



# Intel® 815E Digital Set Top Box Reference Design

Board Support Package for  
Microsoft\* Windows\* CE .NET 4.2



## Product Overview

The Board Support Package (BSP) is designed to accelerate Consumer Electronics designs based on the Intel® 815E Digital Set Top Box Reference Design and Microsoft\* Windows \* CE .NET 4.2. Intended as a validated platform in the Microsoft Platform Builder environment, the BSP includes the library of drivers required to build an image for applications including IP-Digital Set Top Box (IP-DSTB) and other CE client devices.

The driver set includes support for:

- The Intel® 815E chipset with integrated graphics
- Flexible peripheral connectivity of USB 1.1
- Full 10/100 Ethernet connectivity
- Compact Flash and ATAPI drives
- Dolby Digital\* and Digital Theater Sound\* (DTS) 5.1 channel audio
- Power management

## Product Highlights

### Audio Driver<sup>1</sup>

- Dolby Digital and DTS 5.1 channel audio
- Concurrent L/R stereo and S/PDIF output in PCM format
- Validated on Realtek\* RLC650 and Sigmatel\* STAC9766/67
- Compatible with, but not validated on, Realtek RLC655, Sigmatel STAC9750/56/57/58

### ATAPI Driver

- Compact Flash and ATA drives supported (all PIO and Ultra-DMA modes)
- Supports CD/DVD read

### NDIS Driver

- 10/100 full duplex transmission
- Validated on Intel® 82562ET Fast Ethernet controller
- Compatible with, but not validated on, Intel® 82551, 82551ER, 82559ER and 82562 family

### Intel® Digital Set Top Box Display Driver

- GDI and Direct Draw APIs
- Dynamic memory support
- Accelerated per-pixel alpha blending for 16 bit RGB 565 surfaces
- Hardware 2D graphics acceleration
- Hardware cursor
- Video overlay
- 16 and 24-bit color depth
- Display resolutions supported (desktop):
  - 640 x 480
  - 720 x 480
  - 720 x 576
- Support for the following TV encoders:
  - Conexant\* CX25873
  - Focus Enhancements\* FS45x family
- TV output resolutions/rates supported<sup>2</sup>:
  - 720 x 480 29.97 fps
  - 720 x 576 25 fps
- TV Standards supported:
  - NTSC M, J
  - PAL-B, D, G, H, I
  - SECAM<sup>3</sup>-L, L1, B, D, G, H, K, K1
- TV output controls available:
  - Brightness, contrast, flicker/text filter, saturation, sharpness, hue, overscan ratio, macrovision

## Power Management

- S0 and S3 power states supported

## General

- USB 1.1

## BSP Packaging

The CE .NET 4.2 BSP includes five major components, packaged as follows:

- 815DSTB\_CEBSPv4.2.x.x.msi
  - BSP including OAL, ETHDBG, eboot.bin for Intel NIC, with build configuration to make use of the separately-packaged drivers
- E100CE\_v4.2.x.x.msi
  - NDIS driver for Intel NIC
- ICHUAM\_v4.2.x.x.msi
  - UAM Audio driver with support for ICH2
- ICHIDE\_v4.2.x.x.msi
  - ATAPI/IDE driver with support for ICH2
- DDI\_i815\_v4.2.x.x.msi
  - Display driver with support for 815 GMCH

The CE .NET 4.2 BSP and drivers are validated and distributed together. Updates for individual drivers are validated in combination with the most recent gold or gold-candidate BSP and drivers, and may be updated separately in the Platform Builder catalog.

## Intel Advantage

Intel Consumer Electronics reference designs include Intel® processors, chipsets and other building blocks in configurations that can help manufacturers meet a variety of customer requirements. Intel and leading vendors provide the complementary building blocks you need to reduce cost and accelerate time-to-market.

## Ordering Information

For information on how to obtain the Intel® 815E IP-DSTB Reference Design CE .NET 4.2 Board Support Package contact your Intel representative.

<sup>1</sup> Windows® Media 9 Series audio, MP3, MPEG1 and AVI content types are supported by CE .NET 4.2 codecs. The audio driver accepts these formats in decoded form (PCM format).

<sup>2</sup> Not all output resolutions/rates available at all input/desktop resolutions/rates.

<sup>3</sup> CX25873 only

## Intel Access

<b>Developer's Site</b>	<a href="http://developer.intel.com">developer.intel.com</a>
<b>Embedded Intel® Architecture Home Page</b>	<a href="http://www.intel.com/design/intarch">www.intel.com/design/intarch</a>
<b>Intel® Technical Documentation Center</b>	<a href="http://www.intel.com/go/techdoc">www.intel.com/go/techdoc</a> (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
<b>General Information Hotline</b>	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST For more information, visit the Intel Web site at: <b><a href="http://developer.intel.com">developer.intel.com</a></b>

### US AND CANADA

Intel Corporation  
Robert Noyce Bldg.  
2200 Mission College Blvd.  
P.O. Box 58119  
Santa Clara, CA 95052-8119  
USA

### EUROPE

Intel Corporation (UK) Ltd.  
Pipers Way  
Swindon  
Wiltshire SN3 1RJ  
UK

### ASIA-PACIFIC

Intel Semiconductor Ltd.  
32/F Two Pacific Place  
88 Queensway, Central  
Hong Kong, SAR

### JAPAN

Intel Kabushiki Kaisha  
P.O. Box 115  
Tsukuba-gakuen  
5-6 Tokodai, Tsukuba-shi  
Ibaraki-ken 305  
Japan

### SOUTH AMERICA

Intel Semicondutores do Brazil  
Rue Florida, 1703-2 and CJ22  
CEP 04565-001 Sao Paulo-SP  
Brazil

**For more information, visit the Intel Consumer Electronics home page at:**  
**[www.intel.com/go/consumerelectronics](http://www.intel.com/go/consumerelectronics)**

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Copyright © 2004 Intel Corporation. All rights reserved.

Intel, the Intel logo and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

