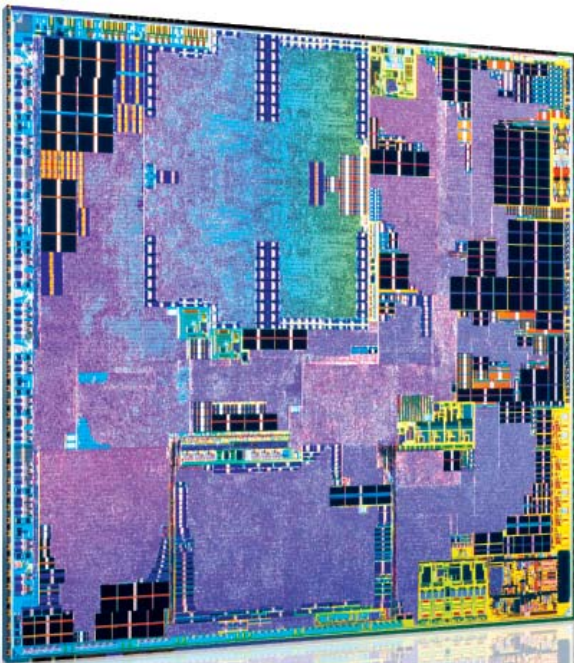(intel®)
experience
what's inside™

MOBILE PERFORMANCE, 3G AND LTE CONNECTIVITY, AND SMART VALUE BUILT IN

**Intel® SoC integration accelerates time-to-market
for affordable tablets and smartphones.**

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*[1] 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 Mobile[1] 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.

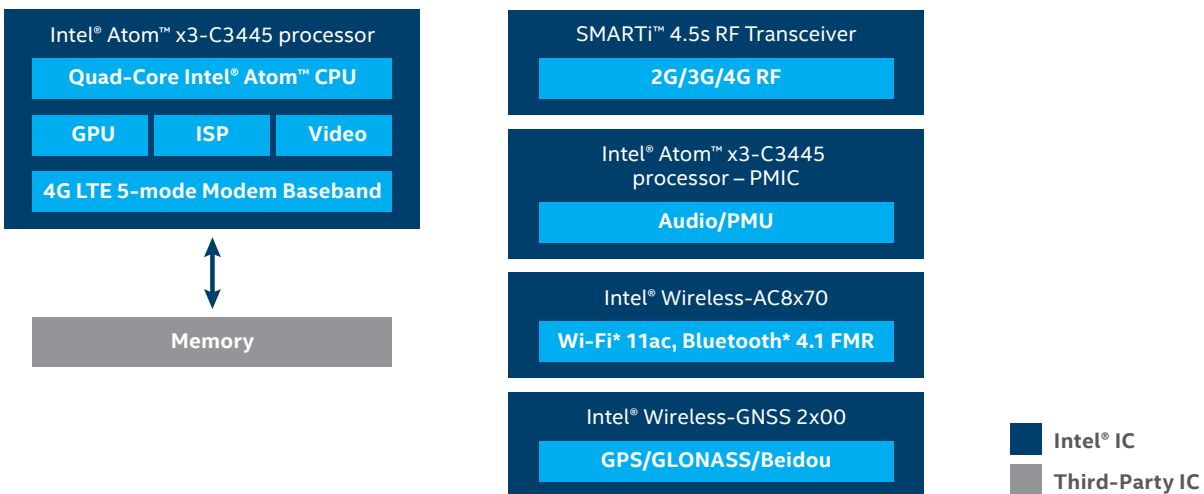**Near Field Communication**[3]**:** Streamlined tap-and-pay with simple, secure transactions.

