

STARGATE

X-SCALE, PROCESSOR PLATFORM

- ▼ 400MHz, Intel PXA255 Processor
- ▼ Low Power Consumption
<500 mA
- ▼ Embedded Linux BSP Package,
Source Code Shipped with Kit
- ▼ Small, 3.5" x 2.5" Form Factor
- ▼ PCMCIA and Compact Flash
Connector
- ▼ 51-pin Expansion Connector
for MICA2 Motes and other
Peripherals
- ▼ Ethernet, Serial, JTAG, USB
Connectors via 51-pin
Daughter Card Interface
- ▼ Li-Ion Battery Option

Applications

- ▼ Single-Board Embedded Linux
Computer
- ▼ Sensor Network Gateway
- ▼ Custom 802.11a/b Gateway
- ▼ Robotics Controller Card
- ▼ Distributed Computing Platform



STARGATE

The Stargate is a high-performance processing platform designed for sensor, signal processing, control, and wireless sensor networking applications. The Stargate is based on Intel's Xscale[®] processor, and it is the same processor found in today's most powerful handheld computers including the Compaq IPAQ[®] and the Dell Axim[®].

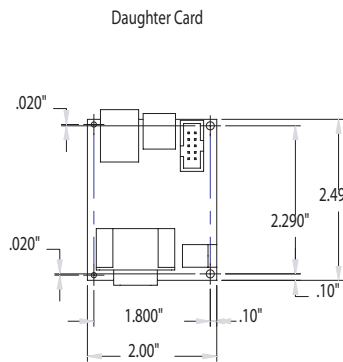
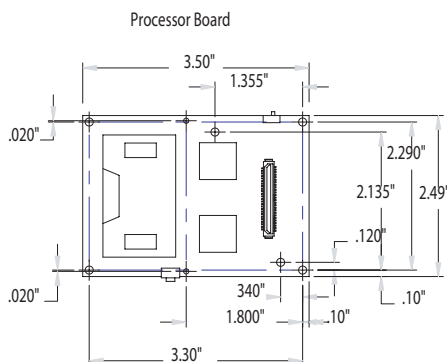
The Stargate processor board is the result of the combined design efforts of several different Ubiquitous Computing research groups within Intel. The completed design is licensed to Crossbow Technology for commercial production. The Stargate processor board is preloaded with a Linux distribution and basic drivers. A variety of useful applications and development tools is also provided.

The Stargate processor module is compatible with Crossbow's MICA2 family of wireless sensor networking products (using the embedded TinyOS platform) and the public domain software from Intel's Open-Source Robotics initiative. The Stargate processor module is also an ideal solution for standalone Linux-based Single Board Computer (SBC) applications.

With its strong communications capability and Crossbow's ongoing commitment to its open-source architecture, the Stargate platform offers tremendous flexibility. The SPB400CA Processor Board has both Compact Flash and PCMCIA connectors as well as an optional installable header for I2C and 4 general-purpose I/O (GPIO) lines. The SDC400CA Daughter Card supports a variety of additional interfaces, including:

- RS-232 Serial
- 10/100 Ethernet
- USB Host
- JTAG

Finally, the standard MICA2 Mote connector on the SPB400CA Processor Board provides support for synchronous serial port, (SSP), UART, and other GPIO connections.



| Specifications | Remarks |
|---------------------------------|-------------------------------|
| STARGATE Processor Board | |
| Intel PXA255, Xscale® | 400 MHz, RISC Processor |
| Intel SA1111, StrongARM® | Multiple I/O Companion Chip |
| Memory | |
| 64 MB SDRAM | |
| 32 MB FLASH | Linux Software < 10 MBytes |
| Communications | |
| PCMCIA Slot | |
| Compact Flash Slot | Type II |
| 51-pin MICA2/GPIO | UART, SSP via MICA2 Connector |
| Optional I2C Port | Installable Header |
| General | |
| Li-Ion Battery Option | |
| Watch Dog Timer (WDT) | Configurable up to 60 seconds |
| Battery Gas Gauge | |
| LED and User Application Switch | |
| Power Switch | |
| STARGATE Daughter Card | |
| Communications | |
| 10/100 Base-T Ethernet Port | RJ-45 Connector |
| RS-232 Serial Port | DB-9 Connector |
| JTAG Debug Port | |
| USB Host Port | Version 1.1 |
| General | |
| A/C Power Adaptor | 5-6 VDC, 1 Amp |
| Reset Button | |
| Real-Time Clock | |
| Physical | |
| Processor Board | |
| (in) 3.50 x 2.49 x 0.73 | Excluding Daughter Card |
| (cm) 9.53 x 6.33 x 1.86 | Excluding Daughter Card |
| Weight (oz) 1.68 | |
| (g) 47.47 | |
| Daughter Card | |
| (in) 2.49 x 2.00 x 0.60 | |
| (cm) 6.33 x 5.08 x 1.52 | |
| Weight (oz) 1.42 | |
| (g) 40.16 | |
| Environmental | |
| 0 to +70 (°C) | Operating Temperature |

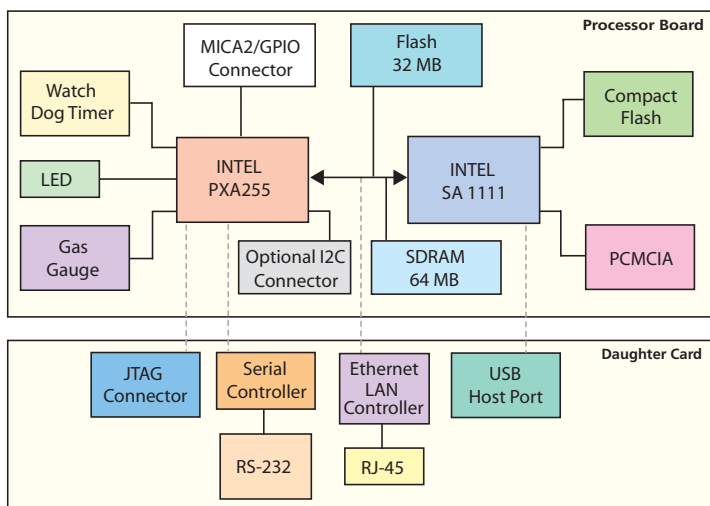
▼ Processor Board - Top



▼ Processor Board - Bottom



▼ Daughter Card



Stargate Block Diagram

Stargate Basic Kit Contents

- Stargate Processor Board
- Stargate Daughter Card
- Power Supply
- Null Modem Cable
- Developer's Guide
- CD-ROM

Advanced Kit Contents

- All Basic Kit Contents
- JTAG Pod with Cable
- WiFi Compact Flash Card

CD-ROM Contents

- Linux - Kernel & Driver Sources
- GNU Cross Platform Dev. Tools
- Bootloader with Source Code
- Flash Programming Utility
- Shareware & Test Applications
- Developer's Guide - PDF Format

Ordering Information

| Model | Description |
|-----------|--|
| SP-KIT400 | Stargate Basic Developer's Kit |
| SP-KIT420 | Stargate Advanced Developer's Kit including JTAG and WiFi |
| SPB400CA | Stargate Processor Board |
| SDC400CA | Stargate Daughter Card - JTAG, 10/100 Ethernet, Serial, USB Host |