

DINOBlade™

PCI Express / USB Expandable Interface

A new generation scalable industrial PC interface used to design high-performance modular industrial system solutions and systems.

**DO YOU BLADE.....
....WITH DINO?**

*An Open Standard from ICP ~
Welcome Joint Developed HW/SW Solutions from 3rd Party*

DIN
Industrial
Networking
Organized interface



DIN
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Organized interface

DIN-3000

DINOBlade™ Embedded System

DINOBlade™ Introduction

The **DINOBlade™** is an open standard scalable industrial PC interface developed by IEI Technology Corp. The **DINOBlade™** enables development engineers to customize high performance modular solutions for diverse industrial PC applications including digital surveillance, modular automation and embedded appliance industrial systems. The **DINOBlade™** interface is also ideal for product development, testing and integration.



DINOBlade™ Interface Benefits

Design modular industrial PC solutions

Engineers can design modular **DINOBlade™** interface based industrial PC solutions and applications. Modular solutions are easier to maintain, easily updated and functionalities are easily improved. Modular solutions also enable simplified integration of multiple functions.



Develop high-performance PCI Express and USB 2.0 based solutions

The **DINOBlade™** interface provides development engineers with a single high performance interface that combines both PCI Express and USB 2.0. PCI Express has a bi-directional data transmission speed of 500MB/s and USB is by far the most popular PC bus today. Combining these buses in a single solution enables engineers to develop systems and solutions with superior performance.



Customize all applications with the DINOBlade™ open pattern

Development engineers can design customized **DINOBlade™** interface solutions and applications to meet their customers' specific solution requirements. IEI released the **DINOBlade™** interface definitions to encourage development engineers to design **DINOBlade™** applications and solutions independently or in partnership with IEI.

Create innovative solutions with flexible form factors

No limitations are placed on external form factors. This allows development engineers to create flexible, innovative solutions that directly meet the needs of their unique design parameters.

DINOBlade™ Features

- ▶ Application blades with highly specialized I/O functions can be developed and implemented
- ▶ Multiple system and I/O functions supported ensures **DINOBlade™** interface industrial PCs have complete PC functionality
- ▶ PCI Express and USB 2.0 combined in a single interface enables high performance system development
- ▶ Flexible hardware and interface design allows development of customized systems
- ▶ Active or passive backplanes can be configured providing system design flexibility
- ▶ ATX power input support ensures systems are compatible with a wide range of advanced power supplies



What is the **DINOBlade™** Interface?

Blade-type Industrial PC Interface

The **DINOBlade™** (DIN Industrial Networking Organizer) interface enables the development of blade-type industrial PCs (similar to blade servers).

High Performance Interface

The **DINOBlade™** interface integrates PCI Express and USB (USB 2.0) into a single high-performance communication bus. The **DINOBlade™** interface also defines a complete system communication bus with connector pin definitions for CPU blades, power supply blades and I/O application blades. These pin definitions are typically implemented on passive or active backplane connectors that connect to the blades.



I/O Expansion Application Blades

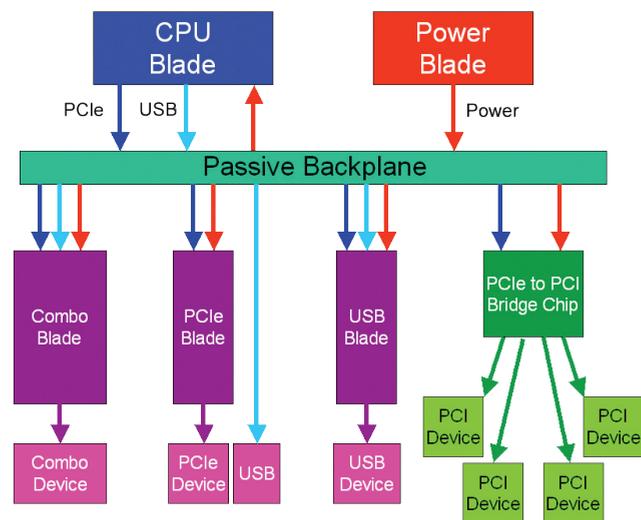
Development engineers can use the **DINOBlade™** interface pin definitions to design highly integrated PCI express or USB compliant embedded I/O application blades for highly specialized industrial solutions including product development and testing, automation and digital surveillance.

Passive Backplanes

Passive backplanes have no embedded devices. The **DINOBlade™** Interface connectors are passively connected to each other via trace routes on the backplane PCB. All active components are installed on the blade PCB and the PCB connects to the backplane.

