UNITECH **PA**700**V**

UNITECH PARTNERS WITH VERIZON TO BRING VERIZON 4G LTE AND XLTE TO THE RUGGED ANDROID–BASED PA700V

By Conrad H. Blickenstorfer

On July 5, 2016, Unitech launched the PA700V, a handy, powerful Android-based data collection tool officially certified for use outside the proverbial "four walls." Specifically, the new PA700V uses the Verizon 4G LTE network to keep users connected to the heart and core of their businesses.

Building on a successful platform
Unitech initially launched the PA700 platform in July 2014 in an effort to provide a rugged handheld that merged effortless smartphone functionality with the best of a traditional mobile computer. To that end, Unitech gave the PA700 a large multi-touch display, a powerful processor, industrial-grade data collection capabilities, and all the tools and services required for easy enterprise integration.

Leading edge technology
On the technology side, Unitech chose a 1.5GHz OMAP 4470 processor from Texas Instruments, the same chip used in Amazon's Kindle Fire HD and various other tablets. There's a gigabyte of RAM and 8GB of eMMC mass storage that can be augmented by up to 32GB via a microSDHC Card slot. The standard battery provides 11.9 watt-hours, and the product brochure also lists an optional 27 watt-hour high capacity battery. Battery life, though, is listed as just around six hours. The PA700 initially came with Android "Jelly Bean" 4.1.1 and is now at Android version 4.3.

Unitech, which always has its finger on the pulse of emerging technologies, gave the PA700 a roomy 4.7-inch display a couple of months before Apple introduced the iPhone 6 with the same size display. The PA700 display's 1280 x 720 resolution means 312 pixels per inch and makes for a super-sharp picture. And transflective display technology means the device can be used outdoors as easily as indoors.

Unitech was prescient also in equipping the PA700 with capacitive multi-touch instead of an older resistive touch interface. Below the display are four physical Android buttons: Search, Menu, Home, and Back. Scan buttons on each side of the device makes the unit equally accessible to lefties as it is to righthanders.

Other notable features include integrated GPS as well as a bevy of sensors (eCompass, light and proximity, and a G-sensor) and a 5-megapixel autofocus camera with flash that can also record MPEG-4 video.

Note that while the original PA700 comes with either an integrated 1D CCD barcode scanner (reading UPC-A/E, EAN-8/13, Codabar, Code 39, Code 39 full ASCI, Code 93, Code 32, Interleaved & Std. 2 of 5, EAN 128, Code 11, Delta, MSI/Plessey, Code 128, Toshiba, RSS expended, RSS Limited, and RSS14) or a 2D imager (reading PDF417, MicroPDF417, Composite, RSS, TLC-39, Datamatrix, QR, Micro QR, Aztec, MaxiCode,US PostNet, US Planet, UK Postal, Australian Postal, Japan Postal, and Dutch Postal), the PA700V only comes with the latter.

For a device this powerful with such a large display and integrated industrial-grade scanner, the PA700V is quite compact, measuring 3.15 x 6.3 x 0.58 inches, and weighing about 10 ounces. That's roughly the same footprint as

the iPhone 6s Plus, though the PA700V, as an industrial-grade device, is thicker and heavier. The overall design follows contemporary smartphone/tablet standards with flush frontal glass, a slender rectangular shape, and rounded corners.

On the wireless communication side, both the original PA700 and the new PA700V have 802.11 b/g/n WiFi, Bluetooth 4.0, and dual external antennas for best possible WWAN and WLAN wireless connectivity and performance. Wireless Wide Area Network — "mobile broadband" — however is where the PA700 and the new PA700V differ.

Verizon 4G LTE/XLTE certified
Whereas the original PA700 comes with older 3.5G WWAN for cellular voice and data connections out there in the field, the PA700V brings Verizon 4G LTE communication technology and speed to the table. The new Unitech PA700V is officially Verizon certified, so let's look what that means.
First, LTE stands for Long Term Evolution —

an odd term for a speedy wireless communication standard, but that's the way it is. LTE evolved from the earlier GSM/EDGE and UMTS/HSPA technologies. The standard was developed by the 3GPP (3rd Generation Partnership Project) and was finalized in the group's Releases 8 and 9, and, as the specs show, the Unitech PA700V is compliant with that.

