WHITE PAPER

June 1996

Compaq Computer Corporation

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Compaq Extends LTE 5000 Family of Personal Computers

Compaq is proud to announce three new notebook models and options for the LTE 5000 family:

- A new top-of-the-line LTE 5000 model, the ***LTE 5380***, with a 133-MHz Pentium processor, 2.16-GB hard drive, 16-MB base RAM and a 12.1-inch color TFT 1024 x 768 panel
- Two new entry-level LTE 5000 models: the ***LTE 5250 and LTE 5150***
- Support for the Compaq brand of leading PC management: ***Intelligent Manageability***
- Support for ***new advanced telephony features*** with new optional Compaq SpeedPaq 288 modem (avail 3Q1996)
- ***New MultiBay-ISA Expansion Base***, with one ISA slot and new Compaq PremierSound audio
- ***New 6X CD-ROM Drive*** option
- ***New 2.16-GB Hard Drive*** option

In September 1995, Compaq introduced the LTE 5000, a high-performance family of Pentium processor-based notebook PCs featuring an innovative modular design that allowed for break-throughs in flexibility not only in the notebook by itself, but flexibility that extends to the desktop with the industry's first modular expansion base, true 64-bit architecture, and PCI Local Bus graphics as well as providing an extensive combination of multimedia features.

In April 1996, Compaq added two new models to the LTE 5000 family, the LTE 5300 and the LTE 5280 both to establish new performance capabilities in the high end of the LTE 5000 family. The list of new performance features include the 133-MHz Intel Pentium processor, two new displays with 11.3-inch and 12.1-inch CTFT panels, and an increase in base memory of 16 MB that makes RAM expandable to 80 MB on these new models.

In June, Compaq is broadening the capabilities of the high-performance Compaq LTE 5000 flagship notebook computer family with three new models at both ends of the spectrum, including the new power-packed **LTE 5380** and two entry-level models, the LTE 5250 and LTE 5150, as well as new options.

The new premier model of the Compaq portable family, the LTE 5380, leads the pack with a 133-MHz Pentium microprocessor, 1024 x 768 resolution on a 12.1-inch color TFT panel, an impressive 2.16 GB hard drive, and 16 MB of base RAM standard.

Refreshing the entry-level end of the LTE 5000 line, are two new models—the **LTE 5250** and **LTE 5150**—offering higher Pentium processing power than previous models.

- The Compaq LTE 5250 offers a 120-MHz Pentium processor, 16 MB of RAM, 10.4-inch color TFT SVGA panel with 800 x 600 resolution, and an 810-MB hard drive.
- The LTE 5150 is equipped with a 100-MHz Pentium processor, 8 MB of RAM, 11.3-inch color STN SVGA panel, and an 810-MB hard drive. An additional 8 MB of memory (for a total of 16 MB) has been installed in the option slot of the LTE 5150 as an added bonus[1].

[1] On North American models only (U.S. and Canada).

COMPAQ

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Compaq Extends LTE 5000 Family of Personal Computers
First Edition (June 1996)

The LTE 5380 will begin shipping in the third quarter, while the LTE 5250 and 5150 have already begun shipping to Compaq marketing partners worldwide. Combined with the LTE 5300 and LTE 5280 announced in April, these new models represent an all-new lineup for the LTE 5000 family.

The following table summarizes the new models available under the LTE 5000 family on June 17, 1996:

	LTE 5380 Model 2160 CTFT 1024x768	**LTE 5250 Model 810 CTFT 800x600**	**LTE 5150 Model 810 DSTN 800x600**
Processor	Pentium 133 MHz	Pentium 120 MHz	Pentium 100 MHz
Display Panel	12.1" CTFT 1024x768	10.4" CTFT 800x600	11.3" DSTN 800x600
Graphics	32-bit PCI local bus	32-bit PCI local bus	32-bit PCI local bus
Video memory	1 MB EDO RAM	1 MB EDO RAM	1 MB EDO RAM
Hard Drive	2.16 GB, removable	810 MB, removable	810 MB, removable
Std./Max. RAM	16/80 MB	16/80 MB	8*/72 MB
CD-ROM	Modular - optional	Modular - optional	Modular - optional
Diskette Drive	Modular - 1.44MB	Modular - 1.44MB	Modular - 1.44MB
Weight	7.4 lb.	7.4 lb.	7.5 lb.