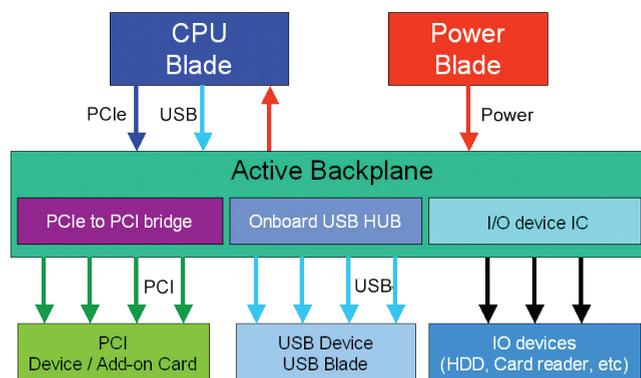
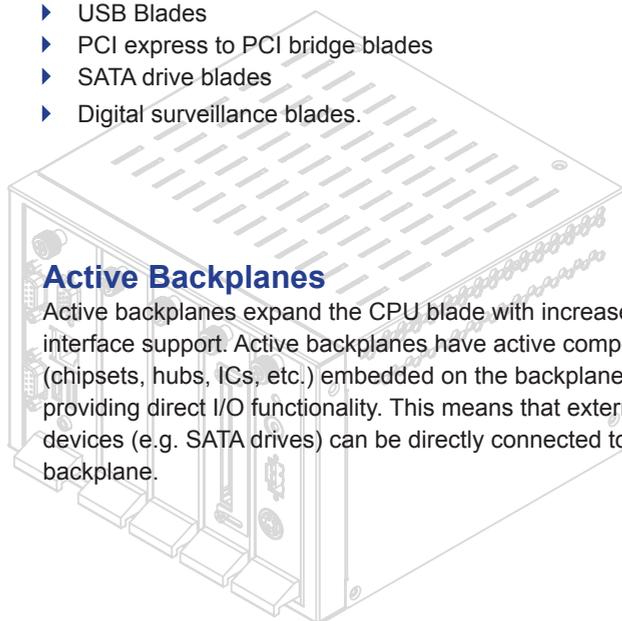
All **DINOBlade™** interface applications require a CPU blade and a power supply blade. I/O application blades may include the following:

- ▶ PCI Express Blades
- ▶ USB Blades
- ▶ PCI express to PCI bridge blades
- ▶ SATA drive blades
- ▶ Digital surveillance blades.



Active Backplanes

Active backplanes expand the CPU blade with increased I/O interface support. Active backplanes have active components (chipsets, hubs, ICs, etc.) embedded on the backplane providing direct I/O functionality. This means that external I/O devices (e.g. SATA drives) can be directly connected to the backplane.



DINOBlade™ Pin Definitions

The standard DINOBlade™ CPU pin definitions ensure full system board structure support with PCI Express and USB functions. The DINOBlade™ interface has CPU pin definitions for four different signal components:

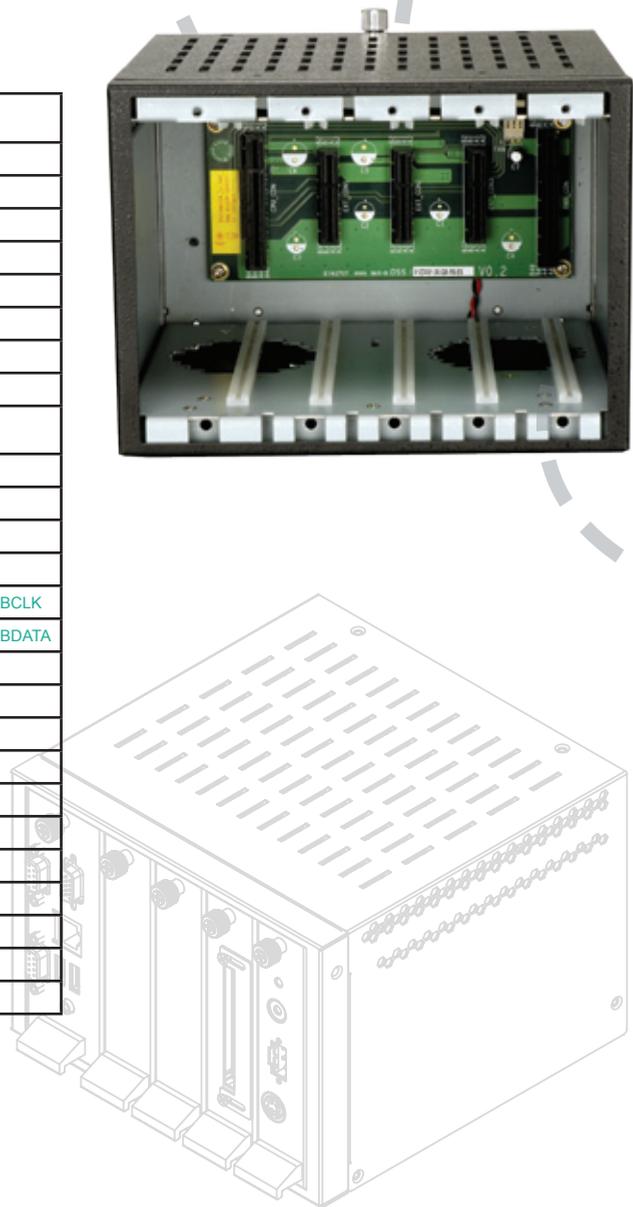
- ▶ ATX power input
- ▶ PCI Express signals
- ▶ USB signals
- ▶ ExpressCard SM bus signals



