

**Flexible
Single Board Computers
for the OEM**

**Introducing the
Megatel Quark[®]**

megatel

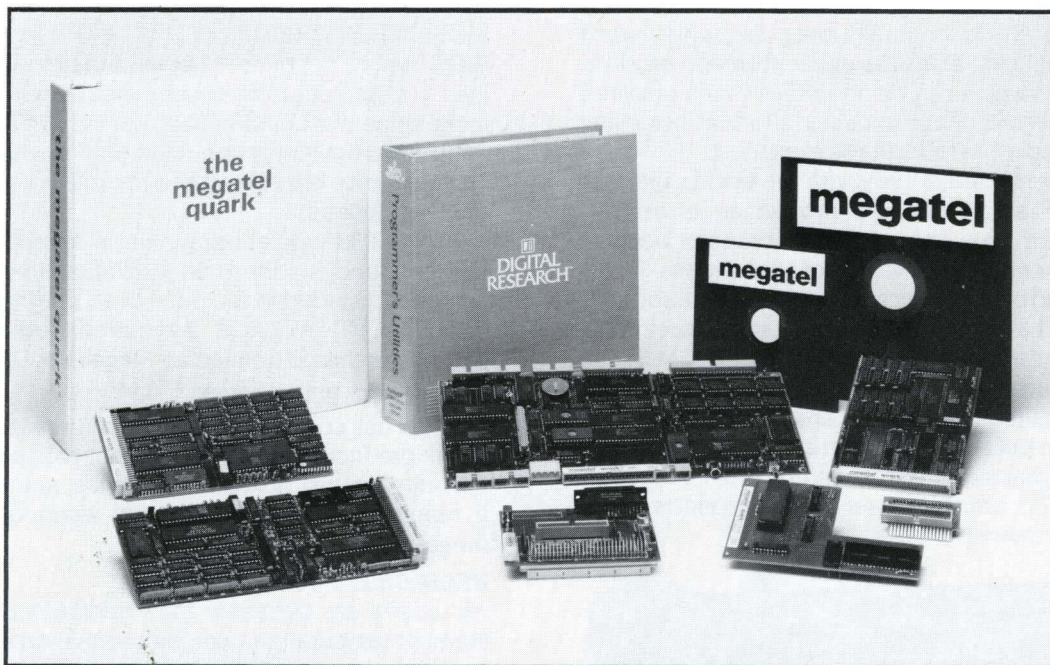


Megatel Computer Technologies
A Division of F. & K. MFG. CO. LTD.

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Telephone: (416) 745-7214
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The Megatel Quark® Family of Single Board Computers



THE QUARK FAMILY

The Quark family of microcomputer products comprises a number of high-performance single board computers and support products designed and manufactured by Megatel. Quarks are designed to provide all the working functions of a basic computer on a single, compact board for the computer OEM and system integrator markets. Quark hardware and software products are flexible and complete components which allow their users to skip most of the expensive and time-consuming steps in their system design, programming and testing.

Quark hardware is designed to minimize space requirements and parts count, while maximizing power, speed, and flexibility. The architecture of the Quark/100 serves as the "template" for the entire series. All of the Quarks share its wide range of CPU, memory, video, disk, and I/O features. The Quark/150 includes an RGB color video output with complete graphics software support as well as every feature of the Quark/100. The Quark/300 extends the Quark/100's floppy disk capability by providing direct control of ST-506-type Winchester hard disk drives. Each of the models is available with various memory and I/O options.

The Quark/400 (pictured below) completes the set by incorporating all the features from the other boards along with

a battery backed-up real time clock EPROM, E²PROM support and full Z-80® vectored interrupt support.

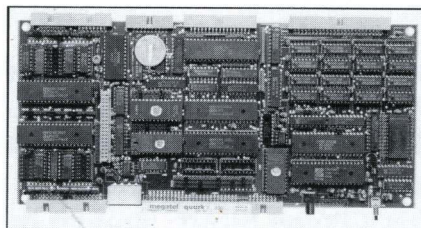
Quark software consists of configurable operating systems, complete device handlers, utility programs, an installation procedure, and source code on disk. Quark software is distributed on floppy disk and in a form which allows it to boot up immediately assuming the "lowest common denominator" in user hardware.

QUARK APPLICATIONS

Megatel Quarks have been integrated into an impressive array of applications. Among these are:

- Automated Test Equipment
- Bio-Medical Engineering Systems
- Office Automation Systems
- Intelligent Terminals
- Motion Control Systems
- Factory Automation Equipment
- Process Control Systems
- Robotic Equipment
- Scientific Equipment
- Software Development Systems

Megatel offers Application Stories that provide further information on some of these applications.



Order # AD-000004-R1

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MEGATEL COMPUTER TECHNOLOGIES

Megatel has built its business on a straightforward philosophy: balancing hardware and software to produce microcomputers which can be treated as small, powerful components. Megatel directs its design efforts at increasing power and speed while reducing size and cost.

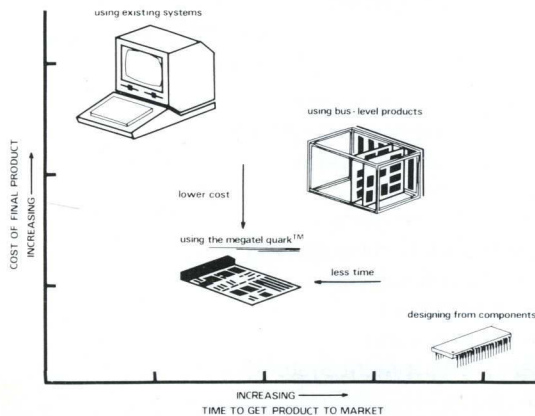
Megatel was formed in 1979 with the world's first full-function CP/M® single board computer as its original product. This complete, low-cost microcomputer became the key component in a wide variety of applications. To this day, compact and powerful microcomputers and associated system software have remained Megatel's special area of engineering expertise.

Quark products are marketed directly by Megatel from offices in the United States and Canada, and worldwide through a network of authorized distributors. Megatel Computer Technologies is a wholly owned subsidiary of F. & K. MFG. CO. LIMITED; a manufacturer of metal products for the North American market.



