GENERAL DYNAMICS ITRONIX GD300

ANDROID-BASED RUGGED WEARABLE COMPUTER/GPS/COMMUNICATOR

In early August of 2010, General Dynamics Itronix announced the GD300, a small wearable computer that combines rugged computing, GPS and data communication into one device specifically designed to provide access to tactical networks and enhance situational awareness. Interestingly, the GD300 runs the Android OS, making it probably the first ruggedized device from a major provider to use Android instead of Windows CE/Mobile.

The GD300 also differs from WinMo devices in its processing architecture. Instead of a Marvell PXA chip, the GD300 uses a 600MHz ARM Cortex-A8 core, a chip based on the ARMv7 architecture that can be scaled from 600MHz to over 1GHz. It's extremely power-frugal and designed for devices that must use less than 0.3 watts. The chip delivers 2.0 Dhrystone MIPS, and is the same core used in the Palm Pre and the Nokia N900.

The unit has a 3.5-inch sunlight-viewable display with a resistive touch screen, and can also be configured to work with night vision goggles. Display resolution is 800 x 480 pixel, which translates into an exceptionally high resolution of 267 dpi (dots per inch). The whole assembly measures 5.8 x 2.6 x 0.7 inches and weighs just eight ounces. It can either be carried in a pocket or worn on the wrist or another part of the body.

Radio in a military unit is different; the GD300's radio interface kit, which connects to the bottom of the GD300, is designed to work within the US military's joint Tactical Radio System (JTRS) architecture for data communication and network access, offering access to a secure, jam-resistant communications network used for almost real-time tactical information. The unit comes with integrated SIRF Star III GPS and a high-gain quadrifilar-helix antenna.

On the ruggedness side, General Dynamics tested the GD300 to pass the requisite testing procedures outlined in MIL-STD 810G for impact, dust ingress, rain/water ingress, vibration and shock, extreme temperatures and humidity. The initial specs, however, did not include specifics other than mentioning IP54 sealing.

According to web references, the base price of a GD300 is about US$1,200, which is modest for a ruggedized device geared towards military use. As of now, the most remarkable aspect of the GD300 is its use of the Android OS. The GD300 brochure points out that with Android, the device "easily accommodates current and emerging applications for warfighters at all command levels." That is so, but it also makes the GD300 the first device in a post-Windows Mobile era where Microsoft's mini-OS no longer rules supreme.

— Conrad H. Blickenstorfer, Ph.D.

Specs: General Dynamics Itronix GD300

SIZE:	5.8 x 2.6 x 0.8 inches
WEIGHT:	8 ounces
CPU:	600MHz ARM Cortex A8
MEMORY:	256MB RAM
STORAGE:	8GB Flash
SLOTS:	microSD Card
OS:	Android
DISPLAY:	3.5-inch
RESOLUTION:	800 x 480
TOUCH:	4-wire resistive
GPS:	SIRF Star IV
ANTENNA:	Quadrifilar Helix
BATTERY LIFE:	Over 8 hours
I/O:	USB 2.0 OTG
SECURITY:	Encryption via radio
OPTIONS:	Customizable radio interface kits; forearm and chest mount kits
SEALING:	IP54
OP. TEMP:	-30 to 60 Celsius
MIL-STD-810G:	Shock, vibration, altitude, EMC/ESD
SAFETY:	CE Mark, UL
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