

# Universal Tone Detector / Generator for Analog Devices Blackfin



## Universal Tone Generator / Detector

algorithms from BAYER DSP Solutions are high-performance standard functions for ADI Blackfin devices.



## Tone Generator

The Universal Tone Generator can produce all kinds of signaling tones (single and dual) in PBX, Central Office or general purpose applications. The algorithm features near perfect frequency and level precision.

### Specifications:

- Frequency precision better than .1%
- Level precision better than .5dB
- Self Timing signal generation (automatic cadences)
- < .2 MIPS / channel
- ~200 Bytes program memory
- 6 Bytes data memory per frequency
- Runs on all Blackfin devices

## Tone Detector

The Universal Tone Receiver detects any dial tone consisting of one or two frequencies with adjustable bandwidth per frequency. The algorithm is targeted but not limited to PBXs and Central Office applications. The algorithm features outstanding speech immunity and very good timing resolution.

### Specifications:

- Detect signals or pauses > 50ms
- Programmable center frequencies/bandwidth
- > 30dB of dynamic range
- Excellent speech immunity guaranteed by design
- ~ 1 MIPS / channel
- < 1 kBytes program memory total
- 32 Bytes data memory / channel
- Runs on all Blackfin devices

The algorithm is fully re-entrant and can easily be integrated in a "C"-environment.

## Support

- Demo for BF533-EZLite and PC available under NDA
- Fully documented separate libraries for Generator and Detector
- Customization/Integration support available
- Code portable to other platforms (DSP, non-DSP)

## Ingenieurbüro Bayer DSP Solutions

Ingenieurbüro Bayer DSP Solutions was founded more than a decade ago by Andreas Bayer, a first hour DSP specialist.

Originally specializing in the telecommunication field, the company has grown its DSP expertise to provide comprehensive services around Digital Signal Processing applications by using DSP chips from Analog Devices, Texas Instruments, NEC, Freescale and other renowned DSP vendors.

Our goal is to provide comprehensive coverage of all Digital Signal Processing topics, including hardware design, FPGA design, DSP algorithms, software integration, tools and complete products.

Today we support many DSP families including Texas Instruments C54x, C55x, C3x, C6x, Analog Devices ADSP218x, SHARC and Blackfin, Motorola DSP56K as well as DSPs from other vendors.

Ingenieurbüro Bayer DSP Solutions is a registered and active Third Party of Analog Devices, Texas Instruments and other silicon vendors.



**Distributor:**  
Kane Computing Ltd  
7 Theatre Court, London Road,  
Northwich, Cheshire, CW9 5HB, UK  
Tel: +44(0)1606 351006  
Fax: +44(0)1606 351007/8  
Email: sales@kanecomputing.com  
Web: www.kanecomputing.co.uk