




Intel® Atom™ Processor E3815 (512K Cache, 1.46 GHz)

Specifications

- Essentials

Status	Launched
Launch Date	Q4'13
Processor Number	E3815
L2 Cache	512 KB
Instruction Set	64-bit
Embedded Options Available	 Yes
Lithography	22 nm
Recommended Customer Price	TRAY: \$31.00
Datasheet	Link
Conflict Free	Yes

- Performance

# of Cores	1
# of Threads	1
Processor Base Frequency	1.46 GHz
TDP	5 W

- Memory Specifications

Max Memory Size (dependent on memory type)	8 GB
Memory Types	DDR3L 1067
Max # of Memory Channels	1
ECC Memory Supported ‡	 Yes

- Graphics Specifications

Processor Graphics ‡	Intel® HD Graphics
Graphics Base Frequency	400 MHz
Graphics Burst Frequency	400 MHz
Intel® Quick Sync Video	 Yes
# of Displays Supported ‡	2

- Expansion Options

PCI Express Revision	2.0
PCI Express Configurations ‡	x4, x2, x1
Max # of PCI Express Lanes	4

- I/O Specifications







USB Revision	2.0, 3.0
Total # of SATA Ports	2

Integrated LAN	No
Integrated IDE	No
UART	Yes

- Package Specifications

T _{JUNCTION}	-40°C to 110°C
Package Size	25mm x 27mm
Sockets Supported	FCBGA1170
Low Halogen Options Available	See MDDS

- Advanced Technologies

Intel® vPro Technology ‡	 No
Intel® Hyper-Threading Technology ‡	 No
Intel® Virtualization Technology (VT-x) ‡	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡	 No
Intel® VT-x with Extended Page Tables (EPT) ‡	 Yes
Intel® 64 ‡	 Yes
Enhanced Intel SpeedStep® Technology	 Yes
Intel® HD Audio Technology	Yes

- Intel® Data Protection Technology

Intel® AES New Instructions	 Yes
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- Intel® Platform Protection Technology

Trusted Execution Technology ‡	 No
Execute Disable Bit ‡	Yes

Ordering and Spec Information

Trade Compliance Information

ECCN	CCATS	US HTS
5A992CN3	G143235	8542310000-HYBRD

Ordering and Spec Information

Spec Code	Ordering Code	Step	RCP
Intel® Atom™ Processor E3815 (512K Cache, 1.46 GHz) FC-BGA13F, Tray			
SR1RA	FH8065301567411	B3	\$31.00
SR1XA	FH8065301567414	D0	\$31.00

Download Drivers



BIOS Implementation Test Suite (BITS)

BITS provides a bootable pre-OS environment for testing BIOSes and in particular their initialization of Intel® Processors, hardware, and technologies

Version: Build 2070 (Latest)

Date: 1/7/2016

Operating Systems: OS Independent



Intel® Embedded Drivers for Microsoft Windows* 10 IoT Core (32-bit)

**Intel® Embedded Drivers for Microsoft Windows* 10 IoT Core (32-bit)****Version:** 1 (Latest)**Date:** 12/23/2015**Operating Systems:** Windows® 10, 32-bit**Intel® Processor Identification Utility - Windows* Version**

The Intel® Processor Identification Utility is provided by Intel to identify characteristics of a processor inside a system.

Version: 5.40 (Latest)**Date:** 12/23/2015**Operating Systems:** Windows 2000*, Windows 7*, Windows 8*, 8 more**Intel® HD Graphics Driver v36.19.0 (Gold) for Windows* 10 IoT Core**

Install Package: Intel® HD Graphics Driver v36.19.0 (Gold) for Windows* 10 IoT Core

Version: v36.19.0 (Gold) (Latest)**Date:** 12/18/2015**Operating Systems:** Windows® 10, 32-bit, Windows® 10, 64-bit**Intel Embedded Drivers for Windows* 7 (32-bit & 64-bit)**

Install Package: Intel® Embedded Drivers for Windows* 7 (32-bit & 64-bit)

Version: 3 (Latest)**Date:** 11/23/2015**Operating Systems:** Windows 7, 32-bit*, Windows 7, 64-bit***Intel® Embedded Drivers for Microsoft Windows* 8 (32-bit & 64-bit) OS**

Drivers: Installs drivers for embedded Windows* 8 (32-bit & 64-bit) OS for the Intel® Atom™ E3800 Product Family & related processors.(v.1, Oct. 2015)

Version: 1 (Latest)**Date:** 10/16/2015**Operating Systems:** Windows 8*, Windows 8, 32-bit*, Windows 8, 64-bit***BKC (Best Known Configuration) for Fedora* 18 MR2 (Maintenance Release 2)**

This is the Best Known Configuration for Linux* MR2 integration into Fedora* 18 for Intel® Atom™ Processor E3800 product family.

