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A. INTRODUCTION

1. WHAT IS A RASPBERRY PI?

The Raspberry Pi is a credit-card sized computer that plugs into your TV and a keyboard. It is a capable little computer which can be used in electronics projects, and for many of the things that your desktop PC does, like spreadsheets, word-processing, browsing the internet and games. It also plays high-definition video. We want to see it being used by kids all over the world to learn programming. You can read more about the Raspberry Pi here. -Introduction -Top

2. CAN I BUY SHARES IN THE RASPBERRY PI FOUNDATION?

The Raspberry Pi Foundation is a charity, so you can't buy shares in the company. If you want to support us, we would love you to buy a Raspberry Pi. -Introduction -Top

B. BUYING AND SHIPPING

1. WHERE CAN I BUY A RASPBERRY PI?

You can buy a Raspberry Pi directly from our website. You can also buy from our main distributors, Premier Farnell/Element14 and RS Components/Allied Electronics. Both distributors sell all over the world. There are also many resellers of Raspberry Pis, both online and in bricks-and-mortar stores. -Buying and Shipping -Top

2. HOW MUCH DOES IT COST?

The Model A+ costs $20, the Model B+ costs $25, and the Pi 2 costs $35, plus local taxes and shipping/handling fees. -Buying and Shipping -Top

3. WHAT DO I GET WHEN I BUY ONE?

You get the Raspberry Pi board itself. A power supply and SD card are not included, but can be purchased at the same time from most places that sell the Raspberry Pi. You can also purchase pre-loaded SD cards too; we recommend buying these from us or our licensed distributors rather than from third parties on eBay, as the software is being updated all the time and cards sold by third parties can quickly become outdated. -Buying and Shipping -Top

4. WHY IS THE PRICE IN US DOLLARS? YOU ARE A UK COMPANY!

The components we buy are priced in dollars, and we negotiate manufacturing in dollars. Because currency markets are so volatile, we price the final board in dollars too so we don't have to keep changing the price. -Buying and Shipping -Top

5. IS THERE A BUY-ONE-GIVE-ONE PROGRAM?

Not at the current time. We may implement a program of this sort one day, but we've come to appreciate that the scale of a program like this may be something our small team isn't equipped to handle without taking on extra staff. You can, of course, just buy an extra Pi to donate to the person or organisation of your choice. -Buying and Shipping -Top

Yes. -Buying and Shipping -Top

7. I WANT TO BE A RASPBERRY PI RESELLER.

We have an exclusive manufacturing and distribution arrangement with RS and Farnell. Resellers buy the Raspberry Pi in bulk from them (which reduces shipping costs to nearly nothing) and sell on. You do not need any special license to resell, and the distributors are very happy to sell on to resellers. Unfortunately, because of the way the pricing model works, and the fact that we are a charity, you will have to buy in very large quantities before you will qualify for any bulk discount; what most resellers are doing is using the resale process as a way to sell high-margin peripherals and so on. -Buying and Shipping -Top

C. GENERAL

1. WHAT IS THE USERNAME AND PASSWORD FOR THE RASPBERRY PI?

The default username for Raspbian is "pi" (without any quotation marks) and the default password is "raspberry" (again, do not include the quotation marks). If this does not work, check the information about your specific distro on the downloads page. -General -Top

2. WHY DOES NOTHING HAPPEN WHEN I TYPE IN MY PASSWORD? DID MY RASPBERRY PI FREEZE?

To protect your information, Linux does not display anything when typing in passwords in the bash prompt or the terminal. As long as you were able to see the username being typed in, your keyboard is working correctly. -General -Top

