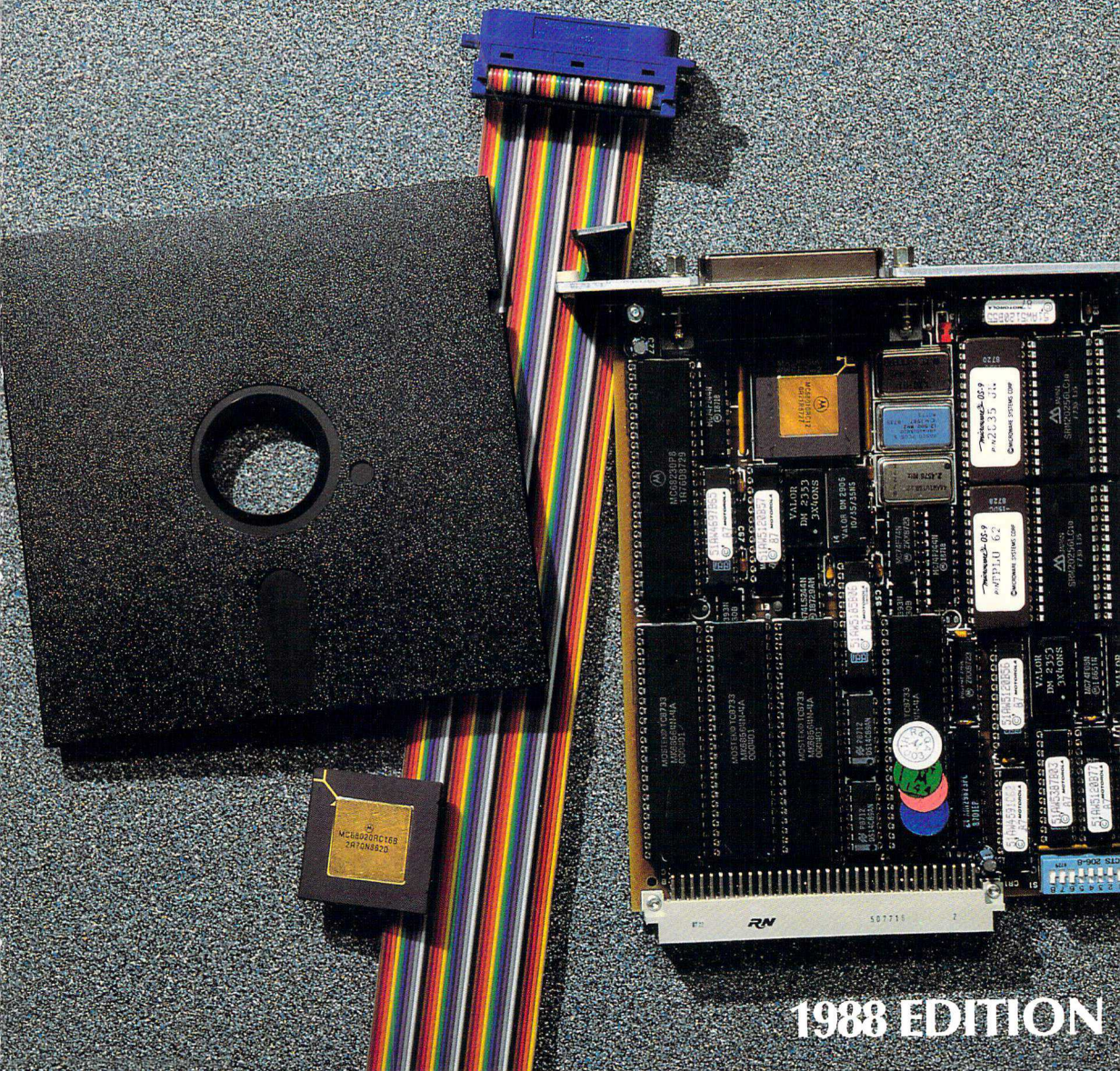
Microware®

THE OS-9 SOURCEBOOK



1988 EDITION

THE OS-9 HARDWARE/SOFTWARE SOURCE BOOK

1988 Edition

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to Walden Miller, James Jones, Warren Brown, Dave Lyons, Mary Jo Marturello, Steve Johnson and Charles Ball without whose expertise and guidance this source book could not have been completed.

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INTRODUCTION

This list of OS-9 compatible hardware and software application products was compiled by Microware Systems Corporation as a service to OS-9 users, and includes information condensed from the suppliers' catalogs, advertisements and OS-9 Hardware/Software Source Book submission forms. Inclusion of a product in this directory does not constitute any endorsement of the product by Microware, and Microware disclaims any responsibility for the accuracy of this information, or the price, performance, availability or completeness of the programs listed. We have attempted to make sure, but cannot guarantee, that all products listed are presently available. Customers may want to obtain references, documentation and/or demonstrations before purchasing these products. We suggest that you contact the supplier directly for additional information before ordering.

Shown below is a list of the format codes that appear in the **OS-9 HARDWARE LISTINGS** section. These format codes are used by hardware manufactures that support OS-9:

Format Code	Disk Size	Tracks	Sides	Density
3803	3 1/2 inch	80 track	double	double
3805	3 1/2 inch	80 track	single	single
3807	3 1/2 inch	80 track	double	double*
38W7	3 1/2 inch	80 track	double	double#
5403	5 inch	40 track	double	double
5407	5 inch	40 track	double	double*
5803	5 inch	80 track	double	double
5807	5 inch	80 track	double	double*
58V3	5 inch	80 track	double	double
58W7	5 inch	80 track	double	double#

**All tracks double density*

#1 Sector offset, all tracks double density

PUBLIC RESOURCE INFORMATION

COMPUSERVE INFORMATION SERVICE OS-9 SPECIAL INTEREST GROUP

The CompuServe OS-9 Special Interest Group (SIG) is a worldwide message and communications system for OS-9 users. The messages on the SIG give OS-9 users an opportunity to exchange ideas, make suggestions, seek and offer assistance and advice, comment on products, etc. On-line nationwide conferences are held weekly. In addition, the SIG includes a large database of public domain OS-9 software which can be downloaded to your system.

To access CompuServe, you need a modem, a communications program such as NineCom, and a CompuServe account. CompuServe sign-up kits are available at many computer stores, bookstores and Radio Shack stores. To access the OS-9 SIG within CompuServe, type **"GO OS9"** at any prompt. You can also contact Microware by CompuServe Electronic Mail via user ID **73105,1265**.

USENET

USENET is a nationwide network of computers that communicate using various protocols originating with the UNIX UUCP program. If your company or school has a large UNIX installation, more than likely it is connected to USENET. The topic area where active OS-9 users exchange messages and programs is generally **"comp.os.os9"**. Microware's UUCP address is:

```
...sun!mcrware!mcrware
```

OS-9 HARDWARE LISTINGS

AAA CHICAGO COMPUTER CENTER

120 Chestnut Lane
Wheeling, Illinois 60090
Phone: (312) 459-0450
Marketing: Gerald N. Koppel *Technical: Gerald N. Koppel*

OS-9 SYSTEMS

ELEKTRA 8/9 MF **Business Applications**

Software	OS-9 6809
On Board	CPU: 6809 RAM: 56K
Ports	Serial: 2
Storage	Hard Disk: 2 Size: 360M Interface: S1410 Floppy Disk: 8 Size: 5 1/4" and/or 8" Format: 5403, 5803 & 8773
Features	Desktop or 19" rack mount. 1K scratch-pad SRAM, programmable timer, up to 32 users, optional 1M RAM and Parallel I/O.

ELEKTRA SBC - H1 **Business Application**

Software	Professional OS-9
On Board	CPU: 68000/10 RAM: 128K or 512K
Ports	Serial: 4 Parallel: 2
Storage	Hard Disk: 2 Size: 360M Interface: S1410 Floppy Disk: 2 Size: 5 1/4" Format: 5403, 5407, 5803 & 5807
Features	Desktop or 19" rack mount. 2-32K ROM, programmable timer, will bolt to a 5 1/4" drive.

ELEKTRA 5BC - H2 **Business Applications**

Software	Professional OS-9
On Board	CPU: 68000/10 RAM: 512K or 1M
Ports	Serial: 4 Parallel: 2
Storage	Hard Disk: 2 Size: 360M Interface: S1410 Floppy Disk: 4 Size: 5 1/4" Format: 5403, 5407, 5803 & 5807
Features	Desktop or 19" rack mount. 4-128K ROM, programmable timer, accepts 5 1/4" floppy drive and I/O expansion bus for adding up to 16 more ports.

AAA CHICAGO COMPUTER CENTER

120 Chestnut Lane
Wheeling, Illinois 60090
(312) 459-0450
Marketing: Gerald N. Koppel *Technical: Gerald N. Koppel*

OS-9 SYSTEMS

ELEKTRA SBC - H3 **Business Application**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 512K-14.5M
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 2	Size: 360M	Interface: S1410
	Floppy Disk: 4	Size: 5 1/4"	
	Format: 5403, 5407, 5803 & 5807		
Features	Desktop or 19" rack mount. 32-256K ROM, calendar/clock with battery backup, programmable timer, DMA floppy and Winchester, 8 expansion slots (can add 32 additional users) and 10 1/4" × 12 5/16" IBM PC pattern.		

ELEKTRA SBC - P2 **Business Application**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 512K or 1M	
Ports	Serial: 4	Parallel: 2	
Storage	Hard Disk: 2	Size: 360M	
	Interface: WD 1002A-HDO		
	Floppy Disk: 4	Size: 5 1/4"	Format: 5803
Features	Desktop or 19" rack mount. Fits IBM-type PC/XT cabinet with 6 IBM PC/XT compatible I/O ports, 4K SRAM, 32K-128K EPROM, clock with on-board battery and 2 programmable interrupt timers.		

OS-9 BOARD-LEVEL PRODUCTS

CPU 8/9: CPU
SS-50 bus 6809 CPU, 2 MHz, three 2716 EPROMS (can be modified for three 2732 EPROMS), 1K scratch-pad static RAM and 6840 triple timer.

DPS: I/O
SS-30 bus dual-port serial card (two 68B50 ACIA)

DPP: I/O
SS-30 bus dual-port parallel card (one 68B21 PIA)

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120 Chestnut Lane
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(312) 459-0450
Marketing: Gerald N. Koppel *Technical: Gerald N. Koppel*

OS-9 BOARD-LEVEL PRODUCTS

SFC: Controller
SS-30 bus DS/DD floppy controller that controls up to four 5 1/4" and four 8" drives.

DBI: Controller
SS-50 bus SASI DMA interface card with built-in power supply for Winchester controller.

4PS: I/O
SS-30 bus 4 serial port card (four 68 B50 ACIA).

2M/4S: I/O
SBC-H3 2M RAM and 4 serial ports (two 68681).

GRAPHICS
SBC-H2, SBC-H3 512 × 256 graphics board.

4P/4S: I/O
SBC-H3 4 parallel ports and 4 serial ports (two 68B21, two 68681).

CAL/CLK
SBC-H1, SBC-H2 calendar/clock board with battery backup.

PROM PROGRAM
SBC-H2, SBC-H3 PROM programmer.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
SBC-H1	(SBC-H1)	(SBC-H1)	Xebec 1410
SBC-H2	(SBC-H2)	(SBC-H2)	Xebec 1410
SBC-H3	(SBC-H3)	(SBC-H3)	Xebec 1410
SBC-P2	(SBC-P2)	(SBC-P2)	WD 1002A-HDO

ARTIFICIAL INTELLIGENCE S.r.l.

Via dei Ciceri, 61
00175 - Rome
Italy
Phone: (6) 762221
Marketing: Antonio Berrelli *Technical: Ercole Maccioni*

OS-9 SYSTEMS

ARADOS 20 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1M
Ports	Serial: 6	Parallel: 1	
Storage	Hard Disk: 1	Size: 40M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	Format: 5803
	Mag. Tape: 1/4" 60M Streamer		
Features	Desktop.		

ARADOS 10 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial:6	Parallel: 2	
Storage	Hard Disk: 1	Size: 40M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	Format: 5803
	Mag. Tape: 1/4" 60M Streamer		
Features	Desktop.		

BERNECKER & RAINER INDUSTRIE-ELEKTRONIK GmbH

5142 Eggelsberg 120
Austria
Phone: 07748/6586 *Fax: 07748/6586-26*
Marketing: Peter Gucher *Technical: Mr. Pexa*

OS-9 SYSTEMS

B&R - MAESTRO **Process Control**

Software	Professional & Personal OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 512K
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 45M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2"	Format: 3803
	Mag. Tape: Streamer		
Features	19" Rack mount. Can be used with all B&R-Multicontrol products.		

OS-9 BOARD-LEVEL PRODUCTS

HCMAESTRO-0: CPU
CPU board to be used in the B&R-Multicontrol P.L.C. Consists of 68000 CPU, 12.5 MHz, 4 serial ports, 512K RAM, 256 EPROM, DMA controller 63450 and floppy interface.

HCMAESTRO-HS: CPU
CPU board to be used in the B&R-Multicontrol P.L.C. 68000 CPU, 12.5 MHz, 4 serial ports, 512K RAM, 256K EPROM, DMA controller 63450, floppy interface, plus FPCP 68881.

HCHDISC45-0: Mass Storage
Streamer tape 45M, dust- and waterproof, hard disk 45M, SCSI, 1M/sec., access time 25 µsec., drivers included with operating system.

HCHDISC45R-0: Mass Storage
Hard disk 45M, SCSI, 1M/sec., access time 25 µsec., drivers included with operating system.

HCFDD700-0: Mass Storage
Floppy disk station, 2 × 3, 5" drives (700K).

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5142 Eggelsberg 120
Austria
Phone: 07748/6586 *Fax: 07748/6586-26*
Marketing: Peter Gucher *Technical: Mr. Pexa*

OS-9 BOARD-LEVEL PRODUCTS

HCGRAPH01-0: Controller
Graphic controller AMD 95C60, 800 × 600 pixel, 16 (256) colors, full graphic controller functions, 2 serial ports, IBM keyboard interface.

I/O
42 Additional boards for discrete I/O, analog I/O and other boards to be used with the B&R-Multicontrol P.L.C.

BICC VERO MICROSYSTEMS

Flanders Road, Hedge End
Southampton, Hants
England 503 BLG
Phone: 0703 266300 *Fax: 0703 264159*
Marketing: Rod Clarke *Technical: David Smith*

OS-9 SYSTEMS

VME68061 STARTER SYSTEM **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: 68851
	RAM: 4-16M		
Ports	Serial: 2	Parallel: Optional	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
	Mag. Tape: Optional streamer		
Features	Desktop or optional 19" rack mount. Other features include support for Ethernet, graphics, palette, DMA RISC, calendar/clock, EEPROM and 9 VME expansion slots.		

VME 68161 STARTER SYSTEM **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	MMU: 68451 (Optional)	
	RAM: 512K		
Ports	Serial: 2	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
	Mag. Tape: Optional Streamer		
Features	Desktop. 8 VME expansion slots.		

VME 68261 STARTER SYSTEM **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	MMU: 68451 (Optional)	
	RAM: 512K		
Ports	Serial: 2	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
Features	Desktop or rack mount. Horizontally mounted boards in 3U system.		

BICC VERO MICROSYSTEMS

Flanders Road, Hedge End
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Marketing: Rod Clarke *Technical: David Smith*

OS-9 SYSTEMS

VME 68361 STARTER SYSTEM **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2		
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
Features	Desktop. 8 Spare slots for 3U VME boards.		

VME 68461 TARGET SYSTEM **Process Control**

Software	Industrial OS-9	
On Board	CPU: 68000	RAM: 512K
Ports	Serial: 2	
Features	19" Rack mount. 4 VME expansion slots for 3U boards.	

OS-9 BOARD-LEVEL PRODUCTS

VME 48350: CPU
VME 68000/68010 CPU, 8, 10 or 12.5 MHz, 68451, 512K DRAM, serial and parallel ports and 256K EPROM.

VME 68100: CPU
VME 68020 CPU, 16 or 20 MHz, 4-16M DRAM, 128K EPROM space, FPCP, PMMU, serial port, SCSI, Ethernet, graphics, calendar/clock, EEPROM, 16/20-MIPS DMA micro-controller, C bindings and GKS support available.

VME 48010: CPU
VME 68000/68010 CPU, 10 MHz, 512K DRAM, 128K EPROM, 16-bit CTC, no-RAM version, 2 serial ports.

VME 48020: CPU
VME 68000/68010 CPU, 10 MHz, 512K dual-port DRAM, 128K EPROM, 16-bit CTC and 2 serial ports.

VME 48024: CPU
VME 68000/68010 CPU, 10 MHz, 512K dual-port DRAM, 256K EPROM, 64K battery-backed static RAM, FPCP, MMU, calendar/clock and 2 serial ports.

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OS-9 BOARD-LEVEL PRODUCTS

VME 48040: CPU
VME 68020 CPU, 16 MHz, 68881, 256K static RAM, 256K EPROM, 2 serial ports, 16-bit CTC and in-line expansion connector.

VME 48650: I/O
VME analog module, 4 channels out, 32 channels in, 12-bit resolution, DMA, programmable auto channel sequencing, 64K static RAM.

VME 48240: I/O
VME analog output module, 4 channels and 12-bit resolution. C bindings and demonstration program available.

VME 48250: I/O
VME analog input module, 32 channels and 12-bit resolution. C bindings and demonstration programs available.

VME 48200: I/O
VME quad serial ports, async., sync. and bisync., HDLC, SDLC, software programmable and modem controller.

VME 48203: I/O
VME quad intelligent serial ports, two 8530 serial ports, on-board CPU, 32K dual-port RAM, async./sync., HDLC/SDLC and software programmable.

VME 48250: I/O
VME quad serial ports, async., sync. and bisync., HDLC, SDLC, software programmable and modem controller.

VME 48210: I/O
VME dual parallel ports, 32 I/O lines plus 8 handshake lines, two 68230 parallel ports, Centronics compatible, two 24-bit timers. C bindings and software utility package available.

VME 48700: Controller
VME dual GPIB ports with DMA, two 9914-A devices, full talker/listener and controller. Software utility package and C bindings available.

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OS-9 BOARD-LEVEL PRODUCTS

VME 48220: Controller
VME Single-channel GPIB controller, uses 9914 device, full talker/listener and controller. Software utility package and C bindings available.

VME 48225: Controller
VME Single-channel GPIB with DMA, uses 9914 device, full talker/listener and controller. Software utility package and C bindings available.

VME 48760: Communication
VME 8 channel serial communications processor, RS232/422, 68000 on-board CPU, DMA, HDLC/SDLC, 32K dual-port RAM, 64K EPROM. Can stand alone as a CPU board.

VME 48231: Controller
VME SCSI controller, full ANSI standard, 512K dual-port RAM and DMA.

VME 68880: Controller
VME hi-resolution color graphics controller, 512K dual-port DRAM, palette, up to 1024 x 1024 resolution, 4-bits per pixel, uses TMS34061. C bindings and GKS available.

VME 68790: Controller
VME hi-resolution color graphics controller, 1M RAM, 63484 ALRTC color palette, 1024 x 1024 non-interlaced resolution, 4-bits per pixel with C bindings and GKS available.

VME 48110: Mass Storage
VME floppy disk controller, single- and double-sided/density, 8", 5 1/4" or 3 1/2" drives, can control up to 4 drives.

VME 48120: Mass Storage
VME intelligent disk controller with DMA, supports up to 4 drives (hard and floppy), ST506 compatible, selective sector lengths, multiple sector transfer, automatic track seeks, error correction and buffered seeks made possible.

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Marketing: Rod Clarke *Technical: David Smith*

OS-9 BOARD-LEVEL PRODUCTS

VME48232: Mass Storage
VME SCSI controller supporting disks and tape drives, C bindings for direct SCSI commands available.

VME 48680: Mass Storage
VME disk module uses VME 48120 disk controller, 20-40M hard disk, 1M floppy, no external cabling required.

VME 6159: Other
VME prototyping wire wrap module with complete slave interface.

VME 48305: Other
VME counter timer module, 10 channels, 4 separate interrupts and buffered output lines.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
452 48363	(452 48363)	451 48120	
452 48363	(452 48363)	451 48110	
452 48363	(452 48363	451 48232 + Manta	
451 48010	(451 48010)	451 48110	
451 48010	(451 48010)	451 48233 + Manta	
451 48020	(451 48020)	451 48120	
451 48020	(451 48020)	451 48110	
451 48020	(451 48020)	451 48232 + Manta	
451 48040	(451 48040)	451 48120	

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
451 48040	(451 48040)	451 48110	
451 48040	(451 48040)	451 48232 + Manta	
452 68100	(452 68100)	(452 68100)	
452 68100	(452 68100)	451 48110	
452 68100	(452 68100)	451 48233 + Manta	

CAMBRIDGE MICRO COMPUTERS LIMITED

Cambridge Science Park
Milton Road
Cambridge, CB4 4BN England
Phone: 0223-314666 Fax: 0223 862920
Marketing: Richard Hinton Technical: Emeran Stuckey

OS-9 SYSTEMS

VITESSE GRAPHICS SYSTEM VGS - (68020) **Graphics**

Software	Professional OS-9
On Board	CPU: 68020 FPCP: 68881 MMU: 68851 RAM: 4-16M
Ports	Serial: 5
Storage	Hard Disk: 2 Size: 40-750M Interface: SCSI Floppy Disk: 2 Size: 3 1/2" - 5 1/4" Mag. Tape: QIC 2
Features	Single-user desktop workstation. 1024 × 768 Graphics system with mouse.

VITESSE GRAPHICS SYSTEM VGS - (68030) **Graphics**

Software	Professional OS-9
On Board	CPU: 68030 FPCP: 68881 MMU: 68851 RAM: 4-16M
Ports	Serial: 5
Storage	Hard Disk: 2 Size: 40-750M Interface: SCSI Floppy Disk: 2 Size: 3 1/2" - 5 1/4" Mag. Tape: QIC 2
Features	Single-user desktop workstation. 1024 × 768 Graphics system with mouse.

VITESSE TOWER V683/3 **Graphics**

Software	Professional OS-9
On Board	CPU: 68030 FPCP: 68881 MMU: 68851 RAM: 4-16M
Ports	Serial: 1-64
Storage	Hard Disk: 2 Size: 40-750M Interface: SCSI Floppy Disk: 2 Size: 3 1/2" - 5 1/4" Mag. Tape: QIC 2
Features	Single-user desktop workstation. 1024 × 768 Graphics system with mouse, can be multi-user with optional serial ports and ASCII terminals.

CAMBRIDGE MICRO COMPUTERS LIMITED

Cambridge Science Park
Milton Road
Cambridge, CB4 4BN England
Phone: 0223-314666 Fax: 0223 862920
Marketing: Richard Hinton Technical Emeran Stuckey

OS-9 SYSTEMS

VITESSE TOWER V683/2 **Graphics**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: 68851
	RAM: 4-16M		
Ports	Serial: 1-32		
Storage	Hard Disk: 2	Size: 40-750M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2" - 5 1/4"	
	Mag. Tape: QIC 2		
Features	Single-user desktop workstation. 1024 × 768 Graphics system with mouse, can be multi-user with optional serial ports and ASCII terminals.		

CAMBRIDGE MICROPROCESSOR SYSTEMS LTD.

Brockfield Business Centre
Twentypence Road
Cottenham, Cambridge, CB4 4PS England
Phone: 0954 5112
Marketing: Phil Taylor *Technical: Phil Taylor*

OS-9 SYSTEMS

ACORN BUS 68000 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 512K	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2 "	Format: 38W7
Features	19" Rack mount.		

OS-9 BOARD-LEVEL PRODUCTS

CMS026: CPU
Acorn Bus 68000 processor card with dual serial port (68681), parallel I/O port (68230), battery-backed real-time clock, 64K battery-backed CMOS RAM and up to 16M EPROM.

PSI001: Memory
512K Dynamic RAM expansion card for CMS026 processor, 8 MHz and no wait states.

PSI001-A: Memory
2M Dynamic RAM expansion card for CMS026 processor, 8 MHz, no wait states.

CMS020: I/O
4 Channel serial card (two 2681 DUARTS), RS-623 or RS-422, multi-drop capabilities, DIN or 25-way D-type interface.

CMS006: I/O
One serial channel (6551) and 80-digital I/O lines (six × 6522) with Centronics interface.

CMS015-A: Mass Storage
Floppy disk controller that supports 3 floppy drives with SCSI interface.

CAMBRIDGE MICROPROCESSOR SYSTEMS LTD.

Brockfield Business Centre
Twentypence Road
Cottenham, Cambridge, CB4 4PS England
Phone: 0954 5112
Marketing: Phil Taylor *Technical: Phil Taylor*

OS-9 BOARD-LEVEL PRODUCTS

CMS021: Graphics
Advanced graphic controller card with 512 × 512 resolution and 128K screen memory. Based on Thomson 68683.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
RES004	CMS020	CMS015-A	PSI001
RES004-A	CMS020	CMS015-A	PSI001-A

CIPRICO, INC.

2955 Xenium Lane
Plymouth, Minnesota 55441
Phone: (612) 559-2034 Fax: (612) 559-8799
Marketing: Don Peterson Technical: Bill Moren

OS-9 BOARD-LEVEL PRODUCTS

TAPEMASTER 1000: Mass Storage
Multibus I Pertec 9-track tape controller, supports up to eight 9-track industry-standard Pertec tape drives, start/stop or streaming tape, PE, NRZI or GCR, tape speeds up to 1.5M.

TAPEMASTER 3000: Mass Storage
VMEbus Pertec 9-track tape controller, supports up to eight 9-track industry-standard Pertec tape drives, start/stop or streaming tape, PE, NRZI or GCR, tape speeds up to 2M.

RIMFIRE 3200: Mass Storage
VMEbus SMD-E disk controller, supports 2 SMD-E disk drives, disk rates of up to 24 MHz (3M/sec.), VMEbus burst rates of up to 30M, 512K look ahead cache architecture, command queuing software interface.

COMENDEC LTD.

Aston Science Park, Love Lane
Aston Triangle, Birmingham B7 4BJ
England
Phone: 21359 0998 *Fax: 21359 0433*
Marketing: Colin Bartram *Technical: Paul Morgan*

OS-9 BOARD-LEVEL PRODUCTS

V-ARC-02: Communication

ARCNET interface, 2.5M/sec., industry-standard token bus LAN, high-noise immunity and efficient token pass protocol, ideal for office, engineering, and factory floor environments. Driver supports NFM, network access from user programs also possible.

