Comparison Chart

Overview	Beaglebone Black (BBB) (Rev C)	Beaglebone Green (BBG)	BeagleBone Green Wireless (BBGW)
Board Dimensions	3.4" (L) x 2.1" (W)	3.4" (L) x 2.1" (W) x .75" (H) (Height is with micro USB cable plugged in)"	3.4" (L) x 2.1" (W) x .85" (H) (Height is with micro USB cable plugged in)"
Board Weight	1.4 oz (39.68 g)	1.4 oz (39.68 g)	1.4oz (41g)
Printed Circuit Board	6 layer PCB	6 layer PCB	6 layer PCB
Processor	Texas Instruments Sitara AM3358 RISC	Texas Instruments Sitara AM3358 RISC	Texas Instruments Sitara AM3358 RISC
Description of Processor	The AM335x is enhanced with image, graphics processing, peripherals and industrial interface options such as EtherCAT and PROFIBUS. The devices support high-level operating systems (HLOS). Linux® and Android™ are available free of charge from TI. Standby power draw: ~25mW, Deep Sleep: ~7mW	The AM3358BZCZ100 on the BeagleBone Green is enhanced with image, graphics processing, peripherals and industrial interface options such as EtherCAT and PROFIBUS. The devices support high-level operating systems (HLOS). Linux® and Android™ are available free of charge from TI. Standby power draw: ~25mW, Deep Sleep: ~7mW	The AM3358BZCZ100 on the BeagleBone Green Wireless is enhanced with image, graphics processing, peripherals and industrial interface options such as EtherCAT and PROFIBUS. The devices support high-level operating systems (HLOS). Linux® and Android™ are available free of charge from TI. Standby power draw: ~25mW, Deep Sleep: ~7mW
Architecture	Sitara™ ARM® Cortex®-A8	Sitara™ ARM® Cortex®-A8	Sitara™ ARM® Cortex®-A8
Speed	1 GHz Max	1 GHz Max	1 GHz Max
Width, Instruction Set	32-bit	32-bit	32-bit
Real Time Clock	No	No	No
Watch Dog Timer	Yes, but must be initially activated by writing to /dev/watchdog, causing reset/reboot in a default 60 sec.	Yes, but must be initially activated by writing to /dev/watchdog, causing reset/reboot in a default 60 sec.	Yes, but must be initially activated by writing to /dev/watchdog, causing reset/reboot in a default 60 sec.
Cache	32KB of L1 Instruction & 32KB of Data Cache	32KB of L1 Instruction & 32KB of Data Cache	32KB of L1 Instruction & 32KB of Data Cache
RAM	512MB DDR3	512MB DDR3	512MB DDR3-1866
Storage	* BeagleBone Black Rev C: 4GB eMMC on-board flash storage *micro SD card slot	*Rev C and higher: 4GB eMMC on-board flash storage (A single 256Mb x16 DDR3L 4Gb (512MB) memory device is used on BBG) *micro SD card slot	*4GB eMMC on-board flash storage with JEDEC/MMC standard version 5.0-compliant * micro SD card slot
EEPROM	4KB	4KB	4KB
Graphics Support	PowerVR SGx 3D graphics accelerator	SGX530 3D, 20M Polygons/S 3D graphics accelerator	SGX530 3D, 20M Polygons/S 3D graphics accelerator
External Storage	Micro-SD-card, & support for an external USB2.0 drive	Micro-SD-card, & support for an external USB2.0 drive	Micro-SD-card, & support for up to 4 external USB2.0 drives
Video Support	HDMI	Via Cape only	Via HDMI Cape only
Audio Support	Yes, via HDMI (stereo)	No. Possible via cape or USB audio sound card. Not tested.	Yes, via A2DP
Status Indication	1 - Power on LED 2 - Ethernet LEDs located on the RJ45 (Yellow for Link up if on, Green flashing for traffic) 4 - User-defined LEDs controlled by setting GPIO pins	1 - Power on LED 2 - Ethernet LEDs located on the RJ45 (Yellow for Link up if on, Green flashing for traffic) 4 - User-defined LEDs controlled by setting GPIO pins	1 - Power LED 1 - LED for BT status and 1 LED for WLAN status 4 - User-defined LEDs controlled by setting GPIO pins
JTAG	Built-in JTAG emulator via USB. See "Getting started with JTAG and CCS"	Built-in JTAG emulator via USB. See "Getting started with JTAG and CCS". A place exists for an optional 20 pin CTI JTAG header "	Built-in JTAG emulator via USB. See "Getting started with JTAG and CCS". A place exists for an optional 20 pin CTI JTAG header "
Serial Debug	Serial port is available via the J1 header, using the FTDI USB to Serial adapter. (Only pins 1, 4 and 5 are connected on the board, so Vcc on pin 3 of the FTDI adapter does not affect the Beaglebone.)	Serial debug is provided via UART0 on the processor via a single 1x6 pin header. In order to use the interface a USB to TTL adapter will be required.	Serial debug is provided via UART0 on the processor via a single 1x6 pin header. In order to use the interface a USB to TTL adapter will be required.
Modules	Capes	Grove modules by Seeed Studio	Grove modules by Seeed Studio