CPU Pin Definitions

The DINOBlade™ CPU pin definition provides support for four PCI Express devices and either three USB devices or three ExpressCard devices. Further expansion requires a chipset to be installed on the backplane.

A Col	CPU Blade	B Col	CPU Blade	A Col	CPU Blade	B Col	CPU Blade
A1	GND	B1	ATXPWROK	A25	PERX1N	B25	GND
A2	PS_ON	B2	RST_PD#	A26	GND	B26	PETX2P
A3	PWRON#	B3	+12V	A27	PERX2P	B27	PETX2N
A4	+12V	B4	GND	A28	PERX2N	B28	GND
A5	GND	B5	USB1P	A29	GND	B29	PETX3P
A6	USB2P	B6	USB1N	A30	PERX3P	B30	PETX3N
A7	USB2N	B7	GND	A31	PERX3N	B31	GND
A8	GND	B8	USB0P	A32	GND	B32	+3.3V
A9	5VSB	B9	USB0N				
A10	3VSB	B10	GND	A33	GND	B33	GND
A11	PCIRST	B11	WAKE	A34	GND	B34	TPD0P
				A35	TPD1P	B35	TPD0N
A12	+3.3V	B12	PECLK0P	A36	TPD1N	B36	GND
A13	GND	B13	PECLK0N	A37	GND	B37	ECARD_SMBCLK
A14	PECLK2P	B14	GND	A38	TPD3P	B38	ECARD_SMBDATA
A15	PECLK2N	B15	PECLK1P	A39	TPD3N	B39	GND
A16	GND	B16	PECLK1N	A40	GND	B40	GND
A17	PECLK3P	B17	GND	A41	GND	B41	GND
A18	PECLK3N	B18	+3.3V	A42	GND	B42	GND
				A43	GND	B43	GND
A19	+3.3V	B19	GND	A44	GND	B44	+5V
A20	GND	B20	PETX0P	A45	+5V	B45	+5V
A21	PERX0P	B21	PETX0N	A46	+5V	B46	GND
A22	PERX0N	B22	GND	A47	GND	B47	+5V
A23	GND	B23	PETX1P	A48	+5V	B48	+5V
A24	PERX1P	B24	PETX1N	A49	+5V	B49	GND

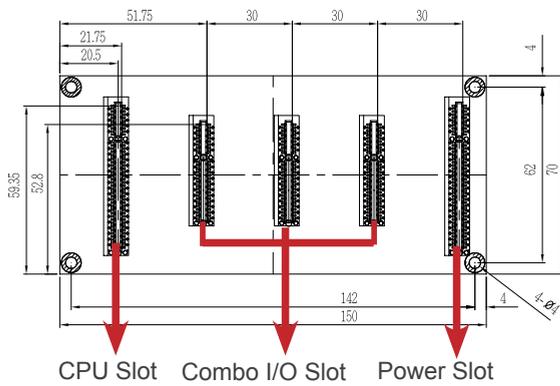




I/O Application Pin Definitions

The **DINOBlade™** I/O applications support ATX signals, one USB channel, SM bus signals and power inputs. The following three implementations are possible:

- ▶ PCI Express only
- ▶ USB only
- ▶ Combo signal as ExpressCard



A Col	Module Conn,	B Col	Module Conn,	A Col	Module Conn,	B Col	Module Conn,
A1	GND	B1	+12V	A17	TPD3P	B17	ECARD_SMBDATA
A2	WAKE	B2	+12V	A18	TPD3N	B18	GND
A3	ATXPWROK	B3	GND				
A4	PCIRST	B4	5VSB	A19	GND	B19	+3.3V
A5	3VSB	B5	GND	A20	+3.3V	B20	+3.3V
A6	GND	B6	USB0P	A21	GND	B21	GND
A7	PECLK0P	B7	USB0N	A22	GND	B22	GND
A8	PECLK0N	B8	GND	A23	GND	B23	GND
A9	GND	B9	PETX0P	A24	GND	B24	GND
A10	PERX0P	B10	PETX0N	A25	GND	B25	GND
A11	PERX0N	B11	GND	A26	GND	B26	GND
				A27	GND	B27	+5V
A12	GND	B12	GND	A28	+5V	B28	+5V
A13	GND	B13	TPD0P	A29	+5V	B29	GND
A14	TPD1P	B14	TPD0N	A30	GND	B30	+5V
A15	TPD1N	B15	GND	A31	+5V	B31	+5V
A16	GND	B16	ECARD_SMBCLK	A32	+5V	B32	GND

