



PRODUCT BRIEF

FALCON/64™ (Integrated 64-Bit GUI Accelerator)

SC15064

FEATURES

Graphics Acceleration (hardware based)

- BitBlt
- Raster operations
- Line draw
- Pattern fill
- Color expansion

DRAM Memory Support

- 1, 2, or 4 MBytes display memory
- Extended Data Out (EDO) DRAMs
- x4, x8, x16 wide DRAMs
- Up to 60 MHz memory clock

Resolution and Color Support

- 640x480, 16M colors (NI)
- 800x600, 16M colors (NI)
- 1024x768, 65K colors (NI)
- 1024x768, 16M colors (NI)
- 1280x1024, 256 colors (NI)
- 1280x1024, 65K colors (I)
- 1600x1200, 256 colors (I)

Bus Support

- PCI Local Bus
- VESA® VL-BUS™
- ISA BUS

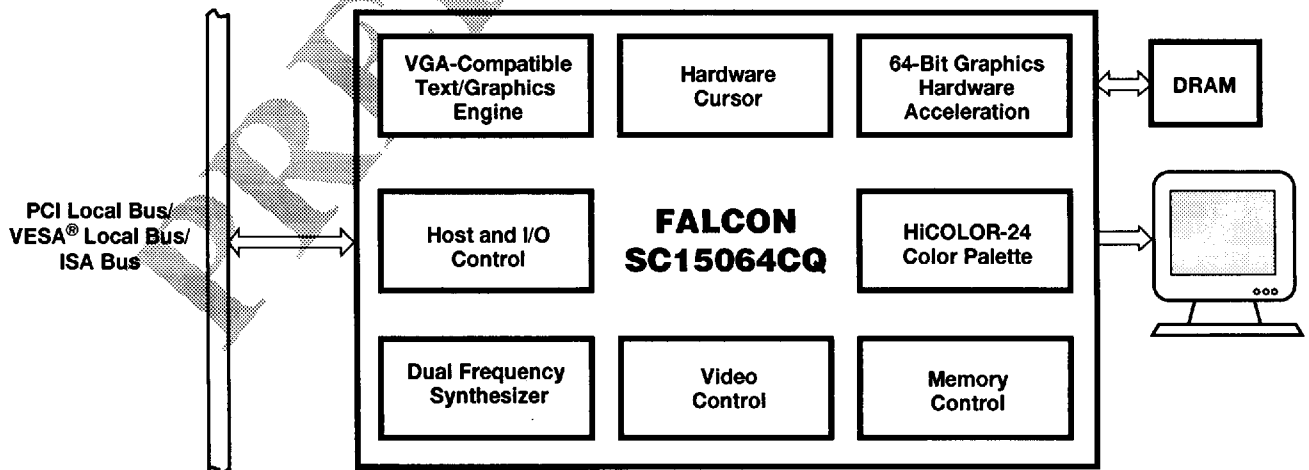
Software Support

- Windows 3.1
- Windows NT
- OS/2 2.1
- SCO UNIX
- Accelerated CAD drivers
- Extended mode support for a variety of DOS applications

BIOS Support

- 100% IBM VGA compatible
- VESA BIOS Extension (VBE) Support
- Display-Power-Management-Signaling (DPMS) support
- VESA monitor-timing compliant

BLOCK DIAGRAM



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FEATURES continued

Green PC Support

- VESA® display power management (DPMS)
- DAC power-down modes
- Low power CMOS technology

208 pin PQFP package

Utilities

- Manufacturing test
- Video mode configuration utilities
- BIOS utility
- Set resolution in Windows
- TARGA file viewing utility

GENERAL DESCRIPTION

The FALCON SC15064 is a high-performance DRAM based Integrated GUI Accelerator. It is specifically designed to accelerate application programs running under Windows 3.1, Windows NT and OS/2, and to optimize the performance of popular CAD and DOS application programs.