3. WHAT ARE THE DIFFERENCES BETWEEN MODELS?

These are the current models of the Raspberry Pi available: the Pi 2 Model B, and the Pi 1 Model B+ and A+. The Model A+ is the low-cost variant of the Raspberry Pi. It has 256MB RAM, one USB port, 40 GPIO pins and no Ethernet port. The Model B+ is the final revision of the original Raspberry Pi. It has 512MB RAM (twice as much as the A+), four USB ports, 40 GPIO pins, and an Ethernet port. In February 2015, it was superseded by the Pi 2 Model B, the second generation of the Raspberry Pi. The Pi 2 shares many specs with the Pi 1 B+, but it uses a 900MHz quad-core ARM Cortex-A7 CPU and has 1GB RAM. The Pi 2 is completely compatible with first generation boards, and is the model we recommend for use in schools, due to its flexibility for the learner. You check our products pages for more details on current boards. There are also some models of Raspberry Pi which are no longer in production, but which may be available second hand or from resellers. The Model A was the initial low-cost variant of the Pi. It was replaced by the smaller, neater Model A+ in November 2014; it shares the same specs as the A+, but has only 26 GPIO pins. The Model B was the previous incarnation of the B+; again, it shares most of the same specs, but has only 2 USB ports and 26 GPIO pins. -General -Top

4. HOW DO I CONNECT A MOUSE AND KEYBOARD?

The Model A/A+ has one USB port, the Model B has two ports, and the Model B+ and 2B have four ports. These can be used to connect most USB 2.0 devices. Additional USB devices such as mice, keyboards, network adapters and external storage can be connected via a USB hub. -General -Top

There is no on/off switch! To switch on, just plug it in. To switch off, if you are in the graphical environment, either exit to the bash prompt or open the terminal. From the bash prompt or terminal shut down the Raspberry Pi by entering "sudo halt -h" (without the quotation marks). Wait until all the LEDs except the power LED are off, then wait an additional second to make sure the SD card can finish its wear leveling tasks and write actions. You can now safely unplug the Raspberry Pi. Failure to properly shut the Raspberry Pi may corrupt your SD card, which would mean you would have to re-image it. -General -Top

6. WHO OR WHAT IS NOOBS?

NOOBS stands for New Out of the Box Software. It is our recommended installation method. It allows you to install the distro of your choice even if you have little to no computing or Linux experience. You can learn more about NOOBS here. -General -Top

7. WHEN WILL THE NEXT MODEL OF THE RASPBERRY PI BE RELEASED?

As of February 2015, the second generation of the Raspberry Pi has been released, initially in a Model B version. Beyond this revision, which upgraded the main processor on the board to a quad core and doubled the RAM while maintaining full backwards compatibility with the original Raspberry Pi, there are no immediate plans to release any more new models. A further new model may be released in 2-3 years, but this is not a firm schedule. We concentrate our engineering effort on making the software that runs on the Raspberry Pi faster and better all the time, which is why you should always ensure that you are running the most recent firmware. -General -Top

8. WHAT ARE THE DIMENSIONS OF THE RASPBERRY PI?

The Raspberry Pi measures 85.60mm x 56mm x 21mm (or roughly 3.37″ x 2.21″ x 0.83″), with a little overlap for the SD card and connectors which project over the edges. It weighs 45g. -General -Top

9. WHAT HARDWARE DOCUMENTATION IS AVAILABLE?

All available documentation is in our documentation repository. -General -Top

10. WHAT SOC ARE YOU USING?

All versions and revisions of the Raspberry Pi other than the Raspberry Pi 2B use the Broadcom BCM2835. This contains an ARM1176JZFS with floating point, running at 700Mhz, and a Videocore 4 GPU. The GPU is capable of Blu-Ray-quality playback, using H.264 at 40MBits/s. It has a fast 3D core accessed using the supplied OpenGL ES2.0 and OpenVG libraries. The Model 2B uses the Broadcom BCM2836. This contains a quad-core ARM Cortex-a7 processor with floating point & NEON, running at 900MHz, and the same Videocore 4 GPU that is in the other models of Raspberry Pi. -General -Top

11. WHAT IS AN SOC?

A System on a Chip (SoC) is a method of placing all necessary electronics for running a computer on a single chip. Instead of having an individual chip for the CPU, GPU, USB controller, RAM, Northbridge, Southbridge, etc., everything is

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12. WHY DID YOU SELECT THE ARM1176JZFS?

