www.phoronix-test-suite.com

Raspberry Pi vs Orange Pi vs Banana Pi 2016-03 Showdown by LoveRPi

Debian 9 with Linux 4.4 on VS-RD-RK3399

Automated Executive Summary

MeUbuntu 14.04.3 had the most wins, coming in first place for 42% of the tests.

Test Systems:

Orange Pi One on Armbian

Processor: ARMv7 rev 5 @ 1.20GHz (4 Cores), Motherboard: sun8i, Memory: 494MB, Disk: 32GB 00000

OS: Debian 8.3, Kernel: 3.4.110-sun8i (armv7l), Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1280x1440

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

Orange Pi PC on Armbian

Processor: ARMv7 rev 5 @ 1.30GHz (4 Cores), Motherboard: sun8i, Memory: 1024MB, Disk: 32GB 00000

OS: Debian 8.3, Kernel: 3.4.110-sun8i (armv7l), Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1280x1440

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

Orange Pi Plus on Armbian

Processor: ARMv7 rev 5 @ 1.30GHz (4 Cores), Motherboard: sun8i, Memory: 1024MB, Disk: 32GB 00000 + 8GB M8G1GC

OS: Debian 8.3, Kernel: 3.4.110-sun8i (armv7l), Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1280x1440

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

Raspberry Pi 2 on Raspbian

Processor: ARMv7 rev 5 @ 0.90GHz (4 Cores), Motherboard: BCM2709 Raspberry Pi 2 Model B Rev 1.1, Memory: 925MB, Disk: 8GB SD

OS: Raspbian 8.0, Kernel: 4.1.13-v7+ (armv7l), Desktop: LXDE 0.7.2, Display Server: X Server 1.16.4, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1824x984

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv6 --with-float=hard --with-fpu=vfp -v
Processor Notes: Scaling Governor: BCM2835 Freq ondemand

Raspberry Pi 3 on Raspbian

Processor: ARMv7 rev 4 @ 1.20GHz (4 Cores), Motherboard: BCM2709 Raspberry Pi 3 Model B Rev 1.2, Memory: 925MB, Disk: 63GB 00000

OS: Raspbian GNU/Linux 8, Kernel: 4.1.20-v7+ (armv7l), Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1824x984

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv6 --with-float=hard --with-fpu=vfp -v
Processor Notes: Scaling Governor: BCM2835 Freq ondemand

Banana Pi M2 by LoveRPi

Processor: ARMv7 rev 3 @ 1.01GHz (4 Cores), Motherboard: Allwinner sun6i (A31) Family Sinovoip BPI-M2, Memory: 1024MB, Disk: 129GB 00000

OS: Ubuntu 14.04, Kernel: 4.4.1-sunxi (armv7l), Compiler: GCC 4.8.4, File-System: ext4

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libmudflap --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand

Banana Pi M3 by LoveRPi

Processor: ARMv7 rev 5 @ 1.80GHz (8 Cores), Motherboard: sun8i, Memory: 2048MB, Disk: 8GB M8G1GC + 129GB TO

OS: Ubuntu 15.10, Kernel: 3.4.39-BPI-M3-aufs (armv7l), Compiler: GCC 5.2.1 20151010, File-System: aufs, Screen Resolution: 1920x2160

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: sunxi-iks interactive

Banana Pi M2+ SinoVoip

Processor: ARMv7 rev 5 @ 1.20GHz (1 Core), Motherboard: sun8i, Memory: 745MB, Disk: 64GB 00000 + 8GB 8WMB3R

OS: Debian 8.4, Kernel: 3.4.111-sun8i (armv7l), Desktop: Xfce, Display Driver: modesetting 0.9.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1280x720

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

Banana Pi M2+ on Armbian

Processor: ARMv7 rev 5 @ 1.20GHz (4 Cores), Motherboard: sun8i, Memory: 745MB, Disk: 64GB 00000 + 8GB 8WMB3R

OS: Debian 8.4, Kernel: 3.4.111-sun8i (armv7l), Desktop: Xfce, Display Driver: modesetting 0.9.0, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

Banana Pi M2+ Raspbian 8.0

Processor: ARMv7 rev 5 @ 1.20GHz (3 Cores), Motherboard: sun8i, Memory: 1024MB, Disk: 8GB SU08G + 8GB 8WMB3R

OS: Raspbian 8.0, Kernel: 3.4.39-02-lobo (armv7l), Desktop: LXDE, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1280x720

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++

--enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv6 --with-float=hard --with-fpu=vfp -v
Processor Notes: Scaling Governor: cpufreq-sunxi ondemand

MiQi on Lubuntu 14.04

Processor: ARMv7 rev 1 @ 1.80GHz (4 Cores), Motherboard: Rockchip RK3288 (Flattened Device Tree), Memory: 2048MB, Disk: 31GB BIWIN

OS: Ubuntu 14.04, Kernel: 3.10.0 (armv7l), Desktop: LXDE, Compiler: GCC 4.8.4, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libmudflap --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: rockchip interactive

DragonBoard 410c on Debian RPB 16.03

Processor: Unknown @ 1.21GHz (4 Cores), Memory: 833MB, Disk: 8GB DS2008, Monitor: TX-NR636

OS: Debian 8.3, Kernel: 4.4.0-104-arm64 (aarch64), Desktop: LXDE, Compiler: GCC 4.9.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-browser-plugin --disable-libquadmath --disable-libsanitizer --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --target=aarch64-linux-gnu --with-arch-directory=arm64 -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand

MeUbuntu 14.04.3

Processor: Intel Atom Z3735F @ 1.83GHz (4 Cores), Motherboard: Mini PC v2.80, Chipset: Intel ValleyView SSA-CUnit, Memory: 2048MB, Disk: 31GB NCard, Graphics: Intel ValleyView Gen7 (646MHz), Monitor: TX-NR636

OS: Ubuntu 14.04, Kernel: 3.16.0-45-generic (x86_64), Desktop: Unity 7.2.6, Display Driver: intel 2.99.914, Compiler: GCC 4.8.4, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: intel_pstate powersave

NanoPi NEO 512MB No Heatsink

Processor: ARMv7 rev 5 @ 0.82GHz (4 Cores), Motherboard: sun8i, Memory: 495MB, Disk: 8GB SL08G

OS: Ubuntu 15.10, Kernel: 3.4.39-h3 (armv7l), Compiler: GCC 5.2.1 20151010, File-System: ext4, Screen Resolution: 1280x1440

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

NanoPi NEO 512MB Heatsink

NanoPi NEO 512MB Heatsink 2

NanoPi NEO 512MB Heatsink2

Processor: ARMv7 rev 5 @ 1.20GHz (4 Cores), Motherboard: sun8i, Memory: 495MB, Disk: 8GB SL08G

OS: Ubuntu 15.10, Kernel: 3.4.39-h3 (armv7l), Compiler: GCC 5.2.1 20151010, File-System: ext4, Screen Resolution: 1280x1440

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

NanoPi NEO 2 FA Ubuntu 16.04.2

Processor: AArch64 rev 4 @ 0.82GHz (4 Cores), Motherboard: sun50iw2, Memory: 468MB, Disk: 8GB SL08G

OS: Ubuntu 16.04, Kernel: 3.10.65 (aarch64), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 1280x1440

Compiler Notes: --build=aarch64-linux-gnu --disable-browser-plugin --disable-libquadmath --disable-werror --enable-checking=release --enable-clocale=gnu --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --target=aarch64-linux-gnu --with-arch-directory=aarch64 --with-default-libstdcxx-abi=new -v
Processor Notes: Scaling Governor: cpufreq-sunxi interactive

NanoPi NEO 2 Armbian Ubuntu 16.04.2

Processor: AArch64 rev 4 (4 Cores), Motherboard: Xunlong Orange Pi PC 2, Memory: 483MB, Disk: 8GB SL08G

OS: Ubuntu 16.04, Kernel: 4.10.0-sun50iw2 (aarch64), Compiler: GCC 5.4.0 20160609, File-System: ext4

Compiler Notes: --build=aarch64-linux-gnu --disable-browser-plugin --disable-libquadmath --disable-werror --enable-checking=release --enable-clocale=gnu --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --target=aarch64-linux-gnu --with-arch-directory=aarch64 --with-default-libstdcxx-abi=new -v

VS-RK3399 Board - Debian 9

Processor: ARMv8 rev 4 @ 1.42GHz (6 Cores), Motherboard: Rockchip RK3399 VideoStrong Board MID (Android), Memory: 4096MB, Disk: 31GB BWBD3R, Monitor: TX-NR636

OS: Debian 9.1, Kernel: 4.4.55 (aarch64), Desktop: LXDE, Compiler: GCC 6.3.0 20170516, File-System: ext4, Screen Resolution: 1024x600p86

Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb --with-target-system-zlib -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand

pi

Processor: ARMv7 rev 3 @ 1.50GHz (4 Cores), Motherboard: BCM2711 Raspberry Pi 4 Model B Rev 1.1, Memory:

