

TOOLS of the TRADE



Nest Thermostat

The Nest Thermostat is smart in a number of ways. It's visually elegant, as it was designed by one of the original designers of the iPod, and function follows design with operations that are simple and much more intuitive than you might expect from a thermostat. The Nest connects to your Wi-Fi network, which lets you change settings when you're away from home. As it learns, it remembers your settings over periods of days and will replicate those patterns of high, low, and off unless you override them. The Nest is packaged with all you need for homeowner installation: There are several templates, a set of wiring instructions, and a screwdriver with a nested selection of bits. There's even a small bubble level built into the base to correctly align the dial on the wall.

If you take the time to program your Nest, you will most likely realize savings of what some claim is 50% of the total energy bill for your home—heating and cooling. You might be able to do that with the older, existing digital thermostats if only the procedures were as easy to follow as those with the Nest. The LED display is bright with very simple menus that you access and activate by turning the outer dial and then pushing it like a large button. The dial even has a built-in motion detector to alert the device when you're home.

www.nest.com/thermostat

Google Nexus 5

The Nexus 5 is Google's latest high-end smartphone with a subsidized price (16GB for \$349; 32GB for \$399) and an unlocked system. It's manufactured by LG and features a 4.95" 1,920 × 1,080 full-HD display constructed of Corning Gorilla Glass 3, an eight-megapixel camera with HDR+, a 2.26GHz Snapdragon 800 processor, and wireless charging. The HDR+ function takes multiple photos at different exposure levels to guarantee the photo won't be too dark or too

bright. Although the names that Google chooses for its operating systems might not sound very serious, the OS powers more than one billion phones and tablets worldwide. Google's latest smartphone operating system—Android 4.4, KitKat—drives the Nexus 5. The new system optimizes memory while improving touchscreen response. A simplified voice command, "OK Google," can call up the search engine, send a text, get directions, and provide access to other functions. An immersive mode swipes away buttons and the status bar until you want to flick them back. With the latest version of the Hangouts app, you can display all of your SMS and MMS messages together in the same app with other conversations and



video calls. A new version of QuickOffice is included for Word documents, spreadsheets, and presentations. The Nexus 5 weighs about 4.5 oz. and measures 2.7" × 5.4" × 0.33". The 2,300 mAh battery provides up to 17 hours talk time, 300 hours of standby, and up to 8.5 hours of Internet time connected through Wi-Fi. A low-power audio playback mode will play music for up to 60 hours. Additional sensors include a GPS, gyroscope, accelerometer, compass, and proximity/ambient light. Networks include dual-band Wi-Fi, NFC, Bluetooth 4.0, and a wide variety of bands in North America, including GSM, CDMA, WCDMA, and LTE.

www.google.com/nexus5

Canon PowerShot SX280 HS

As smartphones crowd the space previously owned by compact digital cameras, there are some cameras that are holding their own by getting smarter and more connected. Canon's PowerShot SX280 HS is a Wi-Fi-connected camera that also has Megazoom—a focal length equivalent to a 35mm camera with 25mm-500mm zoom ca-

TECH FORUM

It's Time to Retire the FUD Directed at Tablets

By Michael Castelluccio, Editor



capacity. Despite the long reach of its lens, the camera is only 4.2" × 2.5" × 1.3" and weighs less than 8 oz. The resolution is 12.1 megapixels with autofocus TTL contrast detection, an image stabilizer system, face detection, and digital video with a maximum 1,920 × 1,080 video resolution. The Wi-Fi connectivity includes GPS geotagging, and the camera's system can wirelessly connect to iOS or Android devices, enabling you to send photos and videos or to back them up on a computer. You can keep the photos you're taking on the camera via a memory card slot that supports SD, SDHC, and SDXC memory cards. The built-in flash provides a number of modes, including fill-in, slow syncro, auto, flash off, and red-eye reduction. There's a self-timer that will wait from two to 10 seconds, and the viewfinder

is a 3" LCD display.
www.canon.com

InCase Origami Workstation

Nothing beats the Apple wireless brushed aluminum keyboard for iPads, smartphones, and other tablets with Bluetooth. But the keyboard isn't something you want to keep tossing in and out of a gear bag without a cover. A brilliantly designed, inexpensive solution that will cover and protect your keyboard that also opens into a stable work stand is the Origami Workstation by InCase. The top lid, like origami, folds back at the corners to form a triangular base for your tablet or phone. As you fold them down, the corners attach with Velcro tabs. The keyboard snaps in securely, and the entire rigid base sits still as you type and tap the screen.

You can position the tablet in portrait or horizontal mode.

Your iPad will even rest firmly in place if it has a smart cover on it. The \$30 InCase

Workstation is available

from www.Apple.com and www.Amazon.com.