Cost and performance. -General -Top

13. HOW DOES IT BOOT?

All the files necessary for booting are installed in a FAT32 partition of the SD card. The Raspberry Pi has to have an SD card installed to boot from, but a USB HD can "take over" after the initial boot. You cannot boot without an SD card. -General -Top

14. DO YOU SELL A SELF-ASSEMBLY KIT?

No. It would be too expensive for us to provide kits alongside finished boards, which would mean introducing another step in manufacturing; and a kit would be impossible to hand solder. We use special equipment (robots!) to solder on the BGA package and other tiny components. -General -Top

D. PERFORMANCE AND COST CONSIDERATIONS

1. HOW POWERFUL IS IT?

The GPU provides OpenGL ES 2.0, hardware-accelerated OpenVG, and 1080p30 H.264 high-profile encode and decode. The GPU is capable of 1Gpixel/s, 1.5Gtexel/s or 24 GFLOPs of general purpose compute and features a bunch of texture filtering and DMA infrastructure. This means that graphics capabilities are roughly equivalent to the original Xbox's level of performance. Overall real world performance for models A, A+, B & B+ is something like a 300MHz Pentium 2, only with much, much swankier graphics. The Model 2B is approximately equivalent to an Athlon Thunderbird running at 1.1GHz: again, it has the much higher-quality graphics that come from using the same GPU as in previous models. -Performance and Cost Considerations -Top

2. DOES IT OVERCLOCK?

The Raspberry Pi models A, A+, B, and B+ operate at 700 MHz by default. Most devices will run happily at 800MHz. The model 2B operates at 900MHz by default and should run quite happily at 1000MHz. In the latest Raspbian distro, there is an option to change the overclocking options on first boot and at any time afterwards, without voiding your warranty, by running "sudo raspi-config". You can download the Raspbian image directly or install it via the NOOBs installer, both available on our downloads page. It should be noted, however, that these are experimental settings and that not every board will be able to run stably at the highest setting. If you experience problems, try reducing the overclocking settings until stability is restored. -Performance and Cost Considerations -Top

3. DOES IT NEED A HEATSINK?

You should not need to use a heatsink, as the chip used in the Raspberry Pi is equivalent to that used in a cell phone, and should not become hot enough to need any special cooling. However, depending on the case you are using and on the overclocking settings, you might find a heatsink to be advantageous. Of course, if you just like the look of a heatsink, you will not hurt the Raspberry Pi by placing an appropriately-sized heatsink on it. -Performance and Cost Considerations -Top

Depending on the model, the Raspberry Pi has either 40 or 26 dedicated GPIO pins. In all cases, these include a UART, an i2c bus, a SPI bus with two chip selects, i2s audio, 3v3, 5v, and ground. The maximum number of GPIOs can theoretically be indefinitely expanded by making use of the i2c or SPI bus. -Performance and Cost Considerations -Top

5. WHY IS THERE NO REAL TIME CLOCK (RTC)?

The expectation is that non-network-connected units will have their clocks updated manually at startup. Adding an RTC is surprisingly expensive, once you have factored in batteries, area and componentry, and would have pushed us above our target price. You can add one yourself using the GPIO pins if you'd like an interesting electronics project. -Performance and Cost Considerations -Top

6. CAN I ADD EXTRA MEMORY?

No. The RAM on the model A, A+, B & B+ is a Package on Package (POP) on top of the SoC, so it is not removable or swappable. The RAM on the Model 2B is on a separate chip on the bottom of the PCB, but 1GB is the maximum RAM that the SoC used by the Model 2B can support. -Performance and Cost Considerations -Top

7. WHY DOESN'T THE RASPBERRY PI INCLUDE <INSERT NAME> PIECE OF HARDWARE OR <INSERT NAME> SORT OF PORT?

Our main function is a charitable one: we are trying to build the cheapest possible computer that provides a certain basic level of functionality, and keeping the price low means we've had to make hard decisions about what hardware and interfaces to include. -Performance and Cost Considerations -Top