FALCON is a complete system on a chip. It connects directly to a PCI, VL or ISA bus, allowing a minimum chip-count solution. Performance is enhanced not only by the Graphics Hardware Accelerator but also by the high level of integration. For example, in traditional systems using discrete products, the controller to palette data path is normally limited to 8 bits by pin related costs. In FALCON, the path is expanded to 24 bits.

The space saving provided by the integration on FALCON makes it ideally suited for both motherboard and add-in board implementations. Using FALCON, a high-performance 100% VGA-compatible system can be built with as few as 2 ICs (not including display memory).

FALCON optimizes graphic performance of ISA, VESA® VL-Bus™ and PCI bus based machines. Major performance characteristics and features are:

- Its 64-bit Graphics Hardware Accelerator greatly enhances performance in both text and graphics modes eliminating a large portion of the overhead in typical Windows applications.
- It supports Windows 3.1 and NT plus many other operating systems
- It is 100% VGA compatible allowing users to run all existing non-Windows software.

- A VESA/PCI Local Bus interface allows direct connection of the Integrated GUI Accelerator to the host CPU circumventing the AT-bus bottlenecks.
- It supports 1, 2, or 4 MBytes of display memory accommodating several new graphics modes.
- It supports pixel clock rates up to 135 MHz providing display resolutions up to 1600 x 1200.
- It provides 24-bit color allowing the display and editing of photorealistic images.
- It supports five popular resolutions: 640x480, 800x600, 1024x768, 1280x1024, and 1600x1200; the higher resolutions permit the use of multiple windows — all readable.
- It is affordable to the average user — not just power users.

FALCON consists of:

- A 100% VGA compatible Core Controller
- A 64-Bit Graphics Hardware Accelerator (GHA)
- A 135 MHz, 24-Bit Color Palette
- A Dual Programmable Frequency Synthesizer.

FALCON Manufacturing Kit

The FALCON Manufacturing Kit contains design, development and marketing tools. The kit includes schematics, layout data, sample boards, video BIOS, and display drivers for Windows, Windows-NT, OS/2, CAD and DOS applications. You have the option of taking Sierra's design to production, or creating your own design.

SOFTWARE SUPPORT FOR FALCON

FALCON provides extensive driver support to enhance the resolution and performance of software packages. FALCON does not require software drivers to run applications in

