

# MIC-3325

## 3U CompactPCI® Intel® Atom™ Dual Core D525/N455 Processor Blade



### Features

- Dual Core Intel® Atom™ D525 processor/single core N455 processor
- Intel® I/O Controller Hub 8-Mobile (ICH8M)
- Two GB DDR3 onboard up to 800 MT/s
- Optimized CompactFlash socket on single board computer
- 2.5" SATA-II HDD on XTM second layer
- Two 10/100/1000 Mbps ports, two USB ports, one VGA port on front panel
- Two COM ports, one USB ports, one PS/2 port on 8HP second layer
- Support 5V only power input
- PICMG 2.0, R 3.0, PICMG 2.1, R 2.0 compliant



### Introduction

Advantech's MIC-3325 is a 3U CompactPCI dual/single core processor blade based on the Intel® Atom™ processor D525/N455+ICH8M two-chip platform. It provides the high performance of 2 cores and 4 threads of processing power at lower cost, and with easier validation. The MIC-3325 fully utilizes the I/O features of the Intel® chipsets, including an integrated memory controller (IMC), integrated graphics processing unit (GPU) and integrated I/O (IIO) such as DMI. The low power requirements of the Intel® Atom™ processor makes operation in elevated temperature ranges possible. Breakthrough memory design puts 2GB SDRAM on board, while keeping the speed at DDR3 800MT/s. The on-board CPU and memory provide less weight and higher shock/vibration resistance than socket devices. With such benefits, the MIC-3325 can be used in mission-critical applications such as military defense, transportation, traffic control, test and measurement (T&M) as well as critical data acquisition & control applications. MIC-3325 uses the Intel® ICH8M as the PCH, which provides extensive I/O support. The Integrated Gigabit Ethernet Controller can operate at multiple speeds (10/100/1000 Mb/s) and in either full duplex or half duplex mode. A flexible 8HP extension module design provides the MIC-3325 with great flexibility and additional I/O connectivity to the customer. For more connectivity details, please contact an Advantech representative.

### Specifications

|                      |                 |   |
|----------------------|-----------------|---|
| Processor System     | CPU             | Intel Atom N455 Single Core 1.66 GHz<br>Intel Atom D525 Dual Core 1.8 GHz                           |
|                      | Max. Speed      | 1.8 GHz   |
|                      | Chipset         | Intel ICH8M @ Pine View-D Platform  |
|                      | BIOS            | SPI 2-MByte BIOS  |
|                      | DMI             | 100 MHz reference clock   |
| CompactPCI Interface | J1 Connector    | 32-bit PCI local bus (33MHz)  |
|                      | J2 Connector    | RTM area (VIO Power 32bit)  |
| Memory               | Technology      | DDR3-800 SDRAM  |
|                      | Max. Capacity   | 2 GB  |
|                      | On board/socket | On board  |
| Graphics             | Chipset         | Integrated in Intel Atom N455/D525  |
|                      | Resolution      | Intel Atom N455 Single Core up to 1400 x 1050 (SXGA)<br>Intel Atom D525 Dual Core up to 2048 x 1536 |
| Ethernet             | Controller      | 2Xi82583V   |
|                      | Interface       | 10/100/1000 Mbps  |
|                      | I/O Connector   | RJ-45 x 1 (front panel), RJ-45 x 1 (RTM)  |
|                      | Controller      | ICH8M (MAC)+82567 (PHY)   |
|                      | Interface       | 10/100/1000 Mbps  |
| Storage              | I/O Connector   | RJ-45 x 1 (front panel)   |
|                      | IDE             | 1 x CompactFlash Socket Type II   |
|                      | SATA            | 1 x Internal SATA connector only on 8HP version   |
| Front I/O            | VGA             | DB15 Port   |
|                      | Ethernet        | 2 x 10/100/1000 Mbps RJ-45 connector  |
|                      | USB 2.0         | 2 x Type A ports  |
|                      | LEDs            | Power, Hot Swap   |
|                      | 8HP-option A    | 2 x DB9 RS-232, 1 x USB Type A port, 1 x PS/2 port  |

