

BeagleBone Home Automation

Juha Lumme

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Juha Lumme : BeagleBone Home Automation before purchasing it in order to gauge whether or not it would be worth my time, and all praised BeagleBone Home Automation:

23 of 23 people found the following review helpful. Don't buy this book! By karma0 This book seems to attempt to start at the basics and work its way up through the depths of electronics and hardware to achieve _something_ with which the reader can utilize as a skill set to implement their own home automation system. With that, it falls short in a number of ways: 1. It assumes that you have familiarity with programming in python and that you have some experience with Java on the Android platform, and that you're wielding a BeagleBone Black, not a BeagleBone. 2. While it makes assumptions that you don't know anything about the BeagleBone Black, Linux, electricity, schematics, or electronic terminology, it does approach offensive with the level of detail that it goes into when it's not quite necessary. It's hit and miss though, so you would be ill advised to use this book as an intro to anything. 3. The examples provided, and often, even the chapters themselves seem to veer quite far from the context or path of the learning material. One example of this is how the book covers in great detail the implementation of a pretty useless

custom TCP/IP network protocol. If you want to do such a thing, buy a book on that topic and do it right.⁴ In contrast, things that should be in the book often aren't. The last couple of chapters talked about the importance of securing the network protocol that you implement so that 3rd parties can't connect, hijack, or otherwise monitor your home on your behalf. The last paragraph of the book **spoiler alert!** suggests that you continue with the author's suggestions by implementing something yourself.⁵ The book doesn't really cover home automation. I couldn't so much as turn on a light after following the content. In fact, I would say that it barely covered the Beaglebone Black. The implementations and examples in the book are, simply put, terrible. Here's a few reasons why:

1. All of the networking library is built using functions, and not a one is a part of a class. The author has no idea what he's doing in what may be the easiest programming language to learn, ever.
2. There is absolutely no reason that a person attempting home automation should be implementing their own network stack; this material could easily account for about 1/2 of the book.
3. The Beaglebone comes with cloud9, which could be used to setup a secure socket server or an HTTPS web server, something that is much more functional and easier than having to use the twisted framework in python (which the author should have used if he insists on using python). Then you could cut out the whole section on developing your own Android app, and just browse to your home computer using tried-and-true protocols that aren't difficult to debug.
4. There are some simple circuits for reading variable resistors and such, but they seem almost like they're copied directly from any number of the Arduino books in circulation. Any one of them would certainly be a better source.
5. The author doesn't really position the Beaglebone as a home automation device. There doesn't seem to be any solid reason why you wouldn't just use an old computer and an Arduino. If you would like to learn about BeagleBone and home automation, I would recommend one of the following books by the same publisher: "Building a Home Security System with BeagleBone" - Don't be put off by the small size of this book, the author, a "hardware guy," does a great job of packing a lot of useful information into a tiny space. Though the book is security-focused (as I personally feel that home automation should be) he still covers a lot of ground that equally applies to home automation, even entertaining the idea of controlling your lawn sprinklers from half-way around the globe with your mobile phone. "BeagleBone Robotic Projects" - This is a great book that covers a lot of ground in a lot of detail. Though it's specific to robotics, home automation isn't really any different. If you already know a lot, this book is still a great reference book that details implementations for sensory, motor controls, programming, etc. This book could also show you how to take things to the next level in home automation with voice commands, voice responses, computer vision, etc. If you combined this a kinect camera, and you will have a complete smart home. I'll be leaving reviews for these other books shortly.

0 of 0 people found the following review helpful. Save your money if you are looking for home automation
By Joe Beagle This book does not cover home automation as in x10 or any z-wave. The title is a bit misleading in that context
0 of 0 people found the following review helpful. Three Stars
By xinyu liok

The Internet of Things is now being taken up by tech corporations but this fantastic book brings you the DIY approach to home automation using BeagleBone. From dimming the lights to opening the garage door -- it's all here. Overview Practical approach to home automation using BeagleBone; starting from the very basics of GPIO control and progressing up to building a complete home automation solution Covers the operating principles of a range of useful environment sensors, including their programming and integration to the server application Easy-to-follow approach with electronics schematics, wiring diagrams, and controller code all broken down into manageable and easy-to-understand sections In Detail Home automation lets you control daily activities such as changing the temperature, opening the garage door, or dimming the lights of your house using microprocessors. BeagleBone is a low-cost, high-expansion, hardware-hacker-focused BeagleBoard. It is small and comes with the high-performance ARM capabilities you expect from a BeagleBoard. BeagleBone takes full-featured Linux to places it has never gone before. Starting with the absolute basics, BeagleBone Home Automation gives you the knowledge you will require to create an Internet-age home automation solution. This book will show you how to set up Linux on BeagleBone. You will learn how to use Python to control different electronic components and sensors to create a standalone embedded system that also accepts control remotely from a smartphone. This book starts with the very basics of Linux administration and application execution using terminal connections. You will learn the basics of the general purpose input/output pins and discover how various electronic sensors and electronic components work. The "hardware jargon" is explained, and example applications demonstrating their practical use are created so that you will feel in control of the capabilities provided. Network programming is also a big part of this book, as the created server will be made accessible from the Internet through a smartphone application. You will also learn how to create a fully working Android application that communicates with the home automation server over the Internet. What you will learn from this book Learn how to interface the BeagleBone board with various hardware components and environmental sensors Set up the programming logic necessary to enable standalone periodic tasks and their management Set up the programming logic necessary to enable standalone periodic tasks and their management Discover network programming over TCP/IP sockets, and enable encrypted access over the Internet Program an Android application that can interface with your home automation server Implement a framework to send any type of data, such as images captured from a camera, to your smartphone Approach An easy-to-follow guide full of hands-on examples to help transform your house into a

standalone home automation solution. Who this book is written for If you are looking for ways to create a highly capable home automation system that is easily extendable and highly configurable, then this book is for you. Basic knowledge of electronics and programming in Python and/or Java languages will be helpful, but not mandatory.

About the Author Juha Lumme Juha Lumme is an engineer with over 10 years' experience in the telecommunications field in various roles. He has been developing platform software for mobile phones and also working on the telecommunication networks side. Embedded systems are his passion, and a hobby he is working on in free time as well. He is passionate about Linux and open source software in general. The open hardware movement in the recent years is also close to his heart, and he hopes we can all soon hack and build our dreams in a world free of patent abuse. When not working on his computer, he loves traveling and riding mountain roads on his motorbike around Kanto prefecture in Japan.