LOW POWER CMOS MULTI-BAND TUNER

E4000

FEATURES

- **Support for Multiple Standards**
  Surpasses NORDIG 2.0 and D-Book
  Fully Compatible with other Digital TV and Radio Standards
- **Scalable Power Consumption**
  105mW Typical Operation
  13mW in DVB-H Mode
  3mW in Standby Mode
- **Variable Gain, Single Input Low Noise Amplifier (LNA)**
  3.5dB Receiver Noise Figure
  64MHz to 1700MHz Input Frequency Range
- **Flexible IF Amplifier and Channel Filter**
  Programmable Bandwidth and Cut-Off Frequency
  Logical Up/Down or Digital PWM Gain Control
- **Flexible Clocking Modes**
  Fractional-N Synthesiser with Fully Integrated VCO and Loop Filter
  15 – 30MHz Input Clock Frequency Range
  Programmable Output Clock Frequency Range
- **I²C Control Bus**
  3.3V Tolerant Interface
  4 Addresses for MIMO and Diversity Applications
- **1.5V Analogue and Digital Supply Operation**
- **32-Pin QFN Package**
  5x5x0.9mm Body Size, Pb Free, RoHS Compliant

TYPICAL APPLICATIONS

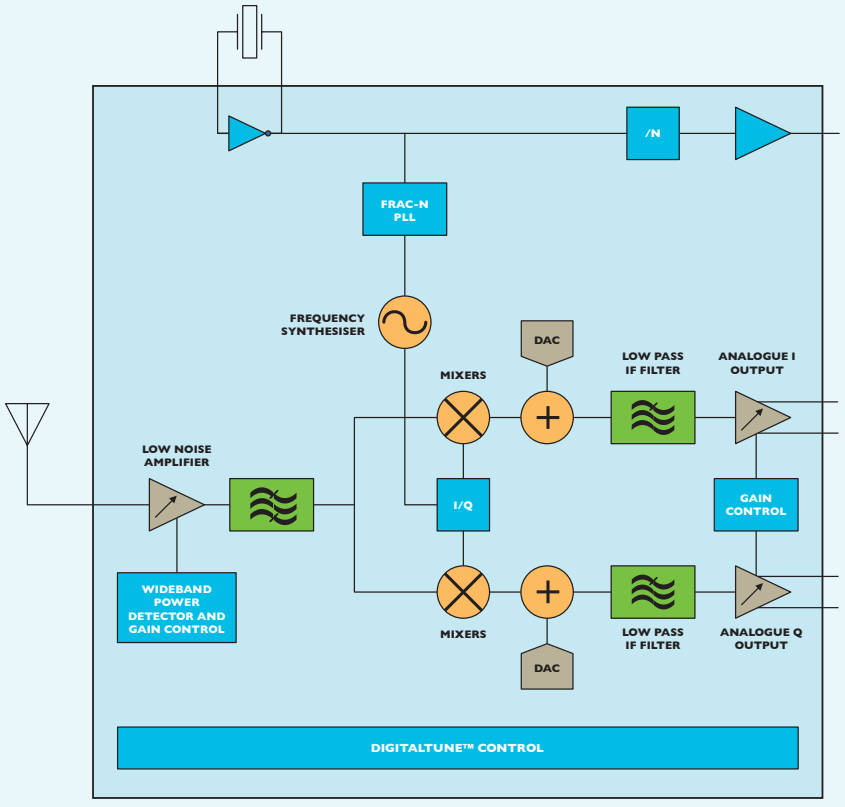
- Digital Terrestrial Set-Top Boxes
- NIM and Half NIM Modules
- Computer TV Cards and USB TV Dongles
- DVD-Rs and PVRs
- Mobile TV Enabled Cell Phones
- MP3 and Portable Multi-Media Players
- In-Car TVCar TV

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 designer to adjust 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, D-TMB, T-DMB, CMMB, and DAB/DAB+. The E4000 contains a single input LNA with a unique programmable RF tracking filter, whose centre frequency can be programmed over the complete frequency range from 64MHz to 1.7GHz. This greatly simplifies antenna management especially for applications that require support for more than one broadcast standard.

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. It makes the E4000 a cost effective and very low power solution for the digital TV and radio market.

E4000



PB-E4000-10/2009

ORDERING INFORMATION

ORDER CODE	TEMPERATURE RANGE	PACKAGE
E4000EQGD	-40 to +85°C	QFN-32 5x5mm body (Pb-free)
E4000EQGR(1)	-40 to +85°C	QFN-32 5x5mm body (Pb-free, tape and reel)

NOTE: (1) A reel contains 3500 devices

EVALUATION AND SUPPORT

Elonics provides 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.

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 called DigitalTune™ 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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