Product Overview

The Intel® Atom™ x3 processor series is Intel’s first integrated communications platform for entry and value tablets, phablets and smartphones, available in your choice of 4G LTE and 3G versions.

These Intel® system-on-a-chip (SoC) solutions help you get new mobile products to market fast with 64-bit multi-core Intel® Atom™ CPUs. The integrated, multi-mode LTE and 3G Intel® modems deliver world-class performance and global coverage. The full chipset includes the image sensor processor (ISP), graphics, audio, video, connectivity, and power management components required for flexible solutions with an optimal combination of value and mobile features.

The Intel Atom x3 processor series is the foundation of a full-featured, cost-effective platform that provides the added advantages of form factor flexibility and a smooth upgrade path to the rapidly growing entry and value market segments. Consumers will love new tablets and smartphones that deliver robust Android® or Windows® experiences with responsive wireless connectivity and fast, reliable global communications.

It all adds up to the fast and seamless mobile experiences that today’s consumers want, available at affordable value.
**Platform Highlights**

**Intel Atom x3 processor series**: SoC with 64-bit Intel Atom processor cores and integrated cellular baseband modem.

**Great mobile performance**: Intel® Architecture performance up to 1.4 GHz Burst Mode.²

**Android or Windows**: Android or Windows 10 Mobile¹ for immersive apps and games, fast Web browsing, email, messaging, and social media experiences.

**Worldwide communications**: Proven LTE and 3G Intel modems are interoperable with operator networks around the world for broad geographic roaming capability.

**4G LTE**: 5-mode LTE modem (2G, 3G, 4G LTE, FDD/TDD, and TD-SCDMA); up to 14 LTE bands can be supported in a single SKU with cost-efficient band-scaling options.

**Versatile connectivity**: Wi-Fi*, Bluetooth*, and GNSS for navigation apps; multi-radio Wi-Fi/Bluetooth and FM radio combo, and an LTE/WLAN antenna sharing design.³

**Long battery life**: Low-power RF and low-power video encoding/decoding.

**Dual cameras (front/rear)**: Up to 5 MP/13 MP.

**Great graphics**: Clear and responsive graphics for games, including support for OpenGL ES 3.0.³

**HD video**: Enjoy smooth, crisp viewing for your favorite videos.

**Audio quality**: Noise and echo reduction, ambient noise adaptation, and headset detection.

**Wireless display**: View your way on TVs and monitors with Miracast.*

**Dual SIM/dual-standby**: Support for two cellular subscriptions on one device.

**FM radio tuner**: Listen to on-air content without service charges.

**Near Field Communication**: Streamlined tap-and-pay with simple, secure transactions.

---

**Figure 1.** The Intel® Atom™ x3-C3445 processor includes a 64-bit quad-core Intel® Atom™ CPU at up to 1.4 GHz Burst Mode² plus an integrated 4G LTE 5-mode modem, support for OpenGL 3.0 and a multi-radio with Wi-Fi*, Bluetooth* and FM radio with antenna sharing.
High performance and SoC integration for great mobile experiences

The Intel Atom x3 processor series includes quad-core and dual-core Intel Architecture processors at up to 1.4 GHz Burst Mode⁷, clear graphics and video, high-quality audio, and dual cameras, including an up to 5 MP front-facing camera and up to 13 MP rear-facing camera.

Consumers will enjoy crisp HD video, responsive apps, fast Web browsing, and engaging photo sharing and social media experiences. High integration lets you deliver the full-featured tablets and smartphones your customers want at affordable price points.

Fast 4G LTE communications

The Intel Atom x3-C3445 processor combines the fast downloads of LTE technology with worldwide roaming enabled by the integrated Intel modem. The modem supports 14 LTE bands in a single SKU, providing up to 300 Mbps, Cat 6 speeds, and LTE TDD and FDD modes.

Flexible connectivity

A full range of connectivity capabilities will keep consumers well connected, including Wi-Fi, Bluetooth, and Global Navigation Satellite System (GNSS). The Intel Atom x3-C3445 processor includes a multi-radio that combines Wi-Fi/Bluetooth and FM radio in a unique LTE/WLAN antenna sharing design that delivers the benefits of multiple in/multiple out (MIMO).

Impressive graphics and audio

Enjoy crystal-clear graphics with fast response times. Support for OpenGL ES 3.0⁷ lets users experience the fun and realism of graphics-intensive games.

Consumers will experience quality audio in any environment, with noise reduction (single and dual microphone, traffic, wind, and ambient noise), echo cancellation, dynamic range processing, and ambient noise adaptation.