* NA only: For added value and increased total memory, this model includes a 8-MB memory option card installed in the memory slot for a total of 16 MB RAM.

New Features Add Breadth to LTE 5000 Family

Communications Features: Ready for the Future

The new LTE 5000 can act as a "virtual office" for users who frequently travel or commute to other business locations. With its built-in support for advanced telephony communications features, the LTE 5000 can serve as a full-duplex speakerphone, fax machine, telephone answering machine and mail center, and provide support for switched voice/data in combination with the new optional Compaq SpeedPaq 288 Telephony Modem, which will become available in the third quarter. These features are activated using a software application called Just Connect, which provides a single source graphical user interface for all communications activity.

Each new LTE 5000 model, including the LTE 5280 and LTE 5300 models announced in April includes support for these new advanced telephony communications features when combined with new telephony PC card modems from Compaq (available 3Q1996),

Increased Notebook Storage Capabilities

The innovative modularity of the LTE 5000 family offers customers the flexibility to customize their notebook by supporting a CD-ROM drive, a second hard drive in the notebook MultiBay slot for up to 4.3-GB of mobile storage capacity, a second battery for double the runtime, a diskette drive, or a weight saver module to reduce overall weight.

Resume on Ring PC Card Modem Functionality

Each new LTE 5000 model, including the LTE 5280 and LTE 5300 models announced in April, includes support for resume on ring PC Card modem functionality. By giving the user the option to initiate power to the PC Card slot during standby, the LTE 5000 can receive a modem transmission while in standby or suspend.

Intelligent Manageability

The LTE 5000 product family will join the Compaq desktop and server families in offering the advantages of the Compaq brand of PC management called Intelligent Manageability. Intelligent Manageability features make networked PCs easier to manage and less expensive to own by providing features organized or classified in the areas of *asset management, security management and fault management.* The LTE 5000 is DMI compliant as certified by the Desktop Management Task Force. DMI compliance solidifies Compaq's commitment to support the benefits of PC management as an integral part of today's total distributed enterprise.

1. The ***asset management*** component of Intelligent Manageability provides companies with an efficient networked inventory of PC hardware and software to help manage a large installation of notebooks. This is achieved through the Compaq Insight Manager or similar industry standard network management software to support features such as serial number identification, ROM level identification, and a record of system configuration, etc.

2. The ***security management*** component consists of hardware and software security provisions that protect and deter unauthorized access to data or hardware. These features are already a part of every LTE 5000 notebook. For example, power on passwords can be invoked to secure unauthorized access to data from the notebook. Several physical security measures such as notebook, hard drive and MultiBay device locking provisions further protect the user from unauthorized access or the removal of data or hardware.

3. Through ***fault management***, all LTE 5000 models are capable of being monitored on the network for temperature changes in case the notebook reaches a critical threshold, in which case both the notebook and network administrators will be notified of an impending critical condition. With planned availability in the third quarter, hard drives that support fault prediction capabilities that provide alerts prior to failure to initiate such protective measures as proactive tape backup when connected to the network.

Intelligent Manageability features will be available in the third quarter at no charge for LTE 5000 users with upgrades on SoftPaq, Compaq's Internet home page (http://www.compaq.com), and on the Compaq forums on America Online, CompuServe and Prodigy.

New Options

New MultiBay-ISA Expansion Base

In response to customer requirements for ISA expansion support, the new MultiBay-ISA Expansion Base was created with one ISA expansion slot for such features as Token Ring network cards, 3270 emulation and LAN-based video conferencing.

The new base also offers innovation in audio with Compaq PremierSound Audio, providing unsurpassed audio quality in a notebook expansion base. Two high-performance speakers in bass-reflex enclosures provide excellent frequency response and improved bass response. This new expansion base option for the LTE 5000 provides all the functionality of the original MultiBay Expansion base with the addition of ISA expansion and high-performance audio. The new MultiBay-ISA Expansion Base, will coexist with the original MultiBay Expansion Base. *Both products feature:*

- Two MultiBay modular device bays for sharing CD-ROM drives, hard drives or diskette drives with the notebook, or functioning as a battery charger when a battery is inserted
- Two Type III PC Card slots
- Integrated Ethernet with RJ-45 and BNC connections
- Integrated Speakers (Compaq PremierSound only offered on MultiBay-ISA Expansion Base)
- Infrared Communications Port
- Support for the optional MPEG and TV/Video Adapter
- Monitor support cover
- MIDI/Game Port
- Notebook locking security provision

New 2.16-GB hard drive option will be available in early third quarter of 1996 for the LTE 5000, providing increased storage capacity as an upgrade to existing LTE 5000 users. This hard drive therefore provides the potential of an impressive 4.3 GB of notebook storage, and up to 8.6 GB when combined with either expansion base.

