



Beaglebone green User Manual

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Bazaar: http://www.seeedstudio.com/depot/BeagleBone-Green-p-2504.html?cPath=122_113

Document Revision History

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| | | | |

Contents

| | |
|---|----|
| Document Revision History | 2 |
| 1. Introduction | 2 |
| 2. Technical Details | 3 |
| 3. Hardware Overview | 4 |
| 3.1 Design materials | 4 |
| 3.2 Headers | 5 |
| 3.2.1 Cape Expansion Headers | 5 |
| 3.2.2 65 Possible Digital I/Os | 5 |
| 3.2.3 PWMs and Timers | 6 |
| 3.2.4 Analog Inputs | 7 |
| 3.2.5 UART | 7 |
| 3.2.6 I2C | 8 |
| 3.2.7 SPI | 9 |
| 4. Software | 10 |
| 4.1 Software Support | 10 |
| 4.2 Getting Started | 10 |
| 4.3 Cloud9 IDE | 10 |
| 4.4 Update image | 11 |
| 4.4.1 Step1: Download the latest microSD card image | 11 |
| 4.4.2 Step2: Install compression utility | 12 |
| 4.4.3 Step3: Decompress the image | 12 |
| 4.4.4 Step4: Install SD card programming utility | 12 |
| 4.4.5 Step5: Connect SD card to your computer | 12 |
| 4.4.6 Step6: Write the image to your SD card | 12 |
| 4.4.7 Step7: Eject the SD card | 13 |
| 4.4.8 Step8: Boot your board off of the SD card | 13 |
| 5. Resources | 14 |

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

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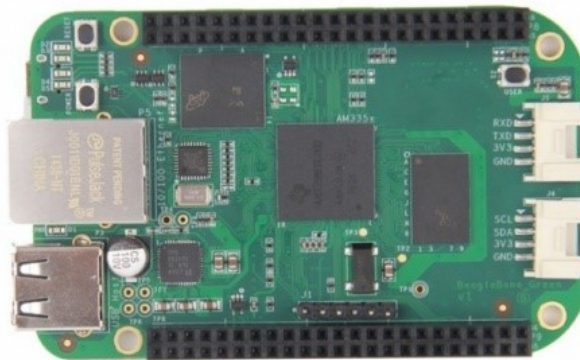
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1. Introduction

BeagleBone Green (BBG) is based on the classical open-source hardware design of BeagleBone Black (BBB) and added two Grove connectors.

It has removed the HDMI port on the BBB and also updated the 5V barrel to Micro USB host. It is a low-cost, community-supported development platform for developers and hobbyists.

Boot Linux in under 10 seconds and get started on development in less than 5 minutes with just a single USB cable.



2. Technical Details

Processor

- AM335x 1GHz ARM® Cortex-A8
- 512MB DDR3 RAM
- 4GB eMMC on-board flash storage
- 3D graphics accelerator
- NEON floating-point

Software Compatibility

- Debian
- Android
- Ubuntu
- Cloud9 IDE on Node
- Support much more

Connectivity

- USB client for power & communications
- USB host
- Ethernet
- 2x Grove
- 2x 46 pin headers

3. Hardware Overview

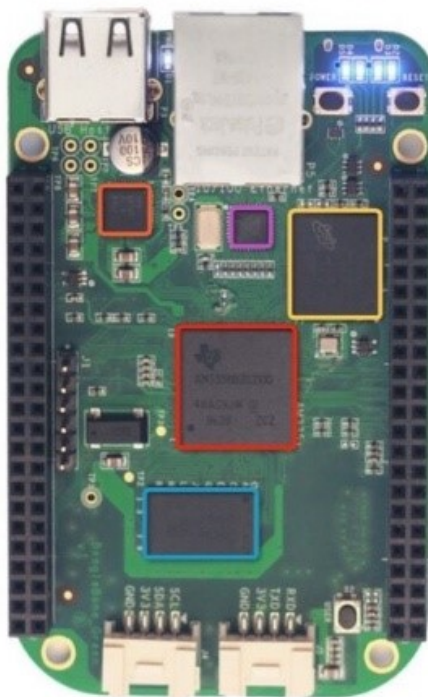
Seeed.cc's BeagleBoneGreen page documents all of the known hardware issues, as well as the latest available software, hardware documentation and design materials.