V-ARC-03: Communication

Low-cost version of above. Both V-ARC-02 and V-ARC-03 have jumper selectable interrupt levels and vectors, 2K dual-ported data buffer, network LED's, high- or low-impedance transceivers. V-ARC-02 has ROAK option, D16 data bus, front panel network ID.

COMMUNICATION MACHINERY CORPORATION

1 Northfiedl Plaza, Suite 330
Northfield, Illinois 60093
Phone: (312) 441-2636 Fax: (312) 441-1885
Marketing: Bill McCaughey Technical: Craig Denney

OS-9 BOARD-LEVEL PRODUCTS

ENP-10: Communication
CMC VMEbus Ethernet Node processor, intelligent front-end ENP processor card for interface onto Ethernet 802.3 LAN's and compatible with IEEE P1014 specification for VMEbus. 68010 CPU, 10 MHz, 512K RAM with parity and no wait states, up to 64K EPROM in two sockets, A24:D16 master/slave interface, descriptor ring buffer management, DMA to shared local DRAM, line access protocol (CSMA/CD), TCP/IP Internet Protocol support.

ADDITIONAL OFFICES

COMMUNICATION MACHINERY CORPORATION LIMITED

Victoria House
28-38 Desborough Street
High Wycombe, Buckinghamshire HP11 2NF
England
Phone: (44) 494-26211 Fax: (44) 494-465346
Marketing: Frank Patterson Technical: Frank Patterson

COMPCONTROL B.V.

Stratumsedijk 31
Postbus / P.O. Box 193
5600 AD Eindhoven, Holland
Phone: 31-40-124955 Fax: 31-40-120296
Marketing: J.A. Knape Technical: C.W. Lambrechtse

OS-9 SYSTEMS

CCS-68K/5/3 **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881
	MMU: 68881	RAM: 2M (expandable)	
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 20-100M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 5403 & 5803		
Features	19" Rack mount.		

CCS-68K/BUSFAST **Process Control**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881
	RAM: 2M		
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk:1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 5403 & 5803		
	Mag. Tape: Streaming		
Features	19" Rack mount. Communication and synchronization for a concurrent processing environment.		

CCS-68/PROCON **Process Control**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881
	RAM: 2M		
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk:1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 5403 & 5803		
	Mag. Tape: Streaming		
Features	19" Rack mount. Data acquisition, process control, operator interface, network module and process simulation.		

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OS-9 SYSTEMS

CCS-68K/UCS **Central Alarm**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881
	RAM: 2M		
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 5403 & 5803		
	Mag. Tape: Streaming		
Features	19" Rack mount. Access control, individual alarms, fire detection, remote message communication, PC network, camera/monitor selection, light installations and other features.		

CCS-68K/IEEE 488 **Measurement/Instrument**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881
	RAM: 2M		
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk:1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 5403 & 5803		
	Mag. Tape: Streaming		
Features	19" Rack mount.		

OS-9 BOARD-LEVEL PRODUCTS

CC-73: CPU

VME 68000 CPU, 8, 10 or 12.5 MHz, 64K on-board RAM, 128K EPROM, 2 serial ports (6850), dual 8-bit parallel port (6821), 3 timers, watchdog and system controller.

CC-97: CPU

VME 68000 or 68010 CPU, 10 or 16 MHz, up to 384K on-board RAM/EPROM, 2M dual-ported RAM, 4 serial ports (DMA), SCSI interface (DMA), 3 timers, real-time clock and system controller.

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OS-9 BOARD-LEVEL PRODUCTS

CC-120: CPU
VME 68020 CPU, 16 MHz, 68851 PMMU, 68881 FPCP, 256K EPROM, 4M dual-ported DRAM, VMS interface, SCSI interface, 3 serial ports, real-time clock.

CC-500: CPU
VME 68020 CPU, 12.5, 16 or 20 MHz, optional 68881 FPCP, 1M dual-ported DRAM, 128K EPROM, 2 serial ports, 16-bit timer, SCSI interface.

CC-93: Mass Storage
VME module containing 1 or 2 mass storage units (3 1/2"). Available units are: 1.6M floppy disk drive, 20, 40 or 100M Winchester drive and 40M tape drive and interfacing through SCSI.

CC-71: Mass Storage
VME SASI and floppy disk interface for 3 1/2", 5 1/4" and 8" drives.

CC-74: Mass Storage
VME SCSI interface with NCR 5386 protocol controller and 68450 DMA controller, 8 or 10 MHz.

CC-174: Mass Storage
VME SCSI interface with NCR 5386 protocol controller and 68450 DMA controller, 8 or 10 MHz, differential mode.

CC-82: Communication
VME serial interface and 8 channel RS-232C.

CC-91: Communication
VME IEEE-488 interface with TMS 9914A GPIB controller, 68450 DMA controller, 8 or 10 MHz.

CC-101: Controller
System controller for mounting on the back-side of a VME backplane.

CC80FDC: Mass Storage
SCSI floppy disk controller for 3 1/2", 5 1/4" or 8" floppy disk drives.

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OS-9 BOARD-LEVEL PRODUCTS

CC-92: I/O
VME digital input module with 32 isolated digital inputs, 24 V or TTL.

CC-94: I/O
VME digital output module with 32 isolated digital outputs (relays).

CC-106: I/O
VME pulse counting module with isolated digital inputs, 24 programmable 16-bit counters.

CC-96/103:Communication
VME IBM token ring network based on intelligent 68020 I/O module.

CC-125: Communication
VME X.25 protocol controller.

CC-80BC: CPU
6809 single-board computer, 2 MHz, 64K RAM/EPROM, DMA controller, SCSI interface, 2 serial ports, timer, ISBX controller and floppy disk interface.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CC73	CC82 (CC73)	CC71	5.25" floppy drive
CC73	CC82 (CC73)	CC74 CC93	
CC97	CC82 (CC97)	(CC97) CC93	
CC97	CC82 (CC97)	(CC97)	OMTI controller floppy + Winchester drive

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CC500	CC82 (CC500)	(CC500) CC93	
CC120	CC82 (CC120)	(CC120) CC93	
CC500 or CC120	CC82 (CC120/500)	(CC120/500)	OMTI controller floppy + Winch- ester drive
CC80SBC	(CC80SBC)	CC80SBC)	Winchester with SCSI Floppy drive

CYCLONE MICROSYSTEMS

25 Science Park
New Haven, Connecticut 06511
Phone: (203) 786-5536 Fax: (203) 786-5449
Marketing: Peter Zackin Technical: Peter Zackin

OS-9 SYSTEMS

DS-11 **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: 68851
	RAM: 16M		
Ports	Serial: 4	Parallel: 1	
Storage	Hard Disk: 1 - 3	Interface: SCSI	
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Mag. Tape: Streaming		
Features	19" Rack mount.		

OS-9 BOARD-LEVEL PRODUCTS

CY4110: CPU
Single-board computer, 68020 CPU, 68851 PMMU (optional), 68881 FPCP (optional), up to 16M DRAM, DMA controller, SCSI controller, parallel port, 4 RS-232C ports, VME master/slave interface, system controller, real-time clock with 2K non-volatile SRAM battery backup, counter timer.

CY4180: CPU
High-speed cache memory single-board computer, 68020 CPU (up to 25 MHz), 68881 FPCP (optional), 16K cache memory (zero wait state), up to 16M DRAM, DMA controller, SCSI controller, parallel port, 4 RS-232C ports, VME master/slave, VSB master, Real-time clock, system controller.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CY4110	(CY4110)	(CY4110)	
CY4180	(CY4180)	(CY4180)	

DATA-COMP DIVISION - C.P.I.

5900 Cassandra Smith Road
Hixson, Tennessee 37343
Phone: (615) 842-4600
Marketing: Don or Tom Williams *Technical: Don or Tom Williams*

OS-9 SYSTEMS

MUSTANG/SL **Business Application**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 512K-1M	
Ports	Serial: 4	Parallel: 2	
Storage	Hard Disk: 2	Size: 185M	Interface: SCSI
	Floppy Disk: 2	Size: 5 1/4"	
Features	Desktop. IBM XT/AT back plane and cards.		

MUSTANG - 020 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 2M
Ports	Serial: 32	Parallel: 2	
Storage	Hard Disk: 2	Size: 185M	
	Interface: Xebex 1410		
	Floppy Disk: 2	Size: 5 1/4"	
	Mag. Tape: Cartridge		
Features	Desktop.		

MUSTANG - 08 **Business Application**

Software	Professional OS-9	
On Board	CPU: 68008	RAM: 768K
Ports	Serial: 4	Parallel: 2
Storage	Hard Disk:2	Size: 185M
	Interface: WD 1002 HD	
	Floppy Disk: 2	Size: 5 1/4"
Features	Desktop.	

OS-9 BOARD-LEVEL PRODUCTS

MUSTANG-020: CPU

Full 32 user development and application system. 2M RAM, SCSI HD 20-185M Winchester technology, 12.5 to 20 MHz 68881 FPCP optional, multiple parallel I/O, floppy 96 TPI.

DATA-COMP DIVISION - C.P.I.

5900 Cassandra Smith Road
Hixson, Tennessee 37343
Phone: (615) 842-4600
Marketing: Don or Tom Williams *Technical: Don or Tom Williams*

OS-9 BOARD-LEVEL PRODUCTS

MUSTANG/SL: CPU

4 User 68000 system, 8, 10 or 12.5 MHz, 1024K DRAM, 4K SRAM, 32-128K EPROM, 4 RS-232C, floppy controller, clock and on-board battery back up, 2 PIA, IBM XT/AT backplane, supports monochrome or color adaptor, and monitor cards and WD 1002 HD interface cards.

MUSTANG -08: CPU

4 User 68008, 12 MHz, 768K RAM, (no wait state), 4 RS-232C, serial I/O, 2 PIA, real-time clock with battery backup, floppy controller, WD 1002 HD interface, floppy 96 TPI, 20-185M hard disk.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
68020	CPU 020	ICOM	HDCWD 1002
CPU/S		Floppy controller on-board	

DATACUBE, INC.

4 Dearborn Road
Peabody, Massachusetts 01960
Phone: (617) 535-6644 Fax: (617) 535-5643
Marketing: Susan Snell Soloman Technical: David Simmons

OS-9 SYSTEMS

DSP-1000 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/20	RAM: 1M	
Ports	Serial: 2		
Storage	Hard Disk: 1	Size:40M	Interface: S1410
	Floppy Disk: 1	Size: 3 1/2"	
Features	Desktop. Real-time video DSP development system.		

OS-9 BOARD-LEVEL PRODUCTS

DIGIMAX: Other
A/D and D/A conversion on RS-170/CCIR video signals in real time. Eight camera inputs are software selectable, 32 banks of input/output look-up tables, three output D/A channels, graphics overlay hardware.

MAX-GRAPH: Other
Graphics generation and display module that implements a variety of geometric draw and fill commands and allows graphics to be overlaid on live video.

EUCLID: Other
High-speed general DSP module, supported by an extensive pre-programmed "C" library and a complete complement of development tools, concurrent data movement and processing.

MAX-SCAN: Other
Accepts asynchronous input data from DC to 20 MHz with horizontal and vertical aperture and programmable up to 4K samples.

ROI-STORE: Other
Region of interest framestore, user defined ROI's up to 4K, hardware supported pan, scroll and zoom features for flexibility.

FRAMESTORE: Other
Triple 512 × 512 × 8-bit framestore, 2 independent pan and scroll registers, horizontal and vertical processing capabilities.

DATACUBE, INC.

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Peabody, Massachusetts 01960
Phone: (617) 535-6644 Fax: (617) 535-5643
Marketing: Susan Snell Soloman Technical: David Simmons

OS-9 BOARD-LEVEL PRODUCTS

MEGASTORE-8: Other
Framestore for large images (up to 2K × 4K × 8-bit) or up to 32 512 × 512 × 8-bit images, stores up to 8 million pixels, multiple modules can be interleaved.

VFIR: Other
Video rate finite impulse response filter, 10-point convolver (3 × 3 two dimensional or 10 × 1 one dimensional), performs 100 million 20-bit precisions multiply/accumulates per second.

VFIR-MKII: Other
Second-generation FIR filter, 64-point, arbitrary coefficient 1-D convolution or 8 × 2-D convolution, calculates 640 million multiply/accumulates per second.

MAX-SIGMA: Other
Large kernel convolution processor, 2 programmable apertures (64 × 256) and 1 ancillary point.

MAX-SP: Other
General purpose signal processor, ALU operation, LUT's for identity transform, clipper for over- and under-flow, barrel shifter, delay lines.

FEATUREMAX: Other
Histogramming and feature list extraction processor, stores x,y coordinates in on-board memory at video rates.

SNAP: Other
Systolic neighborhood area non-linear processor, performs 180 million 8-bit comparisons per second, finds maximum/minimum of a neighborhood.

MAX-MUX: Other
Digital cross point switch, multiplexes signals on MAXbus, 16-bit in/16-bit out LUT.

DATACUBE, INC.

4 Dearborn Road
Peabody, Massachusetts 01960
Phone: (617) 535-6644 Fax: (617) 535-5643
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OS-9 BOARD-LEVEL PRODUCTS

MAX-REPEATER: Other
P3 ECL/P4 ROI bus repeater which allows timing busses to expand beyond single 21-slot VME chassis.

PROTOMAX: Other
Wire wrap prototyping module for developing MaxVideo and MAXbus compatible circuitry.

ADDGEN MKII; Other
Second-generation address generator that supports non-separated backward mapped warping of first, second and third order transformations by specialized 80 MFLOP CPU.

INTERP MKII: Other
Second-generation interpolator based on filter technology allowing images to be manipulated at video rates. Resolution independent, source or target image size adjustable.

MAXVIEW: Other
D/A display buffer stores high-resolution images up to 1280 × 1024 pixels, drives a display monitor at up to 125 MHz non-interlaced, live on-screen windows with color graphics overlays can be displayed on workstations.

DATEL, INC.

11 Cabot Boulevard
Mansfield, Massachusetts 02048
Phone: (617) 339-3000 Fax: (617) 339-6359
Marketing: Norman Renaud Technical: Larry Copeland

OS-9 BOARD-LEVEL PRODUCTS

DVME-601: I/O

VME 68010 CPU A/D coprocessor board, 16 single-ended or 8 differential on-board analog input channels, simultaneous A/D scanning, RS-232C serial port, programmable peripheral I/O (68901), on-board DC-to-DC power converter, A/D start by external trigger, (timer or program), sample to memory transfers at up to 170 KHz.

DIGALOG SYSTEMS, INC.

3180 South 166th Street
New Berlin, Wisconsin 53151
Phone: (414) 797-8000 Fax: (414) 797-8003
Marketing: William P. Gettelman Technical: Jim Leveraus

OS-9 SYSTEMS

Series 2020 **ATE System**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial: 5	Parallel: 2	
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	
	Mag. Tape: Teac cartridge		
Features	19" Rack mount. Parallel interfaces for analog and digital test modules.		

DIGITAL ELECTRONICS CORPORATION

8-2-52 Nankohigashi
Suminoe-KU, Osaka 559
Japan
Phone: 0723-37-1101 Fax: 0723-37-1055-1924
Marketing: Toshiyuki Maegawa Technical: Toshiyuki Maegawa

OS-9 SYSTEMS

SP-012HF **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000	FPCP: Optional	RAM: 1M
Ports	Serial: 4	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	
Features	Desktop. 4 RS-232C Channels and Centronics connectors.		

OS-9 BOARD-LEVEL PRODUCTS

CPU3: CPU
VME 68000 CPU, 2.5 or 16 MHz, 68881 FPCP (optional), 1-4M DRAM, 256K EPROM, 2 serial ports, battery-backed time-of-day clock.

CPU23: CPU
VME 68020 CPU, 16 or 20 MHz, 1M DRAM, 128K EPROM, 2 serial ports, Centronics connector, battery-backed time-of-day clock.

DIPL. PHYS. M. KAMMERER SYSTEM FORSCHUNG

Konig Str. 33a
5300 Bonn 1
West Germany
Phone: 0208-223151
Marketing: Mr. Gockler *Technical: Mr. Krahe*

OS-9 SYSTEMS

MODIMAX 1 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 512K-4M
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1-2	Interface: SCSI	
	Floppy Disk: 1-2	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 38W7, 5803 & 58W7		
	Mag. Tape: Tandberg 3630/3610		
Features	19" Rack mount. Optional Ethernet, OS-9 Net or DEC Net.		

MODIMAX 20 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 4M
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1-2	Interface: SCSI	
	Floppy Disk: 1-2	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 38W7, 5803 & 58W7		
	Mag. Tape: Tandberg 3630/3610		
Features	19" Rack mount. Optional Ethernet, OS-9 Net or DEC Net.		

MODIMAX GRW **Graphics**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2	Parallel: 1	
Features	19" Rack mount. Optional Ethernet.		

OS-9 BOARD-LEVEL PRODUCTS

MP 1000: CPU

VMEbus 6U, 68000 CPU, 8 MHz, 1M RAM, 128K EPROM, 2 RS-232C ports (with 68564), 20 I/O lines (parallel interface 68230), real-time clock, SASI interface and a bus arbitration module.

DIPL. PHYS. M. KAMMERER SYSTEM FORSCHUNG

Konig Str. 33a
5300 Bonn 1
West Germany
Phone: 0208-223151
Marketing: Mr. Gockler *Technical: Mr. Krahe*

OS-9 BOARD-LEVEL PRODUCTS

MP 1001: CPU
VMEbus 6U, 68000 CPU, 8, 10 or 12.5 MHz, 68881 FPCP, 1M dynamic RAM, six 28-pin sockets for RAM/EPROM, 2 serial ports, 1 parallel port, real-time clock, piggyback modules for P2 connector functions like SCSI interface, floppy controller and Ethernet.

MP 1002: CPU
VMEbus 6U, 68000 CPU, 8-16 MHz, 2M RAM, 256K EPROM, 128K CMOS RAM, 2 RS-232C ports, 1 parallel port, real-time clock, piggyback modules for SCSI, Ethernet and FDC on-board for development systems with Ethernet.

MP 1006: CPU
VMEbus 6U, 68000 CPU, 8-16 MHz, 512K - 2M RAM, 256K EPROM, 128K CMOS RAM, 2 RS-232C ports three 8-bit I/O ports, real-time clock, NEC 7220 graphics controller, piggyback modules for SCSI interface, floppy controller and SCSI Ethernet FDC.

MP 1021: CPU
VMEbus 6U, 68020 CPU, 12.5 or 17.7 MHz, 68881 FPCP, 1-4M RAM, 512K EPROM, 512K CMOS RAM, 2 RS-232C ports, 1 parallel port, real-time clock, piggyback modules for SCSI or Ethernet FDC SCSI.

MP 1050: CPU
VMEbus 3U, 68000 CPU, 8-12.5 MHz, 128 EPROM, 128K CMOS RAM, 64K dual-ported RAM, 68901 I/O interrupt processor, 1 serial port, AD/DA converter and IEC-Bus interface available.

MP 1054: Controller
VMEbus 6U intelligent Ethernet controller board.

MP 1400: Controller
4-Channel serial I/O and parallel I/O, piggyback for RS-232C, RS-422 and TTY.

MP 1600: Controller
Graphics board with NEC 7220, 1-, 2- or 4-bit pixel, color look-up table, 512K video RAM, driver with VT100 emulation.

DIPL. PHYS. M. KAMMERER SYSTEM FORSCHUNG

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West Germany
Phone: 0208-223151
Marketing: Mr. Gockler *Technical: Mr. Krahe*

OS-9 BOARD-LEVEL PRODUCTS

MP 1200: Controller
Four 8-bit parallel I/O, TTL or Opto I/O, LED's on front panel.

MP 1700: Controller
Base board for 2 piggyback modules, AD 32 channels, DA 4 or 8 channels, GPIB.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
MP 1000	(MP 1000)	(MP 1000)	OMTI 5X00
MP 1001	(MP 1001)	(MP 1001)	OMTI 5X00
MP 1002	(MP 1002)	(MP 1002)	OMTI 5X00
MP 1006	(MP 1006)	(MP 1006)	OMTI 5X00
MP 1021	(MP 1021)	(MP 1021)	OMTI 5X00

DORSCH MIKROSYSTEM GmbH

Hoeflas 14
D-8560 Lauf
West Germany
Phone: 09123-5583 *Fax: 09123-5613*
Marketing: Dieter Dorsch *Technical: Gunther Holzenleuchter*

OS-9 SYSTEMS

DMS VME 6-20 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: 68851
	RAM: 4M		
Ports	Serial: 2	Parallel: 0	
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2-5 1/4"	
	Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7		
	Mag. Tape: SCSI		
Features	VMEbus and Eurobus in one system.		

OS-9 BOARD-LEVEL PRODUCTS

CPU 68: CPU
Eurobus CPU 68000, 512K RAM, 2 serial ports.

SBC 68K: CPU
Eurobus CPU 68000, up to 780K CMOS-RAM and EPROM, 1 serial port, real-time clock.

CPU/G: CPU
VMEbus CPU 68000, 68450 DMA controller, 640 × 400 × 2 pixel graphics, 512K RAM, 2 serial ports, Eurobus as peripheral channel.

CPU 020: CPU
VMEbus CPU MC68020, FPCP, PMMU, 4M RAM, 2 serial ports, Eurobus as peripheral channel.

CPU/S: CPU
VMEbus CPU MC68020, FPCP, 1M CMOS-RAM, 512K EPROM, floppy disk controller, 2 serial ports, Eurobus as peripheral channel.

ACIA 4/P
Eurobus, 4 serial ports (MC 6850), 1 Centronics port.

DORSCH MIKROSYSTEM GmbH

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D-8560 Lauf
West Germany
Phone: 09123-5583 *Fax: 09123-5613*
Marketing: Dieter Dorsch *Technical: Gunther Holzenleuchter*

OS-9 BOARD-LEVEL PRODUCTS

ICOM: I/O
Eurobus, intelligent 8-port serial card, 1 Centronics port.

INET: Communication
Intelligent network interface for RS-485-Net or Bitbus, MC 68000 CPU, dual-port RAM.

MSI: Mass Storage
Eurobus, floppy controller, SASI interface and data buffer.

HDC: Mass Storage
VMEbus hard disk controller, ST506 hard disk, floppy disk controller, SCSI interface, Centronics port, DMS controller.

IVD: Controller
Intelligent video digitizer, 256 × 512 pixel/8-bit, MC68000 CPU, dual-port RAM, 2 frame buffers.

IGC: Controller
Intelligent graphics controller, MC68000 CPU, dual-port RAM, ACRT, 1M frame buffer.

ACRTC: Controller
ACRTC graphic controller with 1M frame buffer, mouse and keyboard interface, CLUT.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CPU/G	ACIA 4/P	MSI	WD 1002
CPU 68K	ACIA 4/P	MSI	WD 1002
SBC 68K	ACIA 4/P	MSI	WD 1002

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CPU 020	ICOM	HDC	WD 1002
CPU/S		Floppy controller on-board	

DR. RUDOLF KEIL GmbH

Gerhart-Hauptmann-Str. 30
D-6915 Dossenheim
West Germany
Phone: 06221-862091 Fax: 06221-861954
Marketing: Dr. Rudolf Keil Technical: Borcsok

OS-9 BOARD-LEVEL PRODUCTS

SBC 070: CPU
Single-board computer, 68070 CPU, 4M RAM, 256K ROM, floppy/hard disk and SCSI controllers, serial and parallel ports, local extension bus.

ARCLAN: Communication
VMEbus ARCNET controller with on-board coaxial drivers, single Eurocard, full VMEbus interface.

EKF ELEKTRONIK GmbH

Weidekamp Str. 1A
D-4700 Hamm 1
West Germany
Phone: 02381-12630 *Fax: 02381-15067*
Marketing: B. Kleeberg *Technical: U. Petersen*

OS-9 SYSTEMS

20800-1-EDS **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 512K	
Ports	Serial: 2	Parallel: 20	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
Features	19" Rack mount. Real-time clock/calendar and battery back up.		

20802-1-EDS **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 2M
Ports	Serial: 2	Parallel: 40	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
Features	19" Rack mount. Real-time clock/calendar and battery back up.		

68850-2-VMR **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 512K	
Ports	Serial: 2	Parallel: 20	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
	Mag. Tape: Taudberg TDC 3620/40/60		
Features	19" Rack mount. VMEbus with real-time clock/ calendar and battery back up.		

68852-2-VMR **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 2M
Ports	Serial: 2	Parallel: 20	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
	Mag. Tape: Taudberg TDC 3620/40/60		
Features	19" Rack mount. 8-Slot VMEbus with real-time clock/ calendar and battery back up.		

EKF ELEKTRONIK GmbH

Weidekamp Str. 1A
D-4700 Hamm 1
West Germany
Phone: 02381-12630 *Fax: 02381-15067*
Marketing: B. Kleeberg *Technical: U. Petersen*

OS-9 SYSTEMS

68860-2-VMS **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 2M	
Ports	Serial: 2	Parallel: 40	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
	Mag. Tape: Taudberg TDC 3620/40/60		
Features	19" Rack mount. 8-Slot VMEbus with real-time clock/ calendar and battery back up.		

68862-2-VMS **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 2M
Ports	Serial: 2	Parallel: 20	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 58W7
	Mag. Tape: Taudberg TDC 3620/40/60		
Features	19" rack mount. 7-Slot VMEbus with real-time clock/ calendar and battery back up.		

OS-9 BOARD-LEVEL PRODUCTS

68050-2-MCU: CPU
VME 68000 CPU, 12.5 MHz, 2M RAM, 2 serial ports, 40 parallel ports, SCSI, real-time clock with battery back up, 32 RAM/EPROM, full system controller.

68060-2-M32: CPU
VME 6U 68020 CPU, 16.67 MHz, 68881 FPCP, 2M RAM, 2 serial ports, 20 parallel ports, SCSI, real-time clock with battery back up, 32K EPROM, interrupt handlers, VMEbus interface, full system controller.

68200-PO: I/O
VME 6U parallel interface, 40 inputs, 40 outputs, input/output opto-coupled, input sensitivity 5, 12, 24 or 48 volts, output 60 volts maximum.

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OS-9 BOARD-LEVEL PRODUCTS

68230-PIT: I/O
VME 6U parallel interface/timer, 40 x TTL-I/O with prototyping area.

68320-ADC12: I/O
VME 6U analog interface, 64 channels, single ended or 32 channels differential input MUX, 12-bit ADC, sample and hold, programmable gain.