Compatibility	Capes	Beaglebone Black compatible Capes.	Beaglebone Black compatible Capes.

General Purpose I/O	Beaglebone Black	Beaglebone Green	Beaglebone Green Wireless
Analog I/O	7 pins (AIN pins are rated 0 - 1.8V only)	7 pins (AIN pins are rated 0 - 1.8V only)	7 pins (AIN pins are rated 0 - 1.8V only)
Digital I/O (aka GPIO)	65 pins (rated 0 - 3.3V only)	65 pins (rated 0 - 3.3V only)	65 pins (rated 0 - 3.3V only)
PWM	8	8	8

Comparision of Peripherals/Utilities	Beaglebone Black	Beaglebone Green	Beaglebone Green Wireless
USB 2.0	HS USB 2.0 Client Port (Standard A) LS/FS/HS USB 2.0 Host Port (mini USB)	USB0: HS USB 2.0 Client Port (Micro USB) USB1: LS/FS/HS USB 2.0 Host Port(Standard A)	USB0: HS USB 2.0 Client Port (Micro USB) USB1: 4 x LS/FS/HS USB 2.0 Host Port (Standard A)
Ethernet	Yes, one 10/100 RJ45 port	Yes, one 10/100 RJ45 port	No
WLAN	No	No	WLAN Baseband Processor and RF transceiver supporting IEEE 802.11b/g/n. Wi-Fi 802.11b/g/n 2.4GHz 20 and 40MHz SISO and 20MHz 2x2 MIMO at 2.4 GHz for High Throughput:80 Mbps (TCP), 100 Mbps (UDP) 2.4 GHz MRC Support for Extended Range Wi-Fi Direct Concurrent Operation. (Multichannel, Multirole)
Bluetooth	No	No	Bluetooth 4.1 and CSA2 Support Host Controller Interface (HCI) Transport for Bluetooth over UART. Dedicated Audio Processor Support of SBC encoding + A2DP Dual-Mode Bluetooth and Bluetooth LE
SD Card Slot	One Micro SD can be the primary boot source if selected	One Micro SD can be the primary boot source if selected	One Micro SD can be the primary boot source if selected
I²C Two Wire Interface (TWI)	Yes	Yes	Yes
SPI	Yes	Yes	Yes
Serial Data (UART TTL)	UART0 access via 6 pin 3.3V TTL Header	UART0 access via 6 pin 3.3V TTL Header. Header is populated.	UART0 access via 6 pin 3.3V TTL Header. Header is populated.
UART	Yes	Yes	Yes
PWM	Yes, 8 total.	Yes, 8 total.	Yes, 8 total.
Buttons (manual User Input)	1 - Board reset button, located at the edge of the board. 1 - power button with orderly shutdown (located close to Ethernet connector). Power button will power up board if pressed again. 1 - Boot button; depress when booting from SD card.	1 - Board reset button, located at the edge of the board. 1 - power button with orderly shutdown (located close to Ethernet connector). Power button will power up board if pressed again. 1 - Boot button; depress when booting from SD card.	1 - Board reset button, located at the edge of the board. 1 - power button with orderly shutdown (located close to Ethernet connector). Power button will power up board if pressed again. 1 - Boot button; depress when booting from SD card.
Expansion headers	Power 5V, 3.3V , VDD_ADC(1.8V) 3.3V I/O on all signals McASP0, SPI1, I2C, GPIO(69 max),	Power 5V, 3.3V , VDD_ADC(1.8V) 3.3V I/O on all signals McASP0, SPI1, I2C, GPIO(69	Power 5V, 3.3V , VDD_ADC(1.8V) 3.3V I/O on all signals McASP0, SPI1, I2C, GPIO(69 max),
GPU	No, 3D graphics accelerator on processor	No, 3D graphics accelerator on processor	No, 3D graphics accelerator on processor
EEPROM	No	No	No
HDMI	Yes. A microHDMI cable adapter (grounded) may be necessary.	Cape add-ons.	Cape add-ons.
DVI	Cape Add on. (http://www.mouser.com/new/beagleboardorg/beaglebonecapes/) Possible with HDMI/DVI adapter (http://www.mouser.com/access/?pn=545-P130-08N)	No	No
VGA	Cape add-on; or Micro HDMI to VGA adapter (http://www.mouser.com/access/?pn=545-P131-06N-MICRO)	Cape add-ons.	Cape add-ons.

