Sarah Wood

Embedded Programming

Ch7 Assg 2

<http://strangemeadowlarkprojects.blogspot.de/2014/05/a-legoarduino-game-controller.html>

“Strange Meadowlark” built a controller that is perceived as a USB keyboard. He remapped the controller buttons to virtual keyboard “keys”. He ran into some difficulty with certain games, as all keyboard buttons are digital, and he wanted analog controls in some instances. He then built a LEGO shell for the Arduino board and electronics.

I liked LEGO. I also use LEGO for development casings. They are cheap, available, and can be re-configured as needed.

I disliked that he expected analog control from a keyboard interface. A mouse or joystick interface might be closer to what he envisioned. For instance, the Sony Playstation controller used two joysticks, and code exists to adapt that controller to PC.

Verdict: Great for Super Mario or Tetris. Not great for First-person games with camera controls.

<http://excamera.com/sphinx/gameduino/>

Gameduino provides analog audio & video outputs in a shield form factor. There is an extensive library of games and utilities. Gameduino2 provides the same libraries, but outputs to a small touchscreen. (Maybe Gameduino 3 could output HDMI?)

I like the VGA output. VGA signal generators are getting hard to find and are expensive when you do find them. Despite being a deprecated standard, they are still in common use in many industries and homes. This could be an out-of-the-box VGA signal solution.

I dislike that it’s VGA only. Better port replication for RCA, N-coax, HDMI &/or SDI would convert it into a professional video solution. The software is there to test and focus output devices. (There is an unfilled market niche here. Maybe I could fill it…)

Verdict: Could be easily developed into professional signal solution. Awesome toy as it is. (For now, I’ll stick with my RaspberryPi with HATs for port replication & I/O.)

<http://nootropicdesign.com/store/product-category/hackvision/>

Hackvision sells easily adaptable custom game controllers, and a kit for adapting the Wii nunchuck controller to a standard header. This would be useful for tinkering or prototyping a unique controller for a new game. It comes with some simple games installed, or can interface with an Arduino for user-built games.

I like that it is available pre-built or as a kit. Pre-built, you could play Space Invaders on your old TV right away. The kit would be a great weekend electronics project. (I could see a great parent-child science fair project here.) In either case, you could customize existing code or learn to write your own games.

I dislike that it’s RCA-out only. It only provides one RCA analog audio channel, and one RCA analog video channel. Analog audio is fine: you could even fake stereo sound with a splitter. Analog video is going away. At home, you could play this on your oldest TV, but not the big TV in the living room. An HDMI option would increase sales.