8. WHAT IS ITS OPERATING TEMPERATURE?

The Raspberry Pi is built from commercial chips which are qualified to different temperature ranges; the LAN9512 is specified by the manufacturers being qualified from 0°C to 70°C, while the AP is qualified from -40°C to 85°C. You may well find that the board will work outside those temperatures, but we're not qualifying the board itself to these extremes. -Performance and Cost Considerations -Top

9. DOES IT BLEND?

Yes. We have conducted extensive virtual simulations. No Raspberry Pis were harmed in the testing process. -Performance and Cost Considerations -Top

E. CAMERA

1. WHAT IS THE CAMERA BOARD?

The Camera Board is a small PCB that connects to the CSI-2 camera port on the Raspberry Pi using a short ribbon cable. It provides connectivity for a camera capable of capturing still images or video recordings. The camera connects to the Image System Pipeline (ISP) in the Raspberry Pi's SoC, where the incoming camera data is processed and eventually converted to an image or video on the SD card (or other storage). You can read more about the camera board here. -Camera -Top

2. WHAT MODEL OF CAMERA DOES THE CAMERA BOARD USE?

3. WHAT RESOLUTIONS ARE SUPPORTED?

The camera module is capable of up taking photos up to 5 megapixels (5MP) (2592×1944 pixels) and can record video at resolutions up to 1080p30 (1920x1080x30fps). -Camera -Top

4. WHICH PICTURE FORMATS ARE SUPPORTED?

The camera module supports raw capturing (Bayer data direct from the sensor) or encoding as JPEG, PNG, GIF and BMP, uncompressed YUV, or uncompressed RGB photos. It can record video as H.264, baseline, main or high-profile formats. -Camera -Top

5. HOW DO I USE THE CAMERA?

There are three command line applications provided for stills, video, and stills output uncompressed. These applications provide the typical features you might find on a compact cameras, e.g. Set image size, compression quality, exposure mode, ISO. See the documentation for more details. -Camera -Top

6. CAN I EXTEND THE RIBBON CABLE?

Yes. We have reports of people using cables up to 4 meters and still receiving acceptable images, though your mileage may vary. -Camera -Top

7. CAN I HAVE A CAMERA WITH MORE MEGAPIXELS?

No, this is the only camera module that is compatible with the Raspberry Pi. There are currently no plans to release a higher-resolution sensor. -Camera -Top

8. HOW MUCH POWER DOES THE CAMERA MODULE USE?

The camera board requires 250mA to operate. Make sure you ensure your power supply can provide enough power for the camera module as well as the Raspberry Pi, and any peripherals directly attached to the Raspberry Pi. -Camera -Top

F. CASES

1. DOES IT COME WITH A CASE?

An official case for the Raspberry Pi is available from our Swag Store. There are also lots of homebrew case discussions on the forum as well as several third party cases available. We suggest stopping by the cases sub-forum and reading some of the threads about cases you can purchase or build yourself. -Cases -Top

2. DOES IT FIT IN AN ALTOIDS TIN?

It is possible to make a case for the Raspberry Pi out of an Altoids tin: there are instructions given in a forum post here (the directions are also available as an Instructables guide). However, you may find that this is not possible with older boards, as their form factors are not as neat. -Cases -Top

G. VIDEO

1. WHAT DISPLAYS CAN I USE?

a digital TV or to a DVI monitor (using a cheap, passive HDMI->DVI cable for the DVI). For the Model B+ and 2B, the RCA composite jack has been replaced with a 3.5mm jack that combines audio and video in one. You'll need a 3.5mm to 3RCA adapter cable to connect it to an older TV. There are many different types of this cable out there, but you want to purchase on that is compatible with the iPod Video (the iPod will have the left and right audio channels reversed, but the version of Raspbian included with NOOBs can swap this for you). There is no VGA support, but active adapters are available. Passive HDMI->VGA cables will not work with the Raspberry Pi. When purchasing an active VGA adapter, make sure it comes with an external power supply. HDMI->VGA adapters without an external power supply often fail to work. -Video -Top