Power Supply Pin Definitions

The power supply pins support ATX power input. The **DINOBlade™** power interface combines the following ATX signals: +12V, +5V, 5V standby current and a direct 3.3V standby current. Power supplies with power output between 10W and 200W are supported.



A Col	Power Blade	B Col	Power Blade	A Col	Power Blade	B Col	Power Blade
A1	NC	B1	NC	A25	GND	B25	GND
A2	NC	B2	NC	A26	3VSB	B26	3VSB
A3	NC	B3	NC	A27	3VSB	B27	3VSB
A4	PWRON#	B4	NC	A28	5VSB	B28	5VSB
A5	RST_PD#	B5	PS_ON	A29	5VSB	B29	5VSB
A6	+12V	B6	+12V	A30	GND	B30	GND
A7	+12V	B7	+12V	A31	GND	B31	GND
A8	+12V	B8	+12V	A32	GND	B32	GND
A9	GND	B9	GND				
A10	GND	B10	GND	A33	GND	B33	GND
A11	GND	B11	GND	A34	GND	B34	GND
				A35	GND	B35	GND
A12	+3.3V	B12	+3.3V	A36	GND	B36	GND
A13	+3.3V	B13	+3.3V	A37	GND	B37	GND
A14	+3.3V	B14	+3.3V	A38	GND	B38	GND
A15	+3.3V	B15	+3.3V	A39	GND	B39	GND
A16	+3.3V	B16	+3.3V	A40	+5V	B40	+5V
A17	+3.3V	B17	+3.3V	A41	+5V	B41	+5V
A18	GND	B18	GND	A42	+5V	B42	+5V
				A43	+5V	B43	+5V
A19	GND	B19	GND	A44	+5V	B44	+5V
A20	GND	B20	GND	A45	+5V	B45	+5V
A21	GND	B21	GND	A46	+5V	B46	+5V
A22	GND	B22	GND	A47	+5V	B47	+5V
A23	GND	B23	GND	A48	NC	B48	NC
A24	GND	B24	GND	A49	NC	B49	NC

DIN
Industrial
Networking
Organized interface

DIN-3000 DINOBlade™ Industrial PC

The IEI **DINOBlade™** DIN-3000 integrates a high-performance Celeron® M 800MHz (zero cache) single board computer (SBC), ATX power module, SATA drive storage support, ExpressCard support and digital monitoring in a single, easily accessible chassis. The DIN-3000 is ideal for monitoring and digital surveillance and is easily integrated into a variety of industrial applications.

DIN-3000 Benefits

Applied in diverse applications

The DIN-3000 is widely used in digital surveillance applications and industrial automation processes.

Easily configured for multi-functional purposes

Multi-functional application blades ensure the DIN-3000 can be applied in diverse industrial environments.

Easy to use in confined spaces

The compact size of the DIN-3000 makes it portable and easy to install and use in confined areas or in industrial work environments where space is a premium.

Easily maintained

The fans, fan filters and blades are easy to access. Easy access ensures simplified maintenance and component replacement procedures.

DIN-3000 Features

- ▶ Multiple system and I/O function modules.
- ▶ Available blades
 - CPU blades with 800MHz ULV Celeron M processor
 - ExpressCard blade (Optional)
 - Two-channel SATA II blade with eSATA and USB ports
 - MPEG4 digital surveillance blade (Optional)
 - 12V, 100W DC to DC Converter
- ▶ High performance PCI Express and USB 2.0 combined in a single system
- ▶ Flexible interface and hardware design
- ▶ Configured with an active or passive backplane
- ▶ ATX power input interface supported
- ▶ Flexible CPU blade options



DIN-3000 Product

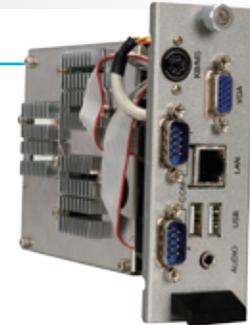
DSB-915 CPU Blade

Celeron® M 800MHz (zero cache) CPU Blade



Introduction

DSB-915 is a **DINOBlade™** interface CPU blade is equipped with an Intel® 915GM mobile chipset and a Celeron® M 800MHz CPU(zero cache). The DSB-915 power consumption ranges between 12W and 15W depending on the memory.