Always read the System Reference Manual!

3.1 Design materials

Design materials for creating your own customized version of the hardware, or for better understanding the design are also linked from the traditional home of "<http://beagleboard.org/hardware/design>"

BeagleBone Green hardware details



- **Sitara AM3358BZCZ100** is the processor for the board.
- **Micron 512M DDR3L** is the Dual Data Rate RAM memory.
- **Micron eMMC** is an onboard MMC chip that holds up to 4GB of data
- **SMSC Ethernet PHY** is the physical interface to the network
- **TPS65217C PMIC** provides the power rails to the various components on the board

POWER button can be used to enter and exit hibernate modes once that feature is implemented in the software.

3.2 Headers

The expansion headers provide extensive I/O capabilities.

3.2.1 Cape Expansion Headers

Each digital I/O pin has 8 different modes that can be selected, including GPIO.

| P9 | | | | P8 | | | |
|-----------|----|----|------------|------------|----|----|-------------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | MMC1_DAT6 | 3 | 4 | MMC1_DAT7 |
| VDD_5V | 5 | 6 | VDD_5V | MMC1_DAT2 | 5 | 6 | MMC1_DAT3 |
| SYS_5V | 7 | 8 | SYS_5V | GPIO_66 | 7 | 8 | GPIO_67 |
| PWR_BTN | 9 | 10 | SYS_RESETN | GPIO_69 | 9 | 10 | GPIO_68 |
| UART4_RXD | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| UART4_TXD | 13 | 14 | EHRPWM1A | EHRPWM2B | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | EHRPWM1B | GPIO_47 | 15 | 16 | GPIO_46 |
| SPI0_CS0 | 17 | 18 | SPI0_D1 | GPIO_27 | 17 | 18 | GPIO_65 |
| I2C2_SCL | 19 | 20 | I2C2_SDA | EHRPWM2A | 19 | 20 | MMC1_CMD |
| SPI0_D0 | 21 | 22 | SPI0_SCLK | MMC1_CLK | 21 | 22 | MMC1_DAT5 |
| GPIO_49 | 23 | 24 | UART1_TXD | MMC1_DAT4 | 23 | 24 | MMC1_DAT1 |
| GPIO_117 | 25 | 26 | UART1_RXD | MMC1_DAT0 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | SPI1_CS0 | LCD_VSYNC | 27 | 28 | LCD_PCLK |
| SPI1_D0 | 29 | 30 | GPIO_122 | LCD_HSYNC | 29 | 30 | LCD_AC_BIAS |
| SPI1_SCLK | 31 | 32 | VDD_ADC | LCD_DATA14 | 31 | 32 | LCD_DATA15 |
| AIN4 | 33 | 34 | GNDA_ADC | LCD_DATA13 | 33 | 34 | LCD_DATA11 |
| AIN6 | 35 | 36 | AIN5 | LCD_DATA12 | 35 | 36 | LCD_DATA10 |
| AIN2 | 37 | 38 | AIN3 | LCD_DATA8 | 37 | 38 | LCD_DATA9 |
| AIN0 | 39 | 40 | AIN1 | LCD_DATA6 | 39 | 40 | LCD_DATA7 |
| GPIO_20 | 41 | 42 | ECAPWMO | LCD_DATA4 | 41 | 42 | LCD_DATA5 |
| DGND | 43 | 44 | DGND | LCD_DATA2 | 43 | 44 | LCD_DATA3 |
| DGND | 45 | 46 | DGND | LCD_DATA0 | 45 | 46 | LCD_DATA1 |

| LEGEND | |
|------------------------|--|
| POWER/GROUND/RESET | |
| AVAILABLE DIGITAL | |
| AVAILABLE PWM | |
| SHARED I2C BUS | |
| RECONFIGURABLE DIGITAL | |
| ANALOG INPUTS (1.8V) | |

