MITSUBISHI ELECTRIC

apricot
LS550

The ultimate networking
business PC

Features of Pentium Pro Models

► 180 or 200MHz CPUs

► 1.7GB E-IDE high performance hard
disk

► Fast access EDO RAM

► 256Kb L2 cache

Features of Pentium Models

► 75, 100, 133, 166 or 200MHz Pentium
CPUs

► Choice of 850MB, 1.2GB or 1.7GB high
performance hard disk

► Enhanced performance EDO RAM

► Up to 256KB pipeline burst L2 cache

Features of all Models

► Pre-installed 3Com Ethernet card

► High performance PCI graphic
accelerators

► Wide choice of configurations from entry
level to high specification

► Power-saving standby mode with fast
recovery

► SoundBlaster Vibra-16 for industry
standard business audio

► Optional 10/100Mbit/sec Ethernet card

► UK Built

Designed for
Microsoft®
Windows®95

intel inside
pentium PROCESSOR

System Overview

The LS550 range from Apricot meets all the needs of the corporate or volume business user. Fully specified, with a choice of the very latest Pentium or Pentium Pro processors, hard disks and advanced memory technology, every LS550 is designed to offer the widest possible choice of price and specification - so that you can put exactly the right model on each desktop, with no limits on processing power, speed, capacity or performance.

One of the LS550's most important features is it's fully-integrated networking facility. This means that every model in the LS550 range is available with a choice of 10 or 100Mbit/s ethernet technology pre-installed, ready to run. High quality business audio is another standard feature, ready to exploit the new technologies of voice messaging and other audio applications. With the in-built CD-ROM the LS550 is also a state-of-the-art multimedia machine, ready to unleash the potential of the latest, most demanding software.

Pick a Pentium

With the LS550, you can choose precisely the processor you need. Even the entry level models boast at least a 75 or 100MHz Intel Pentium chip, and the higher performance models come with a choice of 100, 133, 166 or 200MHz processors.

For maximum performance, suited for true 32-bit operating systems and applications, the latest Pentium Pro processors are ideal. Available with clock speeds of 180 & 200MHz these systems are at the leading edge of personal computing performance.

Ready to network

The LS550 computer has a market-leading 3Com ISA standard Ethernet card already installed and ready to connect. Whether you are using thick, thin or UTP cable, you can literally "plug and go". You also have the option of a 3Com PCI 10/100 auto-sensing Ethernet card, for optimum performance with current 10 Mbit/sec networks and guaranteed upgradeability to the emerging 100Mbit/sec network. For corporates with investment in other NIC's, LS550 systems can be supplied without a network card, allowing integration with Token Ring and other networking technologies

Faster than ever

With every new development in software, the demands placed on the computer's resources increase. The LS550 range has been designed to meet all these needs - and more.

In Pentium based models, EDO memory uses the latest technology to give faster throughput of data. Enhanced performance eliminates the need for a cache on Pentium 75 systems, while on the 100 and faster models, a 256KB pipeline burst cache on allows them to maximise the processor's performance.

Pentium Pro models include DIMM memory technology, utilising high specification 60nS parts and benefiting from an advanced four-way interleave configuration, this provides a memory sub-system that has been designed specifically for the demands of Pentium Pro CPUs.

Sounds good

All except the entry level models incorporate integrated SoundBlaster Vibra-16 audio from the market leader Creative Labs. Coupled with the high speed Sony CD-ROM, you can now have the benefit of high quality business audio through the unit's built-in speaker, or, for maximum quality through external speakers.