Features

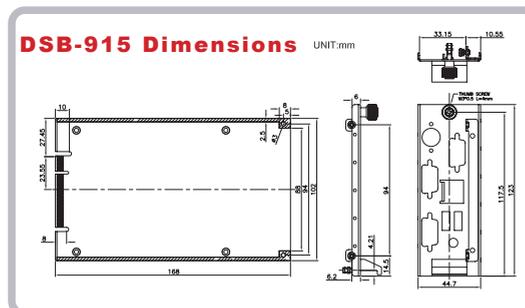
- ▶ Low power Intel mobile technology chipset with onboard Intel® CPU
- ▶ Fanless solution
- ▶ Tiny form factor with full function support with VGA, GbE, audio and UART
- ▶ Integrated heatsink

Specification

CPU	Ultra Low Voltage Intel® Celeron® M 800 MHz zero cache
System Chipset	Mobile Intel® 915GM Express Chipset
System Memory	1 x SO-DIMM socket up to 1GB DDR2 SDRAM
Display	Integrated Intel® GMA 900 graphic engine 1 x VGA connector
Ethernet	1 x 10/100/1000Mbps Broadcom BCM5787 controller
SSD	1 x Compact Flash type II socket
I/O	-2 x RS-232 serial ports -1 x PS/2 for KB/MS -2 x USB 2.0 ports
Audio	AC '97 codec compliant
WDT	Software programmable supports 1~255 seconds system reset
Interface	DINOBlade™ CPU interface 3 x PCI Express 2 x USB 2.0 channel
ATX Power Function	Meets ACPI 1.1 specification
Power Consumption	5V@3.5A, 3.3@300mA
Operating Temperature	0 ~ 60°C
Relative Humidity	5 ~ 95%, non-condensing
GW	1200g

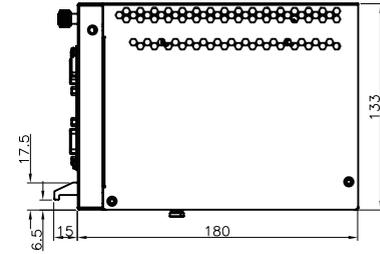
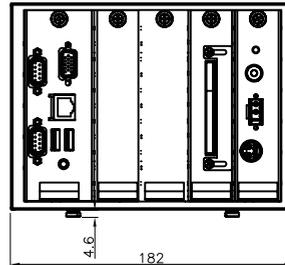
Ordering Information

DSB-915-800Z	Celeron® M 800MHz Zero Cache CPU Blade
By Order Production CPU Blade	
DSB-915-CM1G	ULV Celeron® M 1GHz with 512KB L2 Cache
DSB-915-PM11G	LV Pentium® M 1.1GHz with 1MB L2 Cache
DSB-915-PM14G	LV Pentium® M 1.4GHz with 2MB L2 Cache
By Order Production Onboard CPU List	
LV Pentium® M 1.1GHz with 1MB L2 cache	
LV Pentium® M 1.4GHz with 2MB L2 cache	
ULV Celeron® M 1GHz with 512KB L2 cache	



DCHS-5S Chassis

5-Slot DIN Mountable Chassis

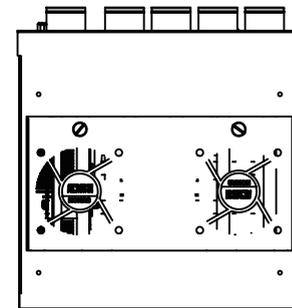


Introduction

The small form factor DIN mountable DCHS-5S chassis is a **DINOBlade™** compatible five slot chassis that supports one **DINOBlade™** compatible CPU blade, one **DINOBlade™** compatible power blade and three **DINOBlade™** compatible I/O blades. The different blades inserted into the chassis communicate with each other through a preinstalled **DINOBlade™** compatible backplane, the DBP-5S.