3.2.2 65 Possible Digital I/Os

In GPIO mode, each digital I/O can produce interrupts.

| P9 | | | | P8 | | | |
|----------|----|----|------------|---------|----|----|---------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | GPIO_38 | 3 | 4 | GPIO_39 |
| VDD_5V | 5 | 6 | VDD_5V | GPIO_34 | 5 | 6 | GPIO_35 |
| SYS_5V | 7 | 8 | SYS_5V | GPIO_66 | 7 | 8 | GPIO_67 |
| PWR_BUT | 9 | 10 | SYS_RESETN | GPIO_69 | 9 | 10 | GPIO_68 |
| GPIO_30 | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| GPIO_31 | 13 | 14 | GPIO_50 | GPIO_23 | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | GPIO_51 | GPIO_47 | 15 | 16 | GPIO_46 |
| GPIO_5 | 17 | 18 | GPIO_4 | GPIO_27 | 17 | 18 | GPIO_65 |
| I2C2_SCL | 19 | 20 | I2C2_SDA | GPIO_22 | 19 | 20 | GPIO_63 |
| GPIO_3 | 21 | 22 | GPIO_2 | GPIO_62 | 21 | 22 | GPIO_37 |
| GPIO_49 | 23 | 24 | GPIO_15 | GPIO_36 | 23 | 24 | GPIO_33 |
| GPIO_117 | 25 | 26 | GPIO_14 | GPIO_32 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | GPIO_123 | GPIO_86 | 27 | 28 | GPIO_88 |
| GPIO_121 | 29 | 30 | GPIO_122 | GPIO_87 | 29 | 30 | GPIO_89 |
| GPIO_120 | 31 | 32 | VDD_ADC | GPIO_10 | 31 | 32 | GPIO_11 |
| AIN4 | 33 | 34 | GNDA_ADC | GPIO_9 | 33 | 34 | GPIO_81 |
| AIN6 | 35 | 36 | AIN5 | GPIO_8 | 35 | 36 | GPIO_80 |
| AIN2 | 37 | 38 | AIN3 | GPIO_78 | 37 | 38 | GPIO_79 |
| AIN0 | 39 | 40 | AIN1 | GPIO_76 | 39 | 40 | GPIO_77 |
| GPIO_20 | 41 | 42 | GPIO_7 | GPIO_74 | 41 | 42 | GPIO_75 |
| DGND | 43 | 44 | DGND | GPIO_72 | 43 | 44 | GPIO_73 |
| DGND | 45 | 46 | DGND | GPIO_70 | 45 | 46 | GPIO_71 |

3.2.3 PWMs and Timers

Up to 8 digital I/O pins can be configured with pulse-width modulators (PWM) to produce signals to control motors or create pseudo analog voltage levels, without taking up any extra CPU cycles.