2. DOES THE HDMI PORT SUPPORT CEC?

Yes, the HDMI port on the Raspberry Pi supports the CEC Standard. CEC may be called something differently by your TV's manufacturer; check the Wikipedia entry on CEC for more information. -Video -Top

3. WHY IS THERE NO VGA SUPPORT?

The chip we use supports HDMI and composite outputs but does not support VGA. VGA is considered to be an end-of-life technology, so supporting it doesn't fit with our plans at the moment. However, if you really want to use a VGA monitor with a Raspberry Pi then it is possible to use an HDMI->VGA adapter or Gert Van Loo's VGA666 adapter. -Video -Top

4. CAN I ADD A TOUCHSCREEN?

Several third-party web stores offer touchscreens for the Raspberry Pi. -Video -Top

5. WHAT CODECS CAN IT PLAY?

The Raspberry Pi can encode (record) and decode (play) h.264 (mp4/mkv) out of the box. There are also two additional codecs you can purchase through the Swag Store that enable you to decode MPEG-2, a very popular and widely used format to encode DVDs, video camera recordings, TV and many others, and VC-1, a Microsoft format found in Blu-ray discs, Windows Media, Slingbox, and HD-DVDs. -Video -Top

H. AUDIO

1. IS SOUND OVER HDMI SUPPORTED?

Yes. -Audio -Top

2. WHAT ABOUT STANDARD AUDIO IN AND OUT?

There is a standard 3.5mm jack for audio out to an amplifier. You can add any supported USB microphone for audio in, or using the I2S interface you can add a codec for additional audio I/O. -Audio -Top

I. POWER

1. WHAT ARE THE POWER REQUIREMENTS?

The device is powered by 5v micro USB. Exactly how much current (mA) the

with ample power to run your Raspberry Pi for most applications, though you may want to get a 2.5A (2500mA) if you want to use all 4 USB ports on the Models B+/2B without using an external powered USB hub. The table below outlines the power requirements of each model.

Product	Recommended PSU current capacity	Maximum total USB peripheral current draw	Typical bare-board active current consumption
Raspberry Pi Model A	700mA	500mA	200mA
Raspberry Pi Model B	1.2A	500mA	500mA
Raspberry Pi Model A+	700mA	500mA	180mA
Raspberry Pi Model B+	1.8A	600mA/1.2A (switchable)	330mA
Raspberry Pi 2 Model B	1.8A	600mA/1.2A (switchable)	

The specific current requirements of each model are dependent on the use case: the PSU recommendations are based on "typical maximum" current consumption, the typical current consumption is for each board in a "desktop computer" configuration. The Raspberry Pi model A, A+, and B can supply a maximum of 500mA to downstream USB peripherals. If you wish to connect a high-power USB device then it is recommended to connect a powered USB hub to the Pi and connect your peripherals to the USB hub. The Raspberry Pi model B+ and 2B can supply 600mA/1.2A to downstream USB peripherals, switchable by a firmware setting. This allows the vast majority of USB devices to be connected directly to these models, assuming the upstream power supply has sufficient available current. Very high-current devices or devices can draw a surge current such as certain 3G modems and USB hard disks will still require an external powered USB hub. The power requirements of the Raspberry Pi increase as you make use of the various interfaces on the Raspberry Pi. The GPIO pins can draw 50mA safely (that is 50mA distributed across all the pins! An individual GPIO pin can only safely draw 16mA), the HDMI port uses 50mA, the camera module requires 250mA, and keyboards and mice can take as little as 100mA or as much as 1000mA! Check the power rating of the devices you plan to connect to the Pi and purchase a power supply accordingly. If you're not sure, we would advise you to buy a powered hub.
-Power -Top

2. CAN I POWER THE RASPBERRY PI FROM A USB HUB?

It depends on the hub. Some hubs comply with the USB 2.0 Standard and only provide 500mA per port, which may not be enough to power your Raspberry Pi. Other hubs view the USB standards more like guidelines, and will provide as much power as you want out each port. Please also be aware that some hubs have been known to "backfeed" the Raspberry Pi. This means that the hubs will power the Raspberry Pi through its USB cable input cable, without the need for a separate micro-USB power cable, and bypass the voltage protection. If you are using a hub