STANDARD FEATURES

Mass Storage
1.44MB floppy drive
Choice of high speed IDE hard drives

Graphics
PCI Local bus enhanced VGA graphics

Pre-installed Software
Windows NT Workstation 3.51
(Pentium Pro Models)
Windows® 95 or DOS 6.22 and Windows for Workgroups *(Pentium Models)*

Expansion
Multiple PCI and ISA expansion slots
Dual high speed serial ports
Parallel port
Socketed video memory

Peripherals
14", 15", 17" or 21" high resolution monitors
Enhanced 102 key keyboard
Two button mouse

Features and Benefits

Pentium Pro processors

The latest 64-bit processor family from Intel provides new levels of raw processing power. With options from 180 to 200MHz, the LS550 system can minimise the run time of processor intensive tasks. We have integrated the Intel 450GX PCIset chipset to ensure that the levels of performance required for high end graphics and engineering applications are attained.

Pentium processing power

Pentium processors have rapidly become the industry standard. With the LS550, however, you can choose exactly the model you need for a specific situation. The entry-level Pentium 75 can cope with everything the software can throw at it - at the lowest possible cost. At the other end of the scale, the latest 200MHz chips offer the ultimate in performance, and for the best combination of price and performance there's the 100 and 133MHz Pentiums. The state-of-the-art Intel 430FX PCIset chipset is designed to achieve maximum performance with the system's PCI bus.

Network ready

Every LS550 has its 3Com3C509B ISA triple combo Ethernet card pre-installed, ready for connection to a network. 3Com are the market leaders in networking hardware and, by adopting this technology, the LS550 is guaranteed to stay at the forefront of networking technology, with upgrading and development support guaranteed. In addition, there is the option of a 3Com 3C595TX PCI 10/100 Mbit/sec card for organisations planning to upgrade to the developing 100Mbit/sec network standard. This card will automatically sense whether it is connected to a 10 or 100Mbit/sec network, and configures itself automatically. For Token-Ring users, or corporates who have standardised on alternative Network interface cards, each LS550 system can be supplied without the network interface.

Memory options

By providing a choice of memory options, the LS550 models allow even more opportunities for matching performance against budget. EDO SIMM memory has enhanced features which reduce the need for a cache: this feature is fully exploited in the Pentium 75 models to enhance their price competitiveness. In the Pentium 100+ MHz models a pipeline burst mode cache provides an increase in processing speed of up to 50%.

The Pentium Pro models utilise ultra high speed DIMM memory technology with 60nS access timing. Incorporating an advanced four-way interleave configuration with the addition of ECC, the LS550 models match the Pentium Pro power with a tightly coupled state-of the-art memory subsystem.

High capacity, high speed hard drives

Fast, powerful computers require large, high performance disk drives. The LS550 comes with a choice of a large 850MB, 1.2GB or a massive 1.7GB drive, with exceptionally high performance. The PCI bus-master enhanced mode 4 IDE interface increases the available bandwidth to the disk drives to 16.6 Mbytes/sec ensuring that data transfer is carried out at the drives' maximum capacity.

Future-proof chassis design

The LS550 uses a chassis designed with the future in mind. It combines the traditional elegance and style of the Apricot marque with an attractive front panel layout and ample room for expansion. The design anticipates future processor developments, for example the LS550 Pentium based motherboard incorporates the Intel Type 7 CPU socket which incorporates support for as yet unannounced Pentium processors, giving the buyer a wide range of options for choice in the future.

Video acceleration

The stunning video performance of the LS550 is made possible by the use of accelerated local bus video processors. The Cirrus Logic GD5436 video controller uses the PCI local bus to link with the main system processor, ensuring that even most graphically intensive applications move like lightning.

In Pentium Pro models graphic performance is increased even further, by the inclusion of a Matrox Millenium PCI accelerator with up to 4MB of WRAM provided as standard.

All LS550 video controller memory can be expanded; entry level systems to 2MB of video memory, higher end products up to 4MB.

Industry standard

By adhering to the latest computer industry standards, Apricot engineers have ensured that the LS550 can be easily upgraded with widely available components and peripherals.