| P9 | | | | P8 | | | |
|----------|----|----|------------|----------|----|----|----------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | GPIO_38 | 3 | 4 | GPIO_39 |
| VDD_5V | 5 | 6 | VDD_5V | GPIO_34 | 5 | 6 | GPIO_35 |
| SYS_5V | 7 | 8 | SYS_5V | TIMER4 | 7 | 8 | TIMER7 |
| PWR_BUT | 9 | 10 | SYS_RESETN | TIMER5 | 9 | 10 | TIMER6 |
| GPIO_30 | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| GPIO_31 | 13 | 14 | EHRPWM1A | EHRPWM2B | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | EHRPWM1B | GPIO_47 | 15 | 16 | GPIO_46 |
| GPIO_5 | 17 | 18 | GPIO_4 | GPIO_27 | 17 | 18 | GPIO_65 |
| I2C2_SCL | 19 | 20 | I2C2_SDA | EHRPWM2A | 19 | 20 | GPIO_63 |
| EHRPWMOB | 21 | 22 | EHRPWMOA | GPIO_62 | 21 | 22 | GPIO_37 |
| GPIO_49 | 23 | 24 | GPIO_15 | GPIO_36 | 23 | 24 | GPIO_33 |
| GPIO_117 | 25 | 26 | GPIO_14 | GPIO_32 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | ECAPPWM2 | GPIO_86 | 27 | 28 | GPIO_88 |
| EHRPWMOB | 29 | 30 | GPIO_122 | GPIO_87 | 29 | 30 | GPIO_89 |
| EHRPWMOA | 31 | 32 | VDD_ADC | GPIO_10 | 31 | 32 | GPIO_11 |
| AIN4 | 33 | 34 | GNDA_ADC | GPIO_9 | 33 | 34 | EHRPWM1B |
| AIN6 | 35 | 36 | AIN5 | GPIO_8 | 35 | 36 | EHRPWM1A |
| AIN2 | 37 | 38 | AIN3 | GPIO_78 | 37 | 38 | GPIO_79 |
| AIN0 | 39 | 40 | AIN1 | GPIO_76 | 39 | 40 | GPIO_77 |
| GPIO_20 | 41 | 42 | ECAPPWMO | GPIO_74 | 41 | 42 | GPIO_75 |
| DGND | 43 | 44 | DGND | GPIO_72 | 43 | 44 | GPIO_73 |
| DGND | 45 | 46 | DGND | EHRPWM2A | 45 | 46 | EHRPWM2B |

3.2.4 Analog Inputs

Make sure you don't input more than 1.8V to the analog input pins. This is a single 12-bit analog-to-digital converter with 8 channels, 7 of which are made available on the headers.

| P9 | | | | P8 | | | |
|----------|----|----|------------|---------|----|----|---------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | GPIO_38 | 3 | 4 | GPIO_39 |
| VDD_5V | 5 | 6 | VDD_5V | GPIO_34 | 5 | 6 | GPIO_35 |
| SYS_5V | 7 | 8 | SYS_5V | GPIO_66 | 7 | 8 | GPIO_67 |
| PWR_BTN | 9 | 10 | SYS_RESETN | GPIO_69 | 9 | 10 | GPIO_68 |
| GPIO_30 | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| GPIO_31 | 13 | 14 | GPIO_50 | GPIO_23 | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | GPIO_51 | GPIO_47 | 15 | 16 | GPIO_46 |
| GPIO_5 | 17 | 18 | GPIO_4 | GPIO_27 | 17 | 18 | GPIO_65 |
| I2C_SCL | 19 | 20 | I2C_SDA | GPIO_22 | 19 | 20 | GPIO_63 |
| GPIO_3 | 21 | 22 | GPIO_2 | GPIO_62 | 21 | 22 | GPIO_37 |
| GPIO_49 | 23 | 24 | GPIO_15 | GPIO_36 | 23 | 24 | GPIO_33 |
| GPIO_117 | 25 | 26 | GPIO_14 | GPIO_32 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | GPIO_123 | GPIO_86 | 27 | 28 | GPIO_88 |
| GPIO_121 | 29 | 30 | GPIO_122 | GPIO_87 | 29 | 30 | GPIO_89 |
| GPIO_120 | 31 | 32 | VDD_ADC | GPIO_10 | 31 | 32 | GPIO_11 |
| AIN4 | 33 | 34 | GNDA_ADC | GPIO_9 | 33 | 34 | GPIO_81 |
| AIN6 | 35 | 36 | AIN5 | GPIO_8 | 35 | 36 | GPIO_80 |
| AIN2 | 37 | 38 | AIN3 | GPIO_78 | 37 | 38 | GPIO_79 |
| AIN0 | 39 | 40 | AIN1 | GPIO_76 | 39 | 40 | GPIO_77 |
| GPIO_20 | 41 | 42 | GPIO_7 | GPIO_74 | 41 | 42 | GPIO_75 |
| DGND | 43 | 44 | DGND | GPIO_72 | 43 | 44 | GPIO_73 |
| DGND | 45 | 46 | DGND | GPIO_70 | 45 | 46 | GPIO_71 |