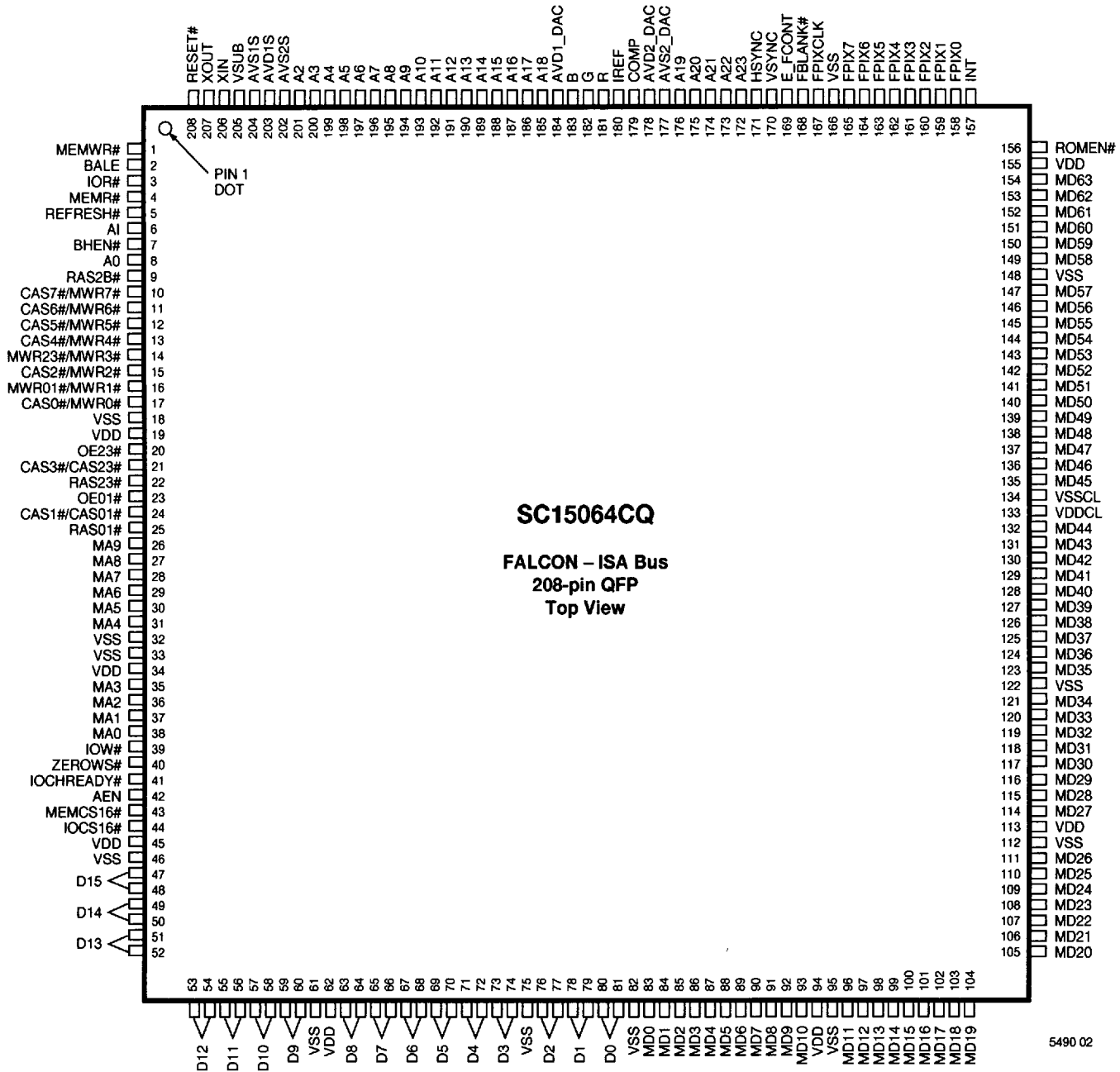
standard VGA mode or applications that have native support for the VESA BIOS extension.

FALCON drivers include:

Software Drivers	Resolution Supported	No. of Colors
Microsoft® Windows V3.x	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 640 x 480, 800 x 600, 1024 x 768	16 colors 256 colors 65,536 colors 16.8 million colors
Microsoft® Windows NT V1.x	640 x 480, 800 x 600, 1024 x 768	16 and 256 colors
OS/2™ V2.1	640 x 480, 800 x 600 640 x 480, 800 x 600, 1024 x 768	16 colors 256 colors
SCO UNIX™	640 x 480, 800 x 600, 1024 x 768	16 and 256 colors
AutoCAD® R11, R12 Autoshade® V2.0 w/ Renderman 3D Studio V1.x, V2.x	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 640 x 480, 800 x 600, 1024 x 768 640 x 480	16 colors 256 colors 65,536 colors 16.8 million colors
MicroStation PC V4.x, V5.x	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 640 x 480, 800 x 600, 1024 x 768 640 x 480	16 colors 256 colors 65,536 colors 16.8 million colors
Ventura Publisher	640 x 480, 800 x 600, 1024 x 768	16 colors
Lotus® 1-2-3™ V2.x	132 x 25, 132 x 43, 132 x 50, 132 x 60 (text)	16 colors
Microsoft® Word V5.x	80 x 25, 75 x 100, 96 x 128, 48 x 128, high-resolution graphics text	16 colors
WordPerfect® V5.0	800 x 600, 1024 x 768	16 colors
WordPerfect® V5.1	132 x 25, 132 x 43, 132 x 50, 132 x 60 (text) 800 x 600, 1024 x 768	16 colors 16 colors

