DFI LanParty UT RDX200 CF-DR Motherboard

Chipset Intro

Introducing Radeon Xpress 200 CrossFire

ATI's Radeon Xpress 200 CrossFire chipset for both Intel® and AMD-based processors is built for the dual slot PCI Express architecture and delivers leading graphics performance, bandwidth, and advanced functionality for the ultimate gaming platform.

Multiply and Conquer with CrossFire.

Radeon Xpress 200 CrossFire for AMD Processors

- AMD Athlon 64 X2, AMD Sempron, AMD Athlon 64 and AMD Athlon 64 FX processors
- Support for 64-bit extended operating systems
- 800MHz and 1GHz HyperTransport interface speeds

Best-in-class Performance for CrossFire Operation

With dual dedicated and balanced PCI Express graphics ports, the Radeon Xpress 200 CrossFire supports up to 2GB/s peak bandwidth to both graphics cards making it the ideal chipset for Multi GPU systems. The unique chipset architecture creates no interference with any other PCI Express peripherals. CrossFire operation does not limit other PCI Express functionality.

Built for the Enthusiast

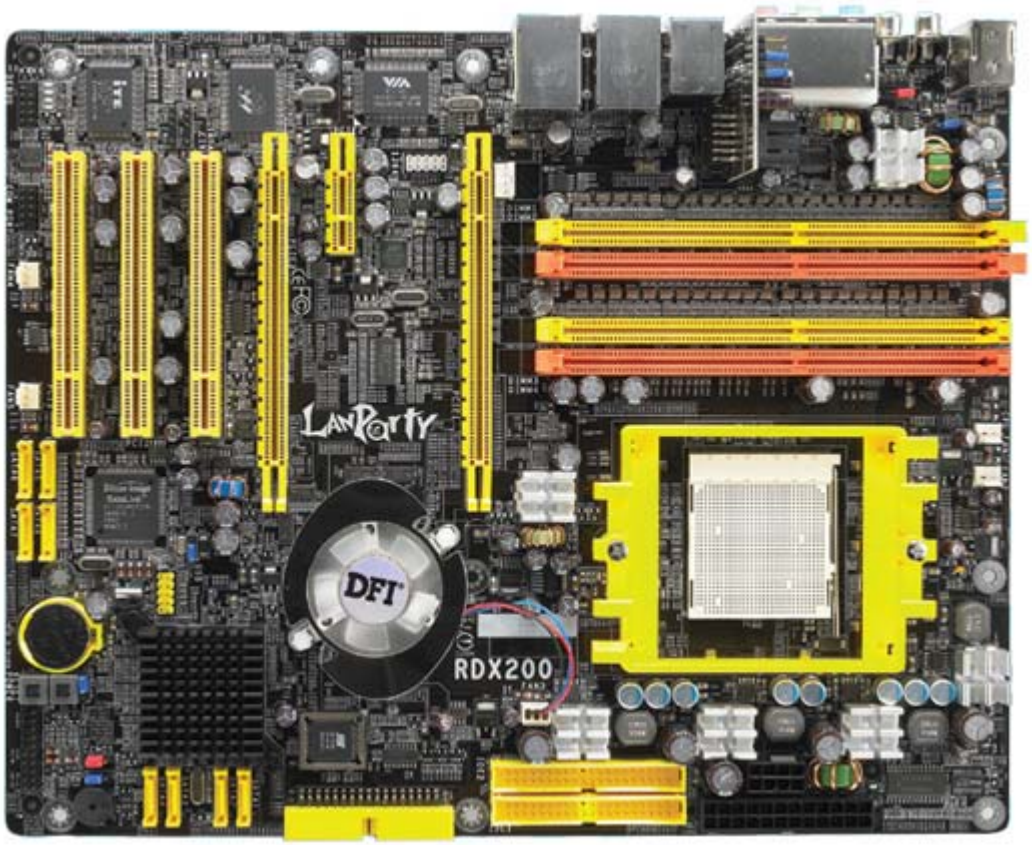
The Radeon Xpress 200 CrossFire is an enthusiast-class chipset that delivers unmatched performance when paired with two ATI-based graphics cards. This chipset supports all three CrossFire performance rendering modes: SuperTiling, Scissor, and AFR. CrossFire acceleration is enabled by default for every game all the time making it the fastest gaming platform out there.

Stunning Overclocking Capabilities

ATI's Radeon Xpress 200 CrossFire offers gamers and enthusiasts tons of advanced features that will help move their performance to the next level. For the overclocking enthusiasts, the Radeon Xpress 200 CrossFire provides a wide array of adjustment capabilities such as memory voltage, CPU core voltage, chipset voltage and others to allow each user to maximize their performance potential.