68330-DAC12: I/O
VME 6U analog interface, 8 channels, 12-bit DAC 5V, 10V, 0...10V, 0...10V.

68500-SI16: I/O
VME 6U serial interface, 16 V24/RS-232C/RS-423 and V11/RS-422/RS-485, 48 LED's for data flow control.

68510-COMCO: I/O
VME 6U intelligent interface, 8 V24/RS-232C/RS-423 and V11/RS-422/RS-485, 68000 CPU, dual-ported RAM VMEbus interface, 512K RAM.

68570-LAN: I/O
VME 6U Ethernet/Cheapernet interface, IEEE 802.3, 68000 CPU, AM7990 LANCE, dual-ported RAM VMEbus interface, 512K buffered RAM, 2 V24 serial ports.

68600-GPIB: I/O
VME 6U IEEE488/GPIB controller/listener/talker, 68000 CPU, dual-ported RAM VMEbus interface, 2 V24 serial ports.

68100-DC: Mass Storage
VME 6U disk controller, SCSI/FDC interface, 68000 CPU, dual-ported RAM VMEbus interface, 512K buffered RAM, 2 V24 serial ports.

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OS-9 BOARD-LEVEL PRODUCTS

68370-POS: Controller
VME 6U positon controller, 4 axis, 4 DAC's, 12-bit 10V, parallel opto-coupled I/O, 68000 CPU, dual-ported RAM VMEbus interface, 2 V24 serial ports.

68400-AGDC: Controller
VME 6U advanced graphic controller, ACRTC 68484, 1280 × 1024 pixels, 256 from 262144 colors, 2M video RAM, 68000 CPU, dual-ported RAM VMEbus interface, 2 V24/RS232 serial ports.

68470-PGM: Other
VME 6U Megabit Programmer, 28/32/40 pin EPROM's, 68008 CPU, dual-ported RAM VMEbus interface, 544K buffered RAM, 2 V24 serial ports for terminal upload/download.

68900-MEM: Other
VME 6U twenty-four 28-pin byte wide RAM/EPROM, memory with Accu backup for CMOS RAM.

68902-MEM32: Other
VME 6U twenty-four 32-pin byte wide RAM/EPROM memory with Accu backup for CMOS RAM, 32-bit data/address VMEbus interface for byte, word and longword.

30100-PLD: Other
6U PAL/GAL/EPLD programmer in desk case, 5 sockets for both DIP and PLCC devices, 14...40 pins, 68000 CPU, 512K buffered RAM, EKF logic assembler.

EPSTEIN ASSOCIATES

P. O. Box 400
Wilmette, Illinois 60091-0400
Phone: (312) 948-9292
Marketing: Sheldon L. Epstein *Technical: Sheldon L. Epstein*

OS-9 SYSTEMS

CUSTOM IMAGING SYSTEM **Vision/Inspection**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1M
Ports	Serial: 8	Parallel: 2	
Storage	Hard Disk: 1	Size: 40 - 80M	Interface: SMD
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 5403, 5407, 5803 & 5807		
Features	Factory-grade custom imaging systems comprising DATACUBE imaging products.		

OS-9 BOARD-LEVEL PRODUCTS

EPSTEIN CUSTOM: Other

Custom I/O expansion modules for Mizar MZ 8115 and MZ 8120 CPU cards used in closed-loop control, instrumentation, DSP and imaging.

FAIRLIGHT INSTRUMENTS PTY. LTD.

15-19 Boundary Street
Rushcutters Bay, N.S.W. 2011
Australia
Phone: (02) 331 6333 *Fax: (02) 332 3362*
Marketing: Robert Fuller *Technical: Andrew Bell*

OS-9 SYSTEM

FAIRLIGHT SERIES III CMI **Music & Audio**

Software	OS-9 Level Two	
On Board	CPU: 6809 & 68000/10/20	FPCP: 68881
	RAM: 1M	
Ports	Serial: 4	
Storage	Hard Disk: 1-4 Size: 190M	Interface: SCSI
	Floppy Disk: 1 Size: 5 1/4"	
	Mag. Tape: 60M Streaming tape	
Features	Free standing 19" rack mount. 6 Octave music keyboard, MIDI (3 input, 4 output), SMPTE time-code read, write and sync., 16 studio outputs, stereo audio input, graphics tablet, 12" monochrome VDU, special MFX console for audio port.	

FUJIFACOM CORPORATION

1 /Fuji-Machi, Hino-Shi
Tokyo 191, Japan
Phone: (0425) 83-6111 *Fax: (0425) 86-9528*
Marketing: Akira Asano *Technical: Masatoshi Kinoshita*

OS-9 SYSTEM

Custom-Made Systems **Process Control**

Software	Industrial OS-9		
On Board	CPU: 68000/10	RAM: 8M	
Ports	Serial: Variable	Parallel: 1-2	
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk: 2	Size: 5 1/4"	
Features	Desk top, tower or 19" rack mount.		

GENERAL MICRO SYSTEMS, INC.

4740 Brooks Street
Montclair, California 91763
Phone: (714) 625-5475 Fax: (714) 621-4400
Marketing: Scott Bowman Technical: Scott Bowman

OS-9 SYSTEMS

GMS-SYSTEM 10-059 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 4M
Ports	Serial: 2	Parallel: 16	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	
Features	19" Rack mount, desktop or portable.		

OS-9 BOARD-LEVEL PRODUCTS

GMSV07: CPU
68020 CPU, 16, 20 or 25 MHz, optional 68881 FPCP, 128K - 1M SRAM, four 32-bit EPROM, up to 4M DRAM, Z8536 programmable dynamic configuration controller with 3 timers, 68562 multi-protocol SCC, RS 232/422/485, 68155 VMEbus interrupt manager, 3 separate mailboxes.

GMSV06: CPU
68000 or 68010 CPU, 10 or 12.5 MHz, optional 68881 FPCP, up to 2M dual-ported DRAM, two 28-pin EPROM, Z8536 configuration controller/timer, 2 RS232, two 8-bit parallel ports, one buffered Centronics compatible, SCSI, 68450 DAM, battery-backed real-time clock/calendar, VMEbus interrupt.

SAM-VSB-1: I/O
Master/slave subsystem module allows memory access over the VSBbus (P2 connector) and message passing and memory sharing between CPU's.

SAM-VSB-2: I/O
VSB master-only subsystem module with floppy controller, SCSI with FIFO buffer for high-speed data transfer, real-time clock.

SAM-MIL-STD/1553: I/O
Two-channel differential serial communications interface, fully isolated I/O for daisy chain between communications modes.

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OS-9 BOARD-LEVEL PRODUCTS

SAM-SYS-F: I/O
Parallel I/O, floppy controller, SCSI asynchronous or synchronous, on-board DMA, battery-backed real-time clock.

SAM-SYS-G: I/O
Parallel I/O, GPIB interface, SCSI asynchronous or synchronous, on-board DMA, battery-backed real-time clock.

SAM-SCSI: I/O
SCSI controller, asynchronous or synchronous, FIFO buffer, floppy controller, real-time clock.

SAM-SERIAL I/O1: I/O
Intelligent 8-channel multi-protocol serial communications controller module, on-board 68020, mailbox communication between the on-board processor and host VO7 CPU of I/O overhead, all channels interrupt driven, duplex serial communications under DMA.

SAM-PARALLEL I/O: I/O
Parallel I/O, 40 bi-directional, I/O lines mated to FIFO buffer, 8 lines reserved for control functions other lines for byte, word or long word communication, direct download from FIFO to CPU permitted by on-board DMA.

VO5: Mass Storage
DRAM board, up to 32M, direct access via CPU bus, provides triple porting via SAM, VMEbus and VSB buses, external access to VO5 with concurrent CPU operation possible.

DRAM-04: Mass Storage
4M DRAM add-on memory device with parity, zero wait state, dual access to the VMEbus.

DRAM-01: Mass Storage
1M DRAM add-on memory device with parity, zero wait state, dual access to the VMEbus.

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OS-9 BOARD-LEVEL PRODUCTS

SRAM 256K: Mass Storage
High-speed memory module, 256K CMOS zero wait state RAM, twelve 32-pin socket array with 4 sockets reserved for up to 512K EPROM.

SRAM 1M: Mass Storage
High-speed memory module, 1M CMOS RAM, twelve 32-pin socket array with 4 sockets reserved for up to 512K EPROM.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
VO6	(VO6)	(VO6)	
VO7	(VO7) SAM-SYS Modules	(VO7) SAM-SYS Modules	 SAM-SYS Modules

GESPAC SA

3, Chemin des Aulx
1228 Plan-Les-Ouates, Geneva
Switzerland
Phone: (22) 713 400 Fax: (22) 713 834
Marketing: Michel Goujet Technical: Daniel Mayaud

OS-9 SYSTEMS

GESCOMP 8440/8340 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881/68882
	RAM: 1M		
Ports	Serial: 4	Parallel: 2	
Storage	Hard Disk: 1	Size: 40M	Interface: ST506
	Floppy Disk:1	Size: 3 1/2" - 5 1/4"	
	Format: 5403, 5407, 5803 & 5807		
Features	19" Rack mount.		

OS-9 BOARD-LEVEL PRODUCTS

GESMPU-2A: CPU
6809 Processor module, 1/2 MHz, three 16-bit timers, 2K CMOS RAM, up to 4K EPROM, 1 RS-232C serial port.

GESMPU-4A: CPU
68000 Processor module, 8 MHz, up to 128K EPROM and 64K CMOS RAM, three 16-bit timers, 1 RS-232C serial port, G-64 bus.

GESMPU-4B: CPU
68000 Processor module, 8 or 16 MHz, up to 128K EPROM and 64K CMOS RAM, three 16-bit timers, 1 RS-232C serial port, G-96 bus.

GESMPU-14: CPU
68010 Processor module, 8 MHz, up to 128K EPROM, quad, 8-bit timers, battery-backed clock, 1 RS-232C serial port, G-96 bus.

GESMPU-20: CPU
68020 Processor module, 12 or 16 MHz, 68881 FPCP, 256K or 512K CMOS RAM, up to 512K EPROM.

GESSBS-2: CPU
6809 System, 1 MHz, six 16-bit timers, 60 TTLI/O lines, up to 4K EPROM and 1K RAM, watchdog circuitry.

GESPAC SA

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Switzerland
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Marketing: Michel Goujet Technical: Daniel Mayaud

OS-9 BOARD-LEVEL PRODUCTS

GESSBS-4: CPU
6806 System, 1 MHz, four 16-bit timers, 40 TTLI/O, up to 32K EPROM and 16K CMOS RAM, 1 RS-232C serial port, watchdog circuitry.

GESSBS-4A: CPU
6809 System, 1 MHz, four 16-bit timers, 40 TTLI/O, up to 32K EPROM and 16K CMOS RAM, 1 RS-232C serial port, battery-backed clock.

GESSBS-6: CPU
68000/68010 CPU, 8 or 16 MHz, up to 512K EPROM, 256K SRAM, 20 TTLI/O, three 16-bit timers, 2 serial ports, clock/calendar.

GESSIO-1E: I/O
Dual RS-232C asynchronous serial interface, programmable data rate from 50 to 19200 baud on each channel.

GESSIO-1A: I/O
Dual serial interface, RS-232C/RS-422TTY modes, synchronous or asynchronous communications, data rate from 50 to 19200 baud.

GESSIO-2: I/O
Quad RS-232C asynchronous serial interface, programmable data rate from 50 to 19200 baud on each channel.

GESPIA-2A: I/O
Dual parallel interface, 32 TTLI/O line with 4 handshake signals, uses 6821 PIA devices.

GESPIA-2AW: I/O
Dual parallel interface with Wire-Wrap Area, 32 TTLI/O line with 4 handshake signals, uses 6821 PIA devices.

GESPIA-3A: I/O
Dual parallel interface, four 16-bit timers, 32 TTLI/O line with 4 handshake signals, uses 6822 VIA devices, watchdog circuitry.

GESCNX-1R: I/O
Parallel printer interface, 10 buffered input and 10 buffered output lines.

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OS-9 BOARD-LEVEL PRODUCTS

GESMFI-1: I/O
Multi-function interface module, 2 RS-232C serial ports, two 8-bit parallel I/O, three 16-bit timers, clock/calendar with battery.

GESIBC-1B: Communication
IEEE 488 instrumentation bus controller, talker/listener functions, up to 15 instruments, 1M/max.

GESNET-1A: Communication
Local area network controller, base-band MRZ at 88K, CSMA/CA arbitration, up to 50 stations, 3000 feet max., DMA on G-96 bus.

GESSIO-1A: I/O
Dual serial interface, RS-232C/RS-422TTY modes, synchronous or asynchronous communications, data rate from 50-19200 bauds.

GESICC-1: Communication
Intelligent quad serial controller, asynchronous and bit/byte synchronous modes (SDLC/HDLC), up to 800K data rate.

GESMOD-1: Communication
1200/300 baud modem, pulse or DTMF auto-dialer, accessible through G-64 bus or on-board RS-232C port.

GESSCC-1: Communication
X.25 packet switching wide area network controller, uses MC68805 XPC, 128K/512K local RAM, TTL output.

VMENET-1: Communication
GESNET controller on VMEbus.

GESFDC-3: Mass Storage
Floppy disk controller, NFM, on-board 32K buffer, compatible with 3 1/2" and 5 1/4" drives and tape streamers.

GESHDC-1A: Mass Storage
Hard disk controller ST506, up to 2 drives, 88 heads max., on-board sector buffer.

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OS-9 BOARD-LEVEL PRODUCTS

GESCSI-1: Mass Storage
SCSI controller module, up to 4M transfer rate, host or target mode, on-board 64K buffer, DMA on G-96 bus.

GESVIG-4: Controller
High-resolution color graphic controller, 640 × 480 pixels, 256 colors out of 262144, uses Hitachi ACRTC graphic processor.

GESVIG-4E: Controller
High-resolution color graphic controller, 640 × 480 pixels, 256 colors out of 262144, uses Hitachi ACRTC graphic processor.

GESVIG-4M: Controller
High-resolution monochrome graphic controller, 1280 × 1024 pixels, interlaced mode.

GESVIG-14A: Controller
High-resolution color graphics, 800 × 600 display window, uses Hitachi ACRTC, 262144 color look-up table.

GESVIE-14A: Controller
2M memory plane for GESVIG-14A, 16 or 256 planes, DMA capability on the G-96 bus.

GESDMC-1: Controller
Intelligent DC motor controller, shaft encoder feedback, synchronizable for multi-axis, indexing or trajectory mode.

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
GESMPU-24	GESSIO-1E	GESHDC-1A GESFDC-3	GESCNX-1B
GESMPU-4B	GESSIO-1E	GESHDC-1A GESFDC-3	GESCNX-1B
GESMPU-14	GESSIO-1E	GESHDC-1A GESFDC-3	GESCNX-1B
GESMPU-20	GESSIO-1E GESMFI-1	GESHDC-1A GESFDC-3	GESCNX-1B
GESSBS-6	GESSIO-1E	GESHDC-1A GESFDC-3	GESCNX-1B

GRAPHIC STRATEGIES, INC.

549 Weddell Drive
Sunnyvale, California 94086
Phone: (408) 745-6500 Fax: (408) 744-0235
Marketing: Gary Jewell Technical: Mike Bray

OS-9 BOARD-LEVEL PRODUCTS

VGME-512: Graphics

VMEbus 6U, 8 colors, 512 × 512 pixel dot addressable display, drawing primitives include points, lines, circles, arcs, rectangles and polygons, TTL and RGB video, screen refresh frequency 60 Hz (nominal).

VGME-640: Graphics

VMEbus 6U, 16 colors, 640 × 480 pixels, RGB video, 16 colors from a palette of 64, graphics primitive, point, line, circle, arc, polygon, rectangle and text, screen refresh frequency 60 Hz (non-interlaced).

VGME-1024: Graphics

VMEbus 6U, 16 colors, 1024 × 1024 pixels, RGB video, 16 colors from a palette of 64, graphics primitive, point, line, circle, arc, polygon, rectangle and text, screen refresh frequency 30 Hz (2:1 interlaced).

VGME-6408: Graphics

VMEbus compatible 6U, Hitachi ACRTC-63484, 512K or 1M dual-ported video memory, 256 colors from a color palette of 16 million, 30 Hz interlaced or 60 Hz non-interlaced.

GWK TECHNISCHE ELEKTRONIK GmbH

Asternstr. 2
D-5120 Herzogenrath
West Germany
Phone: 02406-6035
Marketing: Klappa/Kother *Technical: Klappa/Kother*

OS-9 SYSTEMS

GWK ct 68000 **Process Control/Business Applications**

Software	Professional OS-9		
On Board	CPU: 68000	RAM: 2M	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20-60M	Interface: ST506
	Floppy Disk: 2	Size: 3 1/2" - 5 1/4"	Format: 3803 & 5803
Features	Desktop, tower, 19" rack mount and portable.		

GWK ICS 68020 **Process Control/Business Applications**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 4M
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20-60M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2" - 5 1/4"	Format: 3803 & 5803
Features	Desktop, tower, 19" rack mount and portable.		

H.C. ANDERSEN COMPUTER A/S

Englandsvej 380
DK-2770 Kastrup
Denmark
Phone: 45 1 52 44 04
Marketing: Henrik Eli Lehd *Technical: Hans Christian Andersen*

OS-9 SYSTEMS

DRAGON 200 **Software Development**

Software	OS-9 6809 Level I	
On Board	CPU: 6809	RAM: 64K
Ports	Serial: 1	Parallel: 1
Storage	Floppy Disk: 2	Size: 5 1/4"
Features	Desktop.	

HAZELWOOD COMPUTER SYSTEMS

Highway 94 at Bluffton
Rhineland, Missouri 65069
Phone: (314) 236-4372
Marketing: Mike Smith *Technical: Dave Bridger*

OS-9 BOARD-LEVEL PRODUCTS

UniQuad 1: CPU
Expandable single-board 68008 computer, 8 MHz, 128-512K RAM, 32K ROM, mounts to 5" floppy or Winchester, floppy-style power, 4 serial (6850) and 2 parallel (6821) ports, baud rates (300-19200) set by jumpers, parallel direct pinout to Centronics-style printer.

UniQuad 2: CPU
Expandable single-board 68000 computer, 10 MHz, 512K-1M RAM, 128K ROM, mounts to 5" floppy or Winchester, floppy-style power, 4 serial (6850) and 2 parallel (6821) ports, baud rates (300-19200) set by jumpers, parallel direct pinout to Centronics-style printer.

UniQuad 20x: CPU
Expandable single-board 68020 computer, 12 or 16 MHz, 512K-14.5M RAM, 128K ROM, 68881 FPCP, battery-backed clock, mounts in PC-style case, PC-style power, 2 serial (68681) and 1 parallel (6821) ports, programmable baud rates (50-38400), full modem controls, speed sensing, parallel direct pinout to Centronics-style printer.

UQ20-2M4P: I/O
Adds 4 serial ports (68681) and 2M memory to UniQuad 20x. Maximum of 7 expansions, programmable baud rates (50-38400), full modem, speed sensing.

UQ20-UIO: I/O
Adds 4 serial (68681) and 4 parallel (6821) ports to UniQuad 20x. Maximum of 8 expansions, programmable baud rates, full modem, parallel direct pinout to Centronics-style printer.

S30-AC-4: I/O
4 Serial (6850) ports for S-30 bus, baud rates jumper selectable, modem controls.

S30-PI-4: I/O
4 Parallel (6821) ports for S-30 bus, buffered line drivers.

HAZELWOOD COMPUTER SYSTEMS

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Rhineland, Missouri 65069
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OS-9 BOARD-LEVEL PRODUCTS

UniQuad 20x: Communication
2 Serial (68681) ports, programmable baud rates (50-38400), full modem controls, speed sensing, supports point-to-point RS-232C networking.

UQ20-2M4P: Communication
Adds 4 serial (68681) ports and 2M memory to UniQuad 20x. Maximum of 7 expansions, programmable baud rates, full modem, speed sensing, point-to-point RS-232C networking.

UQ20-UIO: Communication
Adds 4 serial (68681) ports and 2 parallel (6821) ports to UniQuad 20x. Maximum of 8 expansions, programmable baud rates, full modem, speed sensing, point-to-point RS-232C networking.

UniQuad 1: Mass Storage
Floppy: 2 drives (3 1/2" or 5 1/4"), supports all Microware floppy formats, SASI: supports all common stand-alone or embedded Winchester controllers.

UniQuad 2: Mass Storage
Floppy: 4 drives 3 1/2" or 5 1/4"), supports all Microware floppy formats. SASI: supports all common stand-alone or embedded Winchester controllers.

UniQuad 20x: Mass Storage
DMA Floppy: 4 drives (3 1/2" or 5 1/4"), supports all Microware floppy formats. DMA SASI: supports all common stand-alone or embedded Winchester controllers, also supports cartridge tape.

UQ-VG: Controller
Graphics controller, 512 × 256 pixels, 16 gray levels or RGBI, read/write at full CPU speed, includes PC-XT keyboard interface, mounts to 5 1/2" disk drive.

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OS-9 BOARD-LEVEL PRODUCTS

UQ-PRGR: Other
EPROM programmer, on-board voltage converter, EPROM accessed via normal OS-9 commands, fast programming algorithms, attaches via UniQuad 2 expansion.

UQ-CLK: Other
Battery-backed clock/calendar, attaches to parallel (6821) port, provides automatic date/time setting on system boot, small size.

UQ-S30: Other
Bus adapter, provides 4 S-30 bus slots to UniQuad 2 expansion, on-board baud rate generator, power options, can be mounted to 5 1/2" disk drive.

UQ-XAB2: Other
Bus adapter, provides 2 UniQuad 2 type expansions to UniQuad 20x, allows connection of UQ-PRGR, UQ-VG and UQ-S30.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
UniQuad 1	(UniQuad 1)	(UniQuad 1)	SASI
UniQuad 1	(UniQuad 1)	(UniQuad 1)	SASI UQ-CLK
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-CLK
UniQuad 2	(UniQuad 2) S30-AC-4 **up to 4**	(UniQuad 2)	SASI UQ-S30

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
UniQuad 2	(UniQuad 2) S-30-AC-4 **up to 4**	(UniQuad 2)	SASI UQ-CLK UQ-S30
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-PRGR
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-CLK UQ-PRGR
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-VG
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-CLK UQ-VG
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-PRGR UQ-VG
UniQuad 2	(UniQuad 2)	(UniQuad 2)	SASI UQ-CLK UQ-PRGR UQ-VG
UniQuad 20x	(UniQuad 20x)	(UniQuad 20x)	SCSI
UniQuad 20x	(UniQuad 20x) UQ-2M4P **up to 7**	(UniQuad 20x)	SCSI
UniQuad 20x	(UniQuad 20x) UQ-UIO **up to 8**	(UniQuad 20x)	SCSI

HAZELWOOD COMPUTER SYSTEMS

Highway 94 at Bluffton
Rhineland, Missouri 65069
Phone: (314) 236-4372
Marketing: Mike Smith *Technical: Dave Bridger*

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
UniQuad 20x	(UniQuad 20x) UQ-2M4P **up to 7**	(UniQuad 20x)	SCSI UQ-XAB2 UQ-PRGR
UniQuad 20x	(UniQuad 20x) UQ-UIO **up to 7**	(UniQuad 20x)	SCSI UQ-XAB2 UQ-PRGR
UniQuad 20x	(UniQuad 20x)	(UniQuad 20x)	SCSI UQ-XAB2 UQ-VG
UniQuad 20x	(UniQuad 20x) UQ-2M4P **up to 7**	(UniQuad 20x)	SCSI UQ-XAB2 UQ-VG
UniQuad 20x	(UniQuad 20x) UQ-UIO **up to 7**	(UniQuad 20x)	SCSI UQ-XAB2 UQ-VG
UniQuad 20x	(UniQuad 20x)	(UniQuad 20x)	SCSI UQ-XAB2 UQ-PRGR UQ-VG
UniQuad 20x	(UniQuad 20x) UQ-2M4P **up to 7**	(UniQuad 20x)	SCSI UQ-XAB2 UQ-PRGR UQ-VG
UniQuad 20x	(UniQuad 20x) UQ-UIO **up to 7**	(UniQuad 20x)	SCSI UQ-XAB2 UQ-PRGR UQ-VG

HEURIKON CORPORATION

3201 Latham Drive
Madison, Wisconsin 53713
Phone: (608) 271-8700 Fax: (608) 251-1076
Marketing: Todd Wynia Technical: Mike Point

OS-9 BOARD-LEVEL PRODUCTS

HK68/ME: CPU
Multibus I 68010 CPU, 12 MHz, 68881 FPCP (optional), 1M on-board DRAM with party, 128K EPROM, optional DMAC, 1 parallel port, 2 serial ports and optional SCSI interface.

HK68/M10: CPU
Multibus I 68010 CPU, 12 MHz, 68881 FPCP (optional), 68451 MMU (optional), 1M on-board DRAM with parity, 128K EPROM, optional DMAC, iLBX memory expansion, 1 parallel port, 2 serial ports and optional SCSI interface.

HK68/M120: CPU
Multibus I 68020 CPU, 25 MHz, 68881 FPCP (optional), 68851 MMU (optional), 4M on-board DRAM with parity, 256K EPROM, iLBX memory expansion, 1 parallel port, 2 serial ports and optional SCSI interface.

HK68/M130: CPU
Multibus I 68030 CPU, 25 MHz, 68881 FPCP (optional), 4M on-board DRAM with parity, 4 channel DMAC, 2M EPROM, iLBX memory expansion, 1 parallel port, 4 serial ports and optional SCSI interface.

HK68/VE: CPU
VMEbus 68010 CPU, 12 MHz, 68881 FPCP (optional), 1M on-board DRAM with parity, optional 4 channel DMAC, 256K EPROM, 2 serial ports, 1 iSBX connector and optional SCSI interface.

HK68/V2E: CPU
VMEbus 68020 CPU, 25 MHz, 68881 FPCP (optional), 4M on-board DRAM with parity, 128K EPROM, VSB memory expansion, 1 serial ports and optional SCSI interface.

HK68/V2E: CPU
VMEbus 68020 CPU, 25 MHz, 68881 FPCP (optional), 16M on-board DRAM with parity 2M EPROM, VSB memory expansion, 4 serial ports, 1 parallel port and optional SCSI interface.