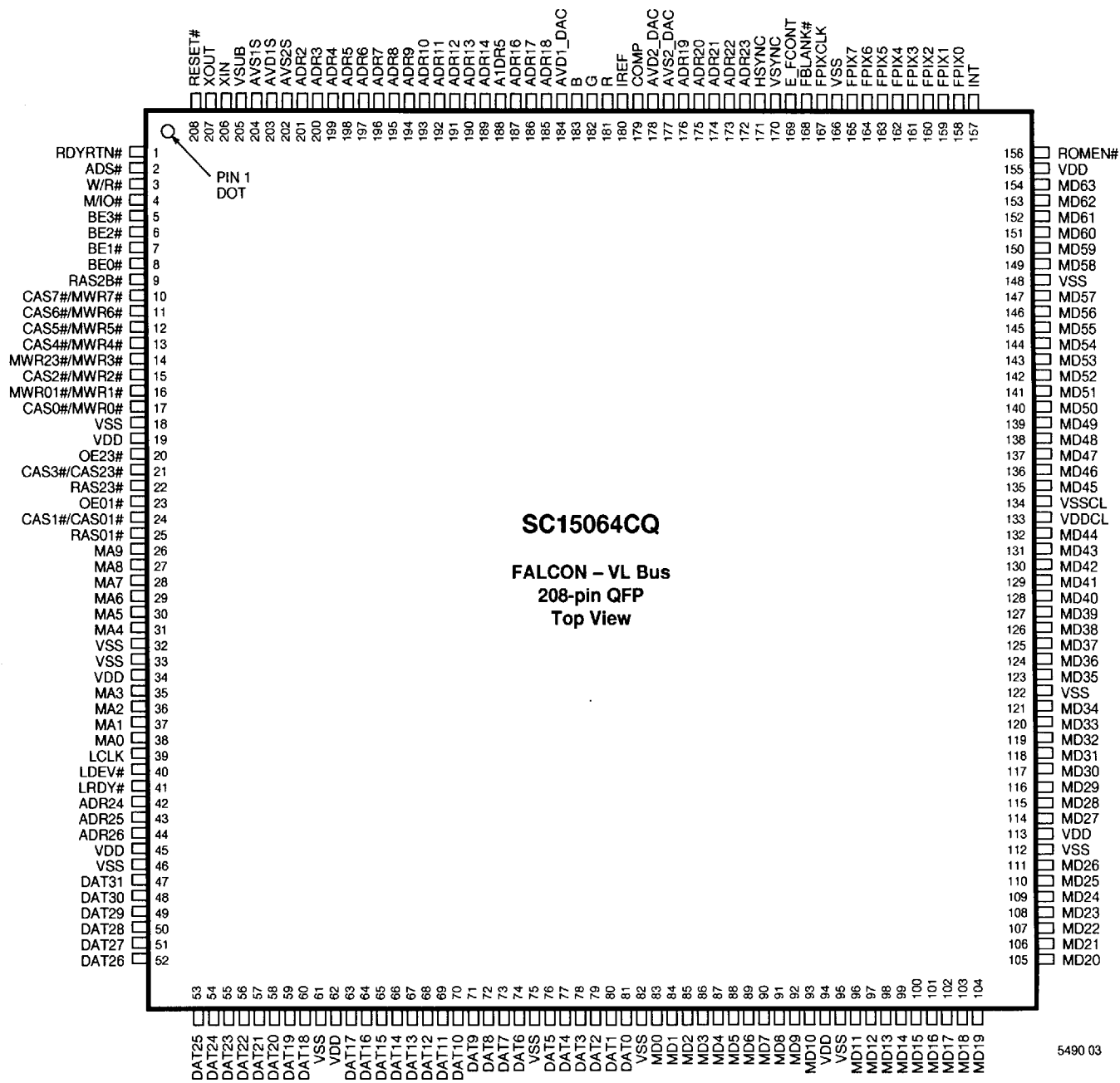
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CONNECTION DIAGRAMS