3584MB, Disk: 125GB USDU1, Graphics: vc4drmfb, Monitor: ZOWIE XL LCD

OS: Raspbian 10, Kernel: 5.4.51-v7l+ (armv7l), Desktop: LXDE 0.10.0, Display Server: X Server 1.20.4, Display Driver: modesetting 1.20.4, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: snd_bcm2835.enable_compat_alsa=0 snd_bcm2835.enable_hdmi=1 snd_bcm2835.enable_headphones=1
Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv6 --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfp --with-gcc-major-version-only --with-target-system-zlib -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand

vurkcade

Processor: ARMv7 rev 3 @ 2.00GHz (4 Cores), Motherboard: BCM2711 Raspberry Pi 4 Model B Rev 1.1, Memory: 3584MB, Disk: 125GB USDU1, Graphics: vc4drmfb, Monitor: ZOWIE XL LCD

OS: Raspbian 10, Kernel: 5.4.51-v7l+ (armv7l), Desktop: LXDE 0.10.0, Display Server: X Server 1.20.4, Display Driver: modesetting 1.20.4, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: snd_bcm2835.enable_compat_alsa=0 snd_bcm2835.enable_hdmi=1 snd_bcm2835.enable_headphones=1
Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv6 --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfp --with-gcc-major-version-only --with-target-system-zlib -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand

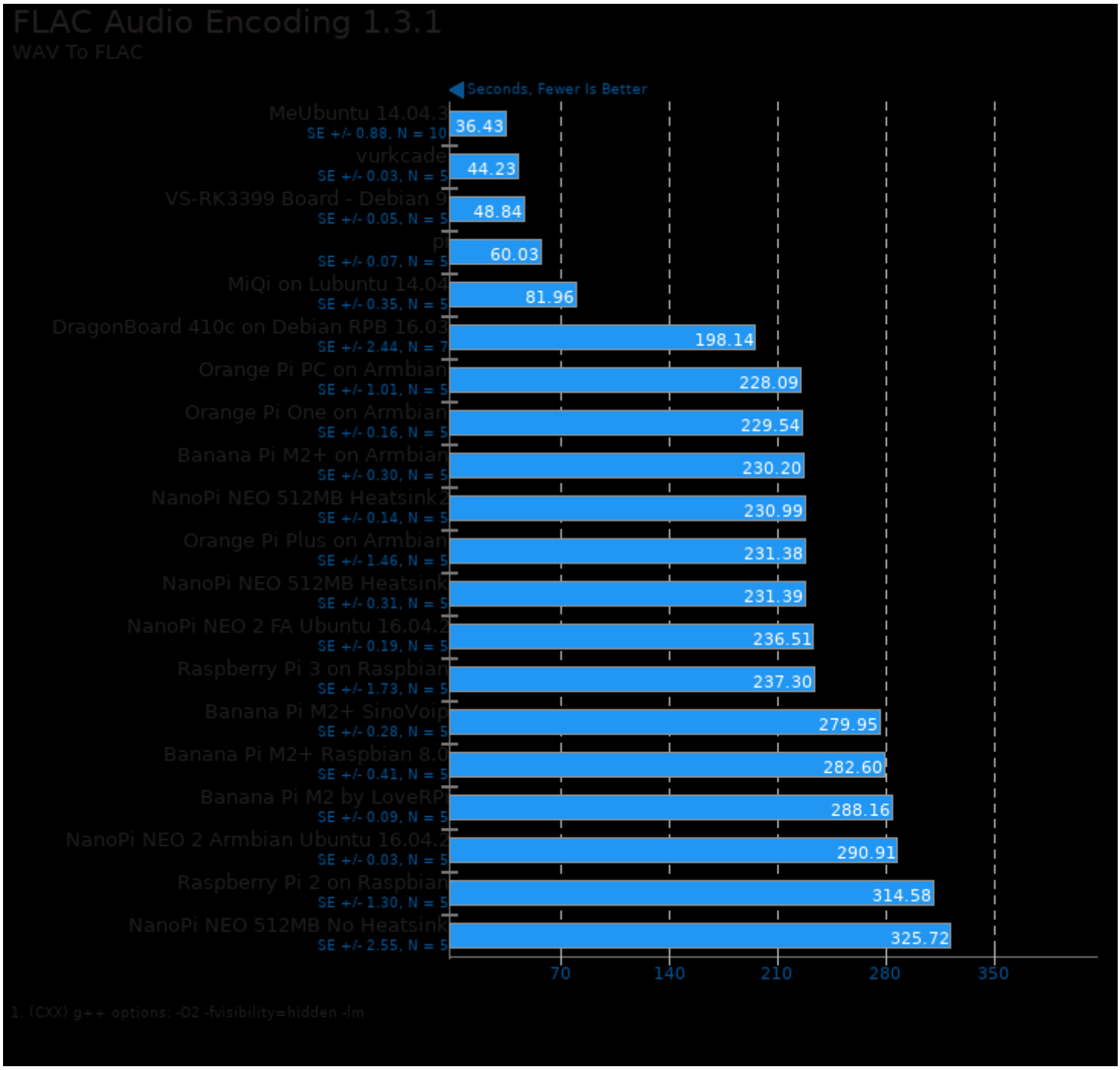
Raspberry Pi vs Orange Pi vs Banana Pi 2016-03 Showdown by LoveRPi

	Orange Pi One on Armbian	Orange Pi PC on Armbian	Orange Pi Plus on Armbian	Raspberry Pi 2 on Raspbian	Raspberry Pi 3 on Raspbian	Banana Pi M2 by LoveRPi	Banana Pi M3 by LoveRPi	Banana Pi M2+ SinoVoip	Banana Pi M2+ on Armbian	Banana Pi M2+ Raspbian 8.0	MiQi on Lubuntu 14.04	Dragon Board 410c on Debian RPB 16.03	MeUbuntu 14.04.3	NanoPi NEO 512MB NoHeatsink	NanoPi NEO 512MB Heatsink	NanoPi NEO 512MB Heatsink 2	NanoPi NEO 512MB Heatsink2	NanoPi NEO 2 FA Ubuntu 16.04.2	NanoPi NEO 2 Armbian Ubuntu 16.04.2	VS-RK3399 Board - Debian 9	pi	vurkcade
FLAC Audio Encoding - WAV To FLAC (sec)	229.54	228.09	231.38	314.58	237.30	288.16		279.95	230.20	282.60	81.96	198.14	**36.43**	**325.72**	231.39		230.99	236.51	290.91	48.84	60.03	44.23
Normalized	15.87%	15.97%	15.74%	11.58%	15.35%	12.64%		13.01%	15.83%	12.89%	44.45%	18.39%	100%	11.18%	15.74%		15.77%	15.47%	12.52%	74.59%	60.69%	82.36%
Standard Deviation	0.2%	1%	1.4%	0.9%	1.6%	0.1%		0.2%	0.3%	0.3%	0.9%	3.3%	7.7%	1.8%	0.3%		0.1%	0.2%	0%	0.2%	0.3%	0.1%
OpenSSL - Performance / Cost - R.4.b.P (Signs/sec/Dollar	**1.60**	1.15	0.44		0.59	**0.30**	0.54															
Normalized	100%	71.88%	27.5%		36.88%	18.75%	33.75%															