## Specifications (Cont.)

|                          |                    |   |                              |
|--------------------------|--------------------|---|------------------------------|
| RIO (J2 interface)       | SATA               | 1 SATA-II (internal)  |                              |
|                          | VGA                | 1 port (VGA switchable from front panel by jumper1)                             |                              |
|                          | COM                | 2 ports (internal)  |                              |
|                          | USB 2.0            | 2 ports   |                              |
|                          | RJ-45              | 1 PCIe1 based on i82583V MAC/PHY  |                              |
| Watchdog Timer           | Supervision        | 0 ~ 255s, 1s step, generate reset signal  |                              |
| Operating System         | Compatibility      | Microsoft Windows XP Professional, Windows 7, Windows XPE, Redhat6.1            |                              |
| Power Requirement        | Configuration      | 4HP, w/o RIO  |                              |
|                          | Consumption        | 16.6 W for D525, 14.6 W for N455 (4HP with peripherals)                         |                              |
| Physical Characteristics | Dimensions (W x D) | 4HP, 160.00 x 100.00 mm (6.30" x 3.95") (PCB size)                              |                              |
|                          | Weight             | 0.4 kg including XTM  |                              |
| Environment              |                    | Operating   | Non-operating                |
|                          | Temperature        | 0 ~ 60° C (32 ~ 140° F)   | -40 ~ 85° C (-40 ~ 185° F)   |
|                          | Humidity           | 5 to 95% @ 40°C (non condensing)  | 95% @ 60° C (non-condensing) |
|                          | Shock              | 10 G, 11ms  | 30 G, 11ms                   |
|                          | Vibration          | 1.06 Grms (5 ~ 100 Hz, without on-board HDD)                                    | 2 Grms (5 ~ 500 Hz)          |
| Regulatory               | Conformance        | FCC, Class A, CE, RoHS  |                              |
| Compliance               | Standard           | PICMG 2.0 Rev. 3.0 compatible; PICMG 2.1 R2.0 CompactPCI Hot Swap Specification |                              |

## Ordering Information

| Part Number     | Description   |
|-----------------|---|
| MIC-3325D-D2E   | MIC-3325 with D525 CPU 2G RAM XTM dual slot         |
| MIC-3325D-S2E   | MIC-3325 with D525 CPU 2G RAM single slot           |
| MIC-3325N-D3E   | MIC-3325 w/ N455 CPU 2G RAM 8HP-2 XTM dual slot     |
| MIC-3325N-S2E   | MIC-3325 with N455 CPU 2G RAM single slot           |
| MIC-3525-S1E    | Rear I/O for MIC-3325 with VGA, LAN, USB, SATA, COM |
| MIC-3325XTM-S1E | 3U CPCI Extension Board for MIC-3325                |

## Recommended Configurations

| CPU Board | Enclosure  | Rear I/O Board |
|-----------|--|----------------|
| MIC-3325  | MIC-3022AE, 3U CPCI enclosure with 400W ATX PSU  | MIC-3525-S1E   |
| MIC-3325  | MIC-3022CE, 3U CPCI enclosure with 250W CPCI PSU | MIC-3525-S1E   |

If you need other chassis or RIO, please contact your Advantech sales representative.

## Optional Accessories

| Part Number    | Description   |
|----------------|---|
| MIC-3955A1-S1E | 3U CPCI 4-port Serial Port Controller with RS-232/422/485           |
| MIC-3955B1-S1E | 3U CPCI 4-port RS-232/422/485 to RIO 4HP                            |
| MIC-3955R1-D1E | 3U CPCI 4-port RS-232/422/485 RIO Board 8HP                         |
| MIC-3716/3-A   | 3U 250kS/s, 16-bit, 16-ch multifunction Card                        |
| MIC-3756/3-A   | 64-ch Isolated DI/O Card  |
| MIC-3680/3-A   | 2-port CAN Card   |
| MIC-3953-AE    | MIC-3953 3U PMC carrier board                                       |
| MIC-3665-AE    | CompactPCI PMC with dual copper (RJ-45) Gigabit Ethernet interfaces |