Technical Specifications

	LS550	575E / 5100E	575/5100	5133/166/200	6180/6200
Processor					
Type	Pentium	Pentium	Pentium	Pentium Pro	
Clock speed (Internal)	75MHz / 100MHz	75MHz / 100MHz	133MHz / 166MHz / 200MHz	180MHz / 200MHz	
Clock speed (External)	50MHz / 66MHz	50MHz /66MHz	66MHz	60MHz / 66MHz	
Internal cache	2x8KB	2x8KB	2x8KB	256KB	
Coprocessor	Integral	Integral	Integral	Integral	
Data/address bus	64/32-bits	64/32-bits	64/32-bits	64/32-bits	
CPU socket type	321-pin ZIF (Type 7)	321-pin ZIF (Type 7)	321-pin ZIF (Type 7)	387-pin ZIF (Type 8)	
iCOMP benchmark	610 / 815	610 / 815	1110 / 1308 / -	-	
Core Logic chipset	Intel 430FX PCIset	Intel 430FX PCIset	Intel 430FX PCIset	Intel 450GX PCIset	
External cache					
Supplied	None / 256KB async	None / 256KB pipeline burst	256KB pipeline burst	-	
Maximum	256KB	256KB	256KB	-	
Mapping	Direct	Direct	Direct	-	
Writing scheme	Write back	Write back	Write back	-	
Cache speed	- / 15ns	- / 15ns	- / 15ns	-	
RAM					
Supplied	8 / 16MB	8 / 16MB	8 / 16MB	16 / 32MB	
Maximum	128MB	128MB	128MB	512MB	
Type	32-bit EDO SIMM	32-bit EDO SIMM	32-bit EDO SIMM	72-bit ECC DIMM	
Speed	70ns	70ns	70ns	60ns	
Fitted RAM location	Motherboard	Motherboard	Motherboard	Motherboard	
Parity	None	None	None	None	
Sockets: total	4	4	4	4	
free	2	2	2	3	
Sizes supported	4, 8, 16 & 32MB	4, 8, 16 & 32MB	4, 8, 16 & 32MB	16, 32, 64, 128MB*	

Additional DIMM modules must be of equal capacity to existing modules. Supported options are 1, 2, or 4 DIMMs.

	LS550	575E / 5100E	575/5100	5133/166/200	6180/6200
ROM					
Size	1Mbit	1Mbit	1Mbit	4Mbit	
Type	Flash ROM	Flash ROM	Flash ROM	Flash ROM	
Shadowable	Yes	Yes	Yes	Yes	
Graphics					
Controller	Cirrus Logic GD5434	Cirrus Logic GD5436	Cirrus Logic GD5436	Matrox Millennium	
Interface	PCI Local Bus	PCI Local Bus	PCI Local Bus	PCI Local Bus	
Location	Motherboard	Motherboard	Motherboard	PCI expansion	
Video memory: :supplied	1MB	1MB / 2MB	2MB	2MB / 4MB	
max	2MB	2MB	2MB	4MB	
type	DRAM	EDO DRAM	EDO DRAM	WRAM	
Max N.I. resolution @ 1MB	1024x768 (256 colours)	1024x768 (256 colours)	N/A	1600x1200 (256 colours)/N/A	
Max N.I. resolution @ 2MB	1280 x1024 (256 colours)	1280 x1024 (256 colours)	1280 x1024 (256 colours)	1600x1200 (65k colours)	
Max N.I. colours @ 1MB	16.8 million (640x480)	16.8 million (640x480)	N/A	16.7 million (800x600)/N/A	
Max N.I. colours @ 2MB	16.8 million (800x600)	16.8 million (800x600)	16.8 million (800x600)	16.7 million (1024x768)	
Expansion*					
Total slots	5 (1 shared PCI/ISA)	5 (1 shared PCI/ISA)	5 (1 shared PCI/ISA)	5	
PCI	1 full & 1 half length	1 full & 1 half length	1 full & 1 half length	2 full & 1 half length	
ISA	2 full & 2 half length	2 full & 2 half length	2 full & 2 half length	2 full	

Network card uses either one half length ISA or one half length PCI slot. Audio card uses one half length ISA slot (Pentium Pro only).