3.2.5 UART

There is a dedicated header for getting to the UART0 pins and connecting a debug cable. Five additional serial ports are brought to the expansion headers, but one of them only has a single direction brought to the headers.

| P9 | | | | P8 | | | |
|------------|----|----|------------|-------------|----|----|------------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | GPIO_38 | 3 | 4 | GPIO_39 |
| VDD_5V | 5 | 6 | VDD_5V | GPIO_34 | 5 | 6 | GPIO_35 |
| SYS_5V | 7 | 8 | SYS_5V | GPIO_66 | 7 | 8 | GPIO_67 |
| PWR_BTN | 9 | 10 | SYS_RESETN | GPIO_69 | 9 | 10 | GPIO_68 |
| UART4_RXD | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| UART4_TXD | 13 | 14 | GPIO_50 | GPIO_23 | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | GPIO_51 | GPIO_47 | 15 | 16 | GPIO_46 |
| GPIO_5 | 17 | 18 | GPIO_4 | GPIO_27 | 17 | 18 | GPIO_65 |
| UART1_RTSN | 19 | 20 | UART1_CTSN | GPIO_22 | 19 | 20 | GPIO_63 |
| UART2_TXD | 21 | 22 | UART2_RXD | GPIO_62 | 21 | 22 | GPIO_37 |
| GPIO_49 | 23 | 24 | UART1_TXD | GPIO_36 | 23 | 24 | GPIO_33 |
| GPIO_117 | 25 | 26 | UART1_RXD | GPIO_32 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | GPIO_123 | GPIO_86 | 27 | 28 | GPIO_88 |
| GPIO_121 | 29 | 30 | GPIO_122 | GPIO_87 | 29 | 30 | GPIO_89 |
| GPIO_120 | 31 | 32 | VDD_ADC | UART5_CTSN+ | 31 | 32 | UART5_RTSN |
| AIN4 | 33 | 34 | GNDA_ADC | UART4_RTSN | 33 | 34 | UART3_RTSN |
| AIN6 | 35 | 36 | AIN5 | UART4_CTSN | 35 | 36 | UART3_CTSN |
| AIN2 | 37 | 38 | AIN3 | UART5_TXD+ | 37 | 38 | UART5_RXD+ |
| AIN0 | 39 | 40 | AIN1 | GPIO_76 | 39 | 40 | GPIO_77 |
| GPIO_20 | 41 | 42 | UART3_TXD | GPIO_74 | 41 | 42 | GPIO_75 |
| DGND | 43 | 44 | DGND | GPIO_72 | 43 | 44 | GPIO_73 |
| DGND | 45 | 46 | DGND | GPIO_70 | 45 | 46 | GPIO_71 |

3.2.6 I2C

The first I2C bus is utilized for reading EEPROMS on cape add-on boards and can't be used for other digital I/O operations without interfering with that function, but you can still use it to add other I2C devices at available addresses. The second I2C bus is available for you to configure and use.

