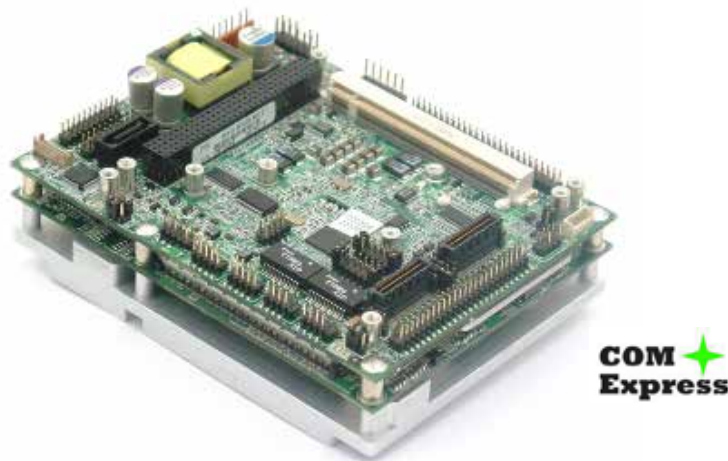# Magellan™ SBC

**DIAMOND SYSTEMS**

## COM Express™ form-factor Single Board Computer with SUMIT,™ PC-104™ and FeaturePak™ expansion and configurable COM CPU

**COM Express**

### Highly Integrated Single Board Computer (SBC)

Magellan integrates an I/O application layer, COM layer, and thermal layer into a compact, COM Express form-factor board-level subsystem.

### Price/Performance Advantage

Magellan offers a configurable COM Express CPU so you to match a Magellan SBC to the price/performance needs of your application.

### Access to Latest Technology

Magellan's COM-based design provides you with access to the latest CPU and I/O technology, while protecting your investment from CPU obsolescence via plug compatible COM Express CPU modules.

### Fast Time-to-Market

Magellan is a fully operational, off-the-shelf subsystem that is ready for immediate deployment in your application. No custom baseboard development is necessary.

### Development Kit

Complete Development Kits are available with all the components you need to get started on your embedded design project. Each kit contains a Magellan SBC, cable kit, and Linux software CD.
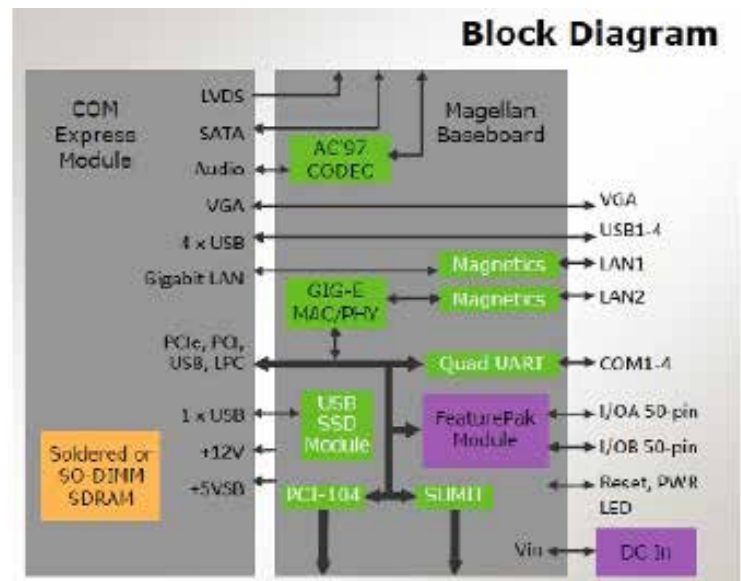
### Software Support

Magellan runs Linux, Windows® XP™, Windows Embedded Standard™ and Windows Embedded CE™. All necessary drivers are provided with the product.

## Key Features

♦ Interchangeable COM Express CPU module provides price/performance flexibility and protects against product obsolescence

♦ Choice of 1.1GHz Intel® Atom™ Z510 or 1.6GHz Intel Core 2 Duo™ LV CPUs

♦ Supports up to 4GB of DDR2 SDRAM (CPU dependent)

♦ I/O connectors for a wide range of interfaces, including:
  - Dual gigabit Ethernet LANs
  - One SATA port
  - Four USB 2.0 ports
  - Two RS-232 serial ports
  - CRT and LVDS video output

♦ On-board USB flashdisk socket

♦ Supports connection of a wide variety of displays, including CRTs, LVDS-interfaced flat panels, and televisions