	LS550	575E / 5100E	575/5100	5133/166/200	6180/6200
Security					
Technology	BIOS Level Security	BIOS Level Security	BIOS Level Security	BIOS Level Security	
Access control	Power On/ CMOS Setup Password FD Access, Virus detection	Power On/ CMOS Setup Password FD Access, Virus detection	Power On/ CMOS Setup Password FD Access, Virus detection	Power On/ CMOS Setup Password FD Access, Virus detection	
Hardware	Case lock & security loop	Case lock & security loop	Case lock & security loop	Case lock & security loop	

	LS550	575E / 5100E	575/5100	5133/166/200	6180/6200
I/O ports					
Serial: quantity		2 (16550 compliant)	2 (16550 compliant)	2 (16550 compliant)	2 (16550 compliant)
connectors		2 x 9-pin D-SUB	2 x 9-pin D-SUB	2 x 9-pin D-SUB	2 x 9-pin D-SUB
Parallel: quantity		1	1	1	1
type		ECP/EPP compliant	ECP/EPP compliant	ECP/EPP compliant	ECP/EPP compliant
Dual channel PCI bus EIDE controller					
ATA IDE standard		Mode 4	Mode 4	Mode 4	Mode 4
Connector type		40-pin	40-pin	40-pin	40-pin
Max data transfer		16.6MB/s	16.6MB/s	16.6MB/s	16.6MB/s
Keyboard type		PS/2	PS/2	PS/2	PS/2
Mouse type		PS/2	PS/2	PS/2	PS/2
Power supply					
Rating (constant)		145W	145W	145W	180W
Rating (peak)		179W	179W	179W	-
Type		Switched mode	Switched mode	Switched mode	Switched mode
Voltage setting		External switch	External switch	External switch	External switch
Voltage input range (AC)		90-132V & 180-264V	90-132V & 180-264V	90-132V & 180-264V	90-132V & 180-264V
Frequency input range		47-63Hz	47-63Hz	47-63Hz	47-63Hz
Max loads: +5V		18A	18A	18A	2.3A
+12V		4.2A	4.2A	4.2A	4.5A
-12V		0.3A	0.3A	0.3A	0.5A
External connectors		IEC in / IEC out	IEC in / IEC out	IEC in / IEC out	IEC in / IEC out
Floppy drive					
Type/capacity		3.5"/1.44MB	3.5"/1.44MB	3.5"/1.44MB	3.5"/1.44MB
Controller		Embedded	Embedded	Embedded	Embedded
Audio					
Type		-	SoundBlaster Vibra-16	SoundBlaster Vibra-16	SoundBlaster Vibra-16
Ports		-	Microphone, line-in,	Microphone, line-in,	Microphone, line-in,
		-	speaker-out, line-out,	speaker-out, line-out,	speaker-out, line-out,
		-	game port	game port	game port
Speakers		-	Single internal,	Single internal,	Single internal,
		-	optional external	optional external	optional external
Networking					
Standard interface		3C590B combo	3C590B combo	3C590B combo	3C590B combo
Bus		ISA	ISA	ISA	ISA
Media		10-base 2 (BNC),	10-base 2 (BNC),	10-base 2 (BNC),	10-base 2 (BNC),
		10-base 5 (AUI)	10-base 5 (AUI)	10-base 5 (AUI)	10-base 5 (AUI)
		10-base T (UTP)	10-base T (UTP)	10-base T (UTP)	10-base T (UTP)
Transfer rate		10Mbit/s	10Mbit/s	10Mbit/s	10Mbit/s
10/100 models		3C595TX	3C595TX	3C595TX	3C595TX
Bus		PCI	PCI	PCI	PCI
Media		10-base T (UTP)	10-base T (UTP)	10-base T (UTP)	10-base T (UTP)
Transfer rate		10/100Mbit/s auto sensing	10/100Mbit/s auto sensing	10/100Mbit/s auto sensing	10/100Mbit/s auto sensing
CD-ROM					
Type		-	CDU77E	CDU111	CDU111
Rotational speed		-	x4	x6	x6
AV access		-	190ms	180ms	180ms
Transfer rate		-	600KB/s	900KB/s	900KB/s

