



# Pine vs. Pi A First Look

Peter Ashford

Ashford Computer Consulting Service

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# What We'll Cover

This presentation is first look at the differences between a Raspberry Pi 3 and a Pine A64+.

Most of the information in this presentation came from various web pages. As is normal with such data sources, the information in the web page may differ from reality.

# CPU & GPU

	Raspberry Pi 3	Pine A64+
CPU	Broadcom BCM2837	AllWinner A64
Architecture	Quad-Core Cortex A-53	Quad-Core Cortex A-53
Clock	1.2GHz	1.152GHz
L1 Cache (per-core)	32KB	32KB Instruction + 32KB Data
L2 Cache (shared)	512KB	512KB
Memory	1GB LPDDR2 - 900MHz	1GB/2GB DDR3 - 800MHz
GPU	VideoCore IV 400MHz	Mali 400MP2 dual-core 500MHz

NOTE: Mali GPU not yet fully supported in Linux kernel.

# Electrical & Physical

	Raspberry Pi 3	Pine A64+
Idle Power	1.5W	1.1W
Maximum Power	6.7W	2.5W
Width	85.6mm	133mm
Length	56.5mm	80mm
Height	17mm	19mm
Weight	45g	46g
Interface Busses	Extended PI (GPIO) - 40-pin	Extended Pi (GPIO) - 40-pin Euler (GPIO) - 34-pin EXP (Console) - 10-pin

# Features

	Raspberry Pi 3	Pine A64+
HDMI	1.3	1.4a
Composite Video	Yes	No
DSI (LCD Panel)	Yes	Yes
Touch Port	Yes	Yes
Camera Port	Yes	Yes
Audio Output	3.5mm jack, HDMI and I2S	3.5mm jack, HDMI, I2S, SPDIF
Audio Input	I2S	3.5mm jack or I2S
USB2	4 Ports	2 Ports
USB3	None	None

# Network

	Raspberry Pi 3	Pine A64+
Wired	10/100	10/100/1000
Wireless	Integrated 802.11 B/G/N	Optional 802.11 B/G/N
Bands	2.4GHz only	2.4GHz only
Bluetooth	Integrated Bluetooth 4.1	Optional Bluetooth 2.1, 3.0, 4.0 (integrated with optional wireless module)

# Cost

	Raspberry Pi 3	Pine A64+
Base (1GB)	\$35.00	\$19.00
Large Memory (2GB)	Not Available	\$29.00
Wireless	Included	\$9.99

# Experiences - Purchase

- This board is sold directly from the Pine64 organization ([pine64.org](http://pine64.org)), and can be paid for with PayPal or EFT (after email with Sales).
- I purchased a 2GB board, 7" touchscreen, touchscreen case, battery and power supply.
- Shipping was fast and the parts were well packed.



# Experiences - Operating System

- Multiple Operating Systems are available for download from the site, but all use older kernels.
- No real repositories.
  - If you need software not in the distribution, you need to build it from source.
  - Unneeded software can't be easily uninstalled.
  - Patches (including security patches) are slow to be released.

# Experiences - Touchscreen

- Touchscreen doesn't work out of the box with any available OS.

# Experiences - Case

- Touchscreen case makes access to MicroSD difficult. Tweezers were needed to insert or remove card.



# Experiences - Board Quality

- Build quality is questionable/unknown - 1 board purchased, 1 board failed.
- No response on RMA request.

# Experiences - Support

- Support is only available through email. Expect a 1-day turnaround on any issue.
- Board warranty is only 30 days (Raspberry Pi 3 has a 1-year warranty). On my failed board, I've been waiting two days for RMA information.
- If there are any problems with the board, it must be tested with the oldest of the available OS images (only image officially supported).

# Experiences - Community

- The Pine Community is both knowledgeable and active. They seem to love the product and want it to succeed. They provide excellent information to even the rawest of newbies.

# Summary

The Pine A64+ board looks good on paper, but it has problems in the real world. These are the same problems that any high-tech startup company is likely to encounter. Specifically, the support is lacking.

In this case, the support is lacking at every level, except for the excellent Community support.

# Suggestions

- If 1GB of memory is adequate to your needs, the Raspberry Pi 3 is suggested.
- If you must absolutely have 2GB of memory, and can handle the extra power, the Odroid C2 is probably a good choice.
- If you must use the Pine A64, I suggest you wait a year and hope they resolve their issues, or rely on the Pine Community to help you.



# Feedback

I would like to improve this presentation. To that end, I would appreciate feedback to:

- [ashford@accs.com](mailto:ashford@accs.com)
- [www.linkedin.com/in/peterashford](http://www.linkedin.com/in/peterashford)