Touchscreen Display	LCD Touch Display via Cape	LCD Touch Display via Cape	LCD Touch Display via Cape
Industrial Protocols	1588, EtherNet/IP , PROFIBUS, PROFINET RT/IRT, SERCOS	1588, EtherNet/IP , PROFIBUS, PROFINET RT/IRT, SERCOS	1588, EtherNet/IP , PROFIBUS, PROFINET RT/IRT, SERCOS
CAN	Yes	Yes	Yes
CAN Bus	Yes. Cape add on.	Yes. Cape add on.	Yes. Cape add on.
Profibus	Yes. Cape add on.	Yes. Cape add on.	Yes. Cape add on.
LVDS	Yes. Cape add on.	Yes. Cape add on.	Yes. Cape add on.
Printer, 3D Printer	Cape add-ons.	Cape add-ons.	Cape add-ons.
Camera	Cape add-ons.	Cape add-ons.	Cape add-ons.
Geiger	Cape add-ons.	Cape add-ons.	Cape add-ons.

Board Requirements	**Beaglebone Black**	**Beaglebone Green**	**Beaglebone Green Wireless**
DC Power Supply (VIN)	5V barrel jack MiniUSB 5VDC via expansion header (5V @ 1A max)	USB port on a PC A power supply with a USB connector. External Power@5 volts via P9 Expansion header VDD_5V pin (5V @ 1A max)	USB port on a PC A power supply with a USB connector. External Power@5 volts via P9 Expansion header VDD_5V pin (5V @ 1A max)
USB 2.0 type A/B-micro cable	Included, a 6-inch long A/B micro cable.	Included, a 6-inch long A/B micro cable.	Included, a 6-inch long A/B micro cable.
SD Card	MicroSD card	MicroSD card	MicroSD card
Powered USB Hub	Not included. Recommended to power any USB peripherals that would take current draw	Not included. Recommended to power any USB peripherals that would take current	USB Hub on board. Recommended to power any USB peripherals that would take current