Features

- ▶ Five slot DIN mount form factor
- ▶ Equipped with DBP-5S, a **DINOBlade™** compatible backplane
- ▶ Heavy duty structure for DIN mount or desktop placement



Specification

Type	DIN mount chassis for DINOBlade™ interface application
Backplane	DBP-5S
Slot	5 slots
Operation Temperature	0 ~ 50°C
Vibration	5 ~ 17 Hz, 0.1" double amplitude displacement 17 ~ 640 Hz, 1.5G acceleration peak to peak
Shock	10G acceleration peak to peak
Relative Humidity	5 ~ 95%, non-condensing
Dimensions	182 x 133 x 180 mm
Color	Dark blue with silver blade cover

Ordering Information

DCHS-5S	DINO 5-slot chassis with DBP-5S
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DIN-3000 DINO barebone system

DINO 5-slot barebone system



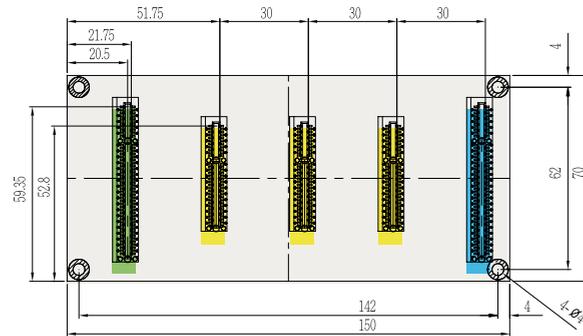
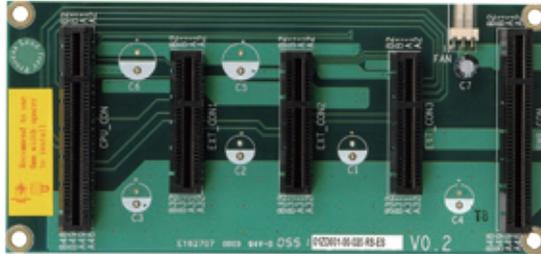
Ordering Information

Model No.	DIN-3000
Description	DINO 5-slot barebone system, Celeron M 800MHz zero cache processor, 915GM, DCHE-5S chassis, with DEX-302 SATA blade, DPW-100V power blade, 12VDC 100W power adaptor, RoHS
Module Included	DSB-915-800Z DCHE-5S DEX-302 DPW-100V 63000-MPU100105-RS (100W AC to DC Adaptor)

DBP-5S Backplane

5-Slot Passive Backplane

The DBP-5S backplane has two X8 connectors, one for the CPU blade and one for the power blade, and three PCI Express X4 connectors for I/O application blades.



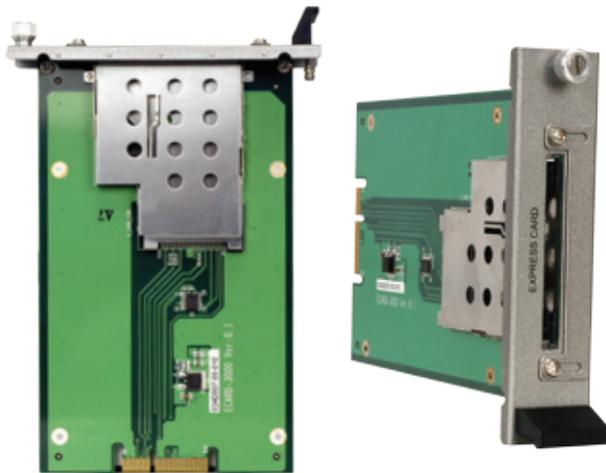
Ordering Information

DBP-5S	DINO 5-slot passive backplane
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■ CPU Slot
 ■ Combo I/O Slot
 ■ Power Slot

DEX-301 ExpressCard Blade

ExpressCard /34 and ExpressCard/54 Carrier

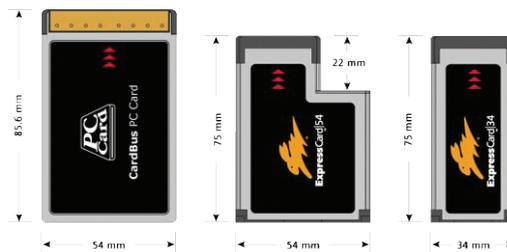


Introduction

The DEX-301 **DINOBlade™** compliant ExpressCard blade supports both 54mm and 34mm ExpressCards. ExpressCard compliance enables modular expansion of the DIN-3000. The following ExpressCards can be easily added and integrated with the system.

Features

- ▶ Memory
- ▶ Wired and wireless communications
- ▶ Multimedia
- ▶ Security features



Specification

Type	DINOBlade™ interface I/O blade
Socket	1 x ExpressCard/54 socket, support ExpressCard/34

Ordering Information

DEX-301	DINO Express Card Carrier
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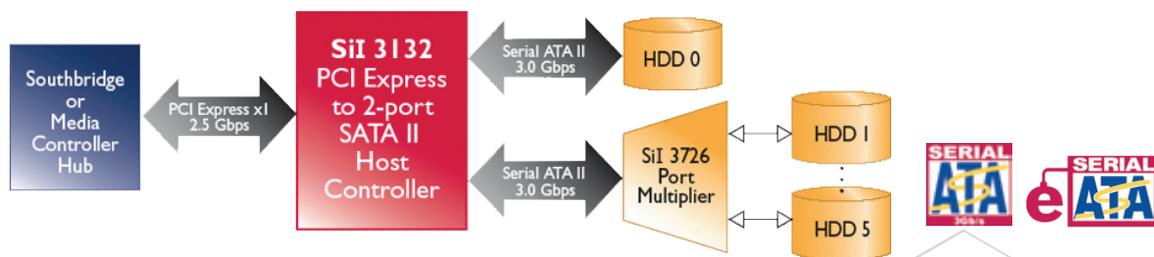
DEX-302 SATA Blade