New 6X-speed MultiBay CD-ROM drive is being announced to eventually replace the 4X-MultiBay CD-ROM. This new option will be available in July.

QUESTIONS AND ANSWERS

NEW MODELS/TRANSITIONS

Q1. Do these new models replace any current models within the LTE 5000 family?

A1. The LTE 5380: Represents a new high end LTE 5000 model that is offered in addition to current models.
The LTE 5250: Offered to be a replacement for the 90-MHz LTE 5100 models as well as a enhancement to the 75-MHz LTE 5000 Model 810 CTFT.
The LTE 5150: Offered to be a replacement for the 75-MHz LTE 5000 Model 810 CSTN 800 x 600 and Model 510 CSTN products.

Q2. What are the current models that are offered in the LTE 5000 family?

A2:

New	LTE 5380 Model 2160 CTFT 1024 x 768	Available in July
	LTE 5300 Model 1350 CTFT 800 x 600	Now shipping
	LTE 5280 Model 1350 CTFT 800 x 600	Now shipping
New	LTE 5250 Model 810 CTFT 800 x 600	June 17
New	LTE 5150 Model 810 CSTN 800 x 600	June 17
	LTE 5000 Model 810 CTFT	Available until July
	LTE 5000 Model 510 CSTN	Available until July

Q3. Are any LTE 5000 models going out of production?

A3. The LTE 5200 Model 1350, both LTE 5100 models and the LTE 5000 Model 810 CSTN 800 x 600 models are being replaced by these new announcements.

Q4. Why did Compaq add the additional 8-MB memory module to the LTE 5150 product?

A4. The additional 8 MB of memory is being offered as an added value on this model only. The 8-MB memory module is installed in the memory option slot for a total of 16 MB of memory on the LTE 5150.

BATTERIES

Q5. Why is there no Li-ion battery for the LTE 5000?

A5. In November of 1995, Compaq delayed the availability of the Li-ion battery for the LTE 5000. The delay was needed while a re-design of the Li-ion battery pack was initiated. In the meantime, Compaq concentrated on making improvements to the NiMH chemistry battery for the LTE 5000. In April, with improvements to the efficiency of the NiMH cells, users could realize a 20% improvement in runtime. In keeping with the momentum gained by concentrating on improvements to the NiMH chemistry battery, users will again realize improvements in runtime with further improvements to the NiMH batteries in these new announced products. These improvements have accumulated to delivery NiMH runtimes close to what a Li-ion chemistry battery would delivery for the LTE 5000. Given that NiMH is more readily available, less expensive to ship in the notebook and now for the LTE 5000 offers runtimes at parity with what we anticipate for Li-ion, the advantage of Li-ion for the LTE 5000 diminishes to that of weight savings.

Q6. When will Compaq make a Li-ion battery available for the LTE 5000?

A6. Compaq continues to pursue the delivery of a Li-ion battery for the LTE 5000 with an anticipated 4Q1996 delivery. This battery will be supported on all LTE 5000 models.

Q7. Is there any difference between the cycle life of NiMH and Lithium Ion batteries?

A7. Lithium Ion battery cycle life is approximately the same as that of NiMH, roughly 300 cycles. Lithium Ion batteries have the greatest capacity at the beginning of their life. NiMH batteries start out below maximum capacity and reach maximum capacity after about 50 cycles. After 300 cycles, both battery chemistries reduce to approximately 80% of their original capacity.

DISPLAY PANELS

Q8. What is the benefit of 1024 x 768 resolution on the 12.1" CTFT display?

A8. With the large 12.1" display, and higher resolution of 1024 x 768 means that more information is displayed within the 12.1" diagonal viewing area as compared to a display with either 640 x 480 or 800 x 600 resolution.