| P9 | | | | P8 | | | |
|----------|----|----|------------|---------|----|----|---------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | GPIO_38 | 3 | 4 | GPIO_39 |
| VDD_5V | 5 | 6 | VDD_5V | GPIO_34 | 5 | 6 | GPIO_35 |
| SYS_5V | 7 | 8 | SYS_5V | GPIO_66 | 7 | 8 | GPIO_67 |
| PWR_BTN | 9 | 10 | SYS_RESETN | GPIO_69 | 9 | 10 | GPIO_68 |
| GPIO_30 | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| GPIO_31 | 13 | 14 | GPIO_50 | GPIO_23 | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | GPIO_51 | GPIO_47 | 15 | 16 | GPIO_46 |
| I2C1_SCL | 17 | 18 | I2C1_SDA | GPIO_27 | 17 | 18 | GPIO_65 |
| I2C2_SCL | 19 | 20 | I2C2_SDA | GPIO_22 | 19 | 20 | GPIO_63 |
| I2C2_SCL | 21 | 22 | I2C2_SDA | GPIO_62 | 21 | 22 | GPIO_37 |
| GPIO_49 | 23 | 24 | I2C1_SCL | GPIO_36 | 23 | 24 | GPIO_33 |
| GPIO_117 | 25 | 26 | I2C1_SDA | GPIO_32 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | GPIO_123 | GPIO_86 | 27 | 28 | GPIO_88 |
| GPIO_121 | 29 | 30 | GPIO_122 | GPIO_87 | 29 | 30 | GPIO_89 |
| GPIO_120 | 31 | 32 | VDD_ADC | GPIO_10 | 31 | 32 | GPIO_11 |
| AIN4 | 33 | 34 | GNDA_ADC | GPIO_9 | 33 | 34 | GPIO_81 |
| AIN6 | 35 | 36 | AIN5 | GPIO_8 | 35 | 36 | GPIO_80 |
| AIN2 | 37 | 38 | AIN3 | GPIO_78 | 37 | 38 | GPIO_79 |
| AIN0 | 39 | 40 | AIN1 | GPIO_76 | 39 | 40 | GPIO_77 |
| GPIO_20 | 41 | 42 | GPIO_7 | GPIO_74 | 41 | 42 | GPIO_75 |
| DGND | 43 | 44 | DGND | GPIO_72 | 43 | 44 | GPIO_73 |
| DGND | 45 | 46 | DGND | GPIO_70 | 45 | 46 | GPIO_71 |

3.2.7 SPI

For shifting out data fast, you might consider using one of the SPI ports.

| P9 | | | | P8 | | | |
|-----------|----|----|------------|---------|----|----|---------|
| DGND | 1 | 2 | DGND | DGND | 1 | 2 | DGND |
| VDD_3V3 | 3 | 4 | VDD_3V3 | GPIO_38 | 3 | 4 | GPIO_39 |
| VDD_5V | 5 | 6 | VDD_5V | GPIO_34 | 5 | 6 | GPIO_35 |
| SYS_5V | 7 | 8 | SYS_5V | GPIO_66 | 7 | 8 | GPIO_67 |
| PWR_BTN | 9 | 10 | SYS_RESETN | GPIO_69 | 9 | 10 | GPIO_68 |
| GPIO_30 | 11 | 12 | GPIO_60 | GPIO_45 | 11 | 12 | GPIO_44 |
| GPIO_31 | 13 | 14 | GPIO_50 | GPIO_23 | 13 | 14 | GPIO_26 |
| GPIO_48 | 15 | 16 | GPIO_51 | GPIO_47 | 15 | 16 | GPIO_46 |
| SPIO_CS0 | 17 | 18 | SPIO_D1 | GPIO_27 | 17 | 18 | GPIO_65 |
| SPI1_CS1 | 19 | 20 | SPI1_CS0 | GPIO_22 | 19 | 20 | GPIO_63 |
| SPIO_D0 | 21 | 22 | SPIO_SCLK | GPIO_62 | 21 | 22 | GPIO_37 |
| GPIO_49 | 23 | 24 | GPIO_15 | GPIO_36 | 23 | 24 | GPIO_33 |
| GPIO_117 | 25 | 26 | GPIO_14 | GPIO_32 | 25 | 26 | GPIO_61 |
| GPIO_115 | 27 | 28 | SPI1_CS0 | GPIO_86 | 27 | 28 | GPIO_88 |
| SPI1_D0 | 29 | 30 | SPI1_D1 | GPIO_87 | 29 | 30 | GPIO_89 |
| SPI1_SCLK | 31 | 32 | VDD_ADC | GPIO_10 | 31 | 32 | GPIO_11 |
| AIN4 | 33 | 34 | GNDA_ADC | GPIO_9 | 33 | 34 | GPIO_81 |
| AIN6 | 35 | 36 | AIN5 | GPIO_8 | 35 | 36 | GPIO_80 |
| AIN2 | 37 | 38 | AIN3 | GPIO_78 | 37 | 38 | GPIO_79 |
| AIN0 | 39 | 40 | AIN1 | GPIO_76 | 39 | 40 | GPIO_77 |
| GPIO_20 | 41 | 42 | SPI1_CS1 | GPIO_74 | 41 | 42 | GPIO_75 |
| DGND | 43 | 44 | DGND | GPIO_72 | 43 | 44 | GPIO_73 |
| DGND | 45 | 46 | DGND | GPIO_70 | 45 | 46 | GPIO_71 |