THE OPPORTUNITY COST OF DESIGN

OEMs are always faced with make versus buy decisions. The window of market opportunity is getting smaller, and new products must be brought to market quickly. The Quark allows you to get your product to market rapidly, while simultaneously eliminating the high variable costs of built-up systems or existing bus level products.



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SOFTWARE LICENSES

MEGATEL DISTRIBUTION SOFTWARE includes a Quark BIOS, device handlers, Megatel utilities, and source listings. It is provided for a one-time fee which is included in the price of a COMPLETE OEM DEVELOPMENT PACKAGE. A particular version need only be purchased once. The customer is free to use, copy, alter or resell this software as desired.

The CP/M operating system is a product of Digital Research and is sold as an individual license. One such license is included in the price of a COMPLETE OEM DEVELOPMENT PACKAGE. If required, additional licenses may be purchased from either Megatel or Digital Research.

ONE YEAR WARRANTY

Megatel has confidence in the quality of its products. All Quark products are covered by a standard one year limited warranty against defects in materials and workmanship. If required, special or extended warranties can be arranged.

RELIABILITY AND SERVICE

All Quarks are burned-in for a minimum of 72 hours at elevated temperatures, and functionally tested at both low and high temperatures. Hence, less than one percent of the Quark single board computers shipped require warranty service. If warranty or other repair is required, it is usually completed within one day of the board arriving at Megatel. Including post-repair burn-in and shipping, a Quark can be back in a North American customer's hands in less than one week. If required, special arrangements regarding service and repair can be made.

MANUFACTURING RIGHTS

Megatel already has numerous Quark customers for whom they will still be making and servicing Quarks many years from now. Nevertheless, Megatel will negotiate manufacturing rights or make its manufacturing documentation available to any OEM who requires it.

TECHNICAL AND APPLICATION SUPPORT

When you need engineering or programming support, Megatel responds. Technical questions are usually answered the same day. This is Megatel's policy. Quark customers can talk directly to the engineers who designed the boards and the programmers who wrote the system software.

OEMs with special applications support requirements are invited to inquire about using Megatel's engineers and programmers to work directly with them to hasten their product development.

FURTHER INFORMATION AVAILABLE

If you would like further technical information about the Quark family please contact us at the factory.

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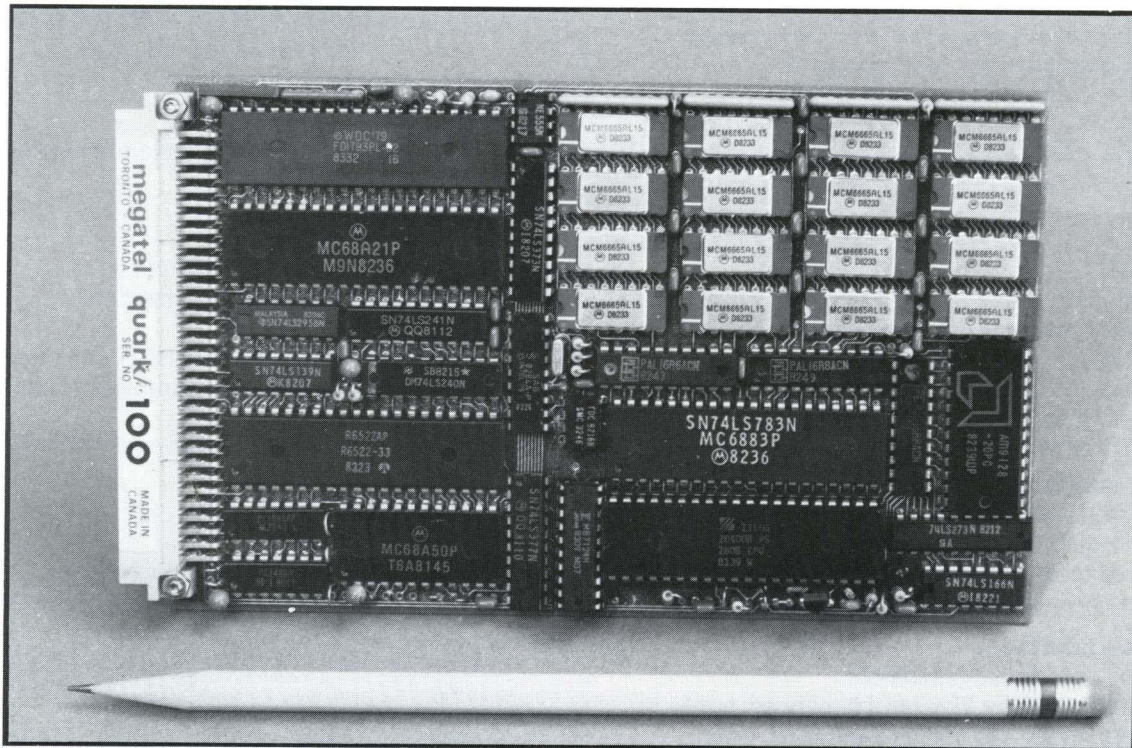
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Megatel Quark®/100

The Megatel Quark/100 SBC offers the lowest cost/performance ratio of any single board computer produced to date



By utilizing PAL technology, Megatel's engineers have incorporated all of the most necessary elements for a CP/M® microcomputer on a small 4" x 6" PCB — CPU, RAM, boot PROM, modem port, serial or parallel printer ports, parallel keyboard port, two general purpose parallel ports, floppy disk controller, and most importantly, the video display interface.

No longer does the small systems integrator require an expensive terminal. With the Megatel Quark/100 SBC, the minimum peripheral requirements for a working computer are a disk drive of any size, a power supply, a video monitor (composite or TTL), and an ASCII encoded parallel keyboard. All these peripherals and others connect easily to the computer through the Megatel transition board provided with an initial package.