Features

High Build Quality and Excellent Board Layout

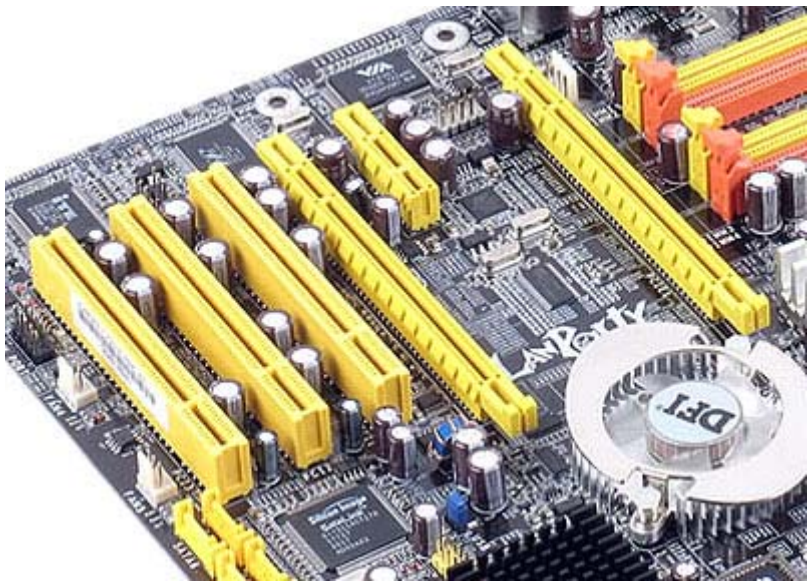


The RDX200 is built to perfection using a 6-layer PCB and high-quality components. UV sensitive (glow in the dark under dark light) slots, and a magnetic-levitation fan on the chipset heatsink make this mobo quite the looker at LAN parties as well.

DFI applies a unique board layout by locating 4 DIMM slots between the CPU and IO ports. This design works very well to keep the air flowing and component temperatures down.

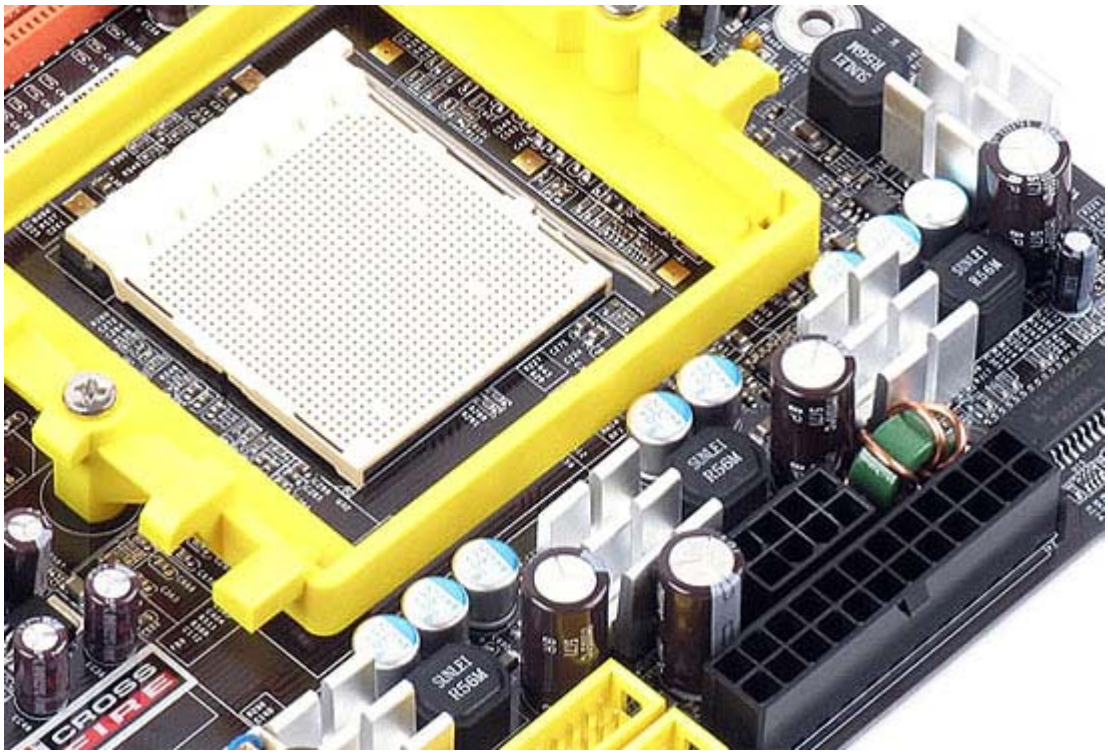
ATI CrossFire Multi VPU Technology Support