In order to hang on to diminishing sales, some personal computer marketers have resorted to slinging old-fashioned FUD (fear, uncertainty, and doubt) at tablet computers, insisting that these gadgets are more appropriate for "consumption than production." They might be cool, the argument goes, but they really just aren't up to doing any serious work.

For a little perspective on just how robust and appropriate tablets can be in place of more traditional computers, we'll take a closer look at ECM², a suite of functions integrated into a communication/information/reporting system for fire departments. The program runs on tablets mounted in the cabs of fire and rescue vehicles and on firefighters' smartphones.

As a call comes in from a 911 center, the alert is sent out to the firefighters' phones while the ECM²-enabled iPad or Android tablet in the rescue vehicles light up with the incident location and then map turn-by-turn directions. They call up the location of the fire hydrants in the vicinity, look for additional information on the involved structures or the neighborhood—such as hazardous storage sites—all the while keeping a continuously updating count of those firefighters responding and en route as well as the vehicles dispatched. The program can even open a weather function if that information is important for the responders. All of this information is displayed by simply tapping the tablet screens inside vehicles racing to the scene.

And the system does even more. ECM² integrates a set of smartphone apps, a data integrator, and mobile map and station manager functions into a single communication system that begins with the local 911 center and ends with data being recorded when the activity at the incident site is closed down and the equipment heads home.

continued on next page

The company that created this system was cofounded less than five years ago by John Bohinc, a firefighter for 28 years and fire chief in the Pittsburgh area for the last 14 of those years. ECM² evolved directly out of that experience, and as Bohinc and his technology cofounder, E.J. Battaglia, drew up the system, they made it as quick and intuitive as possible to manage the critical needs of the situations it would serve in.

The firefighters using the 911 Emergency Call Manager software replace their pagers with an app they load on their smartphones. Firefighters can use their iPhones, Android, or Windows 7 phones. That app receives the alert calls, and a tap on the screen notifies the station or those at the scene that the notified firefighter is or isn't able to respond. On his phone, the chief can view a continuously updated list of who's responding.

Another tap on the globe icon will provide a map of the call location, and a touch on the top of the screen will open turn-by-turn directions to the scene, if needed. The firefighter also can slide to a status page to send and receive messages to those on the company's list.

The Mobile Map tool also provides an interesting function for chiefs to add hydrant locations to a new or existing map. If the chief is, say, on a call to assist another district and doesn't have a map of the area, he can add hydrant locations using the phone's GPS and map function. A few taps let him place the hydrant on the map from his location, along with detailed information like name, pressure, flow rate, pipe diameter, and cap color. It's just tapping, typing, and dragging to ensure the exact location to create a new map for future calls in that area. The same can be used to edit existing maps.

The incident report function on the tablets in the vehicles collects the combined information about the call and response times, location, and personnel, which is then printed when the vehicles return to home base.

WHY BETTER ON A TABLET?

The ECM² system runs on Apple's iOS platform, Google Android devices, or on Windows 7, so you can outfit your vehicles with iPads, Android tablets, or even laptops. But there are a number of compelling reasons for using tablets, such as cost, convenience, space, and ease of use.

You could mount a Panasonic Toughbook laptop in the cab to run the apps, but just one of those laptops will cost you about \$3,000. A new iPad Air with Wi-Fi and cellular data will set you back only \$630, so you could connect



nearly five vehicles for the cost of just one laptop. And if a unit fails, it's a lot cheaper replacing a tablet than a laptop.

Toughbooks are bulky and heavy. The amount of space they take up in the cab is about a square foot because the device is mounted horizontally. They weigh about 8 lbs. and are 3" thick. An iPad is mounted vertically and only occupies 6.6" × 9.4" × 0.29" of space. Being a screen without a keyboard, it saves a lot of room. The device weighs 1 lb., and if you put the iPad in an Otterbox case, you have a device that's sufficiently durable and conveniently mobile. With the excellent cameras on the new iPads, you can readily disconnect the iPad from the flex arm to take photos at the scene for the final report. Another important advantage of using a tablet is its much shorter boot-up time.

The other cost factors for the system are surprisingly modest. The staff at ECM² will install and set up the system at no cost, and the annual service charge for a moderate-size volunteer company is less than \$2,000 for data management with emergency backup. Additionally, training for end-users is completed in an hour or two. That's because the functions are intuitive and familiar for both touch tablets and smartphones. You can view a number of the how-to videos in the support section of the company's website at www.ecm2.us.

For those of you who still see tablets as coffee-table computers, you might want to look at the applications like the ECM² system. You can't get much more serious than fire rescue missions, and the program's ability to handle communication, critical information, and record-keeping simultaneously is a measure of how capable this mobile hardware can be. **SF**