HEURIKON CORPORATION

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OS-9 BOARD-LEVEL PRODUCTS

HK68/V30: CPU
VMEbus 68030 CPU, 25 MHz, 68881 FPCP (optional), 16M on-board DRAM with parity, 1M EPROM, 2 serial ports, 1 parallel port and optional SCSI interface.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
HK68/VE	(HK68/VE)	OMTI 5400	
HK68/V2F	VME 400	OMTI 5400	

INCAA COMPUTERS BV

P.O. Box 722
7300 AS Apeldoorn
Holland
Phone: 055-42 50 01
Marketing: Bert Muller *Technical Bart Sijbrandij*

OS-9 BOARD-LEVEL PRODUCTS

CAPRO 68K: CPU
Autonomous CAMAC 68000 CPU, 6 MHz, 2 sync./async. RS-232C ports, 64K EPROM, 512K dual-ported DRAM with DMA.

DRSC: I/O
2 RS-232C CAMAC interfaces, full duplex RS-232C compatible, isolated 20MA current loops, half duplex mode and internal current generation possible.

CDLC: I/O
Intelligent dual RS-232C-based CAMAC interface for asynchronous transmission, able to recognize and trigger on pre-defined strings (the strings and corresponding actions may be dynamically set up by the host via dataway).

CISCSI: Mass Storage
CAMAC to SCSI host adapter.

WDST: Mass Storage
Floppy and Winchester disk system with SCSI interface, 3 1/2" and 5 1/4" floppy drive, minimal 20M Winchester.

FMEM: Mass Storage
CAMAC file memory module, 512KWORDS of 16-bits of RAM.

PDWC: I/O
CAMAC dataway console, 19" panel with LED display and a single-slot wide CAMAC module inter-connected by a flat cable. The device combines the dataway display with a 24-bit word generator.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CAPRO 68K	DRSC	CISCSI	WDST
	CDLC	FMEM	PDWC

INNOVISION CORPORATION

121 East Wilson Street
Madison, Wisconsin 53703
Phone: (608) 273-8870 Fax: (608) 251-1076
Marketing: Christopher Preibe Technical: Dr. Reddiar Anbalagan

OS-9 SYSTEMS

ARGUS **Vision/Inspection**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/20/30		FPCP: 68881
	RAM: 12M		
Ports	Serial: 6		
Storage	Hard Disk: 1	Size: 140M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	
	Mag. Tape: Streamer		
Features	19" Rack mount, Desktop or tower. Imaging Technology Series 150 real-time image processing modules, 1 or more 2 × 512 × 512 × 16 frame buffer(s), 10 MHz ALU, convolver, feature extractor and array processor.		

INTROL CORPORATION

2675 Patton Road
St. Paul, Minnesota 55113
Phone: (612) 631-7600 Fax: (612) 631-7802
Marketing: Laura Price Technical: Mark Stewart

OS-9 BOARD-LEVEL PRODUCTS

INTROL 300: Mass Communication

An intelligent 68000-based high-performance adapter between the VMEbus and SCSI, SCSI transfer rates are supported at both the synchronous and asynchronous maximum, supports CCD set and disconnect/re-connect with command queuing, VMEbus transfer rates of 20M/sec., programmable data throttling, full 32-bit addressing, multithreading and multitasking operations, FIFO protects against performance degradation.

LP ELEKTRONIK GmbH

Ettishofer Strabe 10c
D-7987 Weingarten
West Germany
Phone: 0751/52327
Marketing: Josef Leibinger *Technical: Heinrich Munz*

OS-9 SYSTEMS

LP 68K SYSTEM I **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 2M
Ports	Serial: 1-7	Parallel: 1	
Storage	Hard Disk: 1	Size: 20-60M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7		
Features	Tower. 82786 Graphic coprocessor, window-driven for OS-9. 4 ICS-Bus slots, 5 additional ECB-bus slots, mini tower 13.2" × 5.3" × 11.6".		

LP 68K SYSTEM II **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 2M	
Ports	Serial: 7	Parallel: 1	
Storage	Hard Disk: 1	Size: 20-60M	Interface:SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7		
	Mag. Tape: Yes		
Features	Tower. 4 ICS-Bus slots, 5 additional ECB-bus slots, mini tower 13.2" × 5.3" × 11.6".		

CAREEN-PC-PACKAGE **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 2M	
Ports	Serial: 1	Parallel: 1	
Storage	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3807, 5807 & PC-Disk (360K, 720K, 1.2M)		
Features	Desktop. Add-on system for PC-Compatibles (XT, AT, 386 and System 30). PC is used as I/O sub-system and supports the mass storage.		

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OS-9 BOARD-LEVEL PRODUCTS

C16/512 CAREEN 68K: CPU
68000 CPU, 16 MHz, 512 RAM, 128K EPROM, 64K battery-backed CMOS-RAM, real-time clock, 1 V-24 serial port, 16-bit parallel port and timer.

C16/2M CAREEN 68K: CPU
68000 CPU, 16 MHz, 2M RAM, 128K EPROM, 64K battery-backed CMOS-RAM, real-time clock, 1 V-24 serial port, 16-bit parallel port and timer.

SER-6: I/O
6 Asynchronous serial I/O channels, 600-19200 baud software selectable.

NET-PACK: Communication
Supports 1 node on OS-9 Network with Ethernet or Cheapernet (does not include MAU).

PERRY 68K: Controller
Multi-functional peripheral board, 82786 graphics coprocessor (640 × 480 pixels), 16 colors, 1M RAM, SCSI controller, floppy controller, 68881 FPCP and PC-compatible keyboard interface.

GRA-63484: Controller
Graphics controller board with HD 63484, 640 × 480 pixels, 16 colors and 256K RAM.

SCSI/FLO: Mass Storage
Floppy disk and SCSI controller board, supports 3 1/2" and 5 1/4" floppy drives and SCSI hard disks and tapes.

LP ELEKTRONIK GmbH

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CAREEN 68K C16/2M	SER-6 (optional) (CAREEN 68K)	PERRY 68K	
CAREEN 68K C16/2M	SER-6 (CAREEN 68K)	SCSI/FLO	

MATRIC LIMITED

RD #1, Summit Drive
Franklin, Pennsylvania 16323
Phone: (814) 432-2180 Fax: (814) 432-8434
Marketing: Jerry Almes Technical: Todd Hoover

OS-9 BOARD-LEVEL PRODUCTS

MX7100: CPU
68HC000 CPU, 10 MHz, RS-232C, 448K RAM (288K populated) with DMA.

MM7101: CPU
68HC000 CMOS CPU, 10 MHz, 512 RAM with 256K EPROM or 512K EPROM, JEDEC-ready for up to 4M EPROM, 4M RAM, real-time clock with battery, 8 serial channels (quad buffered), 4 RS-232C, RS-422, 2 AT&T fiber optic B1-D1 transceivers, 4 counter/timers, 66 parallel I/O ports.

MM7603: Communication
4-Serial channel UART, RS-232C with handshaking, programmable baud rates, full duplex mode, automatic echo mode, wake up mode, loop back modes, 5-volt only operation, 4 timer/counters, 17 parallel I/O lines, vectored interrupt capability.

MM7604: Communication
8-Serial channel UART, RS-232C with handshaking, programmable baud rates, full duplex mode, automatic echo mode, wake up mode, loop back modes, 5-volt only operation, 4 timer/counters, 17 parallel I/O lines, vectored interrupt capability.

MM7500; Controller
Hitachi 63484 ACRTC video processor, RGBY PC "CGA" style monitor port, direct flat panel drive, composite monitor option, up to 512K video RAM buffer, selectable sync. polarity.

MM7201: Mass Storage
Removable memory cassette adapter accepts credit card-style battery RAM cassettes, making them appear as RBF (disk) type devices.

MA7801: Mass Storage
Dual 3 1/2" disk drive DS/80TR microfloppy disk drive controller (3807 format compatible).

MA7803: Mass Storage
Dual 3 1/2" disk drive DS80TR with controller circuit included (3807 format compatible).

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OS-9 BOARD-LEVEL PRODUCTS

MM7700: Other
8-Parallel I/O ports, 16 A/D board, 8 buffered I/O lines, bit program direction, 16 analog inputs, 8-bit, protected.

M662: Other
Parallel I/O-OPTO 22 interface, 24 buffered I/O lines, bit programmable direction.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
MX7100	MX7100 (MM7603) (MM7604)	MA7801 (with M651 controller card) MA7803 MM7201	
MM7101	MM7101 (MM7603) (MM7604)	MM7201	

MATRIX CORPORATION

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Raleigh, North Carolina 27610
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Marketing: Ray Alderman Technical: Ray Alderman

OS-9 SYSTEMS

TSE **Software Development**

Software	OS-9 6809 Disk-based & ROM-based		
On Board	CPU: 6809	RAM: 128K	
Ports	Serial: 2	Parallel: Optional	
Storage	Hard Disk: 2	Size: 20M	Interface: SASI
	Floppy Disk: 4	Size: 3 1/2" - 5 1/4"	Format: 3803 & 5803
Features	Desktop or 19" rack mount.		

HYE **Software Development**

Software	OS-9 6809 Disk-based & ROM-based		
On Board	CPU: 6809	RAM: 128K	
Ports	Serial: 2	Parallel: Optional	
Storage	Hard Disk: 2	Size: 20M	Interface: SASI
	Floppy Disk: 4	Size: 3 1/2" - 5 1/4"	Format: 3803 & 5803
Features	Desktop or 19" rack mount.		

RLKS **Software Development**

Software	OS-9 6809 Disk-based & ROM-based		
On Board	CPU: 6809	RAM: 128K	
Ports	Serial: 2	Parallel: Optional	
Storage	Hard Disk: 2	Size: 20M	Interface: SASI
	Floppy Disk: 4	Size: 3 1/2" - 5 1/4"	Format: 3803 & 5803
Features	Desktop or 19" rack mount.		

SYSTEM 100D **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 64K-4M
Ports	Serial: 2+	Parallel: Optional	
Storage	Hard Disk: 2	Size: 20-40M	Interface: ST506
	Floppy Disk: 4	Size: 3 1/2" - 5 1/4"	Format: 3803 & 5803
Features	Desktop, 19" rack mount or panel/hanging mount.		

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OS-9 SYSTEMS

SYSTEM 200D **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 64K-4M
Ports	Serial: 2+	Parallel: Optional	
Storage	Hard Disk: 2	Size: 20-40M	Interface: ST506
	Floppy Disk: 4	Size: 3 1/2' - 5 1/4"	Format: 3803 & 5803
Features	Desktop, 19" rack mount or panel/hanging mount.		

OS-9 BOARD-LEVEL PRODUCTS

MS-CPU00: CPU
VMEbus 3U 68000 CPU, 10 MHz, 2 serial ports, system controller, ROR requester, 2 RAM sockets for up to 64K, 2 ROM/EPROM sockets for up to 256K, no wait states for on-board RAM and ROM, watchdog timer, 16-bit timer, interrupt handler, front panel reset/abort switch, available with 3U or 6U front panels.

MS-CPU00B: CPU
Same as MS-CPU00 with power-fail detection and battery back-up for RAM.

MS-CPU10: CPU
VMEbus 3U 68010 CPU, 10 MHz, same features as MS-CPU00.

MSCPU10B: CPU
Same as CPU10 with power-fail detection and battery-backed RAM.

MS-CPU100: CPU
VMEbus 3U 68000 CPU, 12.5 MHz, 2 RS-232C/423 serial ports (1 configured as RS-422/485), system controller, FARI/ROR requester, 8K battery-backed RAM and time-of-day clock, optional 68881 FPCP, two 28-pin ROM/EPROM sockets, 1M of no wait state dual-ported DRAM, VME IRQ mask, programmable VMEbus map decoder, watchdog timer, 16-bit timer, clock/calendar, interrupt handler, available with 3U or 6U front panels.

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OS-9 BOARD-LEVEL PRODUCTS

MS-CPU100-5: CPU
Same as MS-CPU100 but with 512K RAM.

MS-CPU110: CPU
VMEbus 3U 68010 CPU with same features as MS-CPU100.

MS-CPU110-5: CPU
Same as MS-CPU110 but with 512K RAM.

MS-PIO: I/O
VMEbus 3U parallel input/out with 48 lines organized as six 8-bit I/O ports, direct compatibility two 24 channel Opto-22, available with 3U or 6U front panels.

MS-HFD: Mass Storage
VMEbus 3U hard/floppy disk controller supporting 3 1/2" and 5 1/4" floppy and hard drives, ST506/ST412 type interface, 4 drive combinations of 4 floppies and 2 hard drives, available with 3U or 6U front panels.

TS9: CPU
STD bus 6809 CPU, 1 MHz, 2 serial ports, 36 I/O lines, real-time clock, timers.

TS9B: CPU
STD bus 6806 CPU, 2 MHz, 2 serial ports, 36 I/O lines, real-time clock, timers.

MF9: CPU
STD bus 6809 CPU, 1 MHz, 2 serial ports, PTM.

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OS-9 BOARD-LEVEL PRODUCTS

MF9B: CPU
STD bus 6809 CPU, 2 MHz, 2 serial ports, PTM.

SP9: CPU
STD bus 6809 CPU, 1 MHz, 1 RS-232C serial port.

SP9B: CPU
STD bus 6809 CPU, 2 MHz, 1 RS-232C serial port.

DSAC: I/O
STD bus dual RS-232C sync./async. ports, Z80 mode 2.

DSP 232: I/O
STD bus dual RS-232C async. ports.

DSP 422: I/O
STD bus dual RS-422C async. ports.

DSP 2/4: I/O
STD bus dual RS-232C/RE-422 async. port.

FDC2: Mass Storage
STD bus double-sided, double-density 3 1/2", 5 1/4" and 8" DMA floppy disk controller (68XX only).

SASI: Mass Storage
STD bus SASI DMA Winchester disk interface (68XX only).

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
MS-CPU00	(MS-CPU00)	MS-HFD	MS-RPC-0NN
MS-CPU10	MS-X400 (MS-CUP10)	MS-HFD	MS-PIM MS-DRM MS-RPC-000
MS-CPU110	(MS-CPU110) MS-X400	MS-HFD	MS-PIM (MS-CPU110)
MF9B	(MF9B)	FDC2	RP64

MICHELS & KLEBERHOFF COMPUTER GmbH

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D-5600 Wuppertal 12
West Germany
Phone: 0202-471636 *Fax: 0202-470388*
Marketing: Boschulte *Technical: Kleberhoff*

OS-9 SYSTEMS

R6800-7-16-16 **Process Control**

Software	Industrial OS-9		
On Board	CPU: 68000/10	RAM: 128K	
Ports	Serial: 2		
Features	19" Rack mount. Keyboard (4 × 4), LCD (2 × 40 characters), isolated I/O, analog I/O, watchdog.		

T 68000-4 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial: 4	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk:1	Size: 3 1/2"	
Features	Desktop.		

T 68020-8 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 4M
Ports	Serial: 8	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 3 1/2"	
Features	Desktop.		

OS-9 BOARD-LEVEL PRODUCTS

CPU68K: CPU
68000 CPU, 12 MHz, 1M RAM, 128K EPROM, single-height ECB card.

CPU68BYT: CPU
68000 CPU, 12 MHz, 128K RAM, 256K EPROM, 2 RS-232C, real-time clock, single-height ECB card.

CPU20: CPU
68020 CPU, 68881 FPCP, 4M RAM, 64K EPROM, interrupt-clock, memory protection, single-height ECB card.

MICHELS & KLEBERHOFF COMPUTER GmbH

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D-5600 Wuppertal 12
West Germany
Phone: 0202-471636 *Fax: 0202-470388*
Marketing: Boschulte *Technical: Kleberhoff*

OS-9 BOARD-LEVEL PRODUCTS

SIO: I/O
4-Serial ports, RS-232C, RS-422, single-height ECB card.

DPSIO: I/O
4 RS-232C, 1 Centronics port, floppy interface, single-height ECB card.

HDC-5: Mass Storage
ST506 controller (2 drives), single-height ECB card.

FDC-III: Mass Storage
SASI floppy controller, single-height ECB card.

MICROBOARDS, INC.

4-41-19 Honcho, Funabashi City
Chiba 273 Japan
Phone: 0474 (22) 1741 Fax: 0474 (22) 1759
Marketing: Fujimoto Technical: Imada

OS-9 SYSTEMS

32B9EX/DPS **Digital Signal Processing**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 5M
Ports	Serial: 2		
Storage	Hard Disk: 1	Size: 80M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	
Features	Tower. 2-16 320C25 DSP's multiprocessing, OS-9 DSP Manager and 320XX OS-9 Cross Assembler.		

DCD/100 **Business Applications**

Software	Industrial OS-9	
On Board	CPU: 68020	RAM: 1M
Ports	Serial: 2	
Features	19" Rack mount. 16 Color display terminals and keyboard support, BSC or HDLC interface to host communication.	

32B9 EX **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: Custom
	RAM: 1-17M		
Ports	Serial: 2-18	Parallel: 2-4	
Storage	Hard Disk: 1-2	Size: 160M	Interface: ST506
	Floppy Disk: 1-2	Size: 5 1/4"	
Features	Tower.		

P32/VDB **Business Applications**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: Custom
	RAM: 17M		
Ports	Serial: 10	Parallel: 2	
Storage	Hard Disk:2	Size: 2G	Interface: SMD
	Floppy Disk:1	Size: 5 1/4"	
	Mag. Tape: 9-Track		
Features	19" Rack mount.		

MICROBOARDS, INC.

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Chiba 273 Japan
Phone: 0474 (22) 1741 Fax: 0474 (22) 1759
Marketing: Fujimoto Technical: Imada

OS-9 BOARD-LEVEL PRODUCTS

M2110: CPU
VME 6U, 68000 CPU, 12.5 MHz, OS-9/SPU, dual serial ports (8530), 128K EPROM, dual-ported 1M RAM, VMX32/VSB, timer (8536), full VME system controller.

M2150: CPU
VME 6U, 68020 CPU, 16 MHz, 68881 FPCP, OS-9/SPU, dual serial ports (8530), 64K EPROM, dual-ported 1M, RAM, VMX32/VSB, timer (8536), full VME system control, multiprocessor control.

M2170A; CPU
VME 6U, 68020 CPU, 25 MHz, 68881 FPCP, 4M page mode data RAM, 1M page mode code RAM, no wait state in page mode, MFP68901, multiprocessor controller.

M2170B: CPU
VME 6U, 6830 CPU, 20 MHz, 68882 FPCP, 4M page mode data RAM, 1M page mode code RAM, no wait state in page mode, MFP68901, multiprocessor controller.

M2210: Memory
VME 6U, 4M RAM with parity, VMX32/VSB interface, dual-ported, 16/32-bit data bus.

M2240: Memory
VME 6U, 16M RAM with parity, VMX32/VSB interface, dual-ported, 16/32-bit data bus.

M2410: I/O
VME 6U, 6 port serial I/O (3-8530), 2 port parallel I/O, timers (2-8536), async., bisync., HDLC, SDLC.

M2450: I/O
VME 6U, intelligent serial I/O, 68000 CPU, 8 MHz, dual-ported host buffers, 8 port serial I/O (3-8530), 1 port parallel I/O, timers (1-8536).

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Marketing: Fujimoto Technical: Imada

OS-9 BOARD-LEVEL PRODUCTS

M2470: Communication
VME 6U, for OS-9 Networking, ARCNET-based networking hardware, optional optical fiber link support.

M2495: Communication
VME 6U, FIFO buffers, high-speed parallel communication link, 4M/sec., device transfer rate, 400K/sec., transfer rate with OS-9 driver.

M2310: Mass Storage
VME 6U, FDD & HDD controller, 765 FDD interface, 63450 DMAC, ST506 HDD interface, dual DMA buffer, no sector interleaving required.

M2350: Mass Storage
VME 6U, SMD HDD controller, 160M to 1G SMD drive, 1.2M/sec., to 2.5M/sec., dual buffered interface, no sector interleaving required (2.5M/sec.).

M2312: Mass Storage
SCSI adapter board for M2310, NCR5380, DMA SCSI supported.

M2313: Controller
GPIB adapter board for M2310, TMS9914, DMA GPIB supported.

M2510: Controller
VME 6U, high-resolution graphics, 63484ACRTC, 512K frame buffer, 16 colors, 640 × 400, 1024 × 768, optional CLUT, additional 512K buffer.

M2520: Controller
VME 6U, dual slots required, ultra high-resolution color graphics, 63484ACRTC, dual-ported 2M frame buffer (host accessible), 256/4096 colors, 100 MHz dot rate, 1280 × 1024.

M2570: Controller
VME 6U, dual color character display controller, ultra high-speed and high functions, 81 characters × 26 lines, 8 fore/background colors, designed for multiple on-line terminal control.

MICROBOARDS, INC.

4-41-19 Honcho, Funabashi City
Chiba 273 Japan
Phone: 0474 (22) 1741 Fax: 0474 (22) 1759
Marketing: Fujimoto Technical: Imada

OS-9 BOARD-LEVEL PRODUCTS

M2330: Controller
VME 6U, laser printer controller, CANON Laser Shot 240/300/400 DPI, 4M bit mapped image buffer, 68000 intelligent controller.

M2660: Controller
VME 6U, PCM input/output board, interface to CD, DAT and PCM processor, on-board 32020DSP for encoding/decoding and filtering.

M2710: Other
VME 6U, Dual 32020/320C25 DSP, parallel and/or cascade operation, 64K high-speed triple-ported RAM, 8536 timer.

20-MATE: CPU
IBM-AT compatible 68020 processor board, 68881 FPCP, 2 serial I/O ports (8530), AT's 80286 works as OS-9 optimized I/O processor.

M9010: CPU
68000 Single-board computer, 10 MHz, 8 serial ports, 2 printer (parallel) ports, OS-9 NET (ARCNET-based) interface, 512K ROM, 512K RAM, RS-232C device interface to OS-9 NET.

M1000: CPU
68000 Single-board computer, 10 MHz, 512K EPROM, 1-2M RAM, 2 serial ports (6850), 1 parallel port (6821), FDC (7265), ST506 (63463), 6 channel DMAC, optional GPIB, SCSI and VME interface.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
M2150	(M2150)	M2310	
M2110	M2410	M2310	
4-M2150		M2350	Multi MPU
M2150	M2410	M2310 M2350	

MICROPROJECT CORPORATION

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Marina del Rey, California 90292
Phone: (213) 306-8000 Fax: (213) 305-1493
Marketing: Kenneth M. Sims Technical: Kenneth M. Sims

OS-9 SYSTEMS

6501-2010-3/6501-2030-1 **Process Control**

Software	Industrial OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1-4M
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 20-40M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	
Features			

6501-1010-4/6501-1030-2 **Process Control**

Software	Industrial OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 512K
Ports	Serial: 4		
Storage	Hard Disk: 1	Size: 20-40M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	
Features	Desktop. Additional serial I/O, additional parallel I/O, larger hard disk and additional RAM are options.		

OS-9 BOARD-LEVEL PRODUCTS

2501-27XX-X: CPU
68020 CPU, 12.5, 16.7 or 20 MHz, 1-4M DRAM, 68881 FPCP, 2 RS-232C channels, 4M on-board dual-ported DRAM, supports full system controller function.

2501-37XX-X: CPU
68010 CPU, 10 or 12 MHz, 1M dual-ported DRAM, full 7-level interrupter for multiprocessor systems.

2701-5904-8: I/O
4-Channel RS-232C interface daughter board.

2701-5918-4: I/O
8-Channel RS-232C interface daughter board.

2701-5916-5: I/O
16-Channel RS-232C interface daughter board.

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OS-9 BOARD-LEVEL PRODUCTS

2501-7518-7: Controller
SCSI disk interface adapter module, full SCSI protocol with re-selection and arbitration, high-speed 16 (Full Word) DMA on VMEbus, 7 VMEbus interrupt levels.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
2501-3715-3	2701-5904-8	2501-7518-7	
2501-3715-3	2701-5918-3	2501-7518-7	
2501-27XX-X	2701-5904-8	2501-7518-7	
2501-27XX-X	2701-5918-3	2501-7518-7	

MICRO CONCEPTS

2 St. Stephens Road
Cheltenham, Glos. GL51 5AA
England
Phone: 0242-510525
Marketing: J. Rew *Technical: J. Rew*

OS-9 BOARD-LEVEL PRODUCTS

IMAGE-10.05: Other
Single-board graphics computer, 68010 CPU, 8 MHz, 512K RAM, 2 serial I/O ports, 2 parallel I/O ports, SCSI interface, 2 floppy disks, graphics (I82782).

IMAGE-10.20: Other
Single-board graphics computer, 68010 CPU, 10 MHz, 2M RAM, 2 serial I/O ports, 2 parallel I/O ports, SCSI interface, 2 floppy disks, graphics (I82782).

MICROSYS ELECTRONICS GmbH

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OS-9 SYSTEMS

SAMLL 68000/68010 SYSTEM **Software Development**

Software Professional OS-9
On Board CPU: 68000/10 FPCP: 68881 MMU: 68451
RAM: 1M
Ports Serial: 2 Parallel: 1
Storage Floppy Disk: 2 Size: 3 1/2" - 5 1/4"
Format: 3803, 3807, 38W7, 5803, 5807 & 58W7
Features Desktop, tower or 19" rack mount. Various extensions with piggybacks and RAM, serial I/O and other boards possible.

LARGE 68000/68010 SYSTEM **Software Development**

Software Professional OS-9
On Board CPU: 68000/10 FPCP: 68881 RAM: 1M
Ports Serial: 2 Parallel: 1
Storage Hard Disk: 1 Size: 25M
Interface: SCSI & OMTI
Floppy Disk:1 Size: 3 1/2" - 5 1/4"
Format: 38W7 & 58W7
Features Desktop, tower or 19" rack mount. Various extensions with piggyback and RAM, serial I/O and other boards possible, optional SCSI and floppy disk controller.

CPU20-BASED SYSTEM **Software Development**

Software Professional OS-9
On Board CPU: 68020 FPCP: 68881 RAM: 1M
Ports Serial: 2 Parallel: 1
Storage Hard Disk: 1 Size: 51M
Interface: SCSI & OMTI
Floppy Disk:1 Size: 3 1/2' - 5 1/4"
Format: 38W7 & 58W7
Features Desktop, tower or 19" rack mount. Various extensions with piggyback and RAM, serial I/O and other boards possible, optional SCSI and floppy disk controller, optional 86M hard disk.