LS550 **Hard Drives**	**ALL MODELS** **850MB**	**1.2GB**	**1.7GB**
Type	E-IDE	E-IDE	E-IDE
Average access	14ms	12ms	11ms
Track to track seek	5ms	3.1ms	2.5ms
Burst data rate	6.5MB/s	10.5MB/s	9.02MB/s
Cache	128KB	128KB	128KB
MTBF	300 000 poh	500 000 poh	400 000 poh

System Dimensions

Width x depth x height	440 x 410 x 120mm
Weight	10Kg

Warranty

Standard cover *(UK mainland only)*	3 year limited warranty (1st year on-site, 2nd & 3rd parts only); Monitor one year on-site only

Preloaded Software

Pentium Pro models	Windows NT workstaion 3.51 Operating System
Pentium models	Window® 95, optional DOS 6.22 and Windows for Workgroups 3.11 Operating System

Environmental

Temperature (operating)	5 to +35^{0}C
Temperature (non-op.)	5 to +65^{0}C
R. humidity (operating)	10 to 80%
R. humidity (non-op.)	10 to 90%
EMI/RFI approvals	$C\epsilon$ Compliant with European CE mark regulations for Emissions Susceptibility. VCCI Level 2
Safety approvals	EN60-950, UL1950

Monitors	**14" SVGAe**	**15" FST EVGAe**	**17" FST EVGAe**	**21" Diamondtron**
Standard	SVGAe	EVGAe	EVGAe	EVGAe
CRT size (diag.)	14"	15"	17"	21"
CRT type	Anti-glare	FST anti-glare black tinted	FST dynamic focus, anti-glare/static	Diamondtron dark tint, anti-glare/static
Display area	260 x 190 (+/-3mm)	270 x 203 (+/-3mm)	290 x 218 (+/-3.5mm)	380 x 285 (+/-4mm)
Dot pitch	0.28mm	0.28mm	0.28mm	0.30mm
Phosphor	P22	P22	P22	P22
Video input	Analogue RGB	Analogue RGB	Analogue RGB	Analogue RGB
Max. video bandwidth	65MHz	110MHz	130MHz	180MHz
Max. res. x vert freq (non-interlaced)	1024 x 768 x 60Hz	1280 x 1024 x 60Hz 1024 x 768 x 75Hz	1600 x 1200 x 60Hz 1280 x 1024 x 75Hz	1600 x 1200 x 75Hz
Power: full operation	<80W	<100W	<130W	<165W
standby	<5W	<5W	<5W	<30W
active off	>5W	>5W	>5W	>11W
Power management	VESA DPMS support for EPA compliance	VESA DPMS support for EPA compliance	VESA DPMS support for EPA compliance	VESA DPMS support for EPA compliance
EMI/RFI approvals	CE mark compliant MPRII	CE mark compliant MPRII	CE mark compliant MPRII	CE mark compliant MPRII
Safety approvals	EN60-950	EN60-950	EN60-950	EN60-950
Dimensions: w x d x h (mm)	351 x 384x327	361 x 382 x 345	411 x 480 x 380	500 x 488 x 490
weight	12Kg	14Kg	23Kg	35Kg

Input Devices	**KEYBOARD**	**MOUSE**
Keys/buttons	102	2
Interface	PS/2	PS/2
Resolution	N/A	400dpi
Cable length	3m	1.83m
Dimensions: w x d x h	465 x170 x 45mm	63 x 114 x 40mm
weight	1.4Kg	127g