Q9. What external refresh rate is offered on the LTE 5000 models with 1024x768 resolution display panels?

A9. The LTE 5000 supports multiple refresh rates up to a maximum of 72 Hz on an external monitor.

Q10. Most DOS-based text and graphics uses only 640x480 pixels. It creates a black band around the screen when using a 1024x768 display panel. Can this text and graphics be stretched on a 1024x768 panel?

A10. Yes, DOS-based 640x480 text and graphics images on a 1024x768 panel can be stretched to 800x600 pixels. You will still see a black band around the screen but much smaller than the one when no text-stretching is used.

Q11. How can the text-stretch feature described above be obtained?

A11. This feature is standard on the LTE 5000, which models To toggle this feature On and Off, please press "FN" and "T" key simultaneously from the notebook keyboard.

Q12. Can the new 1024x768 panel and graphics controller use a simultaneous display with an external monitor or overhead panel?

A12. The simultaneous display is supported with an external 1024x768 monitor or an overhead 1024x768 panel. However, simultaneous display is not supported when using MPEG and TV Video adapter.

EXPANSION BASES

Q13. Why did Compaq develop the new MultiBay-ISA Expansion Base?

A13. The MultiBay-ISA Expansion Base is designed to provide ISA expansion support for the LTE 5000 in addition to a high performance audio system called Compaq PremierSound Audio. The MultiBay-ISA Expansion Base offers (1) full length ISA expansion slot.

Q14. Will the original MultiBay Expansion Base still be offered?

A14. Yes, both MultiBay Expansion base products will be offered

Q15. What feature differences are there between the original MultiBay Expansion Base and the new MultiBay-ISA Expansion Base?

A15. The new MultiBay-ISA Expansion Base offers the same support as the original MultiBay Expansion Base with the addition of (1) full length ISA expansion slot, a high performance audio system called Compaq PremierSound.

Q16. Does the new MultiBay-ISA Expansion Base look different?

A16. Yes, it is a little taller. The ISA slot compartment and audio components were added to the bottom of the original design therefore raising the profile slightly.

Q17. What ISA functions are supported with the new MultiBay-ISA Expansion Base?
A17. The following must be considered when choosing the type of ISA expansion board to be installed in the expansion base:

Graphics controller boards are not supported. The enhanced performance of the Compaq LTE 5000 family of personal computers drives an external monitor at resolutions up to 1024 x 768 x 256 colors and at selectable refresh rates up to 72 Hz, making the use of ISA graphics controller boards unnecessary.
A National NE2000 compatible network ISA board should not be installed. The expansion base comes with a built-in NE2000 compatible Ethernet card, making the use of similar Ethernet card on ISA board unnecessary.
Motion Picture Experts Group (MPEG) cards that require connection to the "feature connector" cannot be installed. The feature connector is not available on the MultiBay-ISA Expansion Base. However, MPEG ISA boards that use a standard video port (external monitor connector) will function properly.
Due to the vast number of ISA expansion boards that are available, Compaq cannot guarantee every ISA board

Q18. Do all the LTE 5000 models work with the new MultiBay-ISA Expansion Base?
A18. Yes, all the LTE 5000 models will work with the new MultiBay-ISA Expansion Base, as well as with the earlier model MultiBay Expansion Base. However, you must use the ROMPAQ included with each MEB-II to enable the ISA functionality/compatibility with the notebook

Q19. Does the LTE 5000 support hot (i.e. with notebook On) and warm (i.e. with notebook in standby/suspend mode) docking?
A19. The LTE 5000 does not support hot or warm docking into either expansion base.

Q20. Does the LTE 5000 support hot and warm undocking?
A20. LTE 5000 supports warm undocking of the notebook docked in either expansion base. You must make sure that all applications accessing hard disk on the expansion base must be closed.

To warm undock:

- First, put the notebook in suspend by either pressing the suspend switch on the notebook, or choose suspend option from Start menu of Windows 95.
- Now, undock the notebook using the mechanical lever on side of expansion base.
- Press the suspend/resume switch on the LTE 5000 to resume operations.

Note: In Windows 3.1, the customer can initiate suspend only using the suspend switch. If the notebook is docked and uses an external monitor on the monitor stand, the access to this switch is restricted.

PREMIERSOUND AUDIO SYSTEM

Q21. What is Compaq PremierSound Audio System?

A21. In 1994, Compaq established a research lab with the goal of bringing leading edge audio technology to the computer industry. Compaq PremierSound Audio System products are a result of this effort. The LTE 5000 incorporates such audio technology concepts in the MultiBay-ISA Expansion Base. PremierSound Audio System is an optimized audio solution for mobile-centric and communication-centric applications and is being implemented on all future Compaq portable products.

Q22. Is PremierSound Audio System available on the LTE 5000 notebook?

A22. The LTE 5000 notebook features 16-bit SoundBlaster Pro compatible stereo sound with built-in speakers, integrated microphone and a physical volume control. It supports PremierSound Audio System through the MultiBay-ISA Expansion Base.

Q23. What are the features of PremierSound Audio System on the LTE 5000?

A23. Customers who have an LTE 5000 docked into the new MultiBay-ISA Expansion Base can enjoy CD-quality audio in their office. With two bass-reflex speakers producing 6 watts total RMS (12 watts peak), a 5-stage built-in equalizer that tremendously improves the frequency response, flared ports to improve bass response and increase speaker life; and is acoustically tuned for computer enthusiasts with long listening periods.

INTELLIGENT MANAGEABILITY

Please refer to the "LTE 5000 and Intelligent Manageability White Paper" for more details. It is available on Lotus Notes (ComPort as well as SalesNotes databases).

Q24. How do I get IM support for my LTE 5000

A24. Intelligent Manageability software can be obtained by requesting it via SoftPaq from Compaq, it consists of the following pieces:

- Intelligent Manageability Agents for Windows 95
- Compaq Insight Personal Edition for Windows 95 or Diagnostics for Windows 3.1
- A LTE 5000 ROM-BIOS that supports/enables Intelligent Manageability functionality

Q25. Is Intelligent Manageability on the LTE 5000 similar in features to Intelligent Manageability on the desktops?

A25. Yes, the Intelligent Manageability on the LTE 5000 and Compaq desktops has identical features, with the following exceptions:

- Drive Fault Prediction: Although there is a complete software support for DFP on the LTE 5000, hard drives with DFP support will be available in 3Q/96.
- System Board revision level: The System (CPU) Board Revision Level on the LTE 5000 is a 6-digit field, where as Intelligent Manageability supports 1 2-digit field. Therefore, the LTE 5000 field will be truncated and may not always display a valid value.
- Serial Number: During the installation of Intelligent Manageability software on the LTE 5000, if the software determines that the LTE 5000 does not have a valid serial number, it prompts the user to enter a valid serial number.

Q26. How can I order Intelligent Manageability support kit?

A26. Intelligent Manageability software can be downloaded either from SoftPaq, or can be ordered as Software Spares Diskettes.

To receive the complete Intelligent Manageability software through Spare Kits, please use the following Spare Kit numbers:

English	242132-001
French	242132-051

SoftPaq numbers will be available at a later date.

Q27. Is there any plan to pre-install Intelligent Manageability on the LTE 5000?

A27. The Intelligent Manageability agents will be pre-installed on the LTE 5000 models in late 3Q96 or early 4Q96.

TELEPHONY

Q28. When will the telephony solution be available on the LTE 5000?

A28. The SpeedPaq 288 Telephony Card will enable advanced telephony features on LTE 5000* models equipped to support such features and will be available in North America in 3Q96.

Note* supported on the following models: LTE 5150, 5250, 5280, 5300 and 5380

Q29. Is telephony supported on all LTE 5000 models?

A29. The telephony solution is supported on LTE 5000 models introduced starting April 96. These models include:

- LTE 5150 Model 810 CSTN 800x600
- LTE 5250 Model 810 CTFT 800x600
- LTE 5280 Model 1350 CTFT 800x600
- LTE 5300 Model 1350 CTFT 800x600
- LTE 5380 Model 2160 CTFT 1024x768

All future LTE 5000 models will also support telephony.

Q30. Why do the original LTE 5000 models not support these new Advanced Telephony features

A30. Special hardware changes were made to the new models to enable the telephony functions provided for by the new Compaq PC Card telephony modems.