Figure 1. The Intel® Atom™ x3-C3445 processor includes a 64-bit quad-core Intel® Atom™ CPU at up to 1.4 GHz Burst Mode[2] 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 Mode[2], 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 3.0[3] 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]
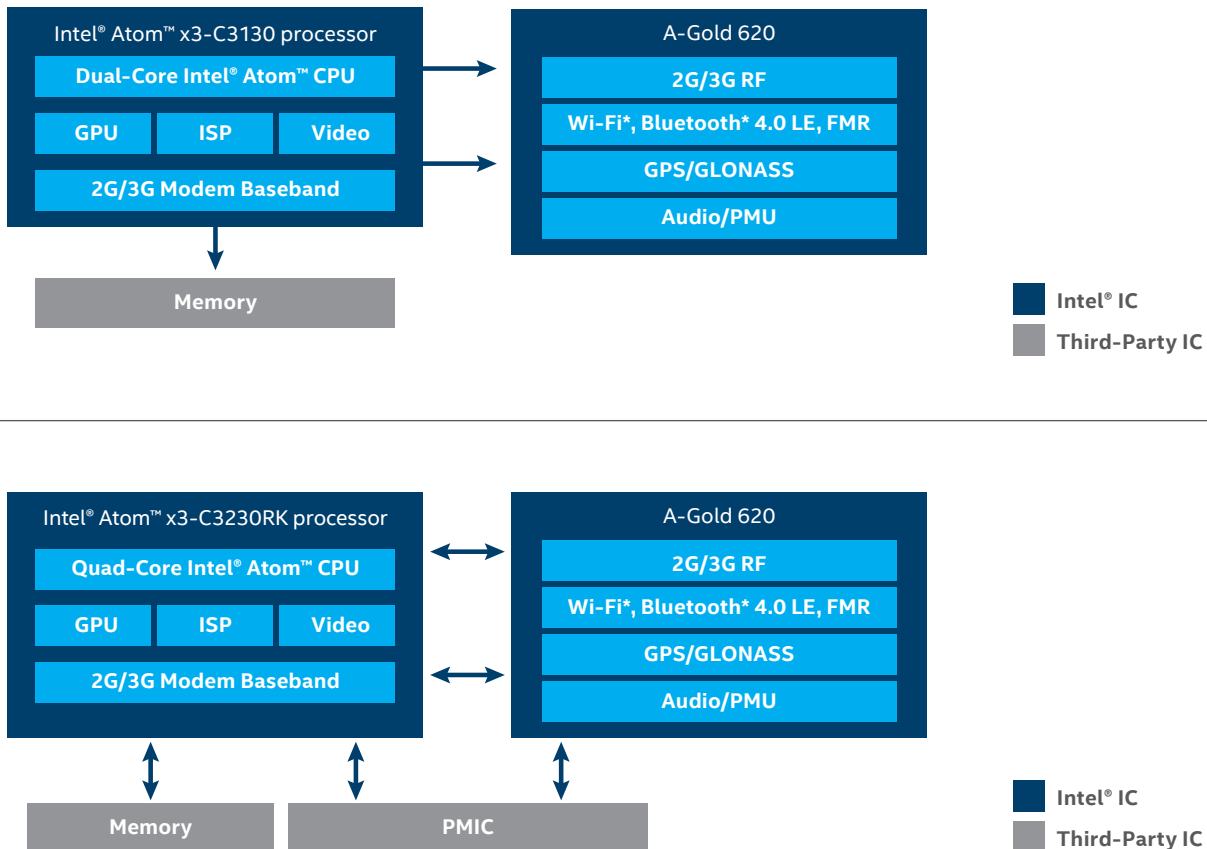

Intel® Atom™ x3-C3130 processor	A-Gold 620
Dual-Core Intel® Atom™ CPU	2G/3G RF
GPU	ISP	Video	Wi-Fi*, Bluetooth* 4.0 LE, FMR
2G/3G Modem Baseband	GPS/GLONASS
	Audio/PMU

Memory

Intel® IC
Third-Party IC

Intel® Atom™ x3-C3230RK processor	A-Gold 620
Quad-Core Intel® Atom™ CPU	2G/3G RF
GPU	ISP	Video	Wi-Fi*, Bluetooth* 4.0 LE, FMR
2G/3G Modem Baseband	GPS/GLONASS
	Audio/PMU

Memory   PMIC

Intel® IC
Third-Party IC

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.

INTEL® ATOM™ X3 PROCESSOR SERIES SPECIFICATIONS

	INTEL® ATOM™ x3-C3130 PROCESSOR (3G)	INTEL® ATOM™ x3-C3230RK PROCESSOR (3G)[5]	INTEL® ATOM™ x3-C3445 PROCESSOR (LTE)[5]
CPU	Dual-core 64-bit Atom x3 up to 1.0 GHz	Quad-core 64-bit Atom x3 up to 1.1 GHz[4]	Quad-core 64-bit Atom x3 up to 1.4 GHz[2]
Process	28nm	28nm	28nm
Graphics (GPU)	OpenGL ES 2.0	OpenGL ES 2.0	OpenGL ES 3.0 & DirectX* 9.3, OpenCL
Media (Encode/Decode)	Encode: H.264 @ 720p30 Decode: H.264, VP8 @ 1080p30	Encode: H.264 @ 1080p60 Decode: H.264, VP8 @ 1080p60 HEVC (H.265) @ 1080p60	Encode: H.264, VP8 @ 1080p30 Decode: H.264, VP8 @ 1080p30 VP9/H.265 (SW) Decoder
Memory	1x32 LPDDR2 800	1x32 LPDDR2/3 1066, DDR3/DDR3L 2x16 1066	1x32 LPDDR2/3 1066
Display Resolution	1280x800 @ 60fps	Up to 1920x1080 @ 60fps	1280x800 @ 60fps 1920x1080 >30fps
Modem (Integrated)	HSPA+ 21/5.8, GSM/GPRS/EDGE, DSDS	HSPA+ 21/5.8, GSM/GPRS/EDGE, DSDS	LTE FDD/TDD up to Cat 6 300 Mbps, DC-HSPA+ 42/11, TD-SCDMA, GSM/GPRS/EDGE, DSDS
Connectivity	Wi-Fi 802.11bgn, Bluetooth* 4.0 LE, GPS & GLONASS, FM Radio	Wi-Fi 802.11bgn, Bluetooth 4.0 LE, GPS & GLONASS, FM Radio	Wi-Fi 802.11ac, Bluetooth 4.1 LE, GPS, GLONASS & Beidou, FM Radio, Near Field Communication (optional feature)
Input Output	UART/SPI, I2C, I2S, SDIO	UART/SPI, I2C, I2S, SDIO	UART/SPI, I2C, I2S, SDIO
USB	USB 2.0 HS	USB 2.0 HS	USB 2.0 HS
Storage	eMMC 4.41	eMMC 4.51	eMMC 4.51
ISP/Camera (rear/front)	Up to 13 MP/5 MP	Up to 13 MP/5 MP	Up to 13 MP/5 MP

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, 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.

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