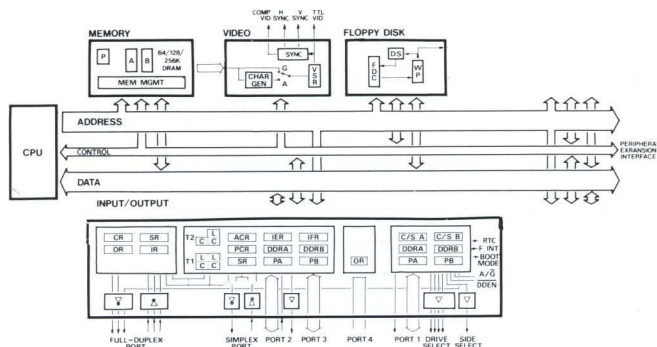
As for software, Megatel provides a copy of CP/M 2.2 or 3.0 with every Quark/100 package. This comes complete with BIOS and ready to boot up on a general purpose distribution format. The user can then customize his BIOS through a unique menu-driven installation utility written by Megatel and provided at no extra charge. Should further changes be required, Megatel provides all the source code on diskette as part of the initial package.

Should you not require disk control on your final product, Megatel will supply Quark/100 SBC's without a disk controller. The bootstrap PROM supplied with these boards will boot from external EPROMs. Complete documentation is available for this product.

Order #DS-100000-R4

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MEGATEL QUARK/100
SINGLE BOARD COMPUTER SPECIFICATIONS



Processor

- 6 MHz Z80®
- 6 MHz CPU clock frequency
- Dual-level fully maskable interrupt system
- 64/128/256 kbyte user RAM memory
- 2 kbyte character generator RAM
- 512 byte bootstrap loader in PROM
- 60/50 Hz real-time clock interrupt

Floppy Disk Interface

- Complete interface for direct connection to standard 8, 5.25 and 3.5 inch floppy disk drives
- Software selectable single or double density operation
- Drive select lines for up to four double-sided drives

Video Display Interface

- Dual-mode video display operation:
Graphics mode: 640 by 224-248 bit-mapped pixels
Alphanumeric mode: 80 columns by 28-31 rows
- 256 displayable character set
- Software programmable character set

Input/Output Interface

- 1 serial asynchronous full-duplex serial channel
- 1 serial asynchronous simplex serial channel
- Independent software selectable baud rates for each channel
- RS-232C compatibility on both serial channels
- 8-bit parallel-printer port with data strobe and acknowledge
- 22 parallel I/O lines for keyboard or general purpose I/O
- 1 input or output strobe line (can generate interrupt)

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Physical

- DC Power: +5V @ 1.5/2.0/2.5A typical
+12V @ 0.1A
- 7.5 to 12.5 watt power consumption, typical
- On-board charge pump generates -12 volts
- Dimensions: 3.9 in. x 6.4 in. (100 mm x 162.5 mm)
0.53 in. overall thickness
- Weight: approximately 6.5 oz.

Software

- CP/M 2.2 or 3.0 operating system including:
CP/M utilities
Megatel utilities
Source code
- Device and I/O handlers including:
Video display and terminal handlers
Floppy disk handlers
Console, serial I/O and parallel I/O handlers
- All handlers are user-configurable through Megatel installation utility
- Software is available on single-sided double density
- 8 inch
- or 5.25 inch 96 tpi
- or 5.25 inch 48 tpi

OEM Development Package Includes:

- 1 Megatel Quark/100 Single Board Computer
- 1 Megatel Transition Board
- 1 CP/M 2.2 license and software including utilities and source
- 1 Disk set (8 or 5.25 inch)
- 1 Hardware and Software manual

Quark/100 Models

Feature	Memory	Model 60 Hz/50Hz
With Disk	64K	Quark 100031/21
	128K	Quark 100035/25
	256K	Quark 100135/125
Diskless (EPROM boot)	64K	Quark 100071/61

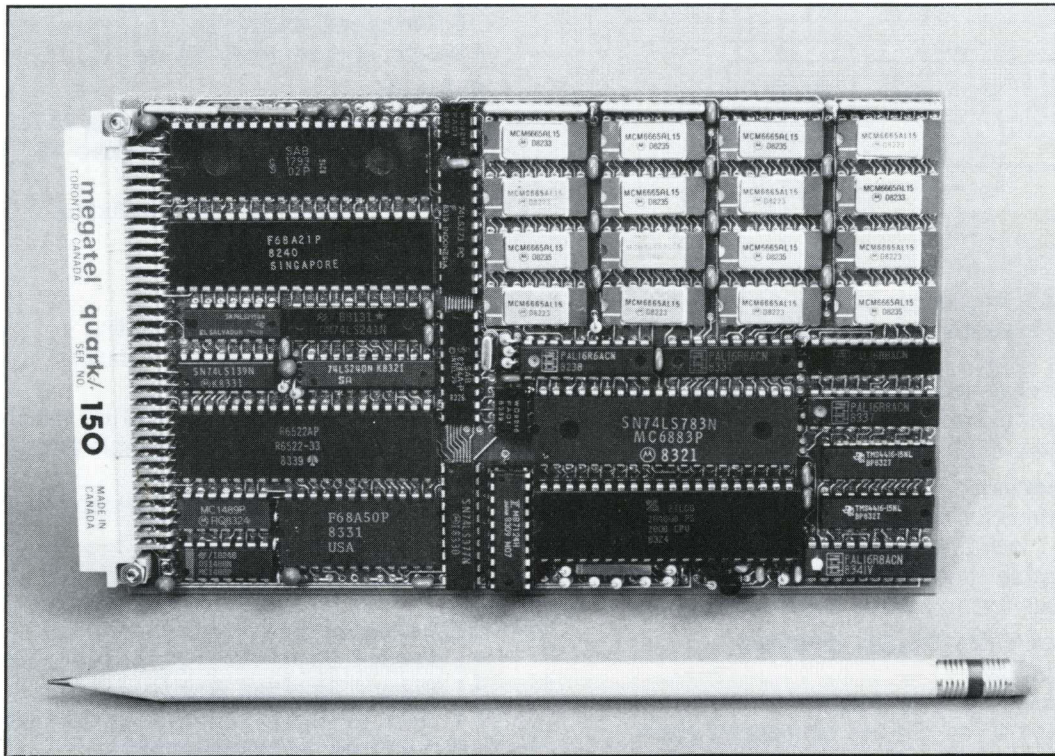
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Megatel Quark®/150

Single Board Computer with RGB Color Video Display



The Megatel Quark/150 is a low cost color graphics single 6 MHz board computer. The hardware features include 128K DRAM, Z80®, two serial ports, four parallel ports, floppy disk controller and of course the RGB color video output. All these features are packed into a tidy 4" x 6" Eurocard format.