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OS-9 SYSTEMS

68020/68030-BASED SYSTEM **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 FPCP: 68881/68882 RAM: 4M
Ports	Serial: 2 Parallel: 1
Storage	Hard Disk: 1 Size: 86M Interface: SCSI/Floppy Controller Floppy Disk: 1 Size: 3 1/2" - 5 1/4" Format: 38W7 & 58W7
Features	Desktop, tower or 19" rack mount. Various extensions with piggybacks and RAM, serial I/O and other boards possible.

OS-9 BOARD-LEVEL PRODUCTS

CPU06: CPU
68000/10 CPU, 10 MHz, 512K-1M DRAM, 2 serial ports, 1 parallel port, real-tine clock, 4-level bus arbiter, 7-level VME interrupt handler, monitor program, piggyback possible.

CPU08: CPU
Same features as CPU06, plus auto-debug software with display.

CPU07: CPU
68000/10 CPU, 10 MHz, 512K-1M dual-ported DRAM, other features same as CPU06/08.

CPU09: CPU
Same features as CPU07, plus auto-debug software with display.

CPU10: CPU
68000/10 CPU, 10 or 12.5 MHz, 512K dual-ported SRAM, no wait state, 2 serial ports, 1 parallel port, real-time clock, 4 digit alphanumeric display, piggyback on P2, socket for FPCP.

CPU11: CPU
Same features as CPU10, plus 2M ported DRAM.

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OS-9 BOARD-LEVEL PRODUCTS

CPU20: CPU
68020 CPU, 12.5 or 16 MHz, 1M DRAM, 1K dual-ported RAM (mail-box), on-board SCSI, 2 serial ports, 1 parallel port, 1 socket for EPROM, 4-digit alphanumeric display.

CPU21: CPU
68020 CPU, 16, 20 or 25 MHz, 0 wait states possible with all clock rates, 512K-1M dual-ported SRAM, 2 sockets for EPROM, P2 piggyback possible, socket for FPCP, MEX-connector.

CPU22: CPU
68020 CPU, 16, 20 or 25 MHz, 4M dual-ported DRAM with parity, other features the same as CPU21, MEX-connector for RAM extension.

CPU33: CPU
Same features as CPU21, but with a 68030.

SIO02: I/O
Serial interface controller, 12 full-duplex channels, 6 × MK 68564, synchronous and asynchronous operation mode up to 1 Mbits/sec.

UIC01: Controller
Universal interface controller, wire-wrap space for customized features, or 3 I/O connectors for I/O modules (ADC01, ADC02, DAC01, RE01, OPT01, OPT02, SI001, PI001 & IEC01).

UIC03: Controller
Same features as UIC01, but with VSB interface.

UIC02: Controller
Intelligent universal interface controller.

GRC02: Controller
High-resolution graphic controller, 1280 × 1024 pixels, HD63483 ACRTC, 25/50 MHz or 32/64 MHz pixel frequency, 4-bit per pixel, 2M frame buffer, optional video DAC and color lookup.

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OS-9 BOARD-LEVEL PRODUCTS

GRC03: Controller
High-resolution graphic controller, HD63484 ACTRC, 512K-1M video-RAM, 4/8-bit per pixel, up to 64 MHz, 16/256 colors out of 262000, optional VSB.

ETH03: Communication
Ethernet controller piggyback.

FDC02: Controller
Floppy disk controller.

SCS01: Other
SCSI interface piggyback without DMA.

SCS02: Other
SCSI interface piggyback with DMA (68450).

SFC01: Controller
SCSI and floppy disk controller piggyback P2 adapter board for Winchester/floppy.

SFC02: Controller
Same features as SFC01, but with DMA.

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CPU06/08	(CPU06/08)	FDC02	2 Floppy
CPU06/08	(CPU06/08)	SCS01	1 Hard Disk 1 Floppy, Tape
CPU06/08	(CPU06/08)	SCS02 (DMA)	1 Hard Disk 1 Floppy, Tape
CPU07/09	(CPU07/09)	FDC02, SCS01 or SCS02	
CPU10/11	(CPU10/11)	SCS01, SCS02 or SFC01/02	SCSI-FDC
CPU20	(CPU20)	(SCSI)	
CPU21	(CPU21)	SCS01, SCS02 or SFC01/02	
CPU22	(CPU22)	SCS01, SCS02 or SFC01/02	

MICROTECH ELECTRONICS LTD.

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Cressex Industrial Estate, High Wycombe
Buckinghamshire HP13 6XG England
Phone: 0494-444949
Marketing: Alan Wright *Technical: Barry Woodhead*

OS-9 SYSTEMS

BMS300 **Plant Control**

Software	Personal OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial:6	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: SASI
	Floppy Disk: 1	Size: 5 1/4"	
Features	Desktop, tower or 19" rack mount. GKS high-resolution graphics.		

BMS200 **Plant Control**

Software	Personal OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 2	Size: 360M	Interface: SASI
	Floppy Disk: 1	Size: 3 1/2"	
Features	Desktop.		

M.I.I.

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Marketing: J.P. Potez *Technical: J.P. Potez*

OS-9 SYSTEMS

MS9 **Software Development**

Software	OS-9 6809		
On Board	CPU: 6809	RAM: 56K	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 10-20M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	Format: 5403, 5803
Features	Desktop, rack mount.		

MS9/680-681 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 2M
Ports	Serial: 2		
Storage	Hard Disk: 1	Size: 20-80M	Interface: SCSI
	Floppy Disk:1	Size: 3 1/2" - 5 1/4"	
	Format: 5403 & 5803		
Features	Desktop, tower or 19" rack mount. 2K-32K ROM, programmable timer, will bolt to a 5 1/4" drive.		

OS-9 BOARD-LEVEL PRODUCTS

GMI-CPU1: CPU
G-64 bus, 6809 CPU, 1 or 2 MHz, 2 serial ports (6850), 8K RAM, up to 32K EPROM, 1 PIA, battery-backed clock (146818).

GMI-CPU3: CPU
G-64 bus, 6809 CPU, 1 or 2 MHz, 2 serial ports (6850), 64K RAM, up to 32K EPROM, 1 VIA, battery-backed clock (146818) and RAM.

GMI-CPU4: CPU
G-64, 68000/68010 CPU, 8 or 10 MHz, 2 serial ports (6850), 64K RAM, up to 128K EPROM, battery-backed clock (146818).

GMI-CPU6: CPU
G-96, 68000/68010 CPU, 10 MHz, 2 serial ports (68681), 64-256K RAM, up to 256K EPROM, battery-backed clock (146818) and RAM.

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OS-9 BOARD-LEVEL PRODUCTS

GMI-SIO1: I/O
G-64/G-96, 4 serial I/O ports, RS-232C.

GMI-SIO2: I/O
G-64/G-96, 4 serial I/O ports, current loop.

GMI-SIO3: I/O
G-64/G-96, 4 serial I/O ports, RS-422.

GMI-SIC1: I/O
G-64/G-96, intelligent serial controller, 68008 CPU, 2 serial ports, RS-232C.

GMI-SIC2: I/O
G-64/G-96, intelligent serial controller, 68008 CPU, 2 serial ports, current loop.

GMI-SIC3: I/O
G-64/G-96, Intelligent serial controller, 68008 CPU, 2 serial ports, RS-422.

GMI-FDC1: Mass Storage
G-64/G-96, floppy disk controller, 5 1/4" or 3 1/2", MF and MFM, pre-compensation adjustable.

GMI-SIA1: Mass Storage
G-64/G-96, SCSI interface adaptor, compatible SASI and SCSI.

GMI-STD1: Mass Storage
G-64/G-96, static disk, 64-256K battery-backed RAM, used as peripheral and not as main memory, drivers for OS-9/6809 and OS-9/68000.

GMI-UCG1: Controller
G-64/G-96, graphic display controller, 512 × 256 or 512 × 512 pixel resolution, uses EF9367 driver, C-Library and graphic editor available on OS-9/68000.

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
GMI-CPU1	(GMI-CPU-1)	GMI-FDC1 GMI-SIA1	OMTI 5100
GMI-CPU3	(GMI-CPU3)	GMI-FDC1 GMI-SIA1	OMTI 5100
GMI-CPU4	(GMI-CPU4)	GMI-FDC1 GMI-SIA1	
GMI-CPU6	(GMI-CPU6)	GMI-FDC1 GMI-SIA1	

MIZAR DIGITAL SYSTEMS, INC.

1419 Dunn Drive
Carrollton, Texas 75006
Phone: (214) 446-2664 Fax: (214) 466-7784
Marketing: Sales Department Technical: Technical Support Group

OS-9 SYSTEMS

VME9100 **Process Control**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2		
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 5807
Features	Desktop. Optional 68020 CPU.		

VME9500 **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 5807
Features	Desktop. Optional 68020 CPU.		

VME9400 **Process Control**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	Format: 5807
Features	Desktop. Optional 68020 CPU.		

OS-9 BOARD-LEVEL PRODUCTS

MZ7100: CPU
6U, 68010 CPU, 10 or 12.5 MHz, 512K dual-ported RAM, up to 256K EPROM, 2 RS-232C serial ports, two 8-bit parallel ports, and VME system controller.

MZ7105: CPU
6U, same as MZ7100, but with 16081 FPCP instead of a parallel port.

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OS-9 BOARD-LEVEL PRODUCT

MZ8100: CPU
3U/6U*, 68010 CPU, 10 or 12.5 MHz, 512K dual-port DRAM, 2 RS-232C ports, time-of-day clock with battery, VME system controller.

MZ8105: CPU
3U/6U*, 68010 CPU, 10 or 12.5 MHz, 512K dual-port DRAM, 2 RS-232C ports, time-of-day clock with battery, VME system controller, optional MX expansion with floppy/SCSI/serial ports.

MZ7120: CPU
6U, 68020 CPU, 12.5, 16.7 or 20 MHz, 1M DRAM, up to 256K EPROM, VME system controller, optional daughter board with VSB bus, or SCSI bus or serial/parallel expansion.

MZ7122: CPU
6U, 68020 CPU, 16.67, 20 or 25 MHz, 1M dual-ported DRAM, up to 128K EPROM, 2 RS-232C ports, time-of-day clock with battery, VME system controller.

8400: Mass Storage
3U/6U*, Floppy disk controller.

8500: Mass Storage
3U/6U*, SCSI bus controller.

7400: Mass Storage
6U, Disk controller, 4 ST506, four 5 1/4" floppies.

8300: Communications
6U, 8-Channel I/O with DMA and dual-port RAM.

8300: Communication
3U/6U*, 4-Channel serial I/O.

*BOARD HEIGHT: 3U/6U is a 3U board, but may be shipped with optional 6U front panel.

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Marketing: Sales Department Technical: Technical Support Group

OS-9 BOARD-LEVEL PRODUCT

8305: I/O
3U/6U*, Parallel I/O, 4 x 8-bit, Centronics compatible.

8315: Other
3U/6U*, Clock/memory module with battery backup.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
7122	(7122)	7400	
7120	SPU	7400	
7120	SPU	8400/8500	
7120	8300	7400	
7120	8300	8400/8500	
7100	(7100)	7400	
7100	(7100)	8400/8500	
8115	(8115)	7400	
8115		8400/8500	
8105	8300	8400/8500	8000
8106	8300	8400/8500	

*BOARD HEIGHT: 3U/6U is a 3U board, but may be shipped with optional 6U front panel.

PAN CONTROLS LIMITED

Drummore, Doune
Perthshire FK16 6AX
Scotland
Phone: (44) 0786-85261
Marketing: A.J. Shaw-Stewart *Technical: R. Bradford*

OS-9 BOARD-LEVEL PRODUCTS

DSCIM: Controller

High-performance servo controller, can be used for multi-axis coordinated control, on-board processor accessible from host via device driver.

PEP MODULAR COMPUTERS GmbH

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Phone: 08341-81001 *Fax: 08341-40422*
Marketing: Norbert Hauser *Technical: Josef Schuler*

OS-9 SYSTEMS

VME 2000 **Measurement/Instrument**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial: 3	Parallel: 2	
Storage	Hard Disk: 1	Size: 40M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 5803 & PEP Format		
	Mag. Tape: Cipher 525		
Features	19" Rack mount or Desktop.		

VME 2010 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: 1M
Ports	Serial: 4	Parallel: 3	
Storage	Hard Disk: 1	Size: 40M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 5803 & PEP Format		
	Mag. Tape: Cipher 525		
Features	19" Rack mount or Desktop.		

VME 2020 **Graphics**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1M
Ports	Serial: 4	Parallel: 2	
Storage	Hard Disk: 1	Size: 40M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 5803 & PEP Format		
	Mag. Tape: Cipher 525		
Features	19" Rack mount or Desktop.		

PEP 2000 **Process Control**

Software	Professional OS-9		
On Board	CPU: 68000/10/08		RAM: 512K
Ports	Serial: 2	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 5803 & PEP Format		
Features	19" Rack mount or Desktop.		

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OS-9 BOARD-LEVEL PRODUCTS

VMPM68KC: CPU
68020 CPU, 12.5 or 16 MHz, 68881 FPCP, 1024K RAM, 512K ROM, 2 serial ports, 24-bit counter/timer.

VMPM68KC-1: CPU
68020 CPU, 20 or 25 MHz, 68881 FPCP, 1024K RAM, 512K ROM, 2 serial ports, 24-bit counter/timer.

VMPM68KB: CPU
68HC000/68010 CPU, 10 or 12.5 MHz, 68881 FPCP, 128K RAM, 128K ROM, 2 serial ports, 16-bit counter/timer.

VMPM68KA-2: CPU
68000/68010 CPU, 8 or 10 MHz, 64K RAM, 128K ROM, 1 RS-232C, three 16-bit counter/timers.

VLAN: Controller
Ethernet controller, TCP/IP, 1 serial port, asynchronous RS-232C, 256K on-board dual-ported/local RAM.

VGPM: Controller
ACRTC63484 graphics controller, 1M RAM, up to 1024M on-board RAM, CLUT, up to 64 MHz pixel frequency, 16 colors, fast VMEbus write logic, TTL output, RGB with CLUT.

VMSC: Controller
Intelligent mass storage controller, 16K on-board RAM, supports 4 floppies and 2 Winchesters, ST504 mass storage interface.

VDAI: I/O
68000 CPU on-board with local RAM, 12-bit resolution, 8-channels D/A.

VADI: I/O
16-Channel A/D, 12-bit resolution, 8µs conversion time, 95 KHz throughput, FIFO, signal conditioning.

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OS-9 BOARD-LEVEL PRODUCTS

VIOP: I/O
Intelligent 32-channel isolated I/O, 32 digital lines, two 24-bit counter/timer, up to 256K on-board RAM, opto-isolated high speed, 50-pin Sub-D.

VISO: I/O
Intelligent 4-channel serial I/O, 4 serial ports, asynchronous and synchronous protocols, two 16-bit counter/timer, up to 512K on-board RAM, 4- × 15-pin Sub-D.

VDIN: I/O
Low-cost digital input module, 16-channels, isolated input, 24Vdc.

VDOUT: I/O
Low-cost output module, 16-channels isolated output, 24Vdc.

VSIO: I/O
2-Channels serial I/O, 2 parallel ports, 2 serial ports, asynchronous and synchronous protocols, 16 digital lines, 2- × 15-pin Sub-D.

VPRM: I/O
Prototyping slave module, on-board DTACK generator.

VMFB: I/O
2 Serial ports, 2 parallel ports, asynchronous and synchronous protocols, 16 digital lines, real-time clock, Watchdog timers, Centronics, 2- × 15-pin Sub-D.

VMPM68KC-2: CPU
68020 CPU, 12-25 MHz, 68881 FPCP, 1M battery-backed SRAM, 512K ROM, 2 serial ports, one 24-bit counter/timer.

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
MPM68008	CIM-2	MSC	CEU (RTC)
VMPM68KA	VMFB (RTC)	VMSC	
VMPM68KB	VMFB (RTC)	VMSC	
VMPM68KC	VMFB (RTC)	VMSC	

ADDITIONAL OFFICES

PEP MODULAR COMPUTERS, INC.

600 North Bell Avenue
Pittsburgh, Pennsylvania 15106
Phone: (412) 279-6661 Fax: (412) 279-6860
Marketing: Randy Ridenour Technical: Rupert Schmitt

POWERFRAME DATENSYSTEME GmbH

Kaiserstrasse 158
7500 Karlsruhe 1
West Germany
Phone: 0721-20013
Marketing: Rushowsky *Technical: Fenkart*

OS-9 SYSTEMS

POWERFRAME/12 **Business Applications**

Software	Industrial OS-9		
On Board	CPU: 68020	FPCP: 68881	MMU: 68851
	RAM: 4-15M		
Ports	Serial: 8-32	Parallel: 2-6	
Storage	Hard Disk: 1	Size: 85-190M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 5803 & MS-DOS		
	Mag. Tape: QLC-02		
Features	Tower. X.25 Communication lines (1-4).		

OS-9 BOARD-LEVEL PRODUCT

VME/X.25: Communication
VME 6U X.25 controller, 1 or 2 links (X.21/X.21-bits), up to 64 PVC or SVC per link, level 1, 2 and 3 ISO, OS-9 Net driver.

VME/VOICE: Communication
Transmitter/receiver with phone line interface, A/D-D/A buffers, SBF driver available, 8 KHz sampling rate.

PSI SYSTEMS LTD.

Brookfield Business Centre
Twentypence Road
Cottenham, Cambridge CB4 4PS England
Phone: 0954-51122
Marketing: Phil Taylor *Technical: Phil Taylor*

OS-9 SYSTEMS

VME V3000 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
Features	19" Rack mount.		

OS-9 BOARD-LEVEL PRODUCTS

PSI V100: CPU
VMEbus 68000 processor card with dual serial port (68681), parallel I/O port (68230), battery-backed real-time clock, 64K battery-backed CMOS RAM and up to 16M EPROM.

PSI M101: CPU
512K Dynamic RAM expansion card for CMS026 processor card, 8 MHz, no wait states.

PSI M102: CPU
2M Dynamic RAM expansion card for CMS026 processor card, 8 MHz, no-wait states.

PSI V200: I/O
Intelligent text processor card with 80-column color video serial interface, Centronics printer port and local firmware.

PSI V303: I/O
Intelligent I/O processor, 64 12-bit ADC characters and 64 independent digital I/O, local processor, RAM and serial interface.

CMS 021: Other
Advanced graphics controller card, 512 × 512 resolution, 128K screen memory, based on Thomson 68438.

PSI SYSTEMS LTD.

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Twentypence Road
Cottenham, Cambridge CB4 4PS England
Phone: 0954-51122
Marketing: Phil Taylor *Technical: Phil Taylor*

OS-9 BOARD-LEVEL PRODUCTS

PSI V400: Mass Storage
Intelligent Winchester/floppy disk controller with local CPU and RAM.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
PSI V100	PSI V200	PSI V400	CMS 021
PSI M100	PSI V300		
PSI M102			

RADSTONE TECHNOLOGY

Water LaneTowcester, Northants, NN12 7JN
England
Phone: 0327-50312 *Fax: 0327-51985*
Marketing: Lynda Fox *Technical: Customer Support Desk*

OS-9 SYSTEMS

CS5/68-25 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1-4M
Ports	Serial: 2-16		
Storage	Hard Disk: 1	Size: 20-85M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
Features	Desktop or 19" rack mount. Compact 5-slot VME system complete with 200 watt PSU, fans, enclosure, etc.		

CS10/68-25 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1-4M
Ports	Serial: 2-16		
Storage	Hard Disk: 1-2	Size: 20-85M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
	Mag. Tape: Optional QLC-02 cartridge streamer		
Features	Desktop or 19" rack mount. 10-Slot VME system complete with 500 watt PSU, fans, enclosure, etc.		

OS-9 BOARD-LEVEL PRODUCT

PME 68-32: CPU

68030 Single-board computer with VME interface, optional 68882 FPCP, 4M dual-port DRAM, two 32-pin sites, 2 async. port, 3 counter/timers, real-time clock, mailbox interrupts, expansion bus for plug in modules, SCSI or floppy interface.

PME 68-31: CPU

Software compatible with PME 68-32, includes full interface to VME subsystem bus (VSB), provides VSB control functions.

PME 68-25: CPU

Compatible with PME 68-23, 68020 CPU, up to 25 MHz, optional FPCP, 4M dual-port DRAM, four 32-pin sites for ROM/PROM/EPROM, 3 async. ports, parallel port, timer/clock, mailbox interrupts, peripheral expansion bus.

RADSTONE TECHNOLOGY

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Towcester, Northants, NN12 7JN
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Phone: 0327-50312 *Fax: 0327-51985*
Marketing: Lynda Fox *Technical: Customer Support Desk*

OS-9 BOARD-LEVEL PRODUCT

PME 68-23: CPU
Low-cost 68020 CPU, optional FPCP, 4M local DRAM, 2K SRAM, four 32-pin sites, floppy disk controller, 3 async. ports, parallel port, timer/clock, mailbox interrupts.

PME 68-22: CPU
Multi-user/multitasking processor, 68020 CPU, optional FPCP, 68851 PMMU, 8M dual-port DRAM, on-board SCSI interface, 2 async. ports, programmable timer, real-time clock, up to 64K EPROM.

PME 68-12: CPU
68000/68010 Single-board computer with VME interface, 2M dual-port DRAM, 128K EPROM, multi-protocol port, floppy disk controller, parallel port and timer. Direct upgrade for 68-2/CPU-2.

PME 68-1B: CPU
68000 General purpose CPU, 128-512K SRAM, up to 128K EPROM, 3 async. ports, parallel port, programmable timer, real-time battery-backed clock.

PME SCSI-1A: Mass Storage
High-performance intelligent SCSI interface, asynchronous transfers up to 4M/sec. over SCSI bus, high-level interface to host software via dual-port RAM, multiprocessor support, handles up to 16 concurrent tasks. Compatible with PME SCSI-1.

PME SIO4: I/O
16-Channel asynchronous intelligent I/O using 68020 on-board CPU and 4M dual-port RAM, 2-channel sync./async. option, optimized for OS-9 real-time applications, minimizes host processor loading for terminal handling.

PME SIO3: I/O
8-Channel asynchronous intelligent I/O, 8 async. plus 1 Centronics compatible port option (software configurable), minimizes host processor loading for terminal handling.

RADSTONE TECHNOLOGY

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OS-9 BOARD-LEVEL PRODUCT

PME SIO1: I/O
Low-cost 6-channel serial I/O, each channel is programmable from host processor to support wide range of synchronous and asynchronous protocols, RS-232C or RS-422 interfaces.

PME PEX-1: Mass Storage
Low-cost SCSI board for PME 68-25, PME 68-32 and other boards which support the PEX-1 interface.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
PME 68-32	PME SIO4 PME SIO3 PME SIO1 (PME 68-32)	PME SCSI-1/1A PME PEX-1	PME 16EP PME 8EP PME 2EP-2
PME 68-31	PME SIO4 PME SIO3 PME SIIO1 (PME 68-31)	PME SCSI-1/1A PME PEX-1	PME 16EP PME 8EP PME 2EP-2 PME 8SB
PME 68-25	PME SIO4 PME SIO3 PME SIO1 (PME 68-25)	PME SCSI-1/1A PME PEX-1	PME 16EP PME 8EP PME 2EP-2
PME 68-23	PME SIO4 PME SIO3 PME SIO1 (PME 68-23)	PME SCSI-1/1A (PME 68-23 FDC)	PME 16EP PME 8EP PME 2EP-2
PME 68-22	PME SIO4 PME SIO3 PME SIO1 (PME 68-22)	PME SCSI-1/1A (PME 68-22)	PME 16EP PME 8EP PME 2EP-2

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
PME 68-12	PME SIO4 PME SIO3 PME SIO1 (PME 68-12)	PME SCSI-1/1A	PME 16EP PME 8EP PME 2EP-2
PME 68-1B	PME SIO4 PME SIO3 PME SIO1 (PME 68-1B)	PME SCSI-1/1A	PME 16EP PME 8EP PME 2EP-2

ROBCON OY

P.O. Box 46
SF - 02771 Espoo
Finland
Phone: (3580) 85911 Fax: (3580) 8053900
Marketing: Veikko Sirkia Technical: Kari Sutinen

OS-9 BOARD-LEVEL PRODUCTS

VMECPU 020: CPU

VME 6U 68020 CPU, up to 25 MHz, 1-4M dual-port DRAM, 32-pin EPROM socket, 2-serial channels, 2 timers, system clock, EPROM for set up, optional FPCP and MMU.

VMECPU 005: CPU

VME 6U CPU card, 12.5 MHz, 256K dual-port CMOS-RAM, battery-backed real-time clock, four 32-pin EPROM sockets, 4-serial channels, Bitbus serial interface, SCSI interface, optional FPCP, graphics and Bitbus support.

CPU 018: CPU

Single-board 68000 CPU, 8 or 10 MHz, 256K CMOS-RAM, battery-back real-time clock, four 32-pin EPROM memory sockets, 2 RS-232C channels, Bitbus serial interface.

BITBUS I/O: I/O

I/O module series for industrial use, including digital, analog and serial I/O modules. Can be controlled by CPU 018 and VMECPU 005 with Bitbus driver software running under OS-9.

SCORPION TECHNOLOGIES

101 Metro Drive, Suite 760
San Jose, California 95110
Phone: (408) 452-0700 Fax: (408) 437-9219
Marketing: Carl D. Hansen Technical: Rick Hallock

OS-9 SYSTEMS

PRO68 - MODEL 120 **Software Development**

Software	Professional OS-9
On Board	CPU: 68000/10 FPCP: NS 32081 RAM: 1M
Ports	Serial: 2-18 Parallel: 1
Storage	Hard Disk: 1-4 Size: 40M+
	Interface: ST506 or SCSI
	Floppy Disk: 2 Size: 5 1/4" - 3 1/2" Format: 5407
	Mag. Tape: Streamer
Features	Desk top. Concurrent PC DOS operation.

PRO68 - Model 185 **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 FPCP: 68881/82 MMU: 68851
	RAM: 4M
Ports	Serial: 2-18 Parallel: 1
Storage	Hard Disk: 1-4 Size: 40M+
	Interface: ST506 or SCSI
	Floppy Disk: 2 Size: 5 1/4" - 3 1/2" Format: 5407
	Mag. Tape: Streamer
Features	Desk top. Concurrent PC DOS operation.

PRO68 - Model 860 **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 FPCP: 68881/82 MMU: 68851
	RAM: 8M
Ports	Serial: 2-18 Parallel: 1
Storage	Hard Disk: 1-4 Size: 40M+
	Interface: ST506 or SCSI
	Floppy Disk: 2 Size: 5 1/4" - 3 1/2" Format: 5407
	Mag. Tape: Streamer
Features	Desk top. Concurrent PC DOS operation.