Raspberry Pi vs Orange Pi vs Banana Pi 2016-03 Showdown by LoveRPi

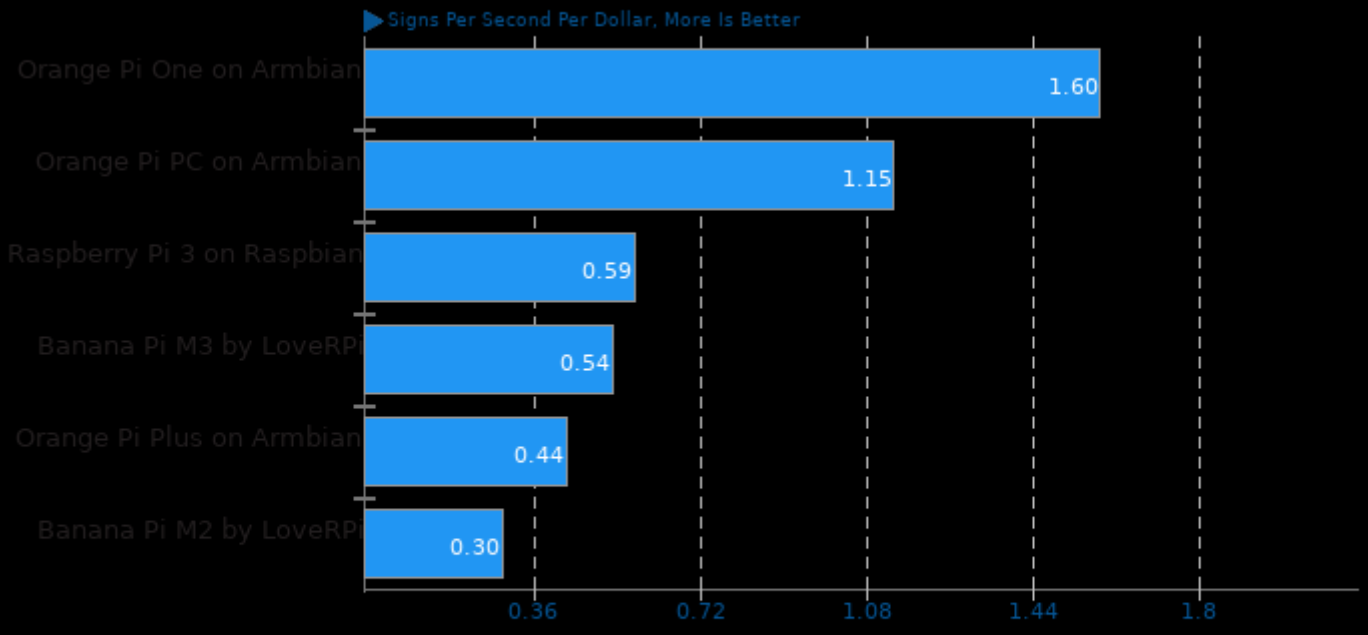
John The Ripper - Performance / Cost - Blowfish (Real C/S/Dolla	**50.90**	36.67	13.85		17.11	**9.73**	17.60																
Normalized	100%	72.0%	27.2%		33.6%	19.1%	34.5%																
Meta Performance Per Dollar - P.P.D (Performance/Dollar)	**19.65**	14.12	5.34		6.48	**3.80**	6.18																
Normalized	100%	71.8%	27.1%		32.9%	19.3%	31.4%																
C-Ray - Total Time (sec)	365.94	344.52	350.07	505.44	250.79	431.10	136.14	**1778**	581.37	893.24	136.96	341.80	200.29	848.52	461.70		466.89	350.48	344.91	98.08	79.56	**54.98**	
Normalized	15.0%	15.9%	15.7%	10.8%	21.9%	12.7%	40.3%	3.09%	9.46%	6.16%	40.1%	16.0%	27.4%	6.48%	11.9%		11.7%	15.6%	15.9%	56.0%	69.1%	100%	
Standard Deviation	0.2%	1.5%	0.5%	0.3%	0.1%	0%	0.3%	0.4%	3.6%	2.3%	4.3%	3.8%	0%	7.8%	3%		1.8%	0%	0.1%	3.1%	2.5%	0.1%	
Himeno Benchmark - P.P.S (MFLOP	64.38	68.23	68.01	33.29	60.28	61.26	31.80	56.83	64.35	63.04	89.84	66.91	**443.65**	41.32	15.34		**15.31**	52.67	49.18	195.30	308.11	315.16	
Normalized	14.5%	15.3%	15.3%	7.5%	13.5%	13.8%	7.17%	12.8%	14.5%	14.2%	20.2%	15.0%	100%	9.31%	3.46%		3.45%	11.8%	11.0%	44.0%	69.4%	71.0%	
Standard Deviation	0.4%	0.8%	0.1%	2.4%	1.1%	0.2%	2.7%	1.4%	1%	1.5%	3%	1.2%	0.9%	0.2%	0.5%		1.8%	8.2%	0.7%	0.7%	2.9%	8.7%	
Smallpt - G.I.R.1.S (sec)	166.5	154.7	154.9	217.5	139.0	195.4	621	**812.7**	248.3	390.6	866	234.1	620	282.9	213.4		210.1	130.8	128.5	679	476	**335**	
Normalized	20.1%	21.6%	21.6%	15.4%	24.1%	17.1%	53.9%	4.12%	13.4%	8.58%	38.6%	14.3%	54.0%	11.8%	15.7%		15.9%	25.6%	26.0%	49.3%	70.3%	100%	
Standard Deviation	0%	0.4%	0.1%	0.5%	0.2%	0.1%	0.4%	0.5%	0%	0.3%	0.5%	11%	0.2%	4%	0.2%		0.1%	0%	0.1%	2.4%			

OpenSSL - R.4.b.P (Signs/s	16	17.20	17.13	11.93	20.60	13.40	43.30	**3.30**	10.48	6.67	29.70	10.90	**66.53**	7.68	12.35	12.40				37.47	52.97
Normalized	24.05%	25.85%	25.75%	17.93%	30.96%	20.14%	65.08%	4.96%	15.75%	10.03%	44.64%	16.38%	100%	11.54%	18.56%	18.64%				56.32%	79.62%
Standard Deviation	0%	0%	0.3%	0.5%	8.9%	0%	2%	0%	14.2%	0.9%	0%	9%	1.4%	18.6%	3.4%	4.4%				0.2%	0.1%
Himeno Benchmark - Performance / Cost - P.P.S (MFLOPS/Dollar)	**6.44**	4.55	1.74		1.72	1.36	**0.40**														
Normalized	100%	70.65%	27.02%		26.71%	21.12%	6.21%														
John The Ripper - Blowfish (Real	509	550	540	387	599	438	1408	**104**	390	323	1055	535	1003	313	462	452	456	478	759	947	**1489**
Normalized	34.18%	36.94%	36.27%	25.99%	40.23%	29.42%	94.56%	6.98%	26.19%	21.69%	70.85%	35.93%	67.36%	21.02%	31.03%	30.36%	30.62%	32.1%	50.97%	63.6%	100%
Standard Deviation	0.1%	0%	0%	0.3%	0.6%	0.1%	0.6%	3%	14.2%	0.8%	0.2%	11.2%	20.4%	9.1%	2.7%	2.7%	0.6%		3.3%	6.6%	0.2%
Timed MAFFT Alignment - M.S.A		62.45	63.17	75.46	61.06	70.58	**29.72**	**210.62**	81.13	121.86	42.84	73.91	33.12	132.29	77.66	75.34	63.73	64.47			
Normalized		47.59%	47.05%	39.39%	48.67%	42.11%	100%	14.11%	36.63%	24.39%	69.37%	40.21%	89.73%	22.47%	38.27%	39.45%	46.63%	46.1%			
Standard Deviation		8.2%	2.1%	2.3%	10.4%	2%	0.8%	0%	8.4%	9.5%	4.6%	8.1%	1.2%	9.4%	2.5%	1.6%	8.2%	0.4%			


FLAC Audio Encoding 1.3.1
WAV To FLAC
Seconds, Fewer Is Better
MeUbuntu 14.04.3
SE +/- 0.88, N = 10
36.43
vurkcade
SE +/- 0.03, N = 5
44.23
VS-RK3399 Board - Debian 9
SE +/- 0.05, N = 5
48.84
pi
SE +/- 0.07, N = 5
60.03
MiQi on Lubuntu 14.04
SE +/- 0.35, N = 5
81.96
DragonBoard 410c on Debian RPB 16.03
SE +/- 2.44, N = 7
198.14
Orange Pi PC on Armbian
SE +/- 1.01, N = 5
228.09
Orange Pi One on Armbian
SE +/- 0.16, N = 5
229.54
Banana Pi M2+ on Armbian
SE +/- 0.30, N = 5
230.20
NanoPi NEO 512MB Heatsink2
SE +/- 0.14, N = 5
230.99
Orange Pi Plus on Armbian
SE +/- 1.46, N = 5
231.38
NanoPi NEO 512MB Heatsink
SE +/- 0.31, N = 5
231.39
NanoPi NEO 2 FA Ubuntu 16.04.2
SE +/- 0.19, N = 5
236.51
Raspberry Pi 3 on Raspbian
SE +/- 1.73, N = 5
237.30
Banana Pi M2+ SinoVoip
SE +/- 0.28, N = 5
279.95
Banana Pi M2+ Raspbian 8.0
SE +/- 0.41, N = 5
282.60
Banana Pi M2 by LoveRPi
SE +/- 0.09, N = 5
288.16
NanoPi NEO 2 Armbian Ubuntu 16.04.2
SE +/- 0.03, N = 5
290.91
Raspberry Pi 2 on Raspbian
SE +/- 1.30, N = 5
314.58
NanoPi NEO 512MB No Heatsink
SE +/- 2.55, N = 5
325.72
70
140
210
280
350
1. (CXX) g++ options: -O2 -fvisibility=hidden -lm

