that need to be supported.

Elonics recognised these emerging requirements and embarked on the development of a new generation of RF tuners that could solve these problems and support the needs of the world's leading original equipment manufacturers (OEMs).

The architectural foundation for Elonics' new family of CMOS RF front ends is DigitalTune™, a unique concept allowing designers to implement CMOS RF front ends capable of cost-effectively supporting these multiple broadcast standards, meeting the challenge for smaller, lighter, cheaper and lower power consumer electronics.

Our initial focus is the rapidly changing world of digital TV and radio broadcasting. To be successful in this environment requires companies to be flexible, listening to what customers want and responding with solutions that meet their needs. Elonics is uniquely positioned to meet this challenge head-on, with world beating RF products full of innovation.

DIGITALTUNE™ RF TUNER ARCHITECTURE

DigitalTune™ is a patent pending radio frequency architecture that uniquely allows each stage of the RF signal processing to be adjusted under digital control. This strategy has a number of benefits over traditional tuners that typically use analogue control voltages to manage the RF signal gain. As well as providing superior flexibility, it can be used to adjust the performance of the tuner for optimum linearity or noise figure according to the signal conditions. DigitalTune™ also helps overcome some of the inherent process limitations of CMOS, and allows Elonics to lower power consumption and reduce silicon cost.

The DigitalTune™ architecture has a number of distinct advantages when applied to the design of consumer electronics devices. In today's world of multiple broadcast standards, the digitally programmable capability of the Elonics tuner technology allows our devices to cover multiple frequency bands with a single integrated low noise amplifier (LNA) instead of the multiple LNAs used in traditional tuner systems.

The DigitalTune™ concept is an integral part of the evolution in radio receiver design, allowing designers to implement multi-standard CMOS RF front ends without compromise.

EXPERTISE AND SUPPORT

Elonics has an engineering team with an in-depth knowledge of RF IC design and RF systems. Extensive experience in RF systems and mixed-signal design enables Elonics to provide customers with a one-stop resource for IC support and applications help. We provide a complete range of product support collateral including tuner reference designs, schematics and layouts. Our products are supported by extensive parametric performance data, easy to use evaluation boards and GUIs. We can also provide firmware scripts to aid system integration.

Elonics is one of the first companies in Europe to use 90nm CMOS for radio frequency (RF) design, with RF IC design techniques supported by a pipeline of world leading patents. Our understanding of RF CMOS design allows us to create cost-effective solutions for the consumer market, yet deliver state-of-the-art performance.

A NEW DIGITAL RECEIVER ARCHITECTURE

Conventional RF tuners are intrinsically inflexible. Each broadcast standard has traditionally been served by separate radio receivers each comprising an RF tuner and a demodulator. This makes them unable to meet the new challenges of today's cost conscious multi-tasking and multi-standard consumer products.

The ideal solution is a single flexible RF tuner capable of receiving signals ranging from low MHz to GHz. The Elonics multi-band tuner does exactly that, replacing the need for multiple radio tuners with a single re-configurable RF CMOS IC.

The direct conversion zero IF architecture is designed to save power and lower system cost. It eliminates the requirement for expensive and bulky external components such as SAW filters and RF baluns, yet offers extremely high performance.

Elonics is developing a family of tuner ICs following on from the introduction of the world leading E4000 multi-standard RF front end, building upon its leadership in multi-media RF connectivity solutions.

E4000 TUNER FAMILY

The E4000 family of tuner ICs are complete radio sub-systems. Designed to interface directly to a digital demodulator, they have fully integrated LNAs, programmable RF filters and RF mixers providing superior real world performance, and the wide tuning range of the synthesiser and programmable IF filters allows the user to cover a very wide frequency spectrum.

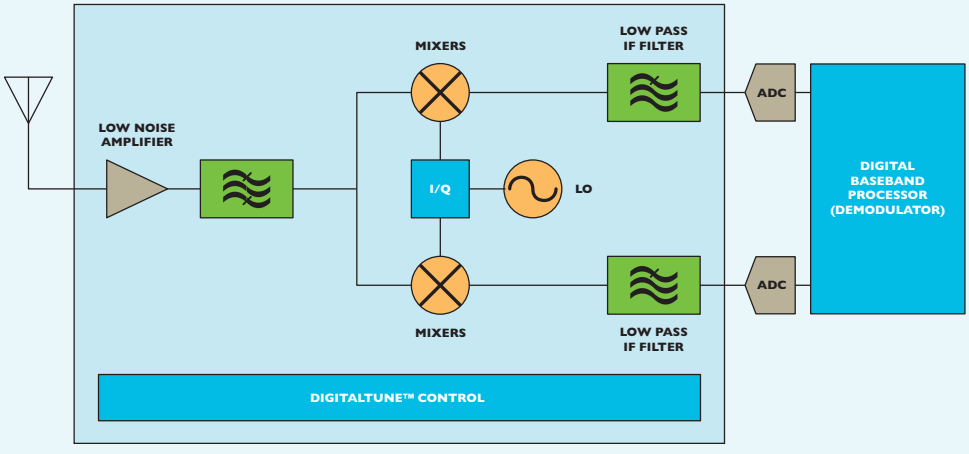
The E4000 is a highly integrated multi-band RF tuner IC implemented in CMOS, ideal for digital TV and radio broadcast receiver solutions. The digitally programmable multi-band tuner architecture covers the complete spectrum from VHF to L Band (64MHz to 1.70GHz), and allows the user to re-configure the RF front end for different broadcast standards.

At the heart of the E4000 is Elonics innovative DigitalTune™ architecture, which allows the user to optimise the performance of the tuner for optimum linearity or noise figure according to the signal conditions. It enables manufacturers to significantly improve reception quality whilst supporting multiple broadcast standards including DVB-T/H, ISDB-T, T-DMB, DMB-T, DAB and FM radio.

The E4000 tuner uses a zero IF architecture, which dramatically reduces the number of external components and allows power consumption to be minimised to as low as 12mW for a 10% duty cycle in DVB-H mode. It makes the E4000 a cost-effective and very low power solution for the digital TV and radio market.

ELONICS DIGITAL RECEIVER ARCHITECTURE

DIGITALTUNE™



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ABOUT ELONICS

Elonics is a fabless semiconductor company specialising in the development and supply of multi-band radio frequency (RF) IC products. Founded in 2003 and based in Livingston, United Kingdom, Elonics has developed an innovative radio frequency architecture that is the foundation for a family of re-configurable CMOS RF tuner products.

Elonics innovative technology allows manufacturers to design high performance multi-band tuners with unrivalled power consumption and low system cost. Our products are targeted at high volume consumer electronics applications that require wireless multi-media connectivity where size, performance, price and power consumption are paramount.

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