Value-added capabilities

Dual SIM capability enables two cellular subscriptions from different carriers, allowing consumers to optimize their devices for lowest roaming and time-of-day usage, and enjoy family sharing with privacy. The built-in FM radio lets users listen to audio broadcasts without incurring subscription service charges for music or other content. Near Field Communication (NFC) enables tap-and-pay transactions for a secure shopping experience.³

Figure 2. The Intel® Atom™ x3 processor series features dual-core (x3-C3130) and quad-core (x3-C3230RK) versions, providing flexibility in design choices for consumer segments.
<table>
<thead>
<tr>
<th>CPU</th>
<th>Dual-core 64-bit Atom x3 up to 1.0 GHz</th>
<th>Quad-core 64-bit Atom x3 up to 1.1 GHz</th>
<th>Quad-core 64-bit Atom x3 up to 1.4 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>28nm</td>
<td>28nm</td>
<td>28nm</td>
</tr>
<tr>
<td>Media (Encode/Decode)</td>
<td>Encode: H.264 @ 720p30, Decode: H.264, VP8 @ 1080p30</td>
<td>Encode: H.264 @ 1080p60, Decode: H.264, VP8 @ 1080p60 HEVC (H.265) @ 1080p60</td>
<td>Encode: H.264, VP8 @ 1080p30, Decode: H.264, VP8 @ 1080p30 VP9/H.265 (SW) Decoder</td>
</tr>
<tr>
<td>Memory</td>
<td>1x32 LPDDR2 800</td>
<td>1x32 LPDDR2/3 1066, DDR3/ DDR3L 2x16 1066</td>
<td>1x32 LPDDR2/3 1066</td>
</tr>
<tr>
<td>Display Resolution</td>
<td>1280x800 @ 60fps</td>
<td>Up to 1920x1080 @ 60fps</td>
<td>1280x800 @ 60fps</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1920x1080 &gt;30fps</td>
</tr>
<tr>
<td>Modem (Integrated)</td>
<td>HSPA+ 21/5.8, GSM/GPRS/EDGE, DSDS</td>
<td>HSPA+ 21/5.8, GSM/GPRS/EDGE, DSDS</td>
<td>LTE FDD/TDD up to Cat 6 300 Mbps, DC-HSPA+ 42/11, TD-SCDMA, GSM/GPRS/EDGE, DSDS</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Wi-Fi 802.11bgn, Bluetooth* 4.0 LE, GPS &amp; GLONASS, FM Radio</td>
<td>Wi-Fi 802.11bgn, Bluetooth 4.0 LE, GPS &amp; GLONASS, FM Radio</td>
<td>Wi-Fi 802.11ac, Bluetooth 4.1 LE, GPS, GLONASS &amp; Beidou, FM Radio, Near Field Communication (optional feature)</td>
</tr>
<tr>
<td>USB</td>
<td>USB 2.0 HS</td>
<td>USB 2.0 HS</td>
<td>USB 2.0 HS</td>
</tr>
<tr>
<td>Storage</td>
<td>eMMC 4.41</td>
<td>eMMC 4.51</td>
<td>eMMC 4.51</td>
</tr>
<tr>
<td>ISP/Camera (rear/front)</td>
<td>Up to 13 MP/5 MP</td>
<td>Up to 13 MP/5 MP</td>
<td>Up to 13 MP/5 MP</td>
</tr>
</tbody>
</table>

**Backed by the Intel® brand**

The Intel® brand is recognized by consumers worldwide for technical innovation, performance, and trusted reliability. With high performance and fast communications built in, the Intel Atom x3 processor series makes quality entry and value tablets, phablets, and smartphones affordable for consumers worldwide.

For more information visit www.intel.com/atom.

---

1. Windows® 10 Mobile in development, details to be announced at a later date.
2. Intel Atom™ x3-C3445 processor max sustained clock frequency is 1.2 GHz for all four cores. Burst Mode enables up to a max clock frequency of 1.4 GHz for relatively short peak loads for max 2 CPU cores simultaneously within specific temperature ranges. Availability and frequency of Burst Mode varies depending on, but not limited to, type of workload, hardware, software, number of active cores, power consumption, processor temperature, and system configuration as determined by your device OEM. For details on specific implementations depending on device configuration, please refer to your device manufacturers specifications.

3. Support for OpenGL ES 3.0 is available in the Intel Atom x3-C3445 processor; Near Field Communication (NFC) is an option in the Intel Atom x3-C3445 processor.

4. Intel® Atom™ x3-C3230RK, Intel® processor actual clock frequency during operation varies depending on but not limited to, type of workload, hardware, software, number of active cores, power consumption, processor temperature, and system configuration as determined by your device OEM. For details on specific implementations depending on device configuration, please refer to your device manufacturers specifications.

5. Wi-Fi only configurations also available. Intel® Atom™ x3-C3200RK, x3-C3405 are the Wi-Fi only configurations for Intel® Atom™ x3-C3230RK and x3-C3445 respectively. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps. Intel technologies may require enabled hardware, specific software, or services activation. Check with your system manufacturer or retailer. Requires a system with a 64-bit enabled processor, chipset, BIOS and software. Performance varies depending on the specific hardware and software you use. Check with your manufacturer for more information. Learn more at http://www.intel.com/info/em64t.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document. The products described may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

Copyright © 2015 Intel Corporation. All rights reserved. Intel, the Intel logo, Intel Experience What’s Inside, Atom, and SMARTi are trademarks of Intel Corporation in the U.S. and/or other countries.

* Other names and brands may be claimed as the property of others.