The DFI LanParty UT RDX200 CF-DR is a CrossFire motherboard. That is to say that it incorporates full support for ATI CrossFire technology. As is the case with nForce4 SLI mobos, the two PCI Express x16 slots on the RDX200 can be configured for x16 + x1 mode in single graphics card mode or dual x8 mode for ATI CrossFire mode.



Unlike many nForce4 SLI mobos, however, the DFI RDX200 doesn't feature a paddle card for changing between single and dual graphics card modes. Instead, the switching is done via the electronics. All the user has to do is to perform the switch in the BIOS or let the BIOS detect it automatically.

100% Japanese Sourced Capacitors/ 4-Phase PWM

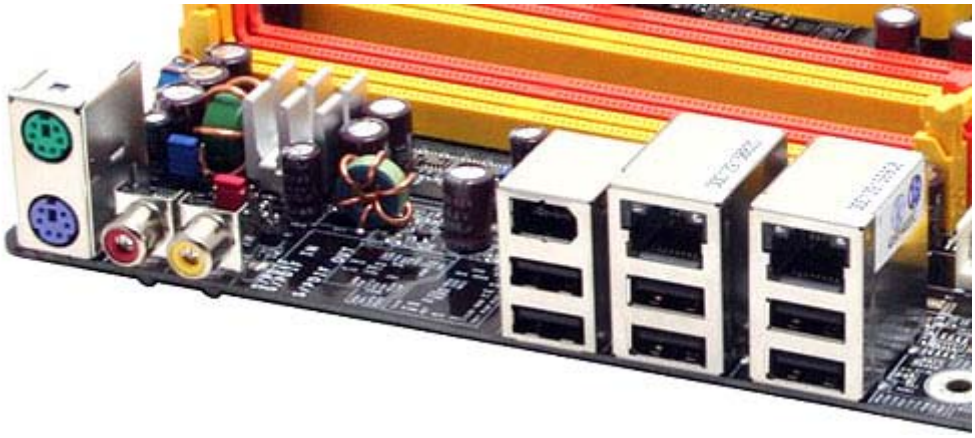


A 4 phase PWM design provides the system extra stability and reliability under heavy-loading and overclocking conditions. The heatsinks attached to the MOSFETs ensure the temperatures stay in the safe zone when the processor runs under full loads. All capacitors on this motherboard are 100% Japanese-sourced for unquestionable levels of quality.

The 24-pin and 8-pin/4-pin power connector are shown above located side-by-side at the right

edge of the board. Users can use either a standard 4-pin or the more robust 8-pin connector on the DFI motherboard.

Rear IO Ports



- 1 PS/2 mouse port
- 1 PS/2 keyboard port
- 2 S/PDIF RCA jacks (S/PDIF-in and S/PDIF-out)
- Karajan audio module (6 audio jacks, see below)
- 1 IEEE 1394a port
- 2 RJ45 Gigabyte LAN ports
- 6 USB 2.0/1.1 ports

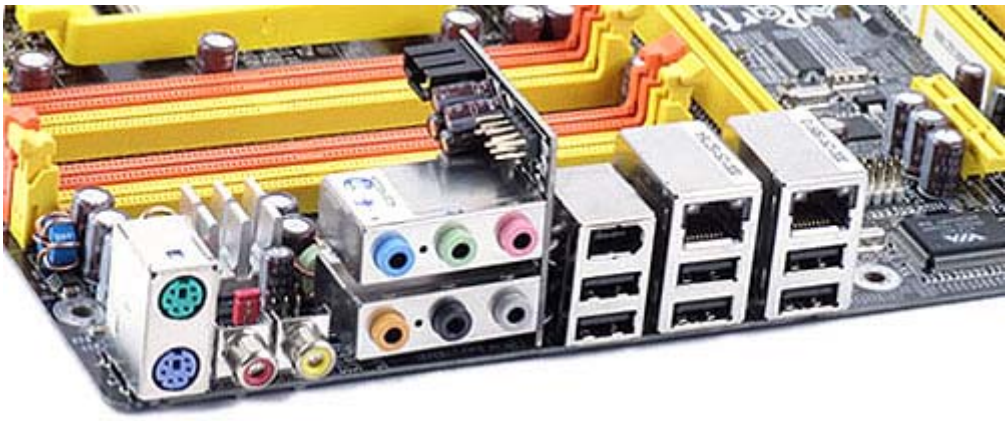
First Retail AMD Motherboard featuring to Feature Azalia High Definition Audio