Version: 1 (Latest)**Date:** 9/15/2015**Operating Systems:** Linux***Intel® Processor Identification Utility - Bootable Version**

The Intel® Processor Identification Utility is provided by Intel to identify characteristics of a processor inside a system.

Version: 5.30 (Latest)**Date:** 9/11/2015**Operating Systems:** OS Independent**Intel® Processor Diagnostic Tool (64-bit)**

The Intel® Processor Diagnostic Tool is compatible with multiprocessor systems.

Version: 2.20.0.0.W.MP-1 (Latest)**Date:** 8/7/2015**Operating Systems:** Windows 7*, Windows 8*, Windows 8.1*, 4 more**Intel® Embedded Media and Graphics Driver (Intel® EMGD)**

For embedded Intel® Atom™ Processor-based systems

Version: 1.15-1.18 (Latest)**Date:** 5/7/2015**Operating Systems:** OS Independent**Intel® IoT Gateways Software Development Kit SK50: Getting Started Guide Commands**

Getting Started guide commands for installation of the Intel® IoT Gateways Software Development Kit SK50.

Version: 1 (Latest)**Date:** 4/30/2015**Operating Systems:** Linux***Intel® Processor Diagnostic Tool (32-bit)**

The Intel® Processor Diagnostic Tool is compatible with multiprocessor systems.

Version: 2.11.0.0.W-2 (Latest)**Date:** 4/29/2015**Operating Systems:** Windows 7*, Windows 8*, Windows 8.1*, 5 more**Intel® IoT Gateways Development Kit DK300 Series: Getting Started Guide Commands**

Getting Started guide commands for installation of the Intel® IoT Gateways Development Kit DK300 Series.

Version: 2 (Latest)**Date:** 2/6/2015**Operating Systems:** Linux***Intel® IoT Gateways Development Kit DK300 Series: Get Started Guide Commands**

Getting Started guide commands for installation of the Intel® IoT Gateways Development Kit DK300 Series.

Version: 1 (Latest)
Operating Systems: Linux*

Date: 2/6/2015



Linux* Processor Microcode Data File

The microcode data file contains the latest microcode definitions for all Intel processors. Intel periodically releases these microcode updates.

Version: 20150121 (Latest)

Date: 1/27/2015

Operating Systems: Caldera Linux*, Chromium OS*, Debian 3.1 Linux*, 91 more



Linux* Processor Microcode Data File

The microcode data file contains the latest microcode definitions for all Intel processors. Intel periodically releases these microcode updates.

Version: 20150107 (Latest)

Date: 1/13/2015

Operating Systems: Caldera Linux*, Chromium OS*, Debian 3.1 Linux*, 89 more



Intel® IoT Gateways Development Kit DK200 Series: Getting Started Guide Commands

Getting Started guide commands for installation of the Intel® IoT Gateways Development Kit DK200 Series.

Version: 1 (Latest)

Date: 12/15/2014

Operating Systems: Linux*



Intel® IoT Gateways Development Kit DK100 Series: Getting Started Guide Commands

Getting Started guide commands for installation of the Intel® IoT Gateways Development Kit DK100 Series.

Version: 1 (Latest)

Date: 12/13/2014

Operating Systems: Linux*



Intel® IoT Gateways Development Kit DK50 Series: Getting Started Guide Commands

Getting Started guide commands for installation of the Intel® IoT Gateways Development Kit DK50 Series.

Version: 1 (Latest)

Date: 12/13/2014

Operating Systems: Linux*



Intel embedded drivers for Windows* 8.1 (64-bit)

Install Package: Intel embedded drivers for Windows* 8.1 (64-bit)

Version: 1 (Latest)

Date: 9/26/2014

Operating Systems: Windows 8.1, 64-bit*

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Refer to Datasheet for formal definitions of product properties and features.

"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

"Conflict free" and "conflict-free" means "DRC conflict free", which is defined by the U.S. Securities and Exchange Commission rules to mean products that do not contain conflict minerals (tin, tantalum, tungsten and/or gold) that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries. Intel also uses the term "conflict-free" in a broader sense to refer to suppliers, supply chains, smelters and refiners whose sources of conflict minerals do not finance conflict in the DRC or adjoining countries. Intel processors manufactured before January 1, 2013 are not confirmed conflict free. The conflict free designation refers only to product manufactured after that date. For Intel Boxed Processors, the conflict free designation refers to the processor only, not to any additional included accessories, such as heatsinks/coolers.

See <http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading> for more information including details on which processors support Intel® HT Technology.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

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System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

Low Halogen: Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

For benchmarking data see <http://www.intel.com/performance>.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See <http://www.intel.com/content/www/us/en/processors/processor-numbers.html> for details.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.

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