3. CAN I POWER THE RASPBERRY PI FROM BATTERIES AS WELL AS FROM A WALL SOCKET?

Running the Raspberry Pi directly off batteries requires special care and can result in damaging or destroying your Raspberry Pi. If you consider yourself an advanced user, though, you could have a go. For example: 4xAA rechargeable batteries would provide 4.8v on a full charge. 4.8v would technically be just within the range of tolerance for the Raspberry Pi, but the system would quickly become unstable as the batteries lost their full charge. Conversely, using 4xAA Alkaline (non-rechargeable) batteries will result in 6v. 6v is outside the acceptable tolerance range and would potentially damage or, in the worst-case scenario, destroy your Raspberry Pi. It is possible to provide a steady 5v from batteries by using a buck and/or boost circuit, or by using a charger pack which is specifically designed to output a steady 5v from a couple of batteries (these devices are typically marketed as cell phone emergency battery chargers). -Power -Top

4. IS POWER OVER ETHERNET (POE) POSSIBLE?

Not in the base device. There are adapters that would split the voltage off the Ethernet line before connecting to the Pi, but they are relatively expensive. -Power -Top

J. SOFTWARE

1. WHAT OPERATING SYSTEM (OS) DOES IT USE?

There are several official distributions (distros) available on our downloads page. New users will probably find the NOOBs installer the easiest to work with, as it walks you through the download and installation of a specific distro. The recommended distro is Raspbian, which is specifically designed for the Raspberry Pi and which our engineers are constantly optimising. It is, however, a straightforward process to replace the root partition on the SD card with another ARM Linux distro, so we encourage you to try out several distros to see which one you like the most. The OS is stored on the SD card. -Software -Top

2. DOES IT HAVE AN OFFICIAL PROGRAMMING LANGUAGE?

The Raspberry Pi Foundation recommends Python as a language for learners. We also recommend Scratch for younger kids. Any language which will compile for ARMv6 (Pi 1) or ARMv7 (Pi 2) can be used with the Raspberry Pi, though; so you are not limited to using Python. C, C++, Java, Scratch, and Ruby all come installed by default on the Raspberry Pi. -Software -Top

3. WILL IT RUN WINE (OR WINDOWS, OR OTHER X86 SOFTWARE)?

In general, with most versions of the Raspberry Pi, this is not possible. Some people have put Windows 3.1 on the Raspberry Pi inside an x86 CPU emulator in order to use specific applications, but trying to use a version of Windows even as recent as Windows 98 can take hours to boot into, and may take several more hours to update your cursor every time you try to move it. We don't recommend it! As of summer 2015, a version of Windows 10 will be available for use on the Raspberry Pi 2. This will be an entirely new version of the operating system,

system. -Software -Top

4. WILL IT RUN THE WINDOWS 8 ARM EDITION?

No. Even if Microsoft decided to devote all its resources to getting Windows 8 on the Pi it would not work. The Raspberry Pi lacks the minimum memory and CPU requirements, it runs on an version of the ARM processor that is not supported by Windows 8, it lacks the appropriate axis sensors… the list goes on and on. The Pi will not run Windows 8. -Software -Top

5. WHAT LINUX DISTROS RUN ON THE PI?

Raspbian (based on Debian), Arch Linux and Pidora run on Raspberry Pi 1 and 2. Ubuntu MATE and Ubuntu Snappy Core also run on Pi 2 only. See our downloads page for more information. -Software -Top

6. WILL IT RUN ANDROID?

No. While a version of Android can be found in the forum, it is not stable enough for everyday use. There are no plans to continue working on it, as Android does not provide any enhancement to educational purposes that are not already fulfilled more readily with existing software – we see it as a platform for consumption, not creation. -Software -Top