The color interface is an industry standard RGB output. As many as sixteen variations on one of three resolution modes allow the user great flexibility of pictorial display. The resolution modes include a 2 color 640 x 240 pixel mode, a 4 color 320 x 240 mode and a 16 color 160 x 240 mode.

The floppy disk controller can handle up to four physical drives of any size or combination. Megatel supplies the

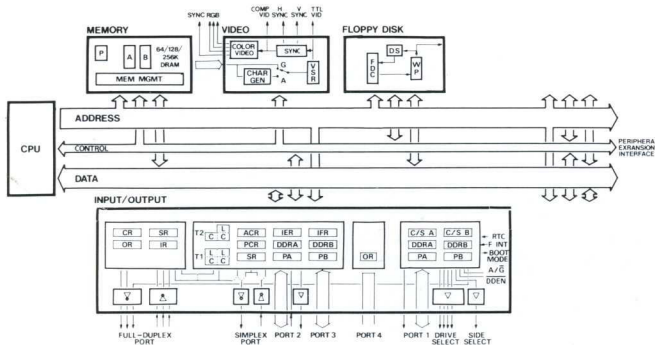
floppy disk drivers so that the system is ready to boot and can be configured to match the user's requirements immediately.

The graphics software which Megatel supplies with the board is as impressive as the hardware. Twenty seven graphics functions include, resolution mode changeable by line, eight fill patterns, eight line styles, multiple character heights and widths, ellipse and arc functions. All functions are Televideo® TPC 1 compatible. As well as the graphics software Megatel provides a complete CP/M® 2.2 BIOS to facilitate the development of the OEM's graphics software.

Order # DS-150000-RI

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**MEGATEL QUARK/150
SINGLE BOARD COMPUTER SPECIFICATIONS**



Processor

- 6 MHz Z80
- 6MHz CPU clock frequency
- Dual-level fully maskable interrupt system
- 128 kbyte user DRAM memory
- 2 kbyte character generator RAM
- 512 byte bootstrap loader in PROM
- 60/50Hz real-time clock interrupt

Floppy Disk Interface

- Complete interface for direct connection to standard 8, 5.25 and 3.5 inch floppy-disk drives
- Software selectable single or double density operation
- Drive select lines for up to four double-sided drives

Color Graphics Video Display Interface

- Sixteen color palette
- Dual-mode video display operation:
Graphics mode: 640 by 224-248 bit-mapped pixels
Alphanumeric mode: 80 columns by 28-31 rows (number of rows is reconfigurable to suit monitor)
- Software programmable color character fonts
- Three software programmable graphics resolution modes for color graphics display:
– 640 x 240 two color choice
– 320 x 240 four color choice
– 160 x 240 sixteen color choice
- Modes switchable on a scan-line-by-scan-line basis

Input/Output Interface

- 1 serial asynchronous full-duplex serial channel
- 1 serial asynchronous simplex serial channel
- Independent software selectable baud rates for each channel
- RS-232C compatibility on both serial channels
- 8-bit parallel printer port with data strobe and acknowledge
- 22 parallel I/O lines for keyboard or general purpose I/O
- 1 input or output strobe line (can generate interrupt)

Physical

- DC Power: + 5V @ 2.0A typical
+12V @ 0.1A
- 10W power consumption, typical
- On-board charge pump generates -12 volts
- Dimensions: 3.9 in. x 6.4 in. (100mm x 162.5mm)
0.53in overall thickness
- Weight: approximately 6.5 oz.

Software

- Color Graphics Software including 26 functions (circle draw, line draw etc.) with Televideo TPC 1 Compatibility
- CP/M 2.2 operating system including:
CP/M utilities
Megatel utilities
Source code
- Device and I/O handlers including:
Video display and terminal handlers
Floppy disk handlers
Console, serial I/O and parallel I/O handlers
All handlers are user-configurable through the Megatel installation utility
Software is available on single-sided double density
– 8 inch
– or 5.25 inch 96 tpi
– or 5.25 inch 48 tpi

OEM Development Package Includes:

- 1 Megatel Quark/150 Single Board Computer
- 1 Megatel Transition Board
- 1 CP/M 2.2 license with Graphics Primitives' license and software including utilities
- 1 Disk set (8 or 5.25 inch)
- 1 Hardware and Software Manual

Quark/150 Models

Feature	Model 60/50Hz
TTL RGB	Quark/150034/24
Analog RGB	Quark/150035/25

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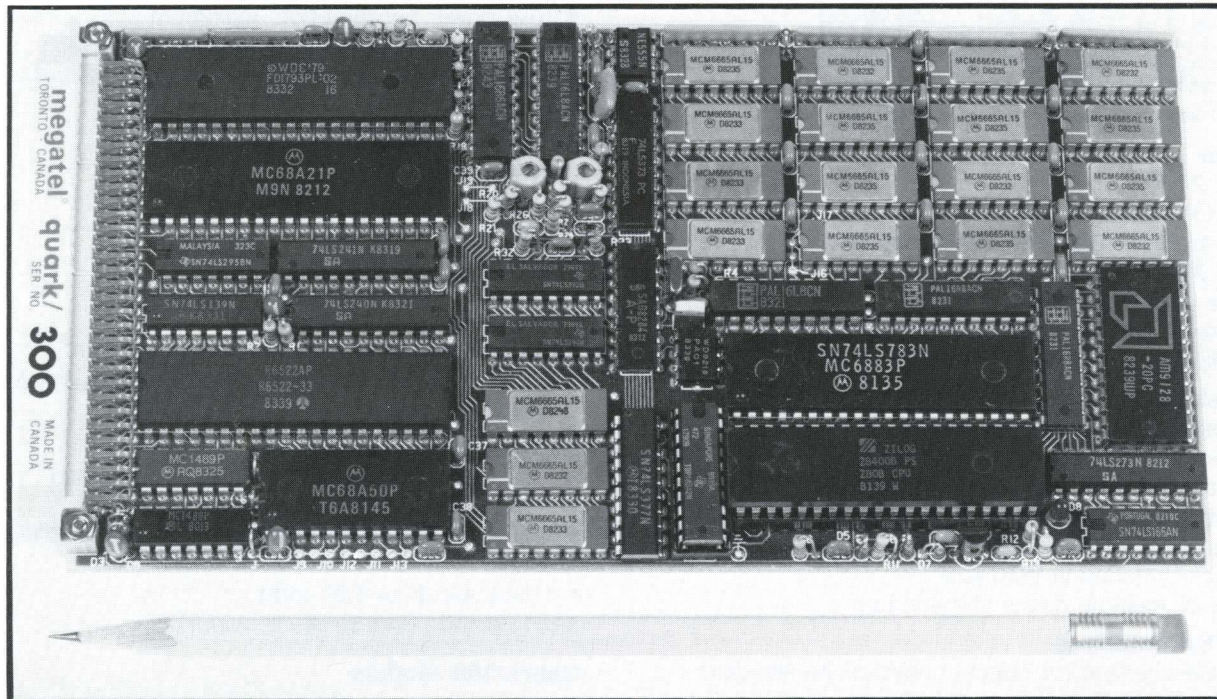
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Megatel Quark®/300