SEIKO INSTRUMENTS U.S.A. (ROBOTICS DIVISION)

2990 West Lomita Boulevard
Torrance, California 90505
Phone: (213) 517-7850 Fax: (213) 517-7792
Marketing: Alan Deeter Technical: Rick Brookshire

OS-9 SYSTEMS

IQ180 **Robot Controller**

Software	Industrial OS-9		
On Board	CPU: 68000/10	RAM: 1M	
Ports	Serial: 3	Parallel: 2+ (optional)	
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk: 2	Size: 5 1/4"	
	Format: Seiko (Special)		
Features	Communications link to all Seiko Industrial Robots.		

SYNTEL MICROSYSTEMS

Queens Mill Road
Huddersfield HD1 3PG
England
Phone: 0484 535101 *Fax: 0484 519363*
Marketing: Paul Wilson *Technical: Chris Cordingley*

OS-9 SYSTEMS

HS6000/20 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 1M
Ports	Serial: 5	Parallel: Optional	
Storage	Hard Disk 1	Size: 40M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	
	Format: 3803, 3807 & 38W7		
	Mag. Tape: Optional Syntel TS60 1/4" 9-track cartridge		
Features	Desktop or tower. This system uses the Syntel VM020 Dual Bus Processor Module with both VMEbus and G-64 bus interfaces. The system has both VME and G-64 back planes and allows for expansion along both buses.		

HS6000/8 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68008	RAM: 1M	
Ports	Serial: 5	Parallel: Optional	
Storage	Hard Disk: Opt.	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	
	Format: 3803, 3807 & 38W7		
	Mag. Tape: Optional Syntel TS60 1/4" 9-track cartridge		
Features	Desktop, tower.		

HS6000/9 **Software Development**

Software	OS-9 6809 Level I (Personal)		
On Board	CPU: 6809	RAM: 64K	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	
	Format: 3803, 3807 & 38W7		
	Mag. Tape: Optional Syntel TS60 1/4" 9-track cartridge		
Features	Desktop, tower.		

SYNTEL MICROSYSTEMS

Queens Mill Road
Huddersfield HD1 3PG
England
Phone: 0484 535101 *Fax: 0484 519363*
Marketing: Paul Wilson *Technical: Chris Cordingley*

OS-9 BOARD-LEVEL PRODUCTS

SYN-VM020: CPU
VME/G-64 dual bus 6U, 68020 CPU, 12.5-16.67 MHz, 1M 32-bit DRAM, 128K EPROM, 68881 FPCP, 2 serial ports, battery-backed calendar/clock.

SYN-MP18: CPU
G-64 3U, 68008 CPU, 10 MHz, 2 serial ports, 15 I/O lines, timer/counter, up to 128K EPROM, 128K DRAM.

SYN-MP08: CPU
G-64 3U, 68008 CPU, 10 MHz, 2 serial ports, 15 I/O lines, timer/counter, two 28-pin JEDEC memory sockets.

SYN-MP29: CPU
G-64 3U, 6809 CPU, 2 serial ports, up to 64K memory on-board, paged addressing off-board to 128K.

SYN-MP19: CPU
G-64 3U, 6809 CPU, 2 serial ports, 8 timers, 8 I/O lines, two 28-pin JRDEC sockets allow up to 64K of memory.

SYN-MP09: CPU
G-64 3U, 6809 CPU, 1 serial port, 6840 counter/timer, four 28-pin JEDEC sockets for memory.

SYN-RD512: Mass Storage
G-64 3U RAM disk module, 512K DRAM accessed like a disk, sits in VPA area of G-64.

SYN-FCM1: Mass Storage
G-64 3U floppy disk controller, supports up to four 3 1/2", 5 1/4" and 8" drives, on-board 8K memory cache and DMA logic.

SYN-SCSI: Mass Storage
G-64 3U SCSI interface module for interfacing to a large-range of standard SCSI and SASI peripherals (hard disks, tape drives, etc.).

SYNTEL MICROSYSTEMS

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Huddersfield HD1 3PG
England
Phone: 0484 535101 *Fax: 0484 519363*
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OS-9 BOARD-LEVEL PRODUCTS

SYN-I488: Mass Storage
G-64 3U IEEE488 GPIB interface module, MC68488 GPIA and MC6281 PIA to provide: talker/listener, talker only, listener only and controller functions.

SYN-TI01: I/O
G-64 3U input/output/timer module, uses two MC6821 PIA's to provide 32 I/O lines (buffered), MC6840 provides three 16-bit timer/counter channels, OS-9 driver for Centronics printer port.

SYN-ACM3: I/O
G-64 3U triple channel serial I/O, uses 3 MC6850's, RS-232C and RS-422 are supported.

SYN-ADC2: I/O
G-64 3U 8-channel 12-bit A/D, 35µs. conversion time, 2-channel D/A.

SYN-ADC4: I/O
G-64 3U 12-bit A/D, 35µs. conversion time, 32-channel single ended, optional 16-channel differential input with instrumentation amplifier.

SYN-ADC5: I/O
VMEbus 3U 6-channel integrating A/D converter, software programmable resolution better than 16-bit, differential inputs with galvanic isolation.

SYN-ADC6: I/O
G-64 3U 6-channel integrating A/D converter, software programmable resolution better than 16-bit, differential inputs with galvanic isolation.

SYN-ADC8: I/O
G-64 3U 8-channel 12-bit D/A converter module.

SYN-VGM1: I/O
G-64 3U color graphics module, programmable screen format up to 640 × 480 pixel resolution, 16 simultaneous colors from a palette of 4096, 1024 × 1024 × 4 pixel frame buffer, non-interlaced scanning.

SYNTEL MICROSYSTEMS

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Huddersfield HD1 3PG
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OS-9 BOARD-LEVEL PRODUCTS

SYN-CGD1: I/O

G-64 3U color graphics module, 16 colors, 4-bit planes, 256 × 256 pixel resolution, non-interlaced scanning.

SYN-DSC1M: I/O

G-64 3U single-axis intelligent D.C. motor controller, allows complex closed-loop control functions with complete control of speed, position and acceleration/deceleration ramps.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
SYN-VM020	SYN-ACM3 (SYN-VM020)	SYN-FCM1 SYN-SCSI	SYN-VGM1 SYN-I488 SYN-TIO1
SYN-MP08	SYN-ACM3 (SYN-MP08)	SYN-FCM1 SYN-SCSI	SYN-VGM1 SYN-I488 SYN-TIO1
SYN-MP09	SYN-ACM3 (SYN-MP09)	SYN-FCM1 SYN-SCSI	SYN-I488 SYN-TIO1

THEMIS/TEKELEC - AIRTRONIC

17 - 23 rue des Trembles
Zac Les Peupliers
38100 Grenoble, France
Phone: (33) 76 40 43 42 Fax: (33) 76 22 06 66
Marketing: Francis Adelving Technical: Georges Garcia

OS-9 SYSTEMS

TSVME 913 **Software Development**

Software	Professional OS-9
On Board	CPU: 68000/10 RAM: 2M
Ports	Serial: 4
Storage	Hard Disk: 1 Size: 40M Interface: SCSI Floppy Disk: 1 Size: 3 1/2" Format: 3803, 3807 & 38W7
Features	19" Rack mount. VME P1/P2 backplane, 16 free slots, 300 watt power supply, calendar, optional Ethernet.

TSVME 922 **Software Development**

Software	Professional OS-9
On Board	CPU: 680020 FPCP: 68881 RAM: 1M
Ports	Serial: 4
Storage	Hard Disk: 1 Size: 80M Interface: SCSI Floppy Disk: 1 Size: 3 1/2" Format: 3803, 3807 & 38W7 Mag. Tape: TDC 3620 (Tandberg)
Features	Tower. VME P1/P2 backplane, 6 free slots, 250 watt power supply, calendar, optional Ethernet.

TSVME 923 **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 FPCP: 68881 RAM: 1M
Ports	Serial: 4
Storage	Hard Disk: 1 Size: 40M Interface: SCSI Floppy Disk: 1 Size: 3 1/2" Format: 3803, 3807 & 38W7
Features	19" Rack mount. VME P1/P2 backplane, 16 free slots, 300 watt power supply, calendar, optional Ethernet.

THEMIS/TEKELEC - AIRTRONIC

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38100 Grenoble, France
Phone: (33) 76 40 43 42 Fax: (33) 76 22 06 66
Marketing: Francis Adelving Technical: Georges Garcia

OS-9 BOARD-LEVEL PRODUCTS

TSVME 105: CPU
VMEbus 6U 68010 CPU, 12.5 MHz, 512K-2M shared dynamic RAM (zero wait states with mail boxes), 128K EPROM, triple timer, 4 RS-232C ports (68681), real-time clock, VMEbus arbiter and interrupter, optional piggyback module floppy/SCSI/calendar.

TSVME 104: CPU
VMEbus 6U 68010 CPU, 12.5 MHz, 68881 FPCP, 2M shared dynamic RAM (zero wait states with mail boxes), 128K EPROM, triple timer, 4 RS-232C ports (68681), real-time clock, VMEbus arbiter and interrupter, optional piggyback module floppy/SCSI/calendar.

TSVME 120: CPU
VMEbus 6U 68020 CPU, 16 MHz, 1M shared dynamic RAM with mail boxes, 512K EPROM, real-time clock, 4 RS-232C ports (68681), VMEbus multi-level arbiter and interrupter, optional piggyback modules VSB or floppy/SCSI/calendar.

TSVME 121: CPU
Identical to TSVME 120 but with 68020 CPU, 20 MHz, 68882 FPCP, 1M shared static RAM with zero wait states.

TSVME 500: I/O
VMEbus 6U 4 serial ports, asynchronous, RS-232C/RS-422C/current loop (up to 9600 bauds) from 50-1M baud.

TSVME 501: I/O
VMEbus 6U 8 ports, asynchronous, intelligent controller, 68000 CPU, 16 MHz, 128K ROM, 64K local RAM, 64K shared RAM, up to 19200 baud on all channels without handshake.

TSVME 541: Communications
VMEbus 6U DUAL × 25 intelligent controller, 68010 CPU, 10 MHz, 512K shared dynamic RAM, full CCITT × 25 implementation up to 255Kbits/sec.

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Marketing: Francis Adelving Technical: Georges Garcia

OS-9 BOARD-LEVEL PRODUCTS

TSVME 542: Communications

VMEbus 6U × 25 intelligent controller with transport layer class 0, two independent physical links up to 225 Kbits/sec., 68010 CPU, 10 MHz, 512K shared dynamic RAM.

TSVME 550: Communications

VMEbus 6U intelligent Ethernet controller with TCP/IP, 68010 CPU, 10 MHz, 512K shared dynamic memory.

TSVME 404: Controller

VMEbus 6U GPIB controller on-board software (talker/listener/ controller), 16K static RAM, 64K ROM, 4 extension RAM/ROM sockets, interrupter, front panel with IEEE 488 connector and address selector.

TSVME 600: Controller

VMEbus 6U graphic controller, 1024 × 512 × 4 color bit map, 1025 × 512 × 1 marking bit map, 680 × 512 or 640 × 480 pixels, 65 Hz interlaced or 55 Hz non-interlaced, 16 colors out of a palette of 4096, 2 RS-232C serial ports, 1 Centronics interface.

TSVME 603: Controller

VMEbus 6U intelligent high-performance graphic controller, 256 colors out of a palette of 16 million, 1024 × 1024 or 1024 × 768 60 Hz non-interlaced, 68010 CPU, 12.5 MHz, 512K dual-ported RAM, 128K PROM (includes debugger and VDI), 2 RS-232C serial ports.

TSVME 630: Controller

VMEbus 6U video acquisition board with real-time edge detection, (based on two specific gate arrays), Sobel gradient plus maximum gradient, 2 storage memory planes (512 × 512 × 8), 4 video camera inputs (50 Hz CCIR or RS-170 60 Hz or single shot), interrupter, memory window access without x, y calculation, library in ROM.

TSVME 400: I/O

VMEbus 6U, 48 opto-coupled isolated inputs (1500 volts), direct connection to switcher or 2/3 wired proximity detectors, debouncing on each input, front panel with two 37-pin Sub-D input connectors.

THEMIS/TEKELEC - AIRTRONIC

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Marketing: Francis Adelving Technical: Georges Garcia

OS-9 BOARD-LEVEL PRODUCTS

TSVME 401: I/O
VMEbus 6U, 32 relay outputs, cut-off capability, 30 watts, 60 VA galvanic isolation, 100 volts, front panel with two 37-pin Sub-D output connectors.

TSVME 402: I/O
VMEbus 6U, analog I/O, 16 × 32 bits analog inputs (differential, single-ended and mixed), 32 µsec. conversion time, 8 × 12 bits analog output, 4 µsec. conversion time, relays for individual output disconnection and protection, gain and offset software adjustable.

TSVME 408: I/O
VMEbus 6U, 48 opto-isolated logical inputs (24-48 volts), isolation 1500 volts, software programmable debouncing on catch input, software programmable interrupt capability on edge signal input.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
TSVME 105	(TSVME 105)	Piggyback TSVME 184	
TSVME 104	(TSVME 104)	Piggyback TSVME 184	
TSVME 120	(TSVME 120)	Piggyback TSVME 190	

TJP ELECTRONICS LTD.

13 West Street
Scarborough, North Yorkshire
England
Phone: 0723-378837 *Fax: 0723-500435*
Marketing: Terry Pickering *Technical: Terry Pickering*

OS-9 SYSTEMS

UNISON WORKSTATION (68020) **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	RAM: 6M	
Storage	Hard Disk: 1	Size: 20M	
	Interface: DMA/SCSI		
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
Features	Tower.		

RAVEN **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2"	Format: 38W7
Features	Tower.		

UNISON WORKSTATION **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 2-4M	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: DMA
	Floppy Disk: 1	Size: 3 1/2"	Format: 3805
	Mag. Tape: Xbec 97TC		
Features	Desktop.		

OS-9 BOARD-LEVEL PRODUCTS

TLP-CPU 2: CPU

VME 68008 CPU, 8 MHz, 128K hidden refreshed DRAM, 2 serial ports (6850), parallel I/O (6821), parallel interface/timer (68230), OS-9 development software in firmware with networking as an option.

TJP ELECTRONICS LTD.

13 West Street
Scarborough, North Yorkshire
England
Phone: 0723-378837 Fax: 0723-500435
Marketing: Terry Pickering Technical: Terry Pickering

OS-9 BOARD-LEVEL PRODUCTS

TJP-CPU 3: CPU
VME 68020 CPU, 12.5 or 16 MHz, 512K SRAM, dual serial ports (68681), DMA to SASI controller, parallel I/O, parallel interface/timer (68230), 68881 FPCP optional.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
TJP-CPU 2		TJP-MEM1	XBEC 1420
TJP-CPU 3		TJP-MEM3	XBEC 1420

ULTRASCIENCE

1824 Wilmette Avenue
Wilmette, Illinois 60091
Phone: (312) 256-0080 *Fax: (312) 256-0097*
Marketing: Eric Gibbs *Technical: Tom Johnson*

OS-9 SYSTEMS

S/R K1 PCS-AT SYSTEM **Software Development**

Software Professional OS-9
On Board CPU: 68000/10 FPCP: No RAM: 1M
Ports Serial: 2 Parallel: 2
Storage Hard Disk: 1-2 Size: 80-160M Interface: SCSI
Floppy Disk: 2 Size: 3 1/2" - 5 1/4"
Format: 3807, 5407, 5807, AT & PS/2
Mag. Tape: Optional SCSI 60M Streaming tape
Features This system combines the power and versatility of a 68000-based coprocessor executing OS-9/68000 concurrently with MS-DOS in an industry-standard AT compatible.

S/R K1 PCS-AT WORK GROUP SYSTEM **Business Applications**

Software Professional OS-9
On Board CPU: 68000/10 RAM: 2-3M
Ports Serial: 8-14 Parallel: 2
Storage Hard Disk: 1-2 Size: 80-160M Interface: SCSI
Floppy Disk: 2 Size: 3 1/2" - 5 1/4"
Format: 3807, 5407, 5807, AT & PS/2
Mag. Tape: 60M SCSI digital cassette tape
Features This system serves 8 to 14 users (terminals or PC's) under OS-9/68000 with MS-DOS operating concurrently in an industry-standard AT compatible.

S/R K2+ GRAPHICS WORKSTATION **Graphics**

Software Professional OS-9
On Board CPU: 68020 FPCP: 68881 RAM: 1-4M
Ports Serial: 2 Parallel: 1
Storage Hard Disk: 1 Size: 80M Interface: SCSI
Floppy Disk: 2 Size: 3 1/2" - 5 1/4"
Format: 3807, 5407, 5807, AT & PS/2
Mag. Tape: 60M SCSI digital cassette streamer
Features Desktop. Complete 68020-based graphics workstation using Hitachi 63484 ACRTC processor, video controller, 1M RAM, programmable CLUT, 1024 × 768 × 8 resolution.

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OS-9 SYSTEMS

S/R K2 PCS-AT SYSTEM **Business Application**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: 4M
Ports	Serial: 8-26	Parallel: 1	
Storage	Hard Disk: 1-2	Size: 80-330M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2" - 5 1/4"	
	Format: 3807, 5407, 5807, AT & PS/2		
	Mag. Tape: SCSI digital cassette or video digital tape		
Features	68020 power in an AT-compatible system capable of serving up to 26 users.		

S/R SYSTEM 32 **Business Applications**

Software	Professional OS-9		
On Board	CPU: 68030	FPCP: 68882	RAM: 8M
Ports	Serial: 30+	Parallel: 2	
Storage	Hard Disk: 1+	Size: 150M+	
	Interface: SCSI & ESDI (SMD & 9-track, optional)		
	Floppy Disk: 2	Size: 3 1/2" - 5 1/4"	
	Format: 3807, 5407, 5807 & AT-PS/2		
	Mag. Tape: Digital cassette, digital video or 9-track tape		
Features	Tower or 19" rack mount. "Building-Block" chassis make upgrade and expansion easy. All I/O is driven by dedicated 68000-based sub-processors, all hard disks feature hardware solid-state cache buffering.		

OS-9 BOARD-LEVEL PRODUCTS

S/R 68KP: CPU
S100 bus, 68000 CPU, 8 MHz, supports Motorola memory schemes.

S/R PC-68K1: CPU
PC-bus 68000 CPU, 10 MHz, 2 serial ports, 2 parallel ports, executes OS-9/68000 and MS-DOS in a standard PC-compatible concurrently, 1M DRAM, zero wait state.

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OS-9 BOARD-LEVEL PRODUCTS

S/R PC-68K2: CPU
PC/AT-bus 68020 CPU, 16 MHz, 68881 FPCP, 2 serial ports, "Oh-20" bus interface, executes OS-9/68000 and MS-DOS in a standard PC-compatible concurrently, 2-4M DRAM, zero wait state.

S/R IO-8: I/O
S100 bus, 8 serial ports, date and time.

S/R K1-MEMOIX: I/O
6-Serial port interface expansion for S/R PC-68K1, 1M DRAM.

S/R K2-IOX: I/O
6-Serial port interface expansion for S/R PC-68K2, connects to "Oh-20" bus, up to 4 can be connected to a K2.

DUAL VIOPE: I/O
VMEbus 6U, 68000 CPU, 10 or 12.5 MHz, 512K dual-ported DRAM, mailbox interrupt controller, Motorola I/O bus interface on P2, accesses up to four 8 port boardlets.

DUAL IOS8: I/O
8-Port serial I/O board for use with Dual VIOPE.

DUAL IOSP: I/O
Six serial, 2 parallel I/O boardlets for use with Dual VIOPE.

PIICEON SRXXXX ECC: Other
S100 error detection and correction DRAM (1 or 2M) memory board for RAM disk.

CLEARPOINT VME RAM: Other
VMEbus 6U, error detection and correction DRAM (4, 8 or 16M) memory board (for RAM Disk).

MMI MM63160: Other
VMEbus 6U, VME/VSB parity detection DRAM (4, 8 or 16M) memory board (for RAM Disk).

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OS-9 BOARD-LEVEL PRODUCTS

S/R SCSI: Mass Storage
S100 bus single-channel SCSI interface.

S/R PC-SCSI: Mass Storage
Single-channel SCSI interface for PC-bus, supports up to 4 floppy disk drives, addressable via K1 or K2 processors.

INTERPHASE V/SCSI: Mass Storage
VMEbus 6U dual channel SCSI controller, 68000 CPU, 10 MHz, 128K cache buffer, supports up to 14 SCSI devices.

DUAL VESDI-32: Mass Storage
VMEbus 6U, 68000 CPU, 10 MHz, 512K dual-ported DRAM, supports up to 4 ESDI drives via P2 interface.

INTERPHASE V/ESDI: Mass Storage
VMEbus 6U 68000 CPU, 10 MHz, 128K cache buffer, supports up to 4 ESDI.

DUAL VSMD-32: Mass Storage
VMEbus 6U, 68000 CPU, 10 MHz, 512K dual-ported DRAM, supports up to 3 SMD drives via P2 interface.

INTERPHASE V/SMD: Mass Storage
VMEbus 6U 68000 CPU, 10 MHz, 128K cache buffer, supports up to 4 SMD.

DUAL V9TRK: Mass Storage
VMEbus 6U Pertec compatible 9-track 1/2" tape controller, FIFO buffered intelligent DMA interface.

CIPRICO TM3000: Mass Storage
VMEbus 6U Pertec compatible 9-track 1/2" tape controller, FIFO buffered intelligent DMA interface.

S/R K2-GCX: Controller
Graphics coprocessor expansion for the K2+, includes 1M video RAM, Hitachi ACRTC controller chip, programmable CLUT.

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OS-9 BOARD-LEVEL PRODUCTS

S/R M1-5012: Other
12-Slot VMEbus, P1-P2 bus chassis with 50 watt surge-protected power supply, one-piece mother board design, bus arbitration board, modular components for ease of service and upgrading.

GD WDC-SMDX: Mass Storage
S100 bus, on-board CPU, supports up to 2 SMD drives.

GD T-CON: Mass Storage
S100 bus, on-board CPU, supports Pertec compatible 9-track tape drives.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
S/R 68KP	S/R IO-8	S/R SCSI GD WDC-SMDX GD T-CON	PIICEON SRXXXX ECC S/R M1-3012
S/R PC-68K1	(S/R PC-68K1) S/R K1-MEMIOX	S/R PC-SCSI	S/R K1-MEMIOX S/R PCS-AT
S/R PPC-68K2	(S/R PC-68K2) S/R K2-IOX	S/R PC-SCSI	S/R PCS-AT S/R KE-GCX

VME SPECIALISTS, INC.

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Phone: (415) 364-3328 Fax: (415) 369-5982
Marketing: Henry Lehmann Technical: Kim Rubin

OS-9 SYSTEMS

VME 1100 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10/20	FPCP: 68881	RAM: .5-5M
Ports	Serial: 2+	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	Format: 5807
Features	Desktop or tower. Low-cost 3U development system with 7-slot card cage.		

OS-9 BOARD-LEVEL PRODUCTS

SBC-2: CPU

VMEbus 3U single-board computer, 68000/68010 CPU, 2 or 4 serial ports, 16-bit counter/timer, up to 128K EPROM, 512K dual-port RAM, VME system controller. Optional MMU, FPCP, real-time clock, non-volatile RAM and 6U card.

SBC-3: CPU

VMEbus 3U 32-bit single-board computer, 68020 CPU, optional 68881/68882 FPCP, 2 serial ports, 16-bit counter/timer, 256K fast static non-volatile RAM, up to 256K EPROM. Optional real-time clock, location monitor, VME system controller, expansion connector.

VME490: I/O

VMEbus 3U serial interface module, 4-channels multi-node async./sync., up to 1M baud, fully buffered via 8K or 32K dual-port RAM and on-bard Z80, includes RS-232C and RS-422 interfaces, optional 6U card.

VME620: Mass Storage

VMEbus 3U SCSI host adapter with DMA, 512K dual-port RAM, full SCSI arbitration, disconnect, parity, meets ANSI X3T9.2. Available with RAM and 6U card.

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OS-9 BOARD-LEVEL PRODUCTS

VME360: Controller
VMEbus 3U high-resolution color graphics controller, 1024 × 1024, interlaced and non-interlaced, up to 64M pixels/sec., optional color palette shows 4096 colors and 16 shades of gray, includes 256K or 512K dual-port RAM, optional 6U card.

SBC-1: CPU
VMEbus 3U single-board computer, 68000/68010 CPU, 2 serial ports, 16-bit counter/timer, up to 128K EPROM, 512K zero wait state RAM, VME system controller, optional FPCP and 6U card.

SBC-7: CPU
VMEbus 3U single-board computer, 68000/68010 CPU, 2 serial ports, 16-bit counter/timer, up to 256K EPROM, 64K or 128K zero wait state battery-backed (on-board) SRAM, VME system controller, optional FPCP and 6U card.

VME DRAM 3-1M: Memory
VMEbus 3U 1M dynamic memory board, includes parity, front panel activity indicators, 64K boundary addressing, A24, D16, D8(EO), optional 6U card.

VME DRAM 2-2M: Memory
VMEbus 6U 2M dynamic memory board, includes 4-way interleave, latched write cycles, 64K boundary addressing, A32, A24, D32, D16, D8(EO), UAT, Interrupter, error logging.

VME DRAM 4-4M: Memory
VMEbus 6U 4M dynamic memory board, includes 4-way interleave, latched write cycles, 64K boundary addressing, block transfer, A32, A24, D32, D16, D8(EO), UAT, Interrupter, error logging, 2M option.

VME DRAM 16-16M: Memory
VMEbus 6U 4/8/16M dynamic memory board, uses industry-standard SIP module sockets for simple upgrade. Full featured: write latching, A32, A24, UAL, 64K addressing, D32, D16, D8(EO), parity block transfer, error logging.

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
SBC-2	VME490	VME620	
SBC-3	VME490	VME620	
SBC-2	VME490 X2	VME620	DRAM 3-1M
SBC-3	VME490 X2	VME620	DRAM 3-1M

WINDRUSH MICRO SYSTEMS LIMITED

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OS-9 SYSTEMS

MODEL 121 **Software Development**

Software	OS-9 6809		
On Board	CPU: 6809	RAM: 56K	
Ports	Serial: 2	Parallel: 1	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2"	
	Format: 3803, 3807 & 38W7		
Features	Desktop.		

MODEL 4000 **Software Development**

Software	OS-9 6809		
On Board	CPU: 6809	FPCP: No	RAM: 1M
Ports	Serial: 2	Parallel: 2	
Storage	Hard Disk: 1	Size: 20M	Interface: SCSI
	Floppy Disk: 2	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7		
Features	Desktop or 19" rack mount. Modular system, additional serial and parallel I/O, A-D and D-A interfaces available.		

MODEL 8000 **Software Development**

Software	OS-9 6809/Professional OS-9		
On Board	CPU: 68000/10/20/30		RAM: 8M
Ports	Serial: 3	Parallel: 4	
Storage	Hard Disk: 1	Size: 340M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7		
	Mag. Tape: 1/4" 150M streamer		
Features	Desktop or tower. Modular system, additional serial and parallel I/O, A-D and D-A interfaces available.		

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OS-9 SYSTEMS

OMEGA-II **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 RAM: 8M
Ports	Serial: 23 Parallel: 3
Storage	Hard Disk: 1 Size: 340M Interface: SCSI Floppy Disk: 1 Size: 3 1/2" - 5 1/4" Format: 3803, 3807 & 38W7 Mag. Tape: 1/4" 150M streamer
Features	Desktop or 19" rack mount. High-resolution color graphics running under OS-9.

OMEGA-STE **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 RAM: 8M
Ports	Serial: 23 Parallel: 3
Storage	Hard Disk: 1 Size: 340M Interface: SCSI Floppy Disk: 1 Size: 3 1/2" - 5 1/4" Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7 Mag. Tape: 1/4" 150M streamer
Features	Desktop or 19" rack mount. STE bus expansion for I/O and color graphics running under OS-9.

OMEGA - G-64 **Software Development**

Software	Professional OS-9
On Board	CPU: 68020 RAM: 8M
Ports	Serial: 23 Parallel: 3
Storage	Hard Disk: 1 Size: 340M Interface: SCSI Floppy Disk: 1 Size: 3 1/2" - 5 1/4" Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7 Mag. Tape: 1/4" 150M streamer
Features	Desktop or 19" rack mount. G-64 bus expansion for I/O and color graphics running under OS-9.

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OS-9 SYSTEMS

MODEL 145 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 2M	
Ports	Serial: 23	Parallel: 3	
Storage	Hard Disk: 1	Size: 40M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3803, 3807, 38W7, 5803, 5807, 58V2 & 58W7		
	Mag. Tape: 1/4" 150M streamer		
Features	Desktop or 19" rack mount. High-resolution (768 × 576 × 4-bit) color graphics running under OS-9.		

OS-9 BOARD-LEVEL PRODUCTS

3U-CPU2: CPU
6809 CPU with DAT for OS-9 Level II (used in Model 4000).

6U-SP0X0: CPU
68000/68010 CPU with 4M RAM, serial port and clock/calendar.

6U-SP020: CPU
68020 CPU with 1.5M RAM, serial port and clock/calendar.

3U-FDSA: Mass Storage
SCSI initiator and 5 1/4" floppy disk controller.

6U-SPIO: I/O
3 RS-232C ports and 2 parallel ports.

6U-PIO6: I/O
96-Channel isolated parallel interface.

6U-ACRTC: Controller
Color graphics controller (768 × 576 × 4-bit) with K/B, light pen and mouse inputs, full terminal emulation running under OS-9.

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OS-9 BOARD-LEVEL PRODUCTS

6U-ADC2: I/O
16-Channel, 12-bit A/D converter.

6U-DAC12: I/O
18-Channel, 12-bit D/A converter.

ADDITIONAL OFFICES

LLOYD I/O, INC.
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WORDSWORTH TECHNOLOGY LTD.

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OS-9 SYSTEMS

VME SYS-09 (7U450-20) **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68020	FPCP: 68881	RAM: .25-8M
Ports	Serial: 2-10		
Storage	Hard Disk: 1	Size: 20/40M	Interface: SCSI
	Floppy Disk: 1	Size: 5 1/4"	
	Format: 3807, 38W7, 5807 & 58W7		
Features	Desktop or 19" rack mount. 12-Slot VME backplane, battery-backed real-time clock, 450 watt power supply.		

VME SYS-09 (3U200) **Software Development**

Software	Professional & Industrial OS-9		
On Board	CPU: 68000/10	FPCP: 68881	RAM: .5-8M
Ports	Serial: 2-10		
Storage	Hard Disk: 1	Size: 20/40M	
	Interface: SCSI or Direct		
	Floppy Disk: 1	Size: 3 1/2"	
	Format: 3807, 38W7, 5807 & 58W7		
Features	Desktop, tower or 19" rack mount. 5-Slot VME back plane, 200 watt power supply, non-volatile RAM, battery-backed clock.		

VME SYS-09 (7U450 X20) **Software Development**

Software	Professional OS-9		
On Board	CPU: 68020	FPCP: 68881-1G	RAM: 2-8M
Ports	Serial: 2-10		
Storage	Hard Disk: 1	Size: 20/40/60M	Interface: SCSI
	Floppy Disk: 1	Size: 3 1/2" - 5 1/4"	
	Format: 3807, 38W7, 5807 & 58W7		
	Mag. Tape: 1/4" 60M		
Features	Desktop or 19" rack mount. 12-Slot VME back plane, battery-backed clock (16 MHz), 450 watt power supply.		

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OS-9 BOARD-LEVEL PRODUCTS

VME SBC2: CPU
VMEbus 3U SBC, 68010 CPU, 512K dual-port RAM, 2-serial channels, full VME slot 1 interface.

VME SBC1: CPU
VMEbus 3U SBC, 68010 CPU, 512K RAM, 2 serial channels, full VME slot 1 interface.

VMED SBC3: CPU
VMEbus 3U SBC, 68020 CPU, 256K dual-port static RAM, battery-backed RAM and clock, 2 serial ports, VME slot 1 interface, OEM connector.

VME CPU010: CPU
VMEbus SBC, 68010 CPU, 64K static RAM, 128K EPROM, 2 serial channels, watchdog timer, non-volatile RAM, full VME slot 1 interface.

VME 360: Controller
VMEbus color graphics controller, displays up to 1024 × 1024 pixels, 16 colors out of 4096 color palette, VT100 command compatible.

VME 490: Communication
VMEbus 3U intelligent 4-channel serial interface capable of supporting HDLC/SDLC protocols, async. RS-232C, firmware provided.

VME PIO: I/O
VMEbus 3U parallel I/O, 48-bit TTL I/O for connection to optically isolated sub-system.

VME 403: I/O
VMEbus 3U serial controller, 4 RS-232C or RS-422 channels, based on Zilog SCC's.

VME 620: Controller
VMEbus 3U SCSI controller with DMA and optional 512K RAM.

VME HFD: Controller
VMEbus 3U disk controller for up to 4 drives, either ST506 or floppy interface, on-board DMA.

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OS-9 BOARD-LEVEL PRODUCTS

VME DSC: Controller
VMEbus 3U dual-channel stepper motor controller.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
VME SBC2	(VME SBC2) VME 490	VME 620	VME DRAM
VME SBC2	(VME SBC2) VME 490	VME HFD	VME DRAM
VME SBC3	(VME SBC3) VME 490	VME 620	VME DRAM
VME CPU010	(VME CPU010) VME 490	VME HFD	VME RPC
VME TP020	(VME TP020) VME 490	(VME TP020)	

XYCOM

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OS-9 SYSTEMS

XVME-860 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2		
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 2	Size: 5 1/4"	Format: 5807
Features	19" Rack mount or table top. 7 Unused 6U VME slots.		

XVME-830 **Software Development**

Software	Professional OS-9		
On Board	CPU: 68000/10	RAM: 512K	
Ports	Serial: 2		
Storage	Hard Disk: 1	Size: 20M	Interface: ST506
	Floppy Disk: 1	Size: 5 1/4"	Format: 5807
Features	19" Rack mount or table top. 7 Unused 3U VME slots, compact unit.		

OS-9 BOARD-LEVEL PRODUCTS

XVME-600: CPU
VMEbus 3U, 68000/68010 CPU, 10 MHz, no wait states, sockets for up to 128K EPROM, 128K static RAM, 2 serial ports and on-board system controller functions.

XVME-601: CPU
VMEbus 3U, 68000/68010 CPU, 10 MHz, 512K no wait state dynamic RAM with sockets for up to 128K EPROM, 2 serial ports and on-board system controller functions.

XVME-200/290: I/O
VMEbus digital I/O module provides 32 bi-directional TTL I/O lines in ether a 3U (XVME-200) or 6U (XVME-290) form factor, connector pinouts are OPTO-22 compatible.

XVME-201: I/O
VMEbus 3U digital I/O module, 48-channels of bi-directional TTL I/O, connector pinouts are OPTO-22 compatible.

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OS-9 BOARD-LEVEL PRODUCTS

XVME-210: I/O
VMEbus 6U digital input module, 32-channels of optically isolated high-level inputs, input debugging circuitry and isolated 12-volt excitation supply.

XVME-212: I/O
VMEbus 6U digital input module, 32 optically isolated digital inputs, on-board scanning logic continuously monitors 32 inputs and generates interrupts on change of state.

XVME-230: I/O
VMEbus 6U intelligent counter module, 16 independent counting channels, on-board 68000 CPU with firmware for stepper motor control, period measurement, frequency measurement, event counting and pulse width modulation.

XVME-240: I/O
VMEbus 6U digital I/O module, 80-channels of TTL I/O with interrupt capability can be programmed as input or output in 8-bit groups.

XVME-260: I/O
VMEbus 6U relay output module, 32-channels of relay output (software readable), each channel is a magnetic relay with varistor protected contacts.

XVME-500/590: I/O
VMEbus analog input module, 32-SE channels, available in ether 3U (XVME-500) or 6U (XVME-590) form factor, programmable gain.

XVME-505/595: I/O
VMEbus analog output module, 4-channels of voltage or current output, available in ether 3U (XVME-505) or 6U (XVME-595) form factor.

XVME-530: I/O
VMEbus 6U analog output module, 8-isolated analog output channels, outputs may be either voltage or current.

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OS-9 BOARD-LEVEL PRODUCTS

XVME540: I/O
VMEbus 6U analog input/output module, provides 32-SE or 16-DI analog input channels and 4 analog output channels.

XVME-560: I/O
VMEbus 6U analog input module, provides 64-SE or 32-DI analog input channels, programmable gains of 1, 2, 4 or 8.

XVME-566: I/O
VMEbus 6U fast analog input module, 32-SE or 16-DI analog input channels, 100 KHz throughput, 64K of dual-port simple RAM, programmable pacer clock.

XVME-400: Communication
VMEbus 3U communication module, 4-channels of asynchronous or synchronous RS-232C serial I/O, uses Zilog Z8530 controller chips.

XVME-401: Communication
VMEbus 3U communication module, 4-channels of asynchronous or synchronous RS-422 serial I/O, uses Zilog Z8530 controller chips.

XVME-420: Communication
VMEbus 6U serial communication module, on-board 68000 processor, 4 asynchronous serial ports, RS-232C, RS-422 and TTL compatible signal levels.

XVME-428: Communication
VMEbus 6U serial communication module, on-board 68000 CPU, 8 asynchronous serial ports, RS-232C, RS-422 or TTL computable signal levels.

XVME-404: Controller
VMEbus 3U Winchester/floppy/ESDI controller for up to 4 floppy disks and 2 Winchester disk drives, 64K dual access RAM.

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750 North Maple Road
Saline, Michigan 48176
Phone: (800) 367-7300 Fax: (313) 429-1010
Marketing: Dennis Waldenmayer Technical: Craig Giraud

OS-9 BOARD-LEVEL PRODUCTS

XVME-405: Controller
VMEbus 3U intelligent SCSI controller, on-board 64180 CPU and firmware to support the SCSI Common Command Set, 2 DMA channels and 128K dual-access RAM.

OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
XVME-600	XVME-400/401 XVME-420/428	XVME-404 XVME-405	
XVME-601	XVME-400/401 XVME-420/428	XVME-404 XVME-405	

XYZ ELECTRONICS, INC.

RR 12 Box 322
Indianapolis, Indiana 46236
Phone: (317) 335-2128
Marketing: Gary Bannister *Technical: Gary Bannister*

OS-9 SYSTEMS

SYSTEM 7 **Software Development**

Software	Professional OS-9	
On Board	CPU: 68000/10/08	RAM: 756K
Ports	Serial: 3	Parallel: 2
Storage	Floppy Disk: 2	Size: 5 1/4"
Features	Desktop or 19" rack mount.	

OS-9 BOARD-LEVEL PRODUCTS

CPU-9A: CPU
STD bus 68B09 CPU, 6551 serial port, 6840 counter/timer, time-of-day clock, battery-backed clock, DRAM refreshed, optional SRAM. OS-9 6809 Level I.

CPU-68K8: CPU
STD bus 68008 CPU, 10 MHz, 68901 MFP, time-of-day clock, battery-backed clock, optional SRAM. OS-9/68000 and OS-9 6809 Level I.

FLOPPY-II: Mass Storage
STD bus 3 1/2", 5 1/4" and 8" floppy disk controller, drives in any combination, on-board DMA. OS-9/68000 and OS-9 6809 Level I.

CRTC-2: Controller
STD bus monochrome video controller, composite or TTL outputs, various visual attributes, block-style "Business Graphics", OS-9/68000.

SPIO: Communication
STD bus, 2 serial channels, 2 parallel channels. OS-9/68000 and OS-9 6809 Level I.

SASI: Mass Storage
STD bus, Shugart Associates System interface for hard disk drives. OS-9/68000 and OS-9 6809 Level I.

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OS-9 BOARD-LEVEL SYSTEMS

CPU	SERIAL PORT	MASS STORAGE	OTHER
CPU-9A	(CPU-9A) SPIO	(CPU-9A) FLOPPY-II SASI	CRTC-2
CPU-68K8	(CPU-68K8) SPIO	(CPU-68K8) FLOPPY-II SASI	CRTC-2

OS-9 SOFTWARE LISTINGS

BUSINESS & PRODUCTIVITY SOFTWARE

Accounts Payable **SPECIALTY ELECTRONICS**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; direct addressed cursor terminal; 132 column printer.

DESCRIPTION: ***Accounts Payable*** is an invoice-linked system revolving around the accounts payable invoice. It allows checks to be calculated by choosing a set of vendors or selecting specific invoices and credit memos for payment of specific vendors. ***Accounts Payable*** will allow reports to be extracted on any basis. The amount of each invoice can be distributed to as many as 11 different general ledger accounts. Postings are automatically made to the cash and accounts payable accounts. The ***Accounts Payable*** program also maintains the vendor's activity totals.

Accounts Receivable **SPECIALTY ELECTRONICS**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; direct addressed cursor terminal; 132 column printer; RunB.

DESCRIPTION: Specialty Electronics' ***Accounts Receivable*** program is an advanced accounting package with provisions for progress billing. This package will keep track of milestone payments before creating the invoice. Journals, reports and statements can be generated and printed according to many user defined formats. This accounts receivable package can post directly to the appropriate general ledger accounts used by the Specialty Electronics ***General Ledger*** system.

Books **TREND COMPUTER SYSTEMS**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; 80 column printer; Basic or RunB. Source language - Basic.

DESCRIPTION: ***Books*** is a double entry journal and general ledger system for small businesses. The program prints income statements, balance sheets, journals audit trails, trial balance, expense and income summaries, comparison of income and comparison of expenses and credit/debit activity for specific accounts.

Biz-It **BOHME & WEIHS**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: This modern office environment system is a foundation for a complete software family. Additional modules include an accounting package (SALD-It) and automatic AFA. Modular architecture and complete integration of the individual modules makes ***Biz-It*** a powerful business and productivity software package. Customizing is available.

CAD Finance One **H. C. ANDERSEN COMPUTER A/S**

OPERATING ENVIRONMENT: OS-9/6809; dual disk drives. Source language - Basic, source code available.

DESCRIPTION: A general ledger accounting program that supports up to 250 different accounts. Features include budgeting, profit and loss reports, balance sheets and financial statements. Customizing is available.

CNC **TREND COMPUTER SYSTEMS**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; 24 X 80 screen; 80 column printer. Source language - Basic.

DESCRIPTION: ***CNC*** is an automated method of organizing the quotation operations of a machine shop using ***CNC*** equipment. A customer data base provides details for all quoted parts. Shop rates are easily changed and separate rates for ***CNC*** and other shop operations can be retained. Markup rates can be entered for outside services, consultants and discounts. For successful bids, comparison of bid vs. actual costs and percentage profit are retained for future reference. Future quotations of the same part number allow quick reference to past quotation history and allow rapid modification of quote parameters if desired. ***CNC*** allows the operator to give a firm quote while talking to the buyer on the very first phone contact. Hard copies of quotation details are available in internal or customer format for written confirmation.

Columns **GRANGE SQUARE, LTD.**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: Data is presented in a row/column format in boxes. User may specify the width of each column individually and to enter the text for each box separately. Text is then formatted (justification, centering, word/page breaks, etc.) automatically. Heading and trailing text can also be presented. Ideal for planning and technical literature, etc. Customizing is available.

CSG IMS **CLEARBROOK SOFTWARE GROUP, INC.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; dual disk drives. Source language - Assembler/ C.

DESCRIPTION: A versatile relational database manager designed for quick and easy implementation of accounting and other data applications. Its powerful structured language, plus screen and report lay out programs allow the user to have an application running in a short period of time. The interactive environment allows the user to retrieve information without having to write a program. Virtually no restrictions on record and file sizes.

Dynacalc **COMPUTER SYSTEMS CENTER**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; CRT terminal with cursor addressing. Source language - (OS-9/6809) Assembler, (OS-9/68xxx) Assembler and C.

DESCRIPTION: Full-featured electronic spread sheet system that can be loaded from disk or run directly from ROM. Will read/write OS-9 data files and pipes, and be run in background to do system number crunching. 15-Digit floating point math including transcendental and financial functions. Optimized for use with smart terminals to reduce system I/O burden in multi-user systems. Foreign language versions available.

General Ledger **SPECIALTY ELECTRONICS**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; direct addressed cursor terminal; 132 column printer; RunB.

DESCRIPTION: The ***General Ledger*** package is a completely computerized ledger system. ***General Ledger*** enables the user to produce balance sheets and income statements in various formats. Also included is the ability to accept postings to the various accounts from external sources: Accounts Payable, Accounts Receivable and Payroll. The normal postings are double entry type to reduce off-balance posting errors. ***General Ledger*** is easily adaptable for multi-company accounting.

General Ledger/Accounts Payable **SOUTHEAST MEDIA- DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - Sculptor.

DESCRIPTION: ***General Ledger*** tracks cash receipts, sales and disbursements, yielding audit trails of transactions in Ledger Account. Sales can be tracked by multiple types and operations by multiple locations (up to 99 types and 99 locations) with the ability to sort by types, locations and combinations of both. ***Accounts Payable*** prepares payable reports including invoice/vendor aging lists, purchase journals and detailed payment schedules. Disbursements also allow for distribution of discounts to specific ***General Ledger*** accounts numbers.

G/L — TREND COMPUTER SYSTEMS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; 24 X 80 cursor addressable CRT; 132 column printer. Source language - Basic.

DESCRIPTION: ***G/L*** is an extremely easy to use and understand general ledger program. It uses true double entry journal postings such that the operator can see exactly how each account is affected by the posting, prior to committing it to disk. A free form description field permits a user defined comment to be attached to each transaction as it is posted. Postings may be made to as many journals (AR, AP, CR, CD, PR, GJ, etc.) as desired. Sorted hard copy journal entries and general ledger reports showing every transaction effecting each account along with the beginning and ending account balances can be printed. Errors may be corrected and the reports re-printed prior to an update. All of the normal trial, monthly and quarterly balance sheets and income statements may also be printed.

Grades — TREND COMPUTER SYSTEMS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; 80 X 24 CRT; 80 column printer; Basic or RunB. Source language - Basic.

DESCRIPTION: ***Grades*** is a system of maintaining test information and individual student grades for any test entered into the system. The operator merely enters for each student the number of questions missed. ***Grades*** will automatically calculate the percentage correct for that test and retain the information for future averaging. Report card averages are computed and printed at specified grading periods and average-to-date scores are available at any time. Students may be added to or dropped from the class list at any time.

Inventory Control System — SPECIALTY ELECTRONICS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; direct addressed cursor terminal; 132 column printer.

DESCRIPTION: The ***Inventory Control System*** program provides the tools for complete control of a large and active inventory. Reports can be generated according to quantity on hand, on order and many other different categories. Included is a complete description field, category groups, supplier information, order dates and an allowance for several other groups.

MOMS — TREND COMPUTER SYSTEMS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; 80 X 24 CRT; 132 column printer; Basic or RunB. Source language - Basic; source code is available.

DESCRIPTION: ***MOMS*** is a complete patient billing and accounts receivable system. It uses open item accounting principals permitting allocation of posted payments. In addition to maintaining personal patient data and treatment history, the program provides many useful management reports including patient balances, day sheet, practice analysis and aged accounts receivable. It also prints superbills, patient statements, insurance forms and instant bills. The programs will handle multiple doctors and multiple practices. Up to 32,000 patients with up to 250 transactions per patient are handled with ease.

Payroll — SPECIALTY ELECTRONICS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; direct addressed cursor terminal; 132 column printer; RunB.

DESCRIPTION: The ***Payroll*** system provides payroll support which goes beyond writing paychecks. It provides complete and accurate audit trails, maintains a complete and accurate history of all transactions and gives concise yet meaningful reports. ***Payroll*** prints payroll checks, W-2 forms, payroll journals and lists of employees. In addition, it maintains employee records, posts to the general ledger and maintains federal tax tables.

Sculptor--4GL — SOUTHEAST MEDIA-DIV C.P.I.

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000.

DESCRIPTION: A special Southeast Media version of OS-9 Sculptor (equivalent to regular Sculptor version 1.4:8). A system of flexible keyed file access that allows fast record and data retrieval, insertion and deletion or other programmed modifications. Access by key or in ascending order and provides automatic menu generation, compilation and report generation. Portable at source level to MS-DOS, UNIX and other operating systems.

Softworks Softspread — SOFTWORKS LIMITED

OPERATING ENVIRONMENT: OS-9/68000. Source language - C, source code is available.

DESCRIPTION: ***Softworks Softspread*** is a Lotus 123 compatible spreadsheet. Users of Lotus 123 will be pleased with the familiarity of this program. ***Softspread*** includes most features of Lotus 123, but does not offer graphing or database features. Lotus 123 files can be directly read or written by Softspread.

Sort/Merge — SPECIALTY ELECTRONICS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; direct addressed cursor terminal; 132 column printer; RunB.

DESCRIPTION: ***Sort/Merge*** allows sorting and merging of Microware Basic files. Includes code and is easily modified for any length of key field.

TEXT EDITORS & WORD PROCESSING

ED and MF — METAMEDIA, INC.

OPERATING ENVIRONMENT: OS-9/68000. Source language - C; source code is available.

DESCRIPTION: The ***ED*** editor and ***MF*** mail-merge/formatter support sophisticated documentation preparation by letting you create, edit, format and print text files. ***ED*** provides simple and intuitive editing of files. It features an on-line help facility, it is equally adept at programming and writing tasks, handles files of virtually any size and type, supports up to nine simultaneous edit sessions, creates a command shell from within, streamlines repeated cycles by providing a process command and may be configured for any intelligent terminal. ***MF*** is a mail merge and formatting program. Its features include: micro-justification, an unlimited number of proportional and non-proportional fonts, permitting the user to create text structures, automatically generating a table of contents and assisting in building an index, easily accessing files containing other source text and processing several text files consecutively without intervention, printing multiple-part, multiple-line header and footer lines and supporting user-defined macros. Customizing is available.

Ed-It Plus — BOHME & WEIHS GmbH

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***Ed-It Plus*** is a full screen editor with WordStar compatible commands and key assignments. It includes on line help menus and powerful programming aids such as: free cursor positioning, symbolic textmarks, absolute and relative line positioning, automatic indenting, block copy, block moves and background printing. Documentation is available in German and English. Sample diskettes and customizing are available.

Just **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C; source code is available.

DESCRIPTION: ***Just*** has many unique features for dot matrix printers such as FPRINT. CMD is supplied for producing multiple copies of the "formatted" text on the printer (including embedded printer commands). Program is "User configurable" and adapts to other printers (set up for Epson MX-80 with Graftrax); 10 embedded printer control commands; and compensates for "double width." Includes the normal line width margin, indent, paragraphs, space, vertical skip lines, page length, numbering, centering and fill justification. Use with ***Pat*** or any other editor. Customizing is available.

MUMPS **PLUS FIVE COMPUTER SERVICES**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - C.

DESCRIPTION: OS-9 ***MUMPS*** is an implementation of standard ***MUMPS*** which meets or exceeds ANSI/MDC X11.1-1984. ***MUMPS*** is a character string oriented data manipulation language that adds powerful character string operators and key indexed file structures to OS-9. Features include: arbitrary precision character arithmetic, arbitrary length strings, routines can be prepared by any editor available, can read and write standard OS-9 files and incremental data locks have been implemented. Customizing is available.

Pat **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/68000. Source Language - C; source code is available.

DESCRIPTION: ***Pat*** is a full-featured, screen-oriented text editor with all the best features of "PIE" and more. You may change or add your own features. PL-9 source finished and easily configured to your CRT. Customizing is available.

Screditor III **WINDRUSH MICRO SYSTEMS, LTD.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; terminal with X-Y cursor control. Source language - Assembler; source code is available.

DESCRIPTION: ***Screditor III*** is a powerful screen-oriented text editor and word processor/mailmerge package. Cursor-based editing with automatic justification, multi-column insert and delete, symbolic keyboard entry and user definable keyboard. Also included is a tutorial guide designed to train novice users in all phases of editing and word processing.

SED **EKF ELEKTRONIK GmbH**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: Full-sized screen editor with numerous enhancements of μMACS. Total support of terminal function keys. Customizing is available.

Stylograph **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - Assembler; source code is available.

DESCRIPTION: ***Stylograph*** is a full-featured word processor where the text is formatted on the screen just as it will appear when printed. Lines of text can be centered, left or right justified, displayed wider than screen, tabbed or indented. Powerful printing options include boldfacing, superscript, subscript, overline, underline and italic. An easy to follow tutorial is included in the manual for quickly learning the use of ***Stylograph***. On-line "Help" is provided to make ***Stylograph's*** use even easier. True proportional spacing is supported for many brands of printers. Customizing is available.

Stylo-Merge **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - Assembler; source code is available.

DESCRIPTION: ***Stylo-Merge*** allows you to generate form letters, append text files or spool larger than memory text files to the printer. Its major function is to generate form letters. When printing the form letter, the program draws variable data such as names, addresses, phone numbers and dollar amounts from a data file and then merges them into the proper locations in the final document. Another ***Stylo-Merge*** control feature allows you to customize each form letter by pausing the printer and allowing you to input responses from the keyboard. ***Stylo-Merge*** allows you to append text files together, thus files can be edited in smaller, more convenient blocks and chained together at printout time. Customizing is available.

Stylo-Spell **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - Assembler; source code is available.

DESCRIPTION: The ***Stylo-Spell*** spelling checker program reads through a text file and compares the words in the file with a 42,000 word dictionary. Words not found in the dictionary may be marked in the text for later editing, corrected immediately, added to the supplementary dictionary for future sessions or simply ignored. In addition to the main dictionary, ***Stylo-Spell*** is also capable of creating a "user defined" dictionary. Customizing is available.

Text-It **BOHME & WEIHS GmbH**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***Text-It*** is a full-screen word processor and programmers documentation aid. Features include: multi file editing, macro facility, spell checker option, WordStar-like command shell, multi fonts, support for laser printers, on-line help and mail merging. Documentation is available in German and English. Sample diskettes and customizing are available.

COMMUNICATIONS

Cmodem — COMPUTER SYSTEMS CONSULTANTS, INC.

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - C; source code is available.

DESCRIPTION: A menu driven telecommunications program easily configured for many types of computer systems and to most modems. It supports dumb-terminal mode, upload and download in non-protocol mode and Ward Christiansen Xmodem protocol mode. Transfer of files between systems is accomplished by using hard-wire or telecommunications facilities. ***Cmodem*** is available in either object or source code Customizing is available.

DIOCOM — ULTRASCIENCE

OPERATING ENVIRONMENT: OS-9/68000. Source language - Assembler and C.

DESCRIPTION: ***DIOCOM*** provides popular communications protocols, as well as an error checking protocol, that handles all types of files.

ASSEMBLERS, CROSS-ASSEMBLERS, LANGUAGES, SIMULATORS & TRANSLATORS

Ada Cross Compiler **DR. RUDOLF KEIL GmbH**

OPERATING ENVIRONMENT: OS-9/68000.

DESCRIPTION: The ***Ada Cross Compiler*** is hosted on VAX/VMS and produces object code for a Motorola MC68020 CPU and MC68881 FPCP running under OS-9. It translates full Ada as specified in the 1983 Ada Reference Manual, and conforms to the Department of Defense 4.4 Ada specification. The user interface is easy to use and the cross compiler is well integrated into the underlying host operating system. It can recognize about 500 different self-explanatory and accurately positioned English languages error messages. The cross compiler can translate up to 1800 lines per minute on a VAX 8500 and requires 1.5M of hard disk storage space. The amount of virtual memory required for a given application depends on the size and number of compilation units to be compiled and typically varies between 4-7M.

CRASMB **LLOYD I/O**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000.

DESCRIPTION: Lloyd I/O has translated its eight-bit Macro Cross Assembler, ***CRASMB*** for OS-9/6809, into the OS-9/68000 environment. ***CRASMB*** supports assembly language software developed for the following microprocessors: 1802, 6502, 6800, 6801, 6303, 6804, 6805, 6809, 6811, TMS 7000, 8041/family, 8048/family, 8051/family, 8080/85, Z8 and the Z80. It is a full-featured assembler with macro and conditional assembly facilities. It generates object code using four different formats. ***CRASMB*** allows (symbols) length to 30 characters and has label cross-referencing options.

CRASMB 16.32 **LLOYD I/O**

OPERATING ENVIRONMENT: OS-9/6809.

DESCRIPTION: ***CRASMB/16.32*** uses machine language memory modules which are linked to the main assembler for mnemonic look up and addressing mode handling. It has extended features not found in other assemblers, and uses 32-bit math symbols and PC addressing. Features include: Nestable conditionals; macros with parameters and nesting; nestable local labels; errors tell line numbers and file names; Intel Hex formatted object code and Motorola S1-S9 formatted object code.

Cross-Assemblers **COMPUTER SYSTEMS CONSULTANTS, INC.**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - C.

DESCRIPTION: These ***Cross-Assemblers*** enable the use of many types of computer systems for program development of 1802/5, 6800/01/11/6303, 6804, 6805, 6809, 6502/3, 8080/5, 8048, 8051, Z-8, Z-80 and 68000 code by giving the assembler language and listing formats used on the target machine. They are all written in C and produce Motorola S-text files. Load/unload utilities and a macro pre-processor are included. Customizing is available.

Debugging Simulators **COMPUTER SYSTEMS CONSULTANTS, INC.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler; source code is available.

DESCRIPTION: The ***Debugging Simulator*** enables the user to interactively simulate, examine and modify 6800/1, 6805, 6809, 6502 and Z-80 programs on 6800/1/2/3/8/9-based systems. Programs may also be disassembled into source format and the source may be displayed or printed. The 6809 simulator is available for OS-9 only. Customizing is available.

FORTH09 **D.P. JOHNSON**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler/FORTH.

DESCRIPTION: ***FORTH09*** is a FORTH-83 Standard implementation with extensions specifically taytlored for OS-9. Programs written in FORTH can instantly be saved as compact, executable machine language modules. ***FORTH09*** saved application code is ROMable, reentrant and position independent, requiring as little as 3K for a small program. Where maximum speed is required, the user can force small code words to be automatically compiled as in line code rather than subroutines.

Kansas City Basic **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler.

DESCRIPTION: A Basic language for the Color Computer with many new commands and sub-functions added. Uses a full implementation of the IF-THEN-ELSE logic, allowing nesting to 255 levels. Strings are supported and a subset of the usual string functions such as LEFT$, RIGHT$, MIDS$, STRINGS$, etc. are included and variables are dynamically allocated.

K-BASIC **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler.

DESCRIPTION: A "native code" Basic compiler that compiles to Assembly language source code. A new, streamlined Assembler is now included allowing the assembly of LARGE Compiled ***K-BASIC*** programs. Conditional assembly reduces Run-Time package.

M68/R68 **ULTRASCIENCE**

OPERATING ENVIRONMENT: OS-9/68000. Source language Assembler and C.

DESCRIPTION: ***M68/R68*** is a utility that does much of the routine work of converting AMOSL assembler code to OS-9 assembler code.

Mach2 **PALO ALTO SHIPPING COMPANY**

OPERATING ENVIRONMENT: OS-9/68000. Source language - Assembly and Forth.

DESCRIPTION: An interactive 68000 assembler, disassembler and debugger using standard Motorola syntax (not RPN). ***Mach2*** is built within a subroutine--threaded Forth-83 development environment--which allows the creation of stand-alone or linkable OS-9 code modules (including OS-9 drivers). The interactive nature of ***Mach2*** makes it particularly well suited to hardware development and real-time applications. Customizing is available

Modula-2 68000 System V3.5 **INTERFACE TECHNOLOGIES CORP.**

OPERATING ENVIRONMENT: OS-9/68000. Source language - Modula-2.

DESCRIPTION: The ***Modula-2 68000 System*** compiler is designed for the 68000 microprocessor family. It features on-line 68020 assembler with Motorola syntax. The compiler comes with several libraries: Standard library for OS-9, library for stand-alone EPROM resident applications and Wirth's library. ***Modula-2*** interfaces with other programming languages including C. Highly portable with full debugger support and many utilities as examples in source code. Tool boxes for different applications available.

OSM **LLOYD I/O**

OPERATING ENVIRONMENT: OS-9/6809.

DESCRIPTION: An extended macro assembler with conditional assembly directives and extended commands including: Motorola standard mnemonics and addressing modes; two passes to generate object code; library file calls nestable to 12 deep; conditional assembly nestable to any depth; macros nestable to any depth, with parameters; variable length symbols up to 32 characters; 2048 maximum symbols; automatically generated labels and symbols; errors report file name and line number; and object code format for OS-9, Motorola S1-S9 or Intel Hex.

P20K **CERTIFIED SOFTWARE CORPORATION**

OPERATING ENVIRONMENT: OS-9/68000. Source language - Pascal.

DESCRIPTION: OmegaSoft Pascal is an integrated package consisting of a menu-driven Pascal shell, compiler, assembler, linker, screen editor, host debugger and various utilities. The source code accepted is extended Pascal for systems programming and real-time systems with or without an operating system. All activities are handled using the Pascal Shell and syntax checking and error reporting from the editor are supported. Generates code for the entire 68000 series. Customizing is available.

PIC/PID Translators **COMPUTER SYSTEMS CONSULTANTS, INC.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler; source code is available.

DESCRIPTION: The 6800-6809 translator converts 6800/1 assembler-language programs to 6809 assembler-language programs by converting 6800/1 opcodes to sequences of one or more 6809 opcodes. The 6809 ***PIC/PID*** translator assists in converting 6809 assembler-language programs to position-independent code and data, using PC, S, U, X, and Y as base registers. Customizing is available.

PLDASM **EKF ELEKTRONIK GmbH**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C, source code is available.

DESCRIPTION: A translator to convert Boolean equations to FEDEC fuse map. Compatible to PALASM (MMI), and covers all popular PLD devices including PAL/GAL. Customizing is available.

OS-9 SOFTWARE

Assemblers, Cross-Assemblers, Languages, Simulators & Translators

PLUS-68K
PXK9
Softworks Basic

PLUS-68K **WINDRUSH MICRO SYSTEMS, LTD.**

OPERATING ENVIRONMENT: OS-9/68000; terminal with X-Y cursor control. Source language - PLUS-68K; source code is available.

DESCRIPTION: ***PLUS-68K*** is a language whose origins come from PL/M. It is a complete programming environment, with a screen editor, a compiler and high-level debugger with all co-resident together in memory. It compiles to pure 6800/68020 code in one pass at over 4000 lines per minute. It supports 8, 16 and 32-bit signed and unsigned variables, plus single precision floating point. It is particularly suited to generating code for applications that must run in non-OS-9 environments. ***PLUS-68K*** is also ideal for OS-9 applications including user programs, device descriptors and device drivers (where it rivals assembler in efficiency). Customizing is available.

PXK9 **CERTIFIED SOFTWARE CORPORATION**

OPERATING ENVIRONMENT: OS-9/68000. Source language - Pascal.

DESCRIPTION: OmegaSoft 6809 Cross Pascal is an integrated package consisting of a menu-driven Pascal shell, compiler, assembler, linker, screen editor, host debugger and various utilities. The source code accepted is extended Pascal for systems programming and real-time systems with or without an operating system. All activities are handled using the Pascal Shell and syntax checking and error reporting from the editor are supported. Generates code for the 6809. Customizing is available.

Softworks Basic **SOFTWORKS LIMITED**

OPERATING ENVIRONMENT: OS-9/68000.

DESCRIPTION: ***Softworks Basic*** is an enhanced version of Basic that is Alpha Basic compatible. Its features make programming and porting simple to other computer systems (including: Atari, Amiga, Macintosh, Alpha Micro, XENIX, UNIX and MS-DOS).

Solve **SOUTHEAST MEDIA**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler.

DESCRIPTION: A symbolic object/logic verification and examine debugger that includes on-line debugging, disassemble and assemble. Choose from a large selection of monitor, assembler, disassembler, environmental and other miscellaneous commands. ***Solve*** is a powerful tool kit, yet simple to use. Customizing is available.

Super Sleuth **COMPUTER SYSTEMS CONSULTANTS, INC.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler.

DESCRIPTION: ***Super Sleuth*** is a set of programs which enables the user to interactively examine and/or modify object programs files on disk or in memory on 6800/1/9 systems. 6800/1/2/3/5/8/9/6502 or Z-80/8080/8085 programs may be disassembled into source code format and the source may be displayed, printed or saved on disk. Labels produced by ***Super Sleuth*** can be changed globally to labels of the user's preference. Cross-reference listing of labels in any Motorola assembler formatted source file may be produced to aid in debugging or modifying the program. 6800/1/2/8/9 object code may be automatically converted to 6809 position-independent code. The program is also capable of disassembling FLEX programs in OS-9. Customizing is available.

68010 Super Sleuth **COMPUTER SYSTEMS CONSULTANTS, INC.**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C; source code is available.

DESCRIPTION: This version of ***Super Sleuth*** analyzes S1, S2 and S3 formatted 58000/68008/68010 object programs on 6809, 680xx, MS-DOS and UNIX systems. It includes label name-changer and cross-reference capabilities to the other version of ***Super Sleuth***. Customizing is available.

6502 Translator System **COMPUTER SYSTEMS CONSULTANTS, INC.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler; source code is available.

DESCRIPTION: The ***6502 Translator*** is a set of 6809 programs which processes 6502 assembler programs and translates them into 6809 assembler code. The user has control over many of the decisions which must be made during the process. Those portions of the 6502 program which are known to be translated inexactly are noted. Customizing is available.

VANTAGE **LLOYD I/O**

OPERATING ENVIRONMENT: OS-9/68000. Source language - Assembler.

DESCRIPTION: A development system for 8-bit micro-processors consisting of three programs: 1. the editor (***ED***) which acts as host to; 2. the cross-assembler (***CRASMB***); and 3. the debugger-simulator (***CRACKER***). Full-screen editing, conditional assembly and macros and symbolic/source code debugging are provided for the 6800, 6801, 6303, 6804, 6805, 6808 and 68HC11. Cross assemblers are also available for 6502, 1802, TMS 7000 series, 8041/family, 8048/family, 8051/family, Z8 and the Z80. Additional debuggers are also under development.

UTILITY PROGRAMS

Basic09 Tools **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - C, source code is available.

DESCRIPTION: Program consists of 21 subroutines for Basic. Six were written in C Language and the remainder in Assembly. All routines are compiled down to native machine code. Routines included are: CFILL - fills a string with characters; DPEEK - double peek; DPOKE - double poke; FPOS - current file position; FSIZE - file size; FTRIM - removes leading spaces from a string; GETPR - returns the current process ID; GETOPT - gets 32 byte option section; GETUSR - gets the user ID; GETIME - gets the time; INSERT - insert a string into another; LOWER - converts a string into lower case; READY - checks for available input; SETPRIOR - changes a process priority; SETUSR - changes the user ID; SETOPT - set 323 byte option packet; STIME - sets the time; SPACE - adds spaces to a string; SWAP - swaps any two variables; SYSCALL - system call; UPPER - converts a string to upper case.

Basic OS-9 Xref **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809; Basic or RunB. Source language - Basic, source code is available.

DESCRIPTION: This Basic cross-reference utility will produce a "pretty printed" listing with each line numbered, followed by a complete cross referenced listing of all variables, external procedures and line numbers called. Also included is a program list utility which outputs a fast "pretty printed" listing with line numbers. Customizing is available.

BTree Routines **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Basic.

DESCRIPTION: Complete set of routines to allow simple implementation of keyed files for programs running under Basic.

C - Shell — EKF ELEKTRONIK GmbH

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: Identical functions as the UNIX C-Shell/Bourne Shell. Allows users to run complex scripts under OS-9. Customizing is available.

CALC — GRANGE SQUARE, LTD.

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: Full maths facilities including complex calculations in decimal or hex mode, plus hex to decimal and decimal to hex conversions. This package is also resident in ***Monitor***. Customizing is available.

Disk Repair — SPECIALTY ELECTRONICS

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000.

DESCRIPTION: The ***Disk Repair*** utility assists in recovery of lost data on damaged diskettes or make corrections of data on a disk. Includes commands to display, read and write physical disk sectors.

EPROG — GRANGE SQUARE, LTD.

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***EPROG*** allows the user to read and program PROM's and EPROM's up to 27512, as well as RAM's and non-volatile RAM's. In addition, devices can be checked for empty and their response time measured. The program handles byte, word and long word data manipulation as necessary for 8-, 16- or 32-bit system requirements. PROM programmer required. Customizing is available.

Erina **CLEARBROOK SOFTWARE GROUP, INC.**

OPERATING ENVIRONMENT: OS-9/6809; 80 column display.

DESCRIPTION: A symbolic user mode debugger that is a must for serious assembler and C software developers. It lets you find bugs quickly by displaying the machine state and instructions being executed. You can set address and register break points, dump, search and change memory and assemble and disassemble code.

GCS File Transfer Utilities **GRANITE COMPUTER SYSTEMS**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - C, source code is available.

DESCRIPTION: ***GSC File Transfer Utilities*** simplify transfer to and from other disk format files (MS-DOS, RSDOS and FLEX) to OS-9 format files. READ file, WRITE file, file DIRECTORY and file DUMP are provided or each format. RENAME file, DELETE file and FORMAT disk are also included for MS-DOS. Binary files can be READ and WRITTEN for FLEX files as well. Set Status Direct Command function must be implemented. Customizing is available.

Generic Lint **GIMPEL SOFTWARE**

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000; distributed on MS-DOS formatted diskettes. Source language - C, source code is available (in shrouded source form).

DESCRIPTION: ***Generic Lint*** is a diagnostic facility for C. It will find bugs, glitches and inconsistencies that your compiler (working on one module at a time) will miss. It requires only K&R C to compile, but will support recent ANSI extensions. ***Generic Lint*** will find inconsistent declarations, argument/parameter mismatches, uninitialized variables, unaccessed variables, variables assigned but not used, suspicious macros, indentation irregularities, functions inconsistencies, unusual expressions, printf-scanf irregularities and more. Customizing is available.

GKS0A **DR. RUDOLF KEIL GmbH**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***GKS0A*** is a graphic library providing the user with the full set of GKS Level 0A functions. The package comes complete with the ***GKS0A*** Library and the full source code for the GKS workstation. This allows the adaption of the software to all types of graphics hardware. All emulation functions are included and may be used if the hardware is not capable of distinct graphics functions.

K Utils **DR. RUDOLF KEIL GmbH**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***K Utils*** is a set of practical utility programs for system development and application programming. Included are the following programs: device--show active devices and respective dates, dfree--show space info and file number rev, dirsize--show file and dir's allocation, undel--repair deleted file, fbackup--fast disk backup, xdir--user surface to show directories and files, find--find file on directory or disk, palloc--show allocation map.

L1 Utility Pak **D.P. JOHNSON**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler or C.

DESCRIPTION: ***L1 Utility Pak*** has over forty useful utilities. Its features include: a complete set of "wild card" file manipulating utilities, a disk sector editor, a disassembler and the MACGEN command language compiler. MACGEN will allow you to generate many useful "command macros" in minutes, MACGEN adds the capability that procedure files lack, and Macro source is included for a macro to implement an archival backup-type function.

L2 Utility Pak **D.P. JOHNSON**

OPERATING ENVIRONMENT: OS-9/6809; RAM disk and print error function for Color Computer Level Two only. Source language - Assembler.

DESCRIPTION: Contains a Level Two "printerr" function that also shows the pathname being searched for when a "not found" or permission type error occurs. A RAM disk driver allows you to allocate any amount of main memory to a function as a RAM disk. Has Level Two extended memory and process table dumps, and improved dump utility.

LSort **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler.

DESCRIPTION: Sorts records with fixed lengths or variable lengths. Allows for either ascending or descending sort. Sorting can be done in either ASCII sequence or alternate collating sequence. Right, left or no justification of data fields is available. ***LSort*** includes a full set of comments and error messages.

Monitor **GRANGE SQUARE, LTD.**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***Monitor*** is a low-level hardware and software development tool providing facilities to examine and change memory locations, moved and fill memory blocks, etc. Memory "reads" and "writes" can be repetitive allowing oscilloscope tracing of hardware systems. Bus errors are reported in a controlled way so that hardware debugging is made much easier. Display can be in binary, byte or word mode. Full maths facilities including complex calculations in decimal or hex mode. Full set and check memory test, and floppy and hard disk test functions. Customizing is available.

MSF — CLEARBROOK SOFTWARE GROUP

OPERATING ENVIRONMENT: OS-9/6809 Level Two; Color Computer with Sdisk3 floppy driver software. Source language - Assembler.

DESCRIPTION: ***MSF*** allows you to use an MS-DOS format disk in a CoCo3. All MS-DOS files and directories are accessible, and you can freely read and write files and directories, Special utilities are provided for getting a directory, renaming, formatting, removing a directory and copying multiple files. Most standard OS-9 utilities and applications will directly use the MS-DOS format files. Customizing is available.

O-F — SOUTHEAST MEDIA-DIV C.P.I.

OPERATING ENVIRONMENT: OS-9/6809 or OS-9/68000. Source language - Basic, source code is available.

DESCRIPTION: ***O-F*** (with source) includes Reformat, a Basic09 program that does the actual read or write function to the special ***O-F*** transfer disk; user-friendly menu driven. Reads the FLEX directory, deletes the FLEX files and copies in both directions. FLEX users use the special disk just like any other FLEX disk. Customizing is available.

OS-9 V Disk — SOUTHEAST MEDIA-DIV C.P.I.

OPERATING ENVIRONMENT: OS-9/6809 Level One; added memory. Source language - Assembler, source code is available.

DESCRIPTION: Use the extended memory capability of your SWTPC or Gimix CPU card (or similar format) for fast program compiles, CMD execution and high-speed inter-process communications (without pipe buffers). Saves system memory and the virtual disk size is variable in 4K increments up to 960K. Some assembly is required. Customizing is available.

PALPROG **GRANGE SQUARE, LTD.**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***PALPROG*** is a screen-driven facility for design of Programmable Array Logic to any level. Logical equations can be edited, copied or moved at will. As new devices become available, the operator can extend the program facilities to match. Supports Stag ZL30 and can be adapted to other programming units. PAL Programmer is required

Pan Utilities **PAN CONTROLS LIMITED**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C, source code is available.

DESCRIPTION: The ***Pan Utilities*** are quite useful in addition to those available with the OS-9 Operating System. Many of them are based on ideas and methods which work well on UNIX or MS-DOS. The files are all given in documented C source code and compiled object form. The package includes: archive, calls, cls, copyq, detab, dirsort, do, entab, epset, fs, hardback, hexcode, mv, mvq, repeat, scrub, spell, symtable, tree, undelete, walk, where, words and xc.

PC-DOS Disk Utility Program **HAZELWOOD COMPUTER SYSTEMS**

OPERATING ENVIRONMENT: OS-9/68000. Source language - Assembly and C.

DESCRIPTION: This utility program permits the creation and manipulation of files and directories on floppy disks utilizing the PC-DOS disk format. Data may be transferred between OS-9/68000 systems and IBM PC or compatible systems. All standard PC-DOS formats on both 5 1/4" and 3 1/2" floppy disks are accommodated. Operation is by command line parameters allowing both stand-alone and embedded use. The program requires an SS_DCmd SetStatus entry into the floppy disk driver. Customizing is available

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PC-XFER **D.P. JOHNSON**

OPERATING ENVIRONMENT: OS-9/6809; "SDISK" floppy driver. Source language - C.

DESCRIPTION: ***PC-XFER*** allows transfer of files between OS-9 and MS-DOS by reading/writing/formatting an MS-DOS diskette on the OS-9 system. A special floppy driver must be installed for ***PC-XFER*** to function. Drivers currently available for Color Computer and Hemphill Electronics systems.

Profile **PAN CONTROLS LIMITED**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***Profile*** is a symbol profiling tool for C or Assembly language programs that increases programmer efficiency. It provides a valuable and quick method of optimizing large and small projects by making a table of the time spent running each of your functions in your program during a working session. A quick look at this profile table shows you which functions are most used and help you to concentrate your programming efforts on optimizing these functions.

Serina **CLEARBROOK SOFTWARE GROUP, INC.**

OPERATING ENVIRONMENT: OS-9/6809 Level Two; Color Computer; 80 column terminal.

DESCRIPTION: A system mode debugger for OS-9 system modules including device drivers and file managers. ***Serina*** allows the user to trace the execution of any system module, set break points, assemble and disassemble code and examine and change memory. Special provisions are provided for executing code with critical timing loops and for accessing I/O registers.

Stimulus — PAN CONTROLS LIMITED

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: ***Stimulus*** is a general purpose rule-based expert system programming language designed for easier and more economic real-time processing for engineering control, simulation, monitoring, diagnosis, etc. Since ***Stimulus*** produces C source, it may be linked with other modules in C or Assembly language giving you the choice of C's I/O and interrupt facilities.

TIC-TOC — ULTRASCIENCE

OPERATING ENVIRONMENT: OS-9/68000. Source language - Assembler and C.

DESCRIPTION: ***TIC-TOC*** (Terminal Input Converter - Terminal Output Converter) is a package of programs that generates device specific routines which neutralize the difference between terminals, printer and other peripheral devices. When using ***TIC-TOC,*** a powerful standardized set of mnemonics will produce a uniform effect on a wide variety of devices. The same display intensive program can run on a Wyse 50, VT220, Link MC3, etc. and the display enhancements will look essentially the same. Input can be translated on the fly under program control. Windowing is currently being implemented.

TShell — BOHME & WEIHS

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: The ***TShell*** features complete command line editing with free cursor positioning, definable shell-variables "setv", shell history (each history command can be reentered into the command line editor), alias function, modified kill_ command and promptstring substitutions with in-line OS-9 commands.

UNIX Utility Package I **EKF ELEKTRONIK GmbH**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C.

DESCRIPTION: The ***UNIX Utility Package I*** set for OS-9 includes: ask, cal, cat, chmod, chown, cp detab, devn, diff, display, dtest, du, echosig, edisk, entab, head, iodmp, kills, lconf, ldsk, lev, ln, lp, lpr, ls, mount, mv, rm, rsplit, tail, time. Customizing is available.

Virtual Terminal **SOUTHEAST MEDIA-DIV C.P.I.**

OPERATING ENVIRONMENT: OS-9/6809. Source language - Assembler.

DESCRIPTION: ***Virtual Terminal*** allows one terminal to do the work of several. The user may start as many as eight tasks on one terminal and switch back and forth between tasks at will. There is no need to exit each one, just jump back and forth. Comes complete with a configuration program. Customizing is available.

Windows **PAN CONTROLS LIMITED**

OPERATING ENVIRONMENT: OS-9/68000. Source language - C, source code is available.

DESCRIPTION: This C source library provides a simple and effective way of producing programs incorporating multiple windows. Any number of windows are allowed in different sizes and shapes. They may be moved, resized, deleted, displayed and