7. WILL IT RUN <INSERT NAME OF PROGRAM HERE>

In general, you need to look to see whether the program you want can be compiled for the ARMv6 (Pi 1) or ARMv7 (Pi 2) architecture. In most cases the answer will be yes. Specific programs are discussed on our forum, so you might want to look there for an answer. Ultimately, nothing beats grabbing a Raspberry Pi and finding out the answer through direct testing! -Software -Top

K. SD CARDS AND STORAGE

1. WHAT SIZE SD CARD DO I NEED?

Whether you want to use the NOOBS installer or a standalone distro image, the minimum size SD card we recommend using is 8GB. This will give you the free space you need to install additional packages or make programs of your own. -SD Cards and Storage -Top

2. WHAT SIZE SD CARD CAN IT SUPPORT?

We have tried cards up to 32GB, and most cards seem to work OK. You can also attach a USB stick or USB hard drive to provide extra storage. -SD Cards and Storage -Top

3. WHAT HAPPENS IF I BRICK THE DEVICE?

You can restore the device by reflashing the SD card. -SD Cards and Storage -Top

L. NETWORKING, USB AND WIRELESS

1. DOES THE DEVICE SUPPORT NETWORKING?

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2. IS THERE BUILT IN WIFI?

No model of the Raspberry Pi has built in WiFi, but all models can support a USB WiFi dongle. The Foundation offers its own branded WiFi dongle which has been fully tested for use with the Raspberry Pi. It is available through our Swag store. You can, of course, use a dongle from another provider if you wish. -Networking, USB, and Wireless -Top

3. WILL THERE EVER BE A BUILT IN WIFI OPTION?

Unlikely. The SoC does not support native WiFi, and adding an additional built in WiFi chip would greatly increase the cost of the Raspberry Pi. -Networking, USB, and Wireless -Top

4. WHY IS THERE NO GIGABIT ETHERNET?

The Ethernet is attached via the USB 2.0 bus, so the upstream bandwidth would not support Gigabit. -Networking, USB, and Wireless -Top

5. DOES THE DEVICE HAVE SUPPORT FOR ANY FORM OF NETBOOTING OR PXE?

The Raspberry Pi does not support PXE booting or network booting without an SD card. If you want to network-boot multiple Raspberry Pis, you could use PiNet. This is a free and open source community based project initially designed for schools. Each Raspberry Pi boots off a small set of startup files on an SD card, and fetches the rest of the data it needs from the PiNet server, thereby allowing you to maintain a single operating system image for all the Raspberry Pis. PiNet also adds network user accounts, shared folders and automated backups. -Networking, USB, and Wireless -Top

6. HOW DO YOU CONNECT MORE USB DEVICES?

Use a USB hub to increase the number of ports. Some keyboards have USB hubs built in which would work well. It is highly recommended that you use a powered USB hub. -Networking, USB, and Wireless -Top

M. EDUCATIONAL USES

1. WHAT EDUCATIONAL MATERIAL IS AVAILABLE?

There are many books about the Raspberry Pi available. For children, we particularly recommend Adventures in Raspberry Pi by Carrie Anne Philbin, who works with us at the Foundation. Check out our resources pages for free educational materials: we are always adding to these. You'll find complete schemes of work linked to the UK curriculum, as well as resources for independent and informal learning. -Educational Uses -Top

N. ADDITIONAL QUESTIONS

I STILL HAVE MORE QUESTIONS!

Read the sticky subjects in the Beginners subforum and check the help pages for

help you out. -Additional Questions -Top

O. GLOSSARY

BGA: ball grid array. A type of surface mount packaging for electronics. SoC: system on chip. A computer on a single chip. GPIO: general purpose input/output. A pin that can be programmed to do stuff. GPU: graphics processing unit. The hardware that handles the graphics. Distro: a specific package ("flavour") of Linux and associated software. Brick: to accidentally render a device inert by making changes to software or firmware. PXE: preboot execution environment. A way to get a device to boot by via the network. PoE: power over ethernet. Powering a device via an ethernet cable. -Glossary a -Top