OpenSSL 1.0.1g

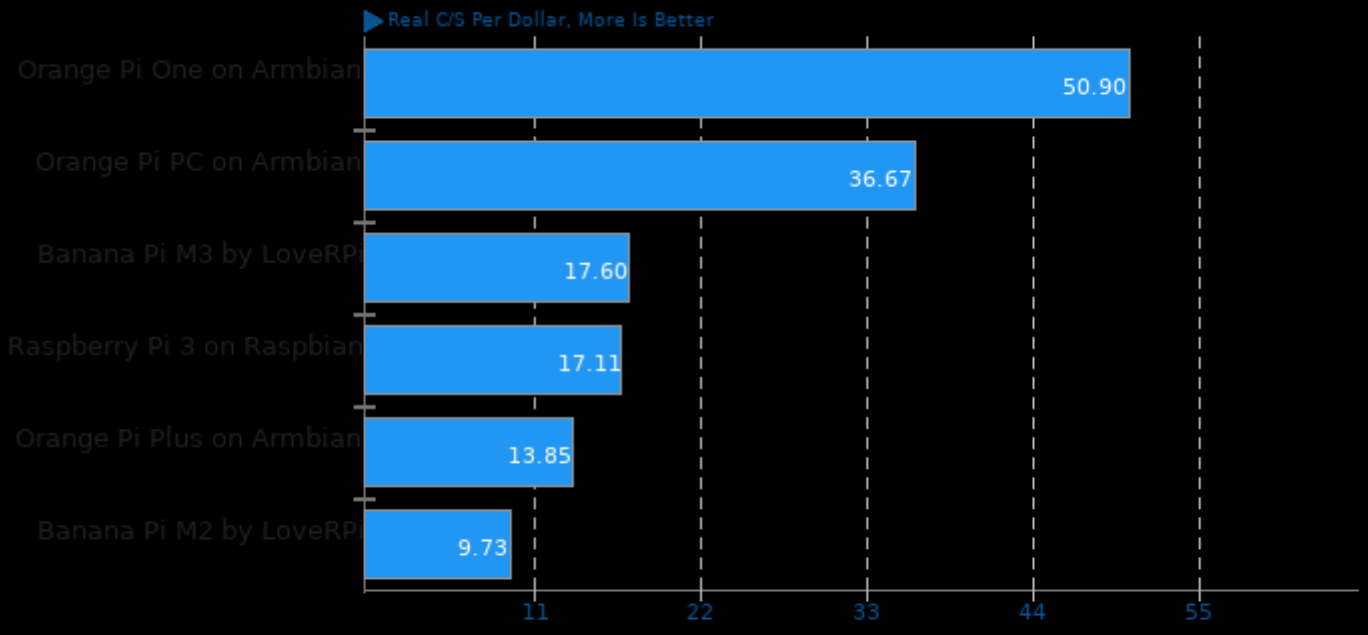
Performance / Cost - RSA 4096-bit Performance



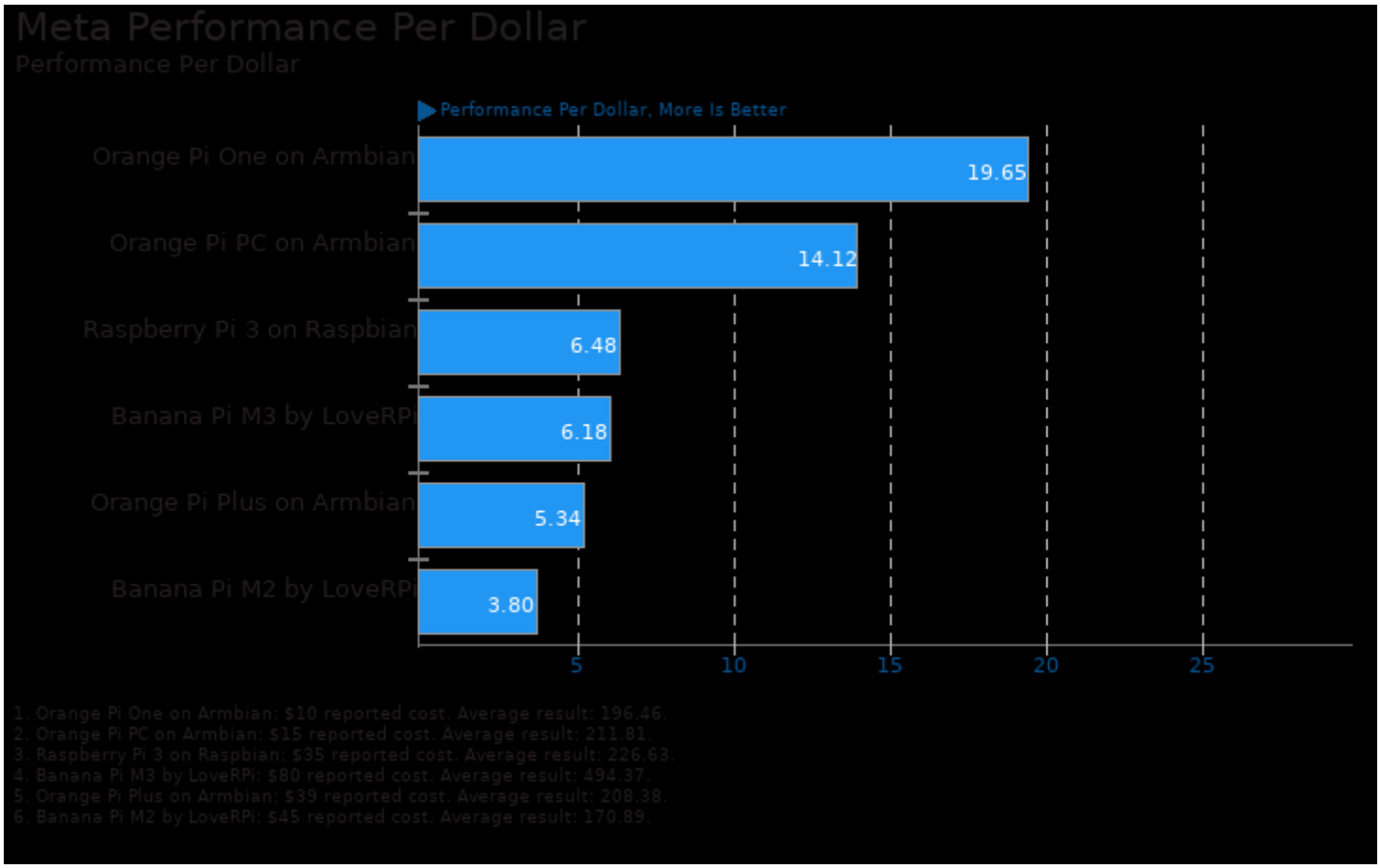
1. Orange Pi One on Armbian: $10 reported cost.
2. Orange Pi PC on Armbian: $15 reported cost.
3. Raspberry Pi 3 on Raspbian: $35 reported cost.
4. Banana Pi M3 by LoveRPi: $80 reported cost.
5. Orange Pi Plus on Armbian: $39 reported cost.
6. Banana Pi M2 by LoveRPi: $45 reported cost.

