



IRIS Indigo™ Indigo™ Family

IRIS Indigo™...

A New Class Of Computer

Silicon Graphics' IRIS Indigo workstation represents the original blending of workstation performance with PC simplicity. IRIS Indigo has created a new class of computer called the RISC PC. Plus it offers all of the advanced 3D graphics capabilities that you expect from Silicon Graphics. But it doesn't stop there, Indigo™ is a lot more than just a computer. It's the concept that drives our design philosophy; one dedicated to people with extreme design, visualization, and compute needs.

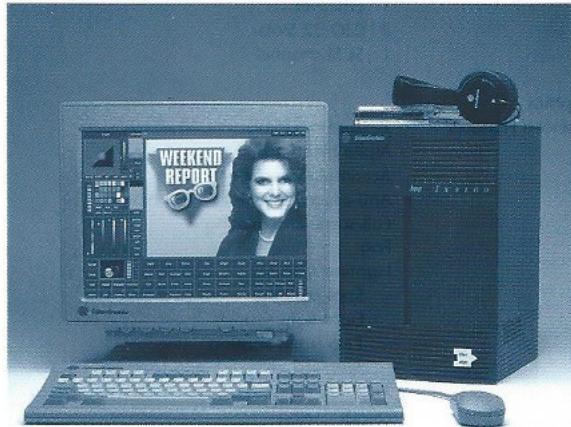
Indigo Technology

In order to meet the needs of our customers, IRIS Indigo workstations implement the highest performance technologies available. At the heart of these systems is a workstation engine based upon the MIPS® RISC architecture - either the 32-bit R3000A™ or the 64-bit R4000® processor. IRIS Indigo takes these fast CPU's and surrounds them with a system architecture that is unrivaled in the industry.

The R4000 CPU-based IRIS Indigo's system bus supports a 266MB/sec sustained transfer rate. These same IRIS Indigo workstations utilize 1MB of secondary cache to support the R4000's 16KB of on-chip data and instruction cache. These system elements combine to produce industry leading application performance.

A Level of Graphics for Everyone

Silicon Graphics has established itself as the leader in visual computing, and IRIS Indigo delivers this capability to the desktop. IRIS Indigo offers users a broad range of graphics options. On the low-end, Entry graphics provides a low-cost 8 bit color solution for those looking for a strong general purpose workstation that supports 3D. The XS family



utilizes a single Geometry Engine® processor to provide a higher level of 3D performance. For solid modeling applications, XZ and Elan offer multiple Geometry Engine processors and 24-bit color. All of these options work inside the same IRIS Indigo chassis, allowing users to invest in a level of technology they need while providing all the flexibility of upgrading in the future as requirements change.

Indigo Magic™...

Compelling New Ways to Communicate

Silicon Graphics continues to be the leader in changing the way scientists and engineers communicate and present their work. In addition to continuing to define what can be done on the desktop, Indigo provides a user environment and tools that are easy and enjoyable to work with. Indigo Magic gives users immediate access to revolutionary digital media technology through the IRIS Showcase™ presentation application, IRIS InSight™ on-line tools, and Media Mosaic™ end user tools (audio & video control panel, CD & DAT manager, and MovieMaker and MoviePlayer to name a few). All this combined with 16-bit, 4 channel audio and live video capabilities make working with Indigo fun.

Technical Specifications

Processing

	R3000	R4000
CPU/FPU	33 MHz	100 MHz
Primary Cache	321/32D	81/8D
Secondary Cache		1MB
Memory Storage	8MB to 384MB of SIMM Memory	
I/O	3 3 1/2" Bays	
	2 Serial RS422 (38.4 k baud)	
	1 Bidirectional Parallel	
	5 Audio I/O Connectors	
	1 Ethernet	
	2 GIO-32 Slots	
	1 SCSI channel	