Comparison of Software and Development Tools	**Beaglebone Black**	**Beaglebone Green**	**Beaglebone Green Wireless**
Boots from:	eMMC on-board Boot - default, ships with pre-flashed image SD Boot from SD card Serial Boot - requires USB-to-serial cable USB Boot	eMMC on-board Boot - default, ships with pre-flashed image SD Boot from SD card Serial Boot - requires USB-to-serial cable USB Boot	eMMC on-board Boot - default, ships with pre-flashed image SD Boot from SD card Serial Boot - requires USB-to-serial cable USB Boot
Operating System(s) for the Target	Linux, Neutrino, Integrity, Windows Embedded CE, VXWorks, Android, FreeBSD, and others	Linux, Neutrino, Integrity, Windows Embedded CE, VXWorks, Android, FreeBSD, and others	Linux, Neutrino, Integrity, Windows Embedded CE, VXWorks, Android, FreeBSD, and others
Integrated Development Environment (IDE)	Code Composer Studio, based on open source Eclipse IDE. Free license is enabled that supports working with Beaglebone onboard debug interfaces. As of Aug 2015, subscription is NOT required for major upgrades.	Code Composer Studio, based on open source Eclipse IDE. Free license is enabled that supports working with Beaglebone onboard debug interfaces. As of Aug 2015, subscription is NOT required for major upgrades. See "Getting started with JTAG and CCS" in path: Docs/ccs-jtag-simple.htm located on your Beaglebone Green. "	Code Composer Studio, based on open source Eclipse IDE. Free license is enabled that supports working with Beaglebone onboard debug interfaces. As of Aug 2015, subscription is NOT required for major upgrades. See "Getting started with JTAG and CCS" in path: Docs/ccs-jtag-simple.htm located on your Beaglebone Green. "
	Cloud9 IDE on Node.js w/ BoneScript library. Cloud9 IDE is an online development environment for Node.js-based Javascript applications as well as HTML, CSS, PHP, Java, Ruby and 23 other languages	Cloud9 IDE on Node.js w/ BoneScript library. Cloud9 IDE is an online development environment for Node.js-based Javascript applications as well as HTML, CSS, PHP, Java, Ruby and 23 other languages	Cloud9 IDE on Node.js w/ BoneScript library. Cloud9 IDE is an online development environment for Node.js-based Javascript applications as well as HTML, CSS, PHP, Java, Ruby and 23 other languages
Free Software Development Kits by TI	Yocto Project compatible LINUX EZSDK for Sitara and ANDROIDSDK-SITARA	Yocto Project compatible LINUX EZSDK for Sitara and ANDROIDSDK-SITARA	Yocto Project compatible LINUX EZSDK for Sitara and ANDROIDSDK-SITARA
Supported Host-resident Operating Systems (System Console)	Linux, Windows	Linux, Windows	Linux, Windows

Programming languages	C++, Python, Userspace Arduino, Starterware (by TI); on Cloud9 IDE: Bonescript, Javascript, HTML, CSS, PHP, Java, Ruby and many more.	C++, Python, Userspace Arduino, Starterware (by TI); on Cloud9 IDE: Bonescript, Javascript, HTML, CSS, PHP, Java, Ruby and many more.	C++, Python, Userspace Arduino, Starterware (by TI); on Cloud9 IDE: Bonescript, Javascript, HTML, CSS, PHP, Java, Ruby and many more.
Drivers	Automatically install regardless of Host system	Automatically install regardless of Host system	Automatically install regardless of Host system
Boots from:	GNU/Linux Debian distribution from on-board flash	GNU/Linux Debian distribution from on-board flash	GNU/Linux Debian distribution from on-board flash

Applications	**Beaglebone Black**	**Beaglebone Green**	**Beaglebone Green Wireless**
Single Board Computer/Linux Box	Yes	Yes	Yes
IoT	Microsoft Azure Certified for IoT, Beaglebone is recognized as a building block to implement the IoT by Microsoft. Azure offers cloud-based preconfigured solutions that address common Internet of Things scenarios.	Microsoft Azure Certified for IoT, Beaglebone is recognized as a building block to implement the IoT by Microsoft. Azure offers cloud-based preconfigured solutions that address common Internet of Things scenarios.	Google Cloud Platform Microsoft Azure Certified for IoT, Beaglebone is recognized as a building block to implement the IoT by Microsoft. Azure offers cloud-based preconfigured solutions that address common Internet of Things scenarios.
Wireless, Robotics, Low Power Instrumentation, Smart Appliances, Networking, Industrial/Home Automation, Consumer Electronics	Yes	Yes	Yes

Resources	**Beaglebone Black**	**Beaglebone Green**	**Beaglebone Green Wireless**
Accessories	Capes	Capes Grove Modules	Capes Grove Modules
Source Code	Source code Repositories	Source code Repositories	Source code Repositories
Firmware Images	Latest firmware images	Latest firmware images	Latest firmware images
Hardware Files	Hardware files for BBB, all Revs	Hardware files for BBGreen	Hardware files for BBGreen Wireless
Wiki	Official Beaglebone Black Wiki	Official Beaglebone Green Wiki	Official Beaglebone Green Wireless Wiki
Other	TI Beaglebone Black Product Page		
Schematic, BOM, PCB files, Schematic source files	See Hardware files above	See Hardware files above	See Hardware files above
Forums/Communities	BBB Forum, TI, Linaro, and the Ubuntu and Yocto Project™ communities	TBD, but BBB communities should have many topics covered that are in common with BBG	TBD, but BBB communities should have many topics covered that are in common with BBGW