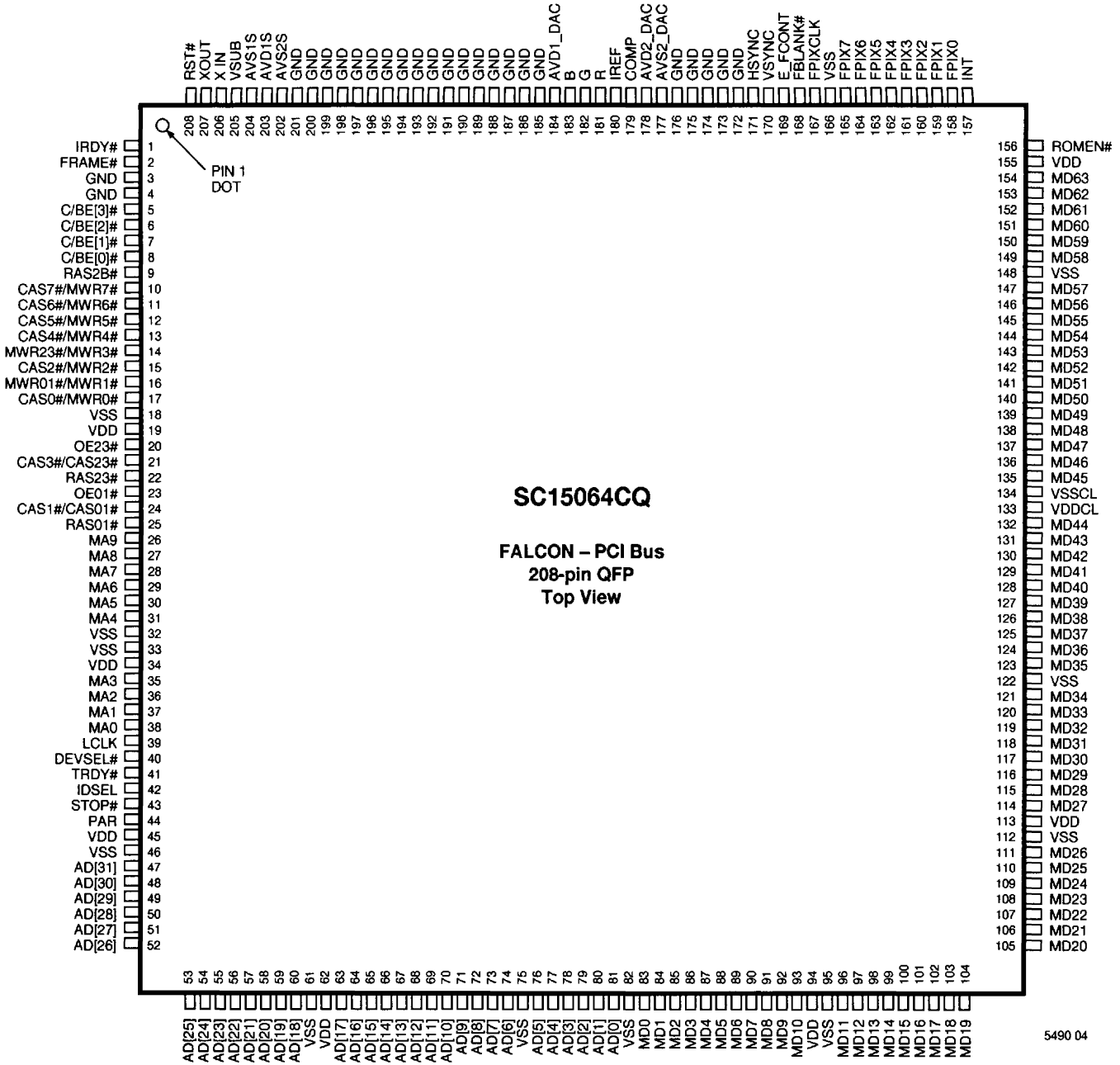
NOTE: To get the high output drive for the CPU data bus signals, each signal data bit must be connected to 2 adjacent pins of the SC15064, e.g. D0 should connect to both pins 80 and 81.

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