The specifications further state that the PA700V supports LTE bands number 4 and number 13. 13 is the main LTE band. It is fully built-up and uses the 700MHz spectrum, which means both excellent coverage and good wall penetration. The problem is that this initial 700MHz LTE band is getting pretty crowded, which can lead to congestion and speed drop-offs.

That is where LTE band 4 on the 1700/2100MHz spectrum comes in. Verizon calls this "XLTE." In essence, this is LTE running on additional spectrum that Verizon owns and has been bringing online. The higher frequency means it needs more cell towers for coverage, and it is therefore suited best for deployment in metropolitan areas. The benefit of offering both bands is switching from standard LTE to XLTE whenever the main 700MHz band is crowded and slowing down. The Unitech PA700V can do that, and it's a definite advantage.

Now where does certification come in? Well, Verizon has something called Verizon Wireless Open Development. It is a program that encourages developers to create new products, applications and services in addition to what Verizon Wireless itself offers.

There's a Verizon certification process that's conducted by approved external test labs. FCC-approved devices are tested and certified for compliance with Verizon's Wireless Open Development requirements for LTE. In essence, the testing makes sure that a device fully adheres to Verizon's technical network specifications and won't cause interference with other spectrum users or jeopardize network security. And the Unitech PA700V has this official 4G LTE Verizon certification.

Tough and rugged

As far as ruggedness goes, the Unitech PA700V delivers as well. 4-foot drop spec, IP65 sealing where the "6" means the device is fully dustproof, and the "5" that it can handle low pressure water jets from all directions. There's also a wide 14 to 122 degree Fahrenheit operating temperature range, and presumably a slew of other tests and certifications.

Bottomline: the PA700V is a powerful piece of hardware that combines contemporary smartphone and professional functionality into a compact Android handheld that's tough enough to hold up in the field. Its Verizon 4G LTE network certification means users can take full advantage of fast LTE and XLTE wireless broadband for operations such as real-time updates to databases, direct communication with home base, facilitating proofs of delivery, and numerous other applications where fast, reliable wireless access is imperative.

That's a major'step for Unitech, one that greatly extends the reach of Unitech handhelds beyond the traditional "four walls."

Unitech PA700V

Type: Rugged handheld

Processor: Texas Instruments OMAP 4470/1.5 GHz

OS: Android 4.3 (Jelly Bean)

Memory: 1GB

Slots: 1 x Micro SD Card Slot (up to 32GB), 1 x SIM

Display: 4.7-inch/1280 x 800 pixel IPS transflective LCD with 7H hardness Gorilla Glass 2

Digitizer: 5-point projected capacitive multi touch

Keys: 4 function keys, 2 scan keys, volume keys

Storage: 8GB eMMC Flash

Housing: Impact-resistant plastic

Size: 3.1 x 6.3 x 0.7 inches (79 x 160 x 18 mm)

Ruggedness: 14° to 122°F (-10° to 50°C); IP65 sealing; 4-foot drop, 600 tumbles, and other criteria in accordance with MIL-STD-810G testing

Weight: 10 oz. with battery

Power: 3.7V 3,220mAH 11.9 watt-hour Li-Ion

Communication: 802.11 b/g/n, Bluetooth 4.0, GPS, 4G LTE Verizon Certified LTE (FDD) 3GPP Rel. 9+, LTE-Bands 4, 13 (1700/2100 AWS, 700), LTE Cat.1, DL/UL max: 10.3Mbps / 5.2 Mbps

Interface: 1 x Mini USB 2.0 OTG, 3.5mm stereo headphone jack, 2D imager

Price: Starting at US$1,650

Contact: Unitech • www.ute.com