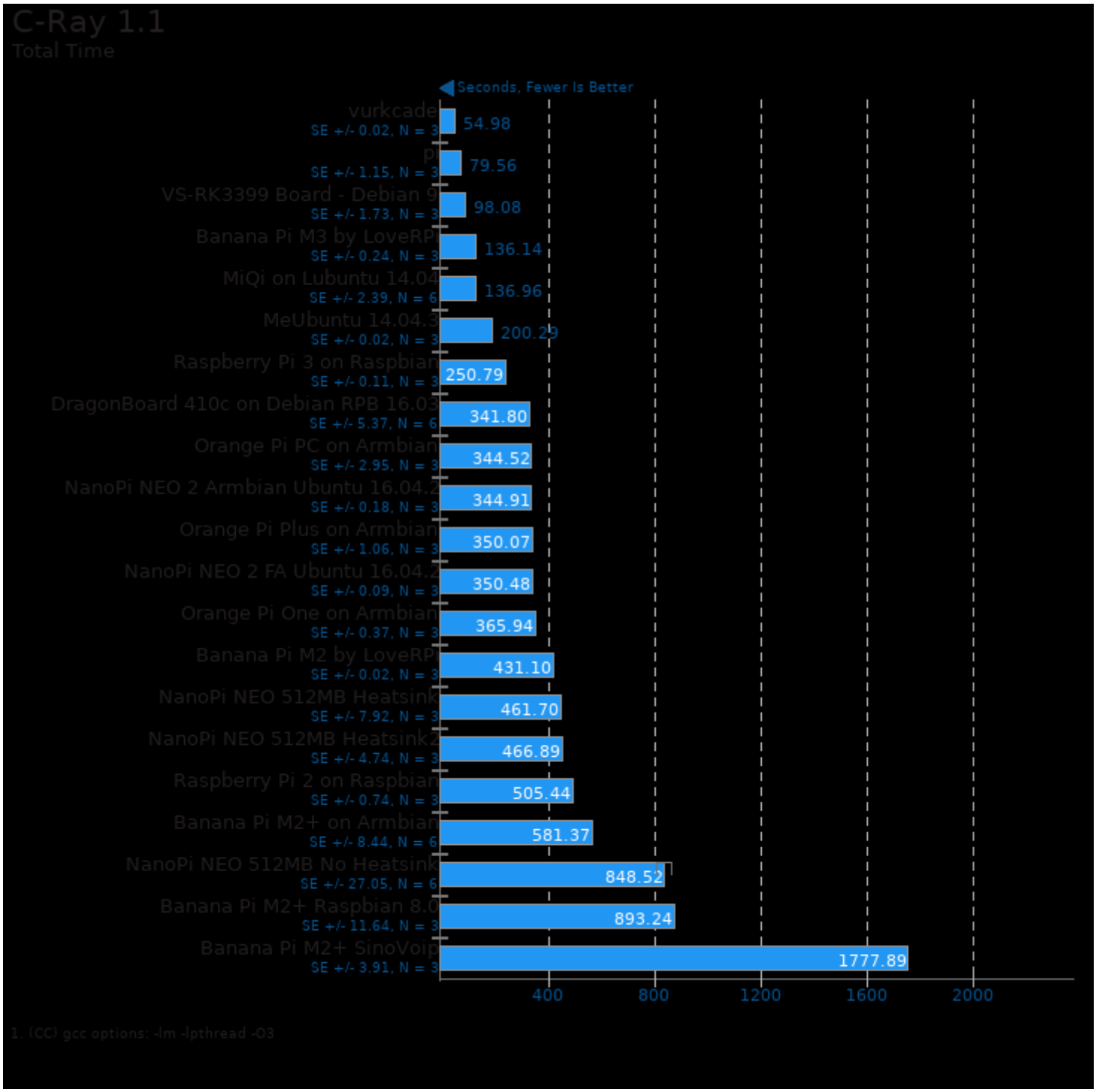
John The Ripper 1.8.0

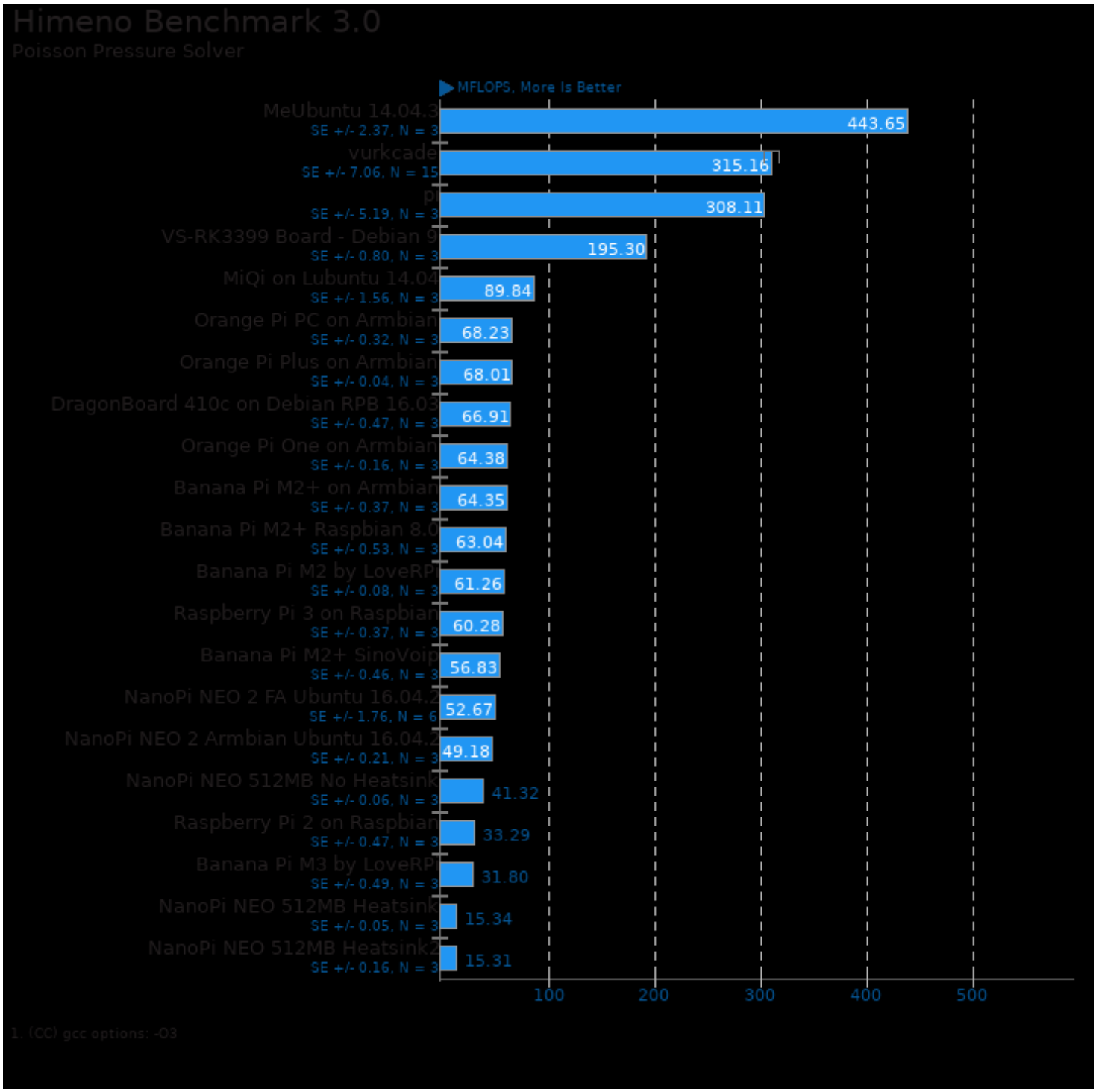
Performance / Cost - Test: Blowfish

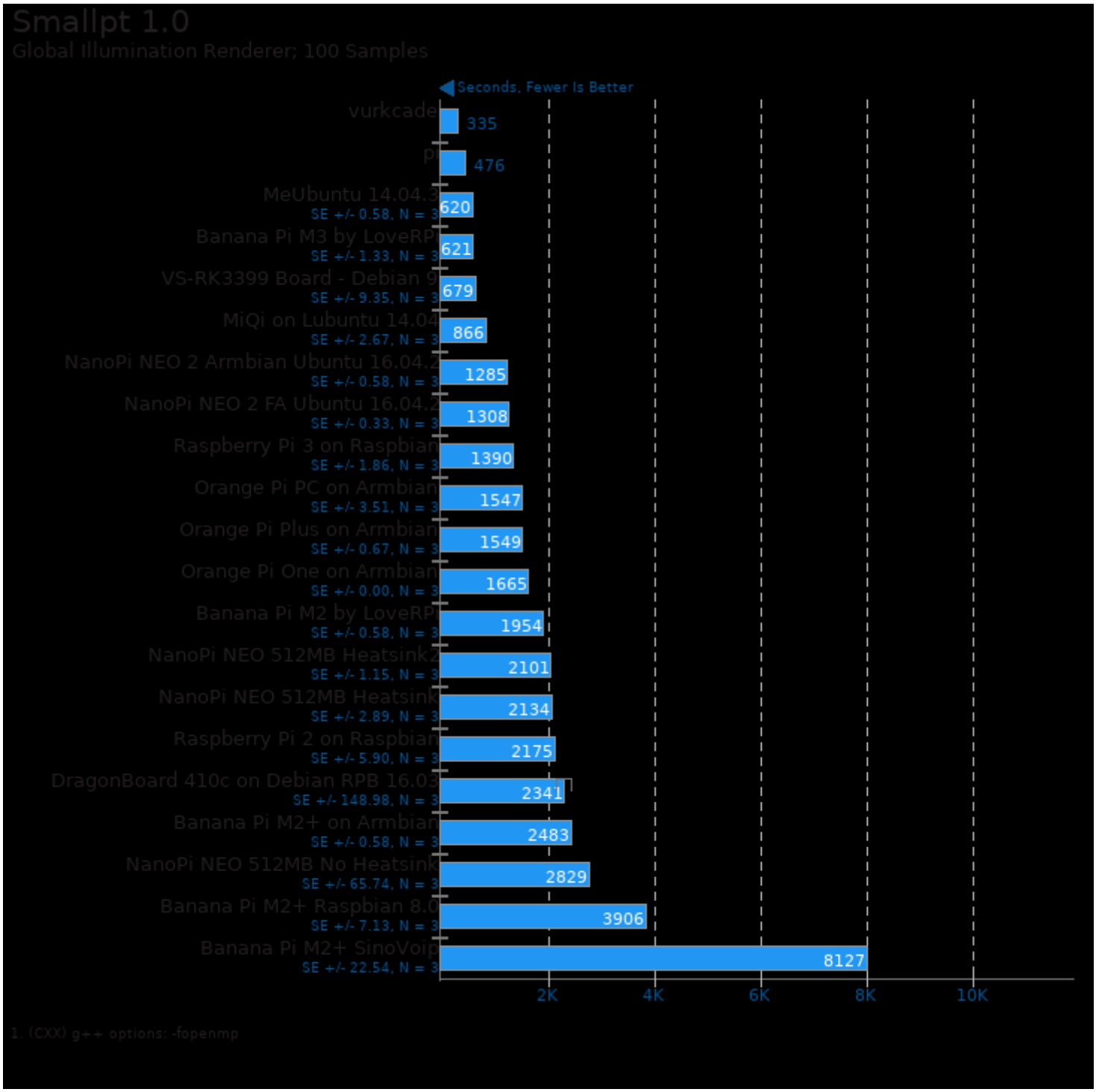


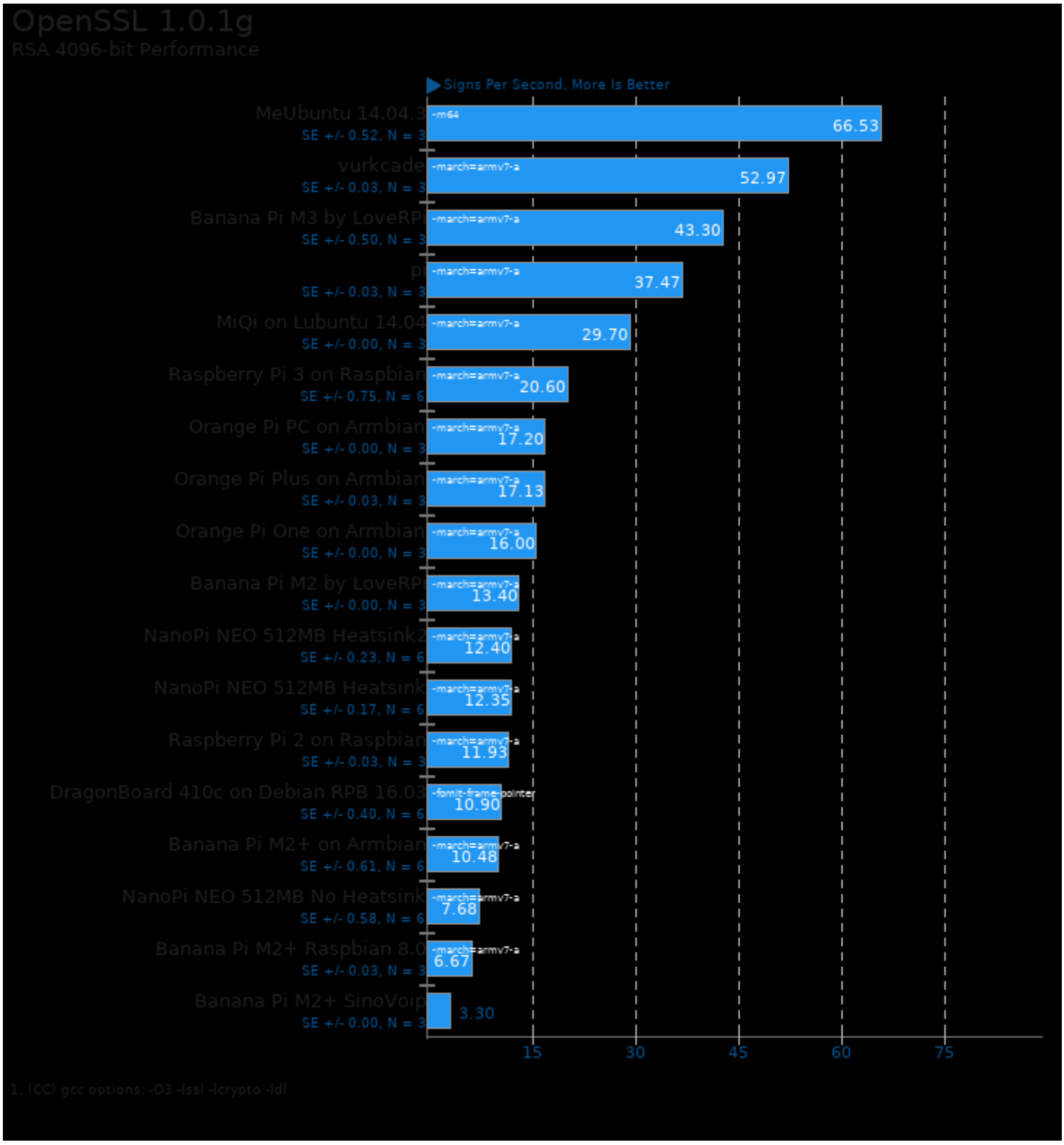
1. Orange Pi One on Armbian: $10 reported cost.
2. Orange Pi PC on Armbian: $15 reported cost.
3. Banana Pi M3 by LoveRPi: $80 reported cost.
4. Raspberry Pi 3 on Raspbian: $35 reported cost.
5. Orange Pi Plus on Armbian: $39 reported cost.
6. Banana Pi M2 by LoveRPi: $45 reported cost.

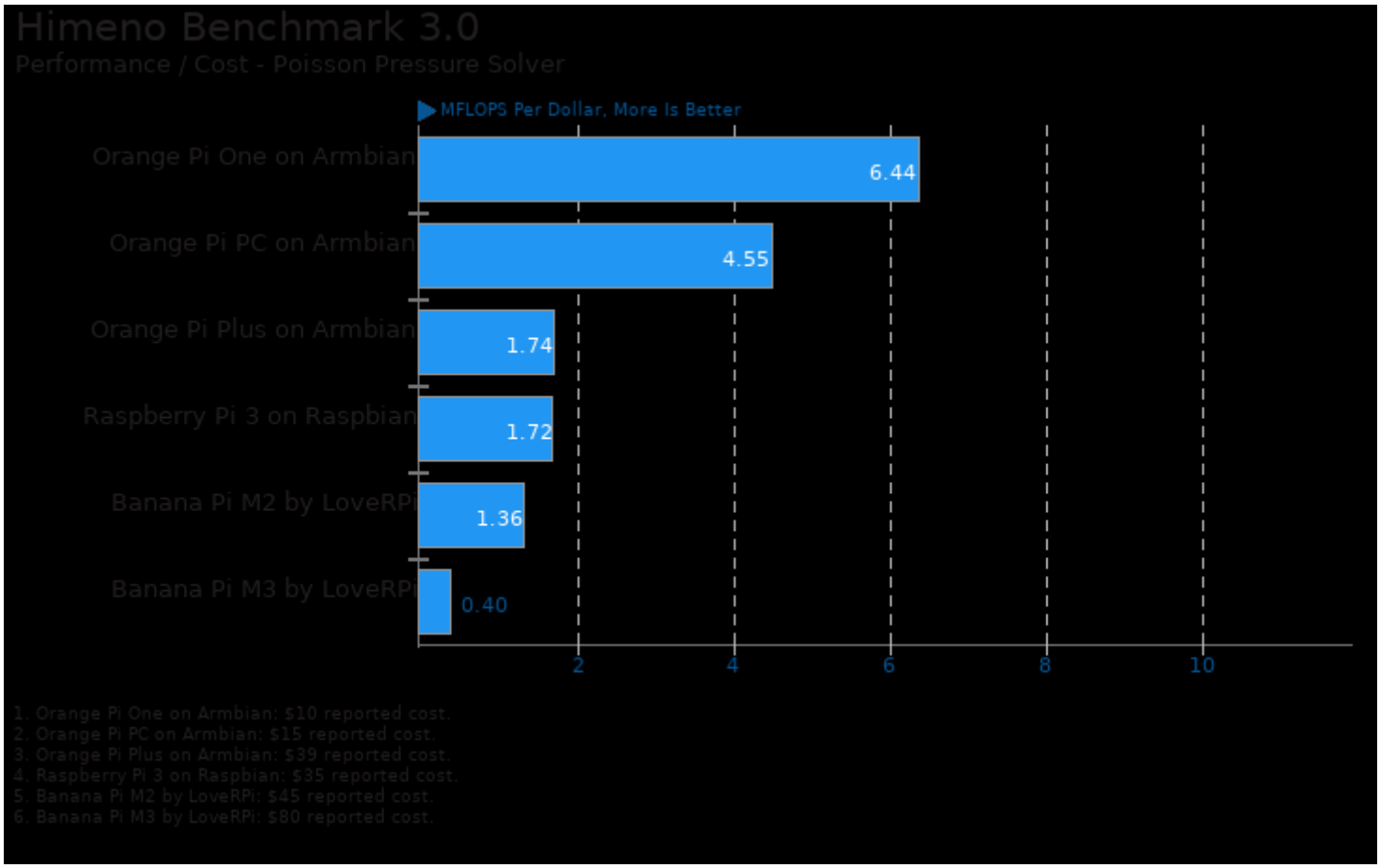

Meta Performance Per Dollar
Performance Per Dollar
Performance Per Dollar, More Is Better
Orange Pi One on Armbian
Orange Pi PC on Armbian
Raspberry Pi 3 on Raspbian
Banana Pi M3 by LoveRPi
Orange Pi Plus on Armbian
Banana Pi M2 by LoveRPi
19.65
14.12
6.48
6.18
5.34
3.80
5
10
15
20
25
1. Orange Pi One on Armbian: $10 reported cost. Average result: 196.46.
2. Orange Pi PC on Armbian: $15 reported cost. Average result: 211.81.
3. Raspberry Pi 3 on Raspbian: $35 reported cost. Average result: 226.63.
4. Banana Pi M3 by LoveRPi: $80 reported cost. Average result: 494.37.
5. Orange Pi Plus on Armbian: $39 reported cost. Average result: 208.38.
6. Banana Pi M2 by LoveRPi: $45 reported cost. Average result: 170.89.