2.5" SATA HDD Carrier with eSATA and USB Port



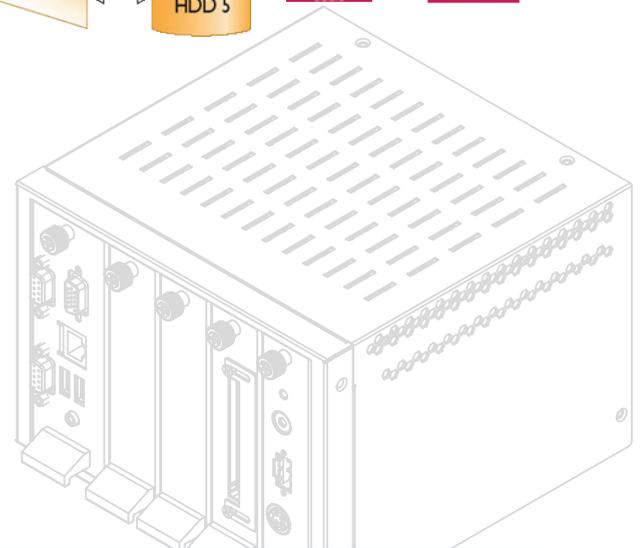
Introduction

The DEX-302 **DINOBlade™** compliant SATA blade is an external storage application blade. The DEX-302 has an onboard SiliconImage SiI3132 chipset that manages two second-generation Serial ATA (SATA II) channels that have 3Gb/s data transfer rates. One SATA channel is connected directly to a preinstalled onboard SATA drive. The second channel is dedicated to an external SATA (eSATA) HDD. The DEX-302 also has one external USB connector for USB device connectivity.



Features

- ▶ Supports one 2.5" onboard SATA connector
- ▶ Supports one eSATA connector
- ▶ Supports one USB 2.0 connector
- ▶ Supports one eSATA port for connectivity to and external SATA II drive
- ▶ SATA II channels support:
 - 3Gb/s transfer speeds
 - Native command queuing
 - Port multipliers with FIS-based switching
 - Programmable output signal swing strengths for longer external cables
 - Hot-plugging
 - Enclosure management
 - ATAPI device support
 - Supports external USB devices



Specification

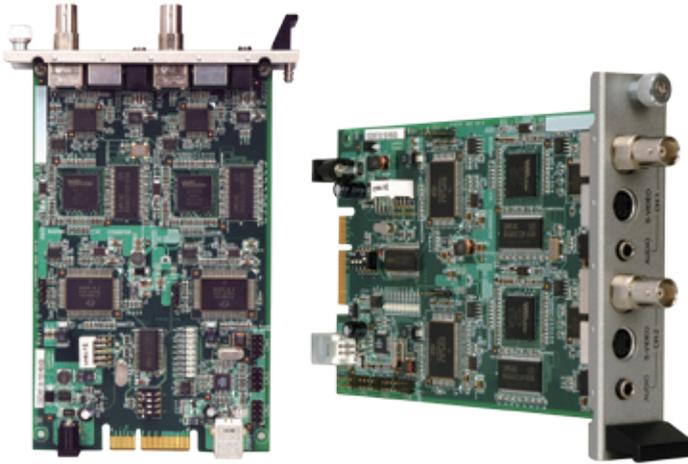
Type	DINOBlade™ interface I/O blade
Chipset	SiliconImage SiI3132 PCI Express interface SATA controller
I/O Interface	1 x 2.5" HDD bay 1 x eSATA connector 1 x USB connector

Ordering Information

DEX-302	DINO 2.5" SATA HDD Carrier with eSATA and USB port
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DEX-303 Surveillance Blade