Single Board Computer with ST-506 Hard Disk Controller



The Megatel Quark/300 is the only single board computer which boasts a complete ST-506 hard disk controller. Megatel's SBCs offer the lowest cost/performance ratio of any single board computers produced to date.

By utilizing PAL technology, Megatel's engineers have incorporated all of the most necessary elements for a CP/M® microcomputer on a small 4" x 8" PCB — CPU, 128 or 256K RAM, ST-506 hard disk controller, floppy disk controller, boot PROM, modem port, serial and parallel printer ports, parallel keyboard port, two general purpose parallel ports, and the video display interface.

No longer does the small systems integrator require an expensive terminal. Storage space is also no problem with the Quark/300; just attach any ST-506 hard disk drive. With any Megatel SBC the minimum peripheral requirements for

a working computer are a disk drive (hard and/or floppy), a power supply, a video CRT monitor (composite or TTL), and an ASCII encoded parallel keyboard. All these peripherals and others connect easily to the computer through the Megatel transition board provided with an initial package.

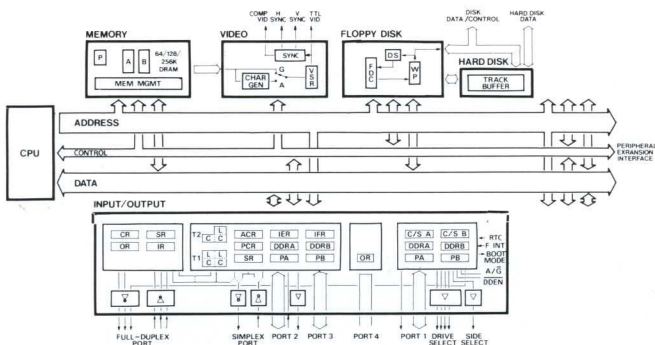
As for software, Megatel provides a copy of CP/M® 3.0 with every Quark/300 package. This comes complete with BIOS and ready to boot up on a general purpose distribution format. The user can then customize his BIOS through a unique menu-driven installation utility written by Megatel and provided at no extra charge. Should further changes be required, Megatel provides all the source code on diskette as part of the initial package.

Order #DS-300000-R5

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MEGATEL QUARK/300

SINGLE BOARD COMPUTER SPECIFICATIONS



Processor

- 6 MHz Z80®
- 6MHz CPU clock frequency
- Dual-level fully maskable interrupt system
- 128 or 256 kbyte user RAM memory
- 2 kbyte character generator RAM
- 512 byte bootstrap loader in PROM
- 60/50Hz real-time clock interrupt

Hard Disk Controller

- Complete controller for industry standard ST-506-compatible Winchester drives
- Automatic error detection and software retry
- Installable error correction
- Buffered and non-buffered seek
- Full track buffering in hardware
- Control of multiple drives and surfaces

Floppy Disk Interface

- Complete interface for direct connection to standard 8, 5.25 and 3.5 inch floppy disk drives
- Software selectable single or double density operation
- Drive select lines for up to four double-sided drives

Video Display Interface

- Dual-mode video display operation:
Graphics mode: 640 by 224-248 bit-mapped pixels
Alphanumeric mode: 80 columns by 28-31 rows
- 256 displayable character set
- Software programmable character set

Input/Output Interface

- 1 serial asynchronous full-duplex serial channel
- 1 serial asynchronous simplex serial channel
- Independent software selectable baud rates for each channel
- RS-232C compatibility on both serial channels
- 8-bit parallel-printer port with data strobe and acknowledge

- 22 parallel I/O lines for keyboard or general purpose I/O
- 1 input or output strobe line (can generate interrupt)

Physical

- DC Power: + 5V @ 2.8A maximum
+12V @ 0.2A
- 16W power consumption, maximum
- On-board charge pump generates -12 volts
- Dimensions: 3.9 in. x 8 in. (100mm x 202mm)

Software

- CP/M 3.0 operating system including:
CP/M utilities
- Megatel utilities
- Source code on disk
- Device and I/O handlers including:
Video display and terminal handlers
Floppy and hard disk handlers
Console, serial I/O and parallel I/O handlers
- All handlers are user-configurable through the Megatel installation utility

OEM Development Package Includes:

- 1 Megatel Quark/300 Single Board Computer
- 1 Megatel Transition Board
- 1 CP/M 3.0 license and software including utilities and source
- 1 Disk set (8 or 5.25 inch)
- 1 Hardware and Software manual