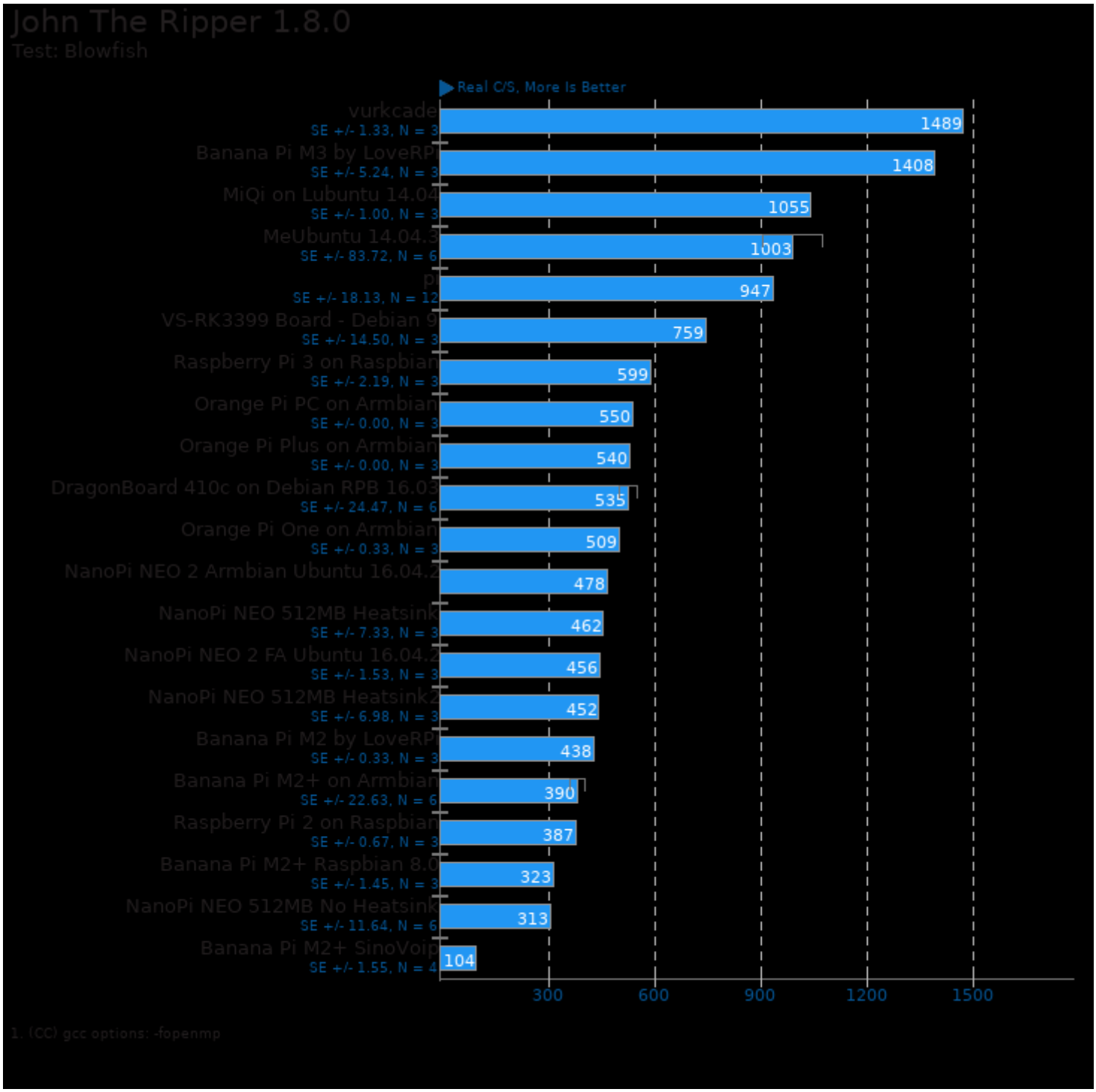

C-Ray 1.1
Total Time
Seconds, Fewer Is Better
vurkcade
SE +/- 0.02, N = 3
54.98
pi
SE +/- 1.15, N = 3
79.56
VS-RK3399 Board - Debian 9
SE +/- 1.73, N = 3
98.08
Banana Pi M3 by LoveRPi
SE +/- 0.24, N = 3
136.14
MiQi on Lubuntu 14.04
SE +/- 2.39, N = 6
136.96
MeUbuntu 14.04.3
SE +/- 0.02, N = 3
200.29
Raspberry Pi 3 on Raspbian
SE +/- 0.11, N = 3
250.79
DragonBoard 410c on Debian RPB 16.03
SE +/- 5.37, N = 6
341.80
Orange Pi PC on Armbian
SE +/- 2.95, N = 3
344.52
NanoPi NEO 2 Armbian Ubuntu 16.04.2
SE +/- 0.18, N = 3
344.91
Orange Pi Plus on Armbian
SE +/- 1.06, N = 3
350.07
NanoPi NEO 2 FA Ubuntu 16.04.2
SE +/- 0.09, N = 3
350.48
Orange Pi One on Armbian
SE +/- 0.37, N = 3
365.94
Banana Pi M2 by LoveRPi
SE +/- 0.02, N = 3
431.10
NanoPi NEO 512MB Heatsink
SE +/- 7.92, N = 3
461.70
NanoPi NEO 512MB Heatsink2
SE +/- 4.74, N = 3
466.89
Raspberry Pi 2 on Raspbian
SE +/- 0.74, N = 3
505.44
Banana Pi M2+ on Armbian
SE +/- 8.44, N = 6
581.37
NanoPi NEO 512MB No Heatsink
SE +/- 27.05, N = 6
848.52
Banana Pi M2+ Raspbian 8.0
SE +/- 11.64, N = 3
893.24
Banana Pi M2+ SinoVoip
SE +/- 3.91, N = 3
1777.89
400
800
1200
1600
2000
1. (CC) gcc options: -lm -lpthread -O3