♦ Triple-play system expansion flexibility:
  - PC/104 stack
  - SUMIT stack
  - FeaturePak zero height expansion socket

♦ Built-in +7-36 DC/DC power supply or +12VDC input only (LC models). Power is supplied by means of a six-pin terminal block

♦ Heatspreader is mounted on bottom side, promoting optimal thermal amangement and increasing space for I/O functions and connectors

♦ Extremely rugged operating temperature of -40°C to +85°C

**FeaturePak™**

# MAGELLAN: COM Express SBC

## SPECIFICATIONS

| | |
|---|---|
| **Processor** | Choice of 1.1GHz Intel Atom Z510 or 1.6GHz Intel Core 2 Duo LV CPU |
| **Front side bus** | Atom Z510: 400MHz<br>Core 2 Duo LV: 800MHz |
| **Memory** | Atom Z510: 1GB soldered-on DDR2 SDRAM<br>Core 2 Duo LV: 1 GB or 4GB SO-DIMM DDR2 |
| **Chipset** | Atom Z510: US15WPT<br>Core 2 Duo LV: 965GME with ICH8M |
| **BIOS** | AMI PnP Flash BIOS |
| **Mass storage** | 1 SATA port, supports 1 device<br>USB flashdisk socket |
| **Serial ports** | 2 RS-232 ports<br>2 RS-232/422/485 ports |
| **USB ports** | 4 USB 2.0 |
| **Networking** | 1 gigabit Ethernet from COM CPU<br>1 gigabit Ethernet from Intel 82574 controller on baseboard |
| **Display** | VGA CRT, LVDS LCD |
| **Audio** | AC'97 audio CODEC; mic in, line in/out |
| **Watchdog timer** | Non-maskable interrupt or reset modes |
| **Other I/O** | SMBus; LPC interface |
| **Expansion buses** | PC/104 or SUMIT stackable expansion<br>FeaturePak socket |
| **On-board power supply** | +7-36V DC/DC power supply or +12V input only (LC models) |
| **Power input** | +12VDC or +7-36V DC/DC |
| **Power consumption** | MAG-Z510-1G: 10.3W idle, 14.2W loaded<br>MAG-965 models: 14.2W idle, 23.5W loaded |
| **Operating temperature** | MAG-965-xG models: -40°C to +80°C (-40°F to +176°F)<br>MAG-Z510 models: -40°C to +85°C (-40°F to +185°F) |
| **Operating humidity** | 0-90% non-condensing |
| **Dimensions (L x W x H)** | MAG-Z510-1G: 4.9 x 3.7 x 1.77 in. (125 x 95 x 57 mm)<br>MAG-965 models: 4.9 x 3.7 x 2.24 in. (125 x 95 x 57 mm) |
| **Weight** | MAG-Z510-1G: 11.7oz (332g)<br>MAG-965 models: 19.2oz (544g) |
| **RoHS** | Compliant |

## ORDERING INFORMATION

| | |
|---|---|
| **MAG-965-4G** | Magellan SBC, 1.6GHz Core 2 Duo LV CPU, 4 GB SO-DIMM SDRAM, heatspreader, 7-36V DC power supply |
| **MAG-965-1G** | Magellan SBC, 1.6GHz Core 2 Duo LV CPU, 1GB SO-DIMM SDRAM, heatspreader, 7-36V DC power supply |
| **MAG-965LC-4G** | Magellan SBC, 1.6GHz Core 2 Duo LV CPU, 4GB SO-DIMM SDRAM, heatspreader, +12V input only |
| **MAG-965LC-1G** | Magellan SBC, 1.6GHz Core 2 Duo LV CPU, 1GB SO-DIMM SDRAM, heatspreader, +12V input only |
| **MAG-Z510-1G** | Magellan SBC, 1.1GHz Atom Z510 CPU, 1GB soldered-on SDRAM, heatspreader, 7-36V DC power supply |
| **MAG-Z510LC-1G** | Magellan SBC, 1.1GHz Atom Z510 CPU, 1GB soldered-on SDRAM, heatspreader, +12V input only |
| **DK-MAG-965LC-1G** | Magellan 965LC Development Kit, includes: MAG-965LC-1G with heatsink & fan, cable kit, Linux image |
| **DK-MAG-Z510-1G** | Magellan Z510 Development Kit, includes: MAG-Z510-1G, cable kit, Linux image |


Block Diagram


Stackable Expansion / Heat

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