4. Software

4.1 Software Support

Android? Ubuntu? Gentoo? Whatever your software preference, get started on development with your Beagle and the software resources by

click <http://beagleboard.org/Support/Software+Support>.

4.2 Getting Started

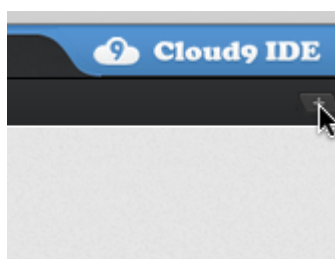
Beaglebone Green is a tiny computer with all the capability of today's desktop machines, without the bulk, expense, or noise. Read the step-by-step getting started tutorial by

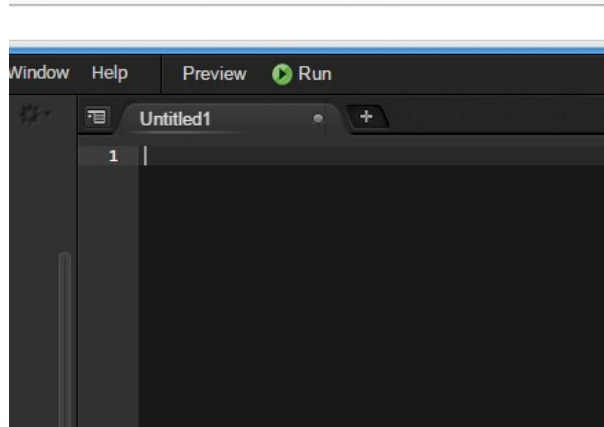
click <http://beagleboard.org/getting-started> to begin developing with your BeagleBone in minutes.

4.3 Cloud9 IDE

To begin editing programs that live on your board, you can use the Cloud9 IDE. As a simple exercise to become familiar with Cloud9 IDE, creating a simple application to blink one of the 4 user programmable LEDs on the BeagleBone is a good start.

- **Step1:** Close any open file tabs.
- **Step2:** Click the "+" in the top-right to create a new file.





- **Step3:** Copy and paste the following code into the new tab

```
import Adafruit_BBIO.GPIO as GPIO
import time
GPIO.setup("P9_14", GPIO.OUT)
while True:
    GPIO.output("P9_14", GPIO.HIGH)
    time.sleep(0.5)
    GPIO.output("P9_14", GPIO.LOW)
    time.sleep(0.5)
```

- **Step4:** Save the file by clicking the disk icon and giving the file a name with the .py extension.
- **Step5:** Run the code

Select the arrow to the right of "**run**" (or "**debug**") in the toolbar to pull down the list of files to run and select your new file.

- **Step6:** Observe the BeagleBone P9_14 led blinking steadily about once a second.
- **Step7:** Stop the code by clicking "stop" in the toolbar.

4.4 Update image

There are multiple ways to run initial software on your board, but it is likely that the simplest way to get an update is to create an exact replica of a bootable microSD card and boot off of it.

The BeagleBone Green that can be initialized by a program booted off of a microSD card. If you want to update to the latest software image for your board, this is a way to do that.