Graphics

Advanced Features

Texture mapping
Alpha blending
Accumulation buffer
Anti-aliased RGB lines and points
Full-scene anti-aliasing
Fog
Lighting features
Spot lighting
Eight light sources
Two-sided lighting
Ambient, diffused, and specular
Arbitrary clipping planes
Depth cueing
Soft shadow and depth of field
Sub-pixel positioning
Stenciling (XS, XS24, Elan)
Stereo graphics (XS, XS24, Elan)
Pan and zoom
Sphere rendering
X11 pixel operations
4 (256 colors each) — IRIS Indigo
2 (4096 colors each)
(XS, XS24, XZ, Elan)

Color Maps

IRIS GL™ Display Modes

RGB double buffer
RGB single buffer
Color index double buffer
Color index single buffer
Stereo viewer connector
(XS, XS24, XZ, Elan)

Audio/Video

Controller/Processor Input/Output

Motorola 56001 DSP @ 20 MHz
Stereo line-level analog
Mono microphone
Serial digital (stereo), IEC958
Stereo headphone
Internal mono speaker

Sampling Rates

48, 44.1, 32 KHz, and many lower rates

Converters

Analog to digital conversion
(16 bit stereo, 64 I/C oversampling)
Digital to analog conversion
(stereo 16/18 bit stereo, 8x oversampling with digital filter)

Connectors

5 stereo mini-phone jacks,
1/8 inch (3.5 mm)

Video

Video slot on graphics board
Independent video bus
Genlock (XS, XS24, XZ, Elan)

R4000® Performance

	Entry	XS	XZ	Elan
2D Vectors	600K	260K	520K	1M
3D Vectors, Depth Cued	380K	140K	280K	555K
3D Tmesh (F, Nz)	100K	98K	196K	370K
3D Tmesh (GS, Z, L)	26K	50K	100K	180K
3D Quad (GS, Z, L)	13K	24K	45K	88K
Screen Clear	19msec	9msec	9msec	9msec
Fill Rate Rectangle (500x500)	40M	40M	40M	40M
	<u>R4000</u>		<u>R3000</u>	
MHz	100		33	
MIPS	85		30	
MFLOPS	16		4.2	
SPEC 89	70		26	
SPEC 92 INT	59		22.4	
SPEC 92 FP	61		24.2	

Physical Environment

System	15 inches H x 9.5 inches W x 10.9 inches D 24 lbs.
16-Inch Monitor	16.1 inches H x 16.0 inches W x 18.8 inches D 52.9 lbs
19-Inch Monitor	18.7 inches H x 18.9 inches W x 19.9 inches D 71.6 lbs
Power Requirements	Voltage and Frequency 100-240 VAC 2.7 - 1.8A 47-63 Hz 120 V 2.5A (without monitor) 120 V 2.5A (with monitor)
Heat Dissipation	1200 BTU/hour
Ambient Temperature	+13 to +35 degrees C operating -40 to +65 degrees C non-operating
Noise	36 dB (A) in typical operating position
Relative Humidity	10% to 80% operating no condensation 10% to 95% non-operating no condensation
Altitude	10,000 feet operating 40,000 feet non-operating
Vibration	0.02 inches, 5-19 Hz 0.35 G, 19-500 Hz

Regulatory Agency Approvals

	R3000/R4000 XS, XZ, XS24, Elan and R4000 Indigo Entry	R3000 Indigo Entry
Electromagnetic Emissions	FCC Class A Canada DOC, Class A CISPR 22 Class A EC EN55022 Class A Germany Vfg 251/1991 Class A VCCI Class 1 UL 1950, CSA 22.2 No. 950 IEC 950 EN 60950 Class 1 SELV	FCC Class B Canada DOC, Class B CISPR 22 Class B EC EN55022 Class B Germany Vfg 243/1991 Class B VCCI Class 2 UL 1950, CSA 22.2 No. 950 IEC 950 EN 60950 Class 1 SELV
Product Safety	Germany ZH618 ISO 9241	Germany ZH618 ISO 9241

For more information please call:

U.S. 1(800) 800-7441

Europe (41) 22-798.75.25

North Pacific (81) 3-5420.71.10

South Pacific (61) 2-879.95.00

Latin America 1(415) 390.58.28

Canada 1(416) 625-4747

Corporate Office

2011 N. Shoreline Boulevard

Mountain View, CA 94043

(415) 960-1980



SiliconGraphics
Computer Systems

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