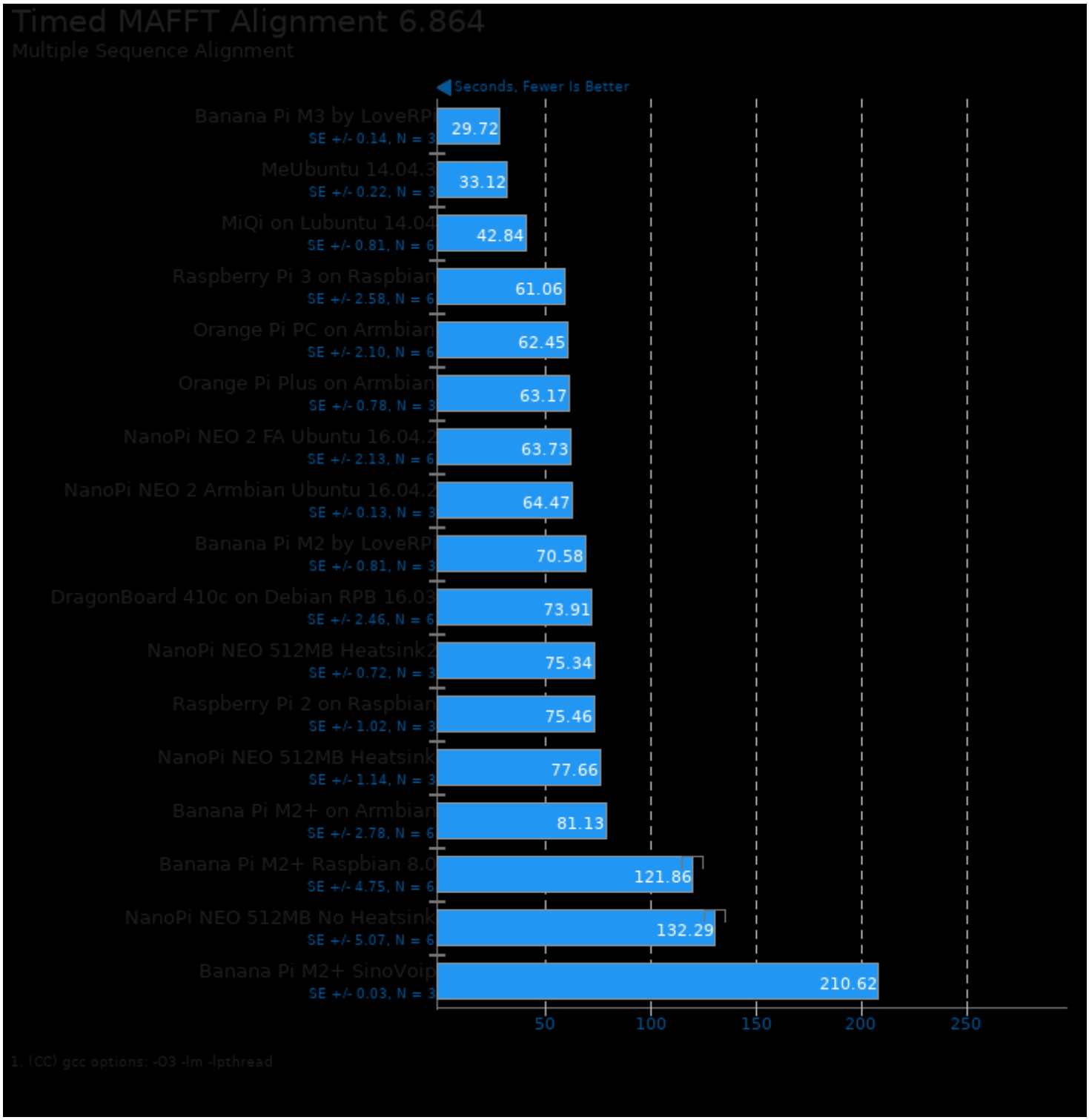

Himeno Benchmark 3.0
Poisson Pressure Solver
MFLOPS, More Is Better
MeUbuntu 14.04.3
SE +/- 2.37, N = 3
443.65
vurkcade
SE +/- 7.06, N = 15
315.16
pi
SE +/- 5.19, N = 3
308.11
VS-RK3399 Board - Debian 9
SE +/- 0.80, N = 3
195.30
MiQi on Lubuntu 14.04
SE +/- 1.56, N = 3
89.84
Orange Pi PC on Armbian
SE +/- 0.32, N = 3
68.23
Orange Pi Plus on Armbian
SE +/- 0.04, N = 3
68.01
DragonBoard 410c on Debian RPB 16.03
SE +/- 0.47, N = 3
66.91
Orange Pi One on Armbian
SE +/- 0.16, N = 3
64.38
Banana Pi M2+ on Armbian
SE +/- 0.37, N = 3
64.35
Banana Pi M2+ Raspbian 8.0
SE +/- 0.53, N = 3
63.04
Banana Pi M2 by LoveRPi
SE +/- 0.08, N = 3
61.26
Raspberry Pi 3 on Raspbian
SE +/- 0.37, N = 3
60.28
Banana Pi M2+ SinoVoip
SE +/- 0.46, N = 3
56.83
NanoPi NEO 2 FA Ubuntu 16.04.2
SE +/- 1.76, N = 6
52.67
NanoPi NEO 2 Armbian Ubuntu 16.04.2
SE +/- 0.21, N = 3
49.18
NanoPi NEO 512MB No Heatsink
SE +/- 0.06, N = 3
41.32
Raspberry Pi 2 on Raspbian
SE +/- 0.47, N = 3
33.29
Banana Pi M3 by LoveRPi
SE +/- 0.49, N = 3
31.80
NanoPi NEO 512MB Heatsink
SE +/- 0.05, N = 3
15.34
NanoPi NEO 512MB Heatsink2
SE +/- 0.16, N = 3
15.31
100
200
300
400
500
1. (CC) gcc options: -O3


Smallpt 1.0
Global Illumination Renderer; 100 Samples
Seconds, Fewer Is Better
vurkcade
335
pi
476
MeUbuntu 14.04.3
SE +/- 0.58, N = 3
620
Banana Pi M3 by LoveRPi
SE +/- 1.33, N = 3
621
VS-RK3399 Board - Debian 9
SE +/- 9.35, N = 3
679
MiQi on Lubuntu 14.04
SE +/- 2.67, N = 3
866
NanoPi NEO 2 Armbian Ubuntu 16.04.2
SE +/- 0.58, N = 3
1285
NanoPi NEO 2 FA Ubuntu 16.04.2
SE +/- 0.33, N = 3
1308
Raspberry Pi 3 on Raspbian
SE +/- 1.86, N = 3
1390
Orange Pi PC on Armbian
SE +/- 3.51, N = 3
1547
Orange Pi Plus on Armbian
SE +/- 0.67, N = 3
1549
Orange Pi One on Armbian
SE +/- 0.00, N = 3
1665
Banana Pi M2 by LoveRPi
SE +/- 0.58, N = 3
1954
NanoPi NEO 512MB Heatsink2
SE +/- 1.15, N = 3
2101
NanoPi NEO 512MB Heatsink
SE +/- 2.89, N = 3
2134
Raspberry Pi 2 on Raspbian
SE +/- 5.90, N = 3
2175
DragonBoard 410c on Debian RPB 16.03
SE +/- 148.98, N = 3
2341
Banana Pi M2+ on Armbian
SE +/- 0.58, N = 3
2483
NanoPi NEO 512MB No Heatsink
SE +/- 65.74, N = 3
2829
Banana Pi M2+ Raspbian 8.0
SE +/- 7.13, N = 3
3906
Banana Pi M2+ SinoVoip
SE +/- 22.54, N = 3
8127
2K
4K
6K
8K
10K
1. (CXX) g++ options: -fopenmp


OpenSSL 1.0.1g
RSA 4096-bit Performance
Signs Per Second, More Is Better
MeUbuntu 14.04.3
SE +/- 0.52, N = 3
-m64
66.53
vurkcade
SE +/- 0.03, N = 3
-march=armv7-a
52.97
Banana Pi M3 by LoveRPi
SE +/- 0.50, N = 3
-march=armv7-a
43.30
SE +/- 0.03, N = 3
-march=armv7-a
37.47
MiQi on Lubuntu 14.04
SE +/- 0.00, N = 3
-march=armv7-a
29.70
Raspberry Pi 3 on Raspbian
SE +/- 0.75, N = 6
-march=armv7-a
20.60
Orange Pi PC on Armbian
SE +/- 0.00, N = 3
-march=armv7-a
17.20
Orange Pi Plus on Armbian
SE +/- 0.03, N = 3
-march=armv7-a
17.13
Orange Pi One on Armbian
SE +/- 0.00, N = 3
-march=armv7-a
16.00
Banana Pi M2 by LoveRPi
SE +/- 0.00, N = 3
-march=armv7-a
13.40
NanoPi NEO 512MB Heatsink2
SE +/- 0.23, N = 6
-march=armv7-a
12.40
NanoPi NEO 512MB Heatsink
SE +/- 0.17, N = 6
-march=armv7-a
12.35
Raspberry Pi 2 on Raspbian
SE +/- 0.03, N = 3
-march=armv7-a
11.93
DragonBoard 410c on Debian RPB 16.03
SE +/- 0.40, N = 6
-fomit-frame-pointer
10.90
Banana Pi M2+ on Armbian
SE +/- 0.61, N = 6
-march=armv7-a
10.48
NanoPi NEO 512MB No Heatsink
SE +/- 0.58, N = 6
-march=armv7-a
7.68
Banana Pi M2+ Raspbian 8.0
SE +/- 0.03, N = 3
-march=armv7-a
6.67
Banana Pi M2+ SinoVoip
SE +/- 0.00, N = 3
3.30
15
30
45
60
75
1. (CC) gcc options: -O3 -lssl -lcrypto -ldl


Himeno Benchmark 3.0
Performance / Cost - Poisson Pressure Solver
MFLOPS Per Dollar, More Is Better
Orange Pi One on Armbian
6.44
Orange Pi PC on Armbian
4.55
Orange Pi Plus on Armbian
1.74
Raspberry Pi 3 on Raspbian
1.72
Banana Pi M2 by LoveRPi
1.36
Banana Pi M3 by LoveRPi
0.40
2
4
6
8
10
1. Orange Pi One on Armbian: $10 reported cost.
2. Orange Pi PC on Armbian: $15 reported cost.
3. Orange Pi Plus on Armbian: $39 reported cost.
4. Raspberry Pi 3 on Raspbian: $35 reported cost.
5. Banana Pi M2 by LoveRPi: $45 reported cost.
6. Banana Pi M3 by LoveRPi: $80 reported cost.


John The Ripper 1.8.0
Test: Blowfish
Real C/S, More Is Better
vurkcade
SE +/- 1.33, N = 3
1489
Banana Pi M3 by LoveRPi
SE +/- 5.24, N = 3
1408
MiQi on Lubuntu 14.04
SE +/- 1.00, N = 3
1055
MeUbuntu 14.04.3
SE +/- 83.72, N = 6
1003
pi
SE +/- 18.13, N = 12
947
VS-RK3399 Board - Debian 9
SE +/- 14.50, N = 3
759
Raspberry Pi 3 on Raspbian
SE +/- 2.19, N = 3
599
Orange Pi PC on Armbian
SE +/- 0.00, N = 3
550
Orange Pi Plus on Armbian
SE +/- 0.00, N = 3
540
DragonBoard 410c on Debian RPB 16.03
SE +/- 24.47, N = 6
535
Orange Pi One on Armbian
SE +/- 0.33, N = 3
509
NanoPi NEO 2 Armbian Ubuntu 16.04.2
478
NanoPi NEO 512MB Heatsink
SE +/- 7.33, N = 3
462
NanoPi NEO 2 FA Ubuntu 16.04.2
SE +/- 1.53, N = 3
456
NanoPi NEO 512MB Heatsink2
SE +/- 6.98, N = 3
452
Banana Pi M2 by LoveRPi
SE +/- 0.33, N = 3
438
Banana Pi M2+ on Armbian
SE +/- 22.63, N = 6
390
Raspberry Pi 2 on Raspbian
SE +/- 0.67, N = 3
387
Banana Pi M2+ Raspbian 8.0
SE +/- 1.45, N = 3
323
NanoPi NEO 512MB No Heatsink
SE +/- 11.64, N = 6
313
Banana Pi M2+ SinoVoip
SE +/- 1.55, N = 4
104
300
600
900
1200
1500
1. (CC) gcc options: -fopenmp



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:01.