4.4.1 Step1: Download the latest microSD card image


Download the image from

<http://statics.seeed.cc/products/platforms/BeagleBoneGreen/bone-debian-7.8-lxde-4gb-armhf-2015-07-13-4gb-for-user.7z> .

The file you download will have an .img.xz extension. This is a compressed sector-by-sector image of the SD card.

4.4.2 Step2: Install compression utility

Download and install 7-zip by click <http://www.7-zip.org/download.html> .



Download

Download 7-Zip 15.05 beta (2015-06-14) for Windows:

| Link | Type | Windows | Description |
|--------------------------|------|-----------------|---|
| Download | .exe | 32-bit x86 | 7-Zip for 32-bit Windows |
| Download | .exe | 64-bit x64 | 7-Zip for 64-bit Windows x64 (Intel 64 or AMD64) |
| Download | .7z | x86 / x64 | 7-Zip Extra: standalone console version, 7z DLL, Plugin for Far Manager |
| Download | .7z | Any | 7-Zip Source code |
| Download | .7z | Any / x86 / x64 | LZMA SDK: (C, C++, C#, Java) |

4.4.3 Step3: Decompress the image

Use 7-zip to decompress the SD card .img file

4.4.4 Step4: Install SD card programming utility

Download and install Image Writer for Windows by click

<http://sourceforge.net/projects/win32diskimager/files/latest/download> .

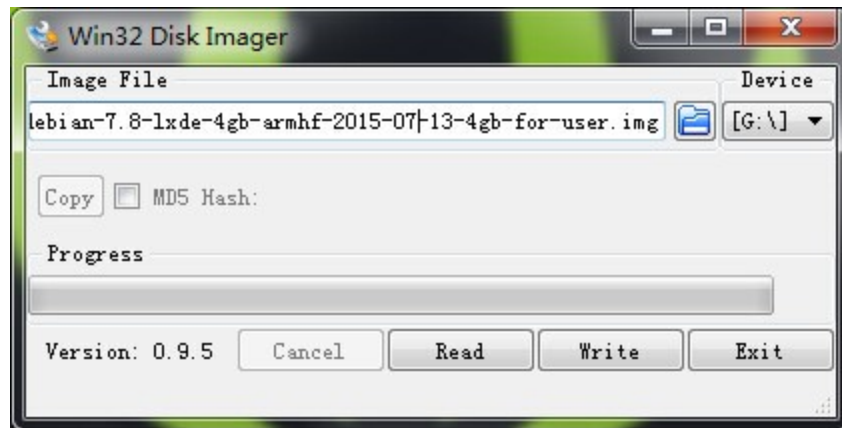
Be sure to download the binary distribution.

4.4.5 Step5: Connect SD card to your computer

Use the provided microSD card to SD adapter or a USB adapter to connect the SD card to your computer.

4.4.6 Step6: Write the image to your SD card

Use either the Ubuntu Image Writer or instructions on its page to write the decompressed image to your SD card.



4.4.7 Step7: Eject the SD card

Eject the newly programmed SD card.

4.4.8 Step8: Boot your board off of the SD card

Insert SD card into your (powered-down) board, hold down the USER/BOOT button (if using Black) and apply power, either by the USB cable or 5V adapter.

If using an original white BeagleBone, you are done.

If using BeagleBone Green and the image is meant to program your on-board eMMC, you'll need to wait while the programming occurs.

When the flashing is complete, all 4 USRx LEDs will be lit solid.

Note: This can take up to 45 minutes. Power-down your board, remove the SD card and apply power again to be complete.

5. Resources

- [BEAGLEBONE_GREEN SRM\(pdf\)](#)
- [BEAGLEBONE_GREEN Schematic\(pdf\)](#)
- [BEAGLEBONE_GREEN Schematic\(OrCAD\)](#)
- [BEAGLEBONE_GREEN BOM\(xls\)](#)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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