

Honeywell Thor VM1

Intel Atom-powered vehicle-mount computer offers flexible keyboard and the ability to run either Windows Embedded or Windows CE

(by Conrad H. Blickenstorfer)

The Thor VM1, initially introduced by LXE in March 2011, is a compact vehicle-mount computer with an 8-inch touch display as well as a QWERTY keyboard and function keys. Depending on the intended application, the Intel Atom-powered Thor can be operated with either Windows Embedded Standard 2009 or with Windows CE 6.0. The VM1 is a remarkably flexible, versatile solution for a variety of logistics applications in different markets.



The Thor VM1 has a footprint of 10.6 x 8.4 inches—about like a netbook—and is around two inches thick. It weighs about 5.5 pounds, a bit hefty if you were to carry it around, but in line for a ruggedized vehicle-mount tablet. The Thor's resistive touch display measures eight inches diagonally and offers WVGA 800 x 480 pixel

resolution. The display has an automatic LED backlight and comes in two versions, one for indoor use, and an extra bright one for outdoor use.

The VM1 is powered by a 1.6GHz Intel Atom Z530 processor. This processor was designed specifically for industrial and embedded applications (as compared to the Atom N270 and N450 that were used in millions of netbooks), and is still used in a large number of industrial and vertical market tablets and other mobile computers.

The ability to run certain applications often determines the purchase decision of vehicle-mount computers. Since some of that software was written for Windows CE and some for standard Windows, LXE designed the Thor to be able to run both Windows CE 6.0 or Windows Embedded Standard 2009. Depending on the choice of operating system, Thor devices may be equipped with 1GB of RAM and 1GB of Flash (for Windows CE), or with 2GB of DDR2 RAM and 4 or 8GB of Flash (for Windows Embedded).

As far as ruggedness goes, the Thor VM1 was designed to handle the typical conditions encountered in vehicle use. The device is sealed to IP66 specifications, which means it is totally protected against dust and it can also handle strong jets of water from all directions. The Thor is also vibration-proof and can operate in a very wide temperature range of -22 to 122 degrees Fahrenheit. For use in very low temperatures, customers can even order a screen defroster. As the picture above shows, the Thor can be mounted virtually anywhere and in numerous ways. And should something go wrong, the front panel and other parts are field-replaceable.




The VM1's designers knew that some applications only need touch whereas others need, or benefit from, a full keyboard. Including a keyboard in a compact tablet computer usually means the display gets to be pretty small, but in the Thor LXE managed to offer both a reasonably large display and an amazingly full-featured QWERTY keyboard with a separate numeric keypad and ten programmable function keys.

The Thor VM1 generally uses vehicle power (10 to 60VDC), but Honeywell also offers external converters for AC or extended VDC (60 to 150V). And since the VM1 is designed to work with a quick-mount smart dock, it also has an internal bridge battery that provides power for up to 30 minutes even in very cold weather. That way it can be moved to a different vehicle or location without shut-down, or even operated while walking around for brief periods of time.

Wireless communication capabilities are becoming ever more important in vehicle-mounted computers, and so the Thor includes not only the usual WiFi and Bluetooth, but customers can also order an internal Gobi 2000 WWAN module for technology and carrier-independent wireless data (but not voice). And the Gobi module also includes assisted GPS.

"Thor" being the name of a hammer-wielding nordic god, the Honeywell Thor VM1 probably benefits from LXE's Akerstroms Trux connection (LXE bought Akerstroms Trux in 2008, Honeywell bought LXE in 2011) which was responsible for the company's Förj and Kärv vehicle-mount tablets. Good pedigree indeed.

Specifications Honeywell Thor VM1	
Added/changed	Added 03/2011, updated 09/2013
Form-factor	Robust vehicle mount computer
CPU Speed	1.6GHz Intel Atom Z530
OS	Windows CE 6.0 or Windows Embedded Standard 2009
Memory	1GB DDR2 for Windows CE or 2GB for WES
Hard Drive	1GB Flash for Windows CE; 4 or 8GB Flash for WES
Card slots	none external
Display type	TFT, automatic LED backlight brightness adjustment
Display size/res	8.0"/800 x 480 (400 nits) 8.0"/800 x 480 (900 nits)
Digitizer/pens	Resistive touch (screen blanking and defroster optional)
Keyboard/keys	Backlit 64-key QWERTY keyboard with number pad and 10 function keys; optional 12-key minimized keyboard with 10 function keys, shift, 2nd and power keys (all main keys mappable)
Housing	Unknown
Operating Temp	-22° to +122°F (-30° to +50°C)
Sealing	IP66
Vibration	MIL-STD-810F, composite wheeled vehicles
Humidity	5 to 95% non-condensing
ESD	EN 55024:1998 (enhanced ESD to 8kV direct & 15kV air)
Shock	SAE-J1455
Size (WxHxD)	10.6 x 8.4 x 1.7 to 2.6 inches (268 x 214 x 43/66mm)
Weight	5.6 lbs. (2.1kg); dock 3.2 lbs. (1.2kg)
Power	10 to 60 VDC isolated, integrated Li-Ion maintenance ups (30 min at -20C), optional external converters for AC (90-240VaC) and extended range DC (60-150 VdC)
Interface	1 x USB 2.0 host, 1 x USB 1.1 client, 2 x RS232, 1 x CAN-bus, RF antenna ports (1 WiFi, WWAN and GPS)
Wireless	802.11a/b/g/n, Bluetooth 2.0 + EDR, optional Gobi 2000 (data only) 3.75G UMTS/HSPA+ (800/850/900/1900/2100MHz), GSM/GPRS/EDGE (850/900/1800/1900MHz) and EV-DO/CDMA (800/1900), A-GPS
List price	inquire
Web	Thor VM1 page
Spec sheet	 LXE Thor datasheet (PDF)

- Windows Mobile Info
- Windows 10 IoT Core
 - Windows Embedded 8.1 Handheld
 - Windows Embedded Compact 2013
 - Windows Embedded 8 Handheld
 - Windows Embedded Compact 7
 - Windows Embedded Handheld
 - Windows Phone 7
 - Windows Embedded CE 6.0 R3
 - Windows Mobile 6.5
 - Windows Mobile 6
 - Windows CE 6.0
 - Windows Mobile 5
 - Windows CE 5.0
 - Windows Mobile Smartphone
 - Windows Mobile 2003
 - Windows CE .Net
 - Windows for Pocket PC 2002
 - Pocket PC intro 2000
 - Windows CE H/PC Pro 1998
 - Windows CE 2.0 1997