Karajan audio module: the Azalia High Definition audio Codec that is isolated on the module for improved signal-to-noise performance

Realtek ALC882 8-channel High Definition Audio CODEC provides:

- 6 audio jacks
- 1 CD-in connector
- 1 front audio connector
- True stereo line level outputs

- S/PDIF-in/out interface



BIOS

Major options and adjustable range for overclocking:

Options	Values
CPU FSB Frequency	200 to 500MHz in 1MHz increments
PCIe Frequency	fixed
SB PCIE Voltage	1.8V/1.9V
NB Analog Voltage	1.2V/1.3V/1.4V/1.5V
LDT Voltage Control	1.2V/1.3V/1.4V/1.5V
NB Core Voltage	1.2V/1.3V/1.4V/1.5V
RAM Voltage Control	2.5V to 4.03V in 0.02V to 0.05V increments
CPU Multiplier	Depending on CPU, 0.5x increments
CPU Voltage	0.8V to 1.55V in 0.025V increments PLUS 2.4%~36.0% in 2.4% increments (Maximum vCore 2.108V)

The DFI LanParty nForce4 series boards are famous for offering the enthusiast almost every BIOS option imaginable. The DFI RDX200 goes even further, extending memory voltage to 4.03V and CPU voltage to as high as 2.108V.

The most exciting one has to be the "impossible" option of running 4DS (Dual Side) DIMMs at 1T Command Rate and a working CAS 1.5 option in the BIOS.

PCI Express x16 slots Configuration:

Dual Slot Configuration	Enable/Disable
GFX0 Link Width	16X/12X/8X/4X/1X
GFX1 Link Width (only available when “Dual Slot” enabled)	12X/8X/4X/1X

The PCI Express x16 slot operating modes are easily configured in the BIOS, and the user can choose the specific link width of the two slots as well.

DRAM related parameters:

DRAM Timing Parameters	Options
DRAM Frequency Set(MHz)	By SPD 100/120/133/140/150/166/180/200/216/233/250
Command Pre Clock(CPC)	Enable/Disable
CAS latency Control(T_{cl})	1.0 to 4.5, 0.5 increments
RAS# to CAS# delay(T_{rcd})	Auto/00~07 Bus Clock
Min RAS# Active Time(T_{ras})	Auto/00~15 Bus Clock
Row Precharge time(T_{rp})	Auto/00~07 Bus Clock
Row Cycle time(T_{rc})	Auto/07~22 Bus Clock
Row refresh cycle time(T_{rfc})	Auto/09~24 Bus Clock
Row to Row delay(T_{rrd})	Auto/00~07 Bus Clock
Write recovery time(T_{wr})	Auto/02/03 Bus Clock
Write to Read delay(T_{wtr})	Auto/01/02 Bus Clock
Read to Write delay(T_{rwt})	Auto/00~08 Bus Clock
Refresh period(T_{ref})	Auto etc.
DRAM Bank Interleaving	Enable/Disable

Like the LanParty nForce4 series, DFI has provided a whole host of detailed options on memory parameter tuning for this RDX200 motherboard. That's really good news for enthusiasts and experienced users as they have the potential to achieve higher performance levels through the tuning of these parameters to better fit their own systems.

DRAM Configuration Parameters	Options
DQS Skew Control	Auto/Increase/Decrease
DQS Skew Value	0~255
DRAM Driver Strength	Auto/Level1~15
DRAM Data Driver Strength	Auto/4/3/2/1
MAX Async Latency	Auto/0.0～15.0ns
Read Preamble Time	Auto/2.0~9.5ns
Idle cycle Limit	0/4/8/16/32/64/128/256 Cycle
Dynamic Counter	Enable/Disable
R/W Queue Bypass	Auto/2X/4X/8X/16X
Bypass MAX	Auto/0~7X
32Byte Granularity	Auto/Enable/Disable

Another area in which the RDX200 actually exceeds its predecessor (i.e. the LanParty nForce4 series) is this: most DRAM modules run perfectly using the “By SPD” mode on this RDX200. This was not the case with previous LanParty boards as manual settings were always needed. This improvement is especially important for DIY beginners as memory compatibility issues are greatly reduced.