2-Channel MPEG4 Digital Surveillance Blade

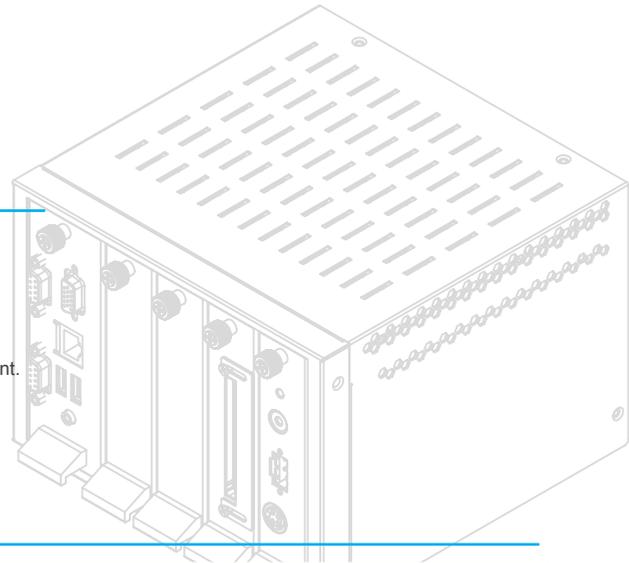


Introduction

The DEX-303 **DINOBlade™** compliant surveillance blade is a 2-channel surveillance solution that comes with an audio and video recording system through a high-speed USB 2.0 interface. MPEG1/2/4 codec hardware encoding support enables real-time VGA video and stereo audio capture on each channel. A DEX-302 software development kit (SDK) offers 2-channel audio-video preview and recording functions. Detailed parameters can be easily adjusted for DVR or streaming software development.

Features

- ▶ 2-channel D1 resolution real-time recording
- ▶ 2-channel stereo audio input
- ▶ NTSC/PAL auto-sensing
- ▶ 60 VGA frames per second (30 per channel) supported
- ▶ Smart ID selector for multi-card application
- ▶ SDK and software demo program provided for software application development.



Specification

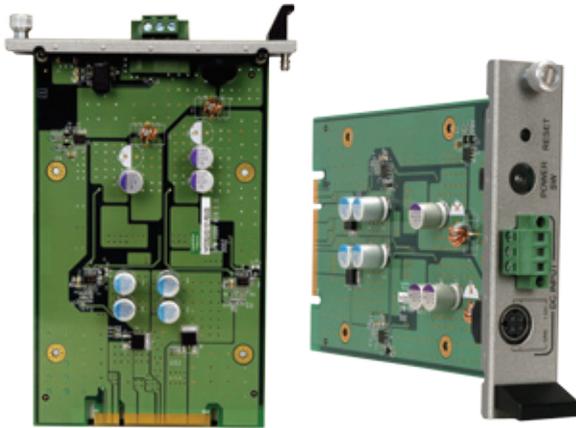
Type	DINOBlade™ interface IO blade
Video Input	2 Channels BNC Composite Video / S-Video input, NTSC / PAL auto-sensing
Audio Input	2 Channels stereo audio input
Video Processing	MPEG 4 advanced simple profile@L3, MPEG 2 P@ML, MPEG 1 Resolution: 720*480, 352*240(NTSC), 720*576, 352*288(PAL) Frame rate: Up to 30(NTSC), 25(PAL) FPS for each channel Quality: DVD quality full D1 video at 3 Mbps, high quality D1 video at 1 Mbps, high quality CIF video at 384Kbps
Audio Processing	44.1KHz or 48KHz at 8 bits data depth Format: PCM or ADPCM

Ordering Information

DEX-303	DINO Two Channels MPEG-4 Digital Surveillance Blade
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DPW-100V Power Blade

12VDC Input, 100W DC to DC Converter



Introduction

The DPW-100V **DINOBlade™** compliant power module blade is a 100W 12V DC input converter module with ATX function support. The DPW-100V supports both AC-DC power adapter input and direct DC inputs.

Features

- ▶ DC 12V power converter with ATX support
- ▶ Four pin mini DIN connector input
- ▶ Direct DC terminal blocks
- ▶ Integrated power and reset switches

Specification

Type	DINOBlade™ interface power blade with ATX function support
Power Watts	100 Watts
Input	DV 12V @ 12.3A Max
Output	12V @ 3A Max, 5V+5VSB @ 15A Max, 3.3V+3VSB @ 10A Max
Connector	1 x 4 pin mini-DIN connector 1 x 3 pin terminal block

Ordering Information

DPW-100V	DINO 12VDC input, 100W DC to DC Converter
63000-MPU100105	Power adapter, 90~260VAC, 12V@8.33A, 100W output

63000-MPU100105

90-260VAC input, 12VDC 100W Power adapter



Specification

Input Voltage Range	90-260VAC
Input Frequency	47-63Hz
Output Voltage	12VDC
Output Current	8.33A
Output Watts	100W
Efficiency	75%
Operating Temperature	0 ~ 70 °C
Storage Temperature	-40 ~ 85 °C

Ordering Information

63000-MPU100105-RS	Power adapter, 90~260VAC, 12V@8.33A, 100W output
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