Quark/300 Models

Feature	Model 60/50Hz
128K	Quark/300035/25
256K	Quark/300135/125

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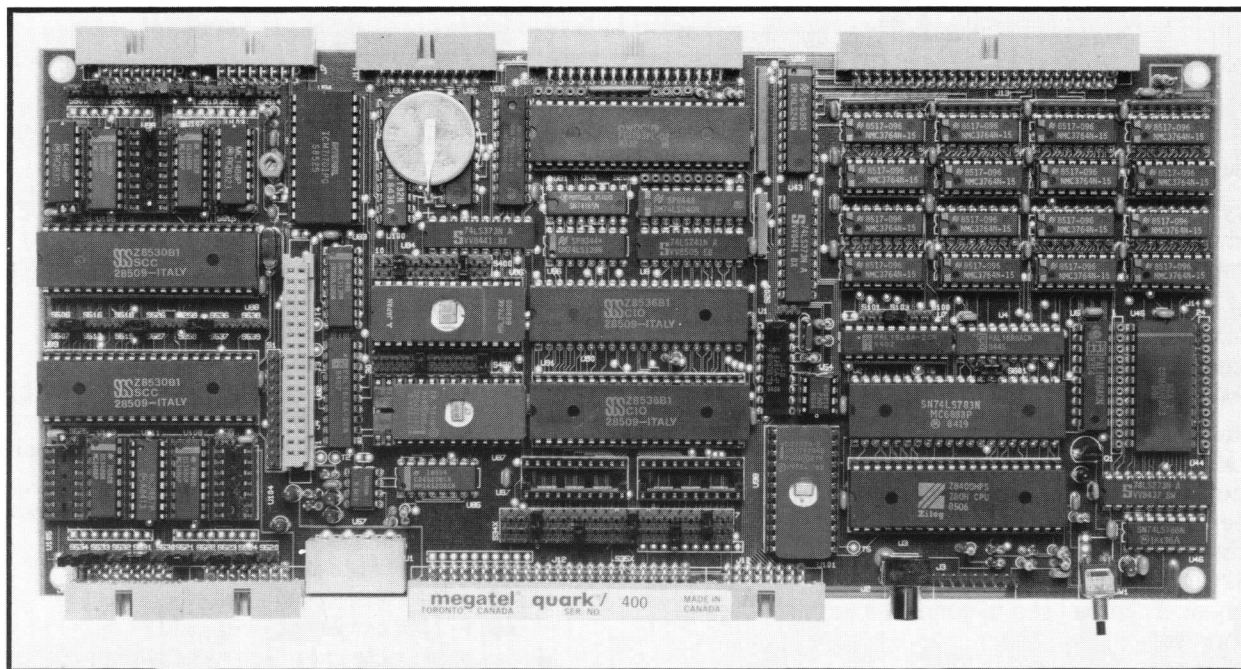
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Megatel Quark®/400

Flexible OEM Single Board Computer



The Megatel Quark®/400 is a new single board computer based upon the already proven and popular Megatel Quark architecture. By incorporating all the features of previous Quark models with several new features, Megatel now offers a complete and powerful microcomputer on a board only 5.2" x 11.2" in size. The most novel feature of the Quark/400, however, is that you choose only the features you require. The Quark/400 is designed to provide OEMs and end-users with customized single board computers at the low prices and short leadtimes of standard, off-the-shelf products.

The Quark/400 is a single board computer which offers optional features at a lower cost than equivalent multiple board systems, while maintaining the configuration flexibility. Typical applications for the Quark/400 include any product or situation where bus level systems or single board computers can be used.

The low-cost Quark/400 Base Unit provides a 6 MHz Z80® processor, 64 kbytes of DRAM, up to 128 kbytes of EPROM, 16 kbytes of E²PROM or battery backed-up SRAM. Other features include three parallel ports and interrupt priority logic — fully supporting the Z-80 vectored interrupt structure. The system designer can also choose from a variety of optional features.

BASE UNIT INCLUDES:

Processor

- 6 MHz Z80 supporting the full Z80 vectored interrupt structure

Memory

- 64 kbyte RAM for User Program and Video Memory
- Two 28-pin sockets for up to 128 kbyte EPROM (Intel type 27512)
- 4 kbyte Boot PROM to boot from EPROM, floppy disk or hard disk

Parallel Input/Output Interfaces

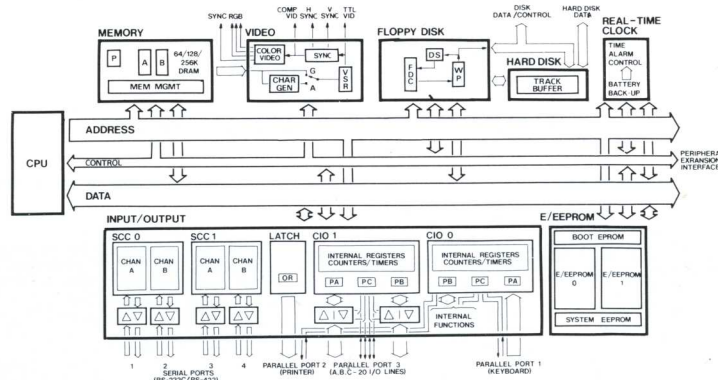
- 10 Bidirectional I/O lines — can be configured for 8-bit ASCII-encoded keyboard with STROBE input and optional BUSY output
- 9 buffered output lines and 1 I/O line — can be configured for standard parallel printer output with buffered STROBE output and ACKNOWLEDGE input
- 8 buffered outputs — used for disk control if floppy or hard disk interfaces are chosen

Buffered Peripheral Expansion Interface

- 8 data, 6 address and 11 control lines including 2 decoded chip selects to facilitate I/O expansion
- All data and address lines are buffered
- Compatible with Z80, Z8500, 6500 and 6800 series peripheral devices
- iSBX® connector for commercially available I/O expansion cards

Order #DS-40000-R0

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OPTIONS INCLUDE:

Memory

- 128 kbyte or 256 kbyte DRAM
- Real-time Clock with Battery Back-up

Parallel Input/Output Interfaces:

- 20 Bidirectional I/O lines with optional customer installed buffers
- 3 16-bit Counter/timers (Zilog®CIO)

Serial Input/Output Interfaces

- 0, 2 or 4 asynchronous/synchronous full duplex serial channels (with Zilog SCC)
- Independently programmable standard baud rates for asynchronous communication from 50 to 38400 baud
- RS-232C or RS-422 compatible outputs
- One channel can be used to connect a terminal during development

Video Display Interface

- Dual-mode video display operation:
Graphics mode: 640 by 224-248 bit-mapped pixels
Alphanumeric mode: 80 columns by 28-31 rows
- 256 displayable character set
- Software programmable character set

Floppy Disk Controller

- Floppy Disk Controller optional
- Controls up to four 8", 5.25" or 3.5" drives
- Single or double density, single or double sided operation
- Programmable disk drive characteristics
- Programmable disk formats

Hard Disk Controller

- Winchester Hard Disk Controller optional
- Compatible with industry standard ST-506 hard disk drives
- Full track buffering in hardware
- Programmable disk drive characteristics

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Color Graphics Video Display Interface

- Standard sixteen color palette
- Dual-mode video display operation:
Graphics mode: 640 by 224-248 bit-mapped pixels
Alphanumeric mode: 80 columns by 28-31 rows (number of rows is reconfigurable to suit monitor)
- Software programmable color character fonts
- Three software programmable graphics resolution modes for color graphics display:
– 640 x 240 two color choice
– 320 x 240 four color choice
– 160 x 240 sixteen color choice
- Modes switchable on a scan-line-by-scan-line basis

Development Software

- CP/M 2.2 disk operating systems ready to boot up on a Quark/400
- Memory, interrupt, terminal, video, console input and output, floppy disk, hard disk, Centronics printer and RS-232C modem port handlers provided
- All handlers are user configurable
- Common terminal emulations possible
- Graphics primitives available for video
- Popular disk formats supported
- Peripheral hardware independent
- Extensive utility package included
- Source code available on disk
- Common high-level programming languages available (C, MBASIC, etc.)

Electrical And Physical

- DC Power: +5V @ 1.0 to 3.0A
+12V @ 0.1 to 0.2A
(depending on options selected)
- On-board charge pump generates -12 volts
- Dimensions: 5.2 inches x 11.2 inches

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THE MEGATEL QUARK/400

The Megatel Quark/400 single board computer comes available with many options. To choose the options you require for your application, first consult the data sheet and then this pricing sheet. The ordering system works as follows:

ORDER NUMBER:

BD-400-Sn-Pn-Dn-Cn-Mn-Vn

LETTER		NUMBER	OPTION DESCRIPTION
Sn	=	0	No serial Ports.
	=	1	Two serial Ports with RS-232C compatibility.
	=	2	Four serial Ports with RS-232C compatibility.
	=	3	Two serial Ports with RS-422 compatibility.
	=	4	Four serial Ports, two with RS-422 compatibility and two with RS-232C compatibility.
Pn	=	0	No additional parallel Ports to those included with Base Unit.
	=	1	Two additional parallel Ports to those included with Base Unit.
Dn	=	0	No disk controllers.
	=	1	Floppy disk controller.
	=	2	Floppy and hard disk controllers. (Available Jan. 86)
Cn	=	0	No real time clock.
	=	1	Real time clock with battery backup.
Mn	=	0	64 K DRAM only.
	=	1	128 K DRAM only.
	=	2	256 K DRAM only.
Vn	=	0	No video control.
	=	1	Monochrome video control.
	=	2	Color video control. (Available Jan. 86)

EXAMPLE:

The QUARK/400 Base Unit would have order number:

BD-400-S0-P0-D0-C0-M0-V0

PLEASE NOTE THAT SOME OPTION COMBINATIONS ARE ONLY AVAILABLE IN QUANTITIES OF 10 OR GREATER. PLEASE CONSULT THE FACTORY FOR THESE PARTICULAR MODELS.

For larger quantity pricing of any board model please contact the factory. The following pricing applies up to fifty units over a yearly period.

OPTION NUMBER	DESCRIPTION	PRICE
QUARK/400.....	BASE UNIT.....	\$250.00
S1.....	SERIAL PORTS.....	\$50.00
S2.....	SERIAL PORTS.....	\$95.00
S3.....	SERIAL PORTS.....	\$60.00
S4.....	SERIAL PORTS.....	\$105.00
P1.....	PARALLEL PORTS OPTION.....	\$40.00
D1.....	FLOPPY DISK CONTROLLER.....	\$90.00
D2.....	HARD DISK CONTROLLER.....	\$190.00
C1.....	REAL TIME CLOCK.....	\$45.00
M1.....	128 K DRAM.....	\$45.00
M2.....	256 K DRAM.....	\$95.00
V1.....	MONOCHROME VIDEO CONTROL.....	\$40.00
V2.....	COLOR VIDEO CONTROL.....	\$85.00

MISCELLANEOUS SUPPORT SOFTWARE

LI-220000	CP/M 2.2 License with Megatel Distribution Software including QUARK BIOS, BIOS and utilities source listings, installation software and Megatel utilities. Please specify diskette media size at the time of ordering, either 8", 5.25" 48 TPI or 5.25" 96 TPI.	\$95.00
LI-GP000	Megatel QUARK Graphics Primitives Software (Object Code) and documentation...	\$70.00
LI-GPS000	Megatel QUARK Graphics Primitives Source Code (on disk)	\$200.00
LI-BDSCCO	BDS C Compiler.....	\$250.00
LI-MSBASC	Microsoft BASIC Compiler.....	\$395.00
LI-MSBASI	Microsoft BASIC Interpreter.....	\$350.00

\$385
+ 90 FDC

MISCELLANEOUS SUPPORT DOCUMENTATION

MA-HWDPKG-4	Hardware Documentation Package (Manual, schematics, application notes).....	\$40.00
MA-220100	Digital Research CP/M 2.2 manual.....	\$50.00
	Extra or Replacement disk sets	\$30.00

TERMS OF PAYMENT

Purchase orders are accepted on terms of NET 30 days for customers who have established credit with Megatel. Other forms of payment accepted are: VISA, MASTERCARD, or check.

ALL PRICES ARE QUOTED IN U.S. FUNDS. No returns will be accepted without a return authorization number. A restocking charge will apply to returned items.

SHIPPING

Shipping point is F.O.B. Buffalo, NY for all shipments within the U.S. Canadian and Overseas orders are F.O.B. Toronto, Ontario, Canada.

Delivery for quantity 1-2 is usually from stock. For larger quantities allow at least 2 weeks.

Standard Canadian and U.S. shipping charges via UPS ground(quantity 1-2).....\$15.00
Express Canadian and U.S. shipping charges via Air Freight(quantity 1-2).....\$45.00

50 Hz MODELS

All QUARK single board computers are also available in models for use with 50 Hz power systems. All prices are subject to change without notice.

megatel
Megatel Computer Technologies
A Division of F. & K. MFG. CO. LIMITED
160 TURBINE DRIVE, WESTON, ONTARIO, CANADA M9L 2S2

ORDER NUMBER	DESCRIPTION	PRICE
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MISCELLANEOUS SUPPORT HARDWARE

HW-CSF960	96 Pin Female Wire-Wrappable Connector	\$15.00
HW-QTB300	QUARK Transition Board (no connectors)	\$15.00
HW-QTB3xx	QUARK Transition Board (assembled and tested for 5.25",8" or hard disk drives)	\$49.00
HW-DCA100	Drive Cable Adapter	\$15.00
HW-DCA1xx	Drive Cable Adapter (assembled and tested)	\$25.00
HW-128KUP	64K to 128K Quark/100 Hardware and Software Upgrade Kit	\$95.00
HW-CAB058	Mixed single 5-inch and single 8-inch floppy drive Cable.....	\$50.00
HW-CAB088	Dual 8-inch floppy drive Cable	\$30.00
HW-CAB055	Dual 5-inch floppy drive Cable	\$30.00
HW-CABHDD	Hard Disk Data Cable.....	\$15.00

MISCELLANEOUS SUPPORT SOFTWARE

LI-220000	CP/M 2.2 License with.....	\$95.00
	Megatel Distribution Software including QUARK BIOS, BIOS and utilities source listings, installation software and Megatel utilities	
LI-300000	CP/M Plus License with.....	\$195.00
	Megatel Distribution Software including QUARK BIOS, BIOS and utilities source listings, installation software and Megatel utilities	
LI-GPLO00	Megatel QUARK Graphics Primitives Software (Object Code) and documentation...	\$70.00
LI-GPS000	Megatel QUARK Graphics Primitives Source Code (on disk)	\$200.00
LI-BDSCCO	BDS C Compiler.....	\$250.00
LI-MSBASC	Microsoft BASIC Compiler.....	\$395.00
LI-MSBASI	Microsoft BASIC Interpreter.....	\$350.00

MISCELLANEOUS SUPPORT DOCUMENTATION

MA-HWDPKG	Hardware Documentation Package (Manual, schematics, application notes).....	\$40.00
MA-SDAPKG	Schematics, Data sheets and Application note package.....	\$20.00
MA-220100	Digital Research CP/M 2.2 manual.....	\$50.00
MA-300100	Digital Research CP/M PLUS manual.....	\$80.00
	Extra or Replacement disk sets	\$20.00

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50 Hz MODELS

All QUARK single board computers are also available in models for use with 50 Hz power systems. All prices are subject to change without notice.

Megatel Computer Technologies
 A Division of F. & K. MFG. CO. LIMITED
 Head Office: 150 Turbine Drive, Weston, Ontario, Canada M9L 2S2
 Telephone: (416)-745-7214 Telex: 065-27453 MEGATEL TOR

ORDER NUMBER	DESCRIPTION	PRICE
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THE MEGATEL QUARK/100

The Megatel Quark/100 includes the following hardware features: 6 MHz Z80 Processor, Video Display Controller, Boot PROM, Floppy Disk Controller, Serial and Parallel I/O. There are three different models of the Quark/100 depending on the amount of on-board RAM.

BD-100031	Quark/100031 with 64K RAM in quantities 1 - 9 in quantities 10-49 in quantities 50-99\$325.00\$295.00\$275.00
BD-100035	Quark/100035 with 128K RAM in quantities 1 - 9 in quantities 10-49 in quantities 50-99\$425.00\$385.00\$345.00
BD-100135	Quark/100135 with 256K RAM in quantities 1 - 9 in quantities 10-49 in quantities 50-99\$495.00\$455.00\$425.00

THE MEGATEL QUARK/150

The Megatel Quark/ 150 includes the following hardware features: 6MHz Z80 processor, Color Graphics Video Display Controller, Boot PROM, Floppy Disk Controller, Serial and Parallel I/O. The two different models depend on whether the video output is analog RGB or TTL RGB.

BD-150035	Quark/150 with analog output and 128K RAM:	in quantities 1 - 9\$495.00
BD-150034	Quark/150 with TTL output and 128K RAM	in quantities 10-49 in quantities 49-99\$435.00\$395.00

THE MEGATEL QUARK/300

The Megatel Quark/ 300 includes the following hardware features: 6 MHz Z80 Processor, Video Display Controller, Boot PROM, Floppy Disk and Hard Disk Controller, Serial and Parallel I/O. There are two different models of the Quark/300 depending on the amount of on-board RAM.

BD-300035	Quark/300035 with 128K RAM in quantities 1 - 9 in quantities 10-49 in quantities 50-99\$495.00\$435.00\$395.00
BD-300135	Quark/300135 with 256K RAM in quantities 1 - 9 in quantities 10-49 in quantities 50-99\$595.00\$535.00\$495.00

For larger quantity pricing please contact the factory

SPECIAL PACKAGE PRICING

The following Introductory packages come complete with an assembled and tested Quark board, a CP/M license, Megatel Distribution Software and populated Transition Board, and documentation.

PK-131210	Quark/100031 64K SBC (with CP/M 2.21).....	\$375.00
PK-135220	Quark/100035 128K SBC (with CP/M 2.22 and graphics primitives).....	\$445.00
PK-135310	Quark/100035 128K SBC (with CP/M Plus).....	\$575.00
PK-113320	Quark/100135 256K SBC (with CP/M Plus).....	\$695.00
PK-185220	Quark/150035 128K SBC (with CP/M 2.22 and graphics primitives).....	\$595.00
PK-184220	Quark/150035 128K SBC (with CP/M 2.22 and graphics primitives).....	\$595.00
PK-335320	Quark/300035 128K Hard Disk SBC (with CP/M Plus).....	\$595.00
PK-313320	Quark/300135 256K Hard Disk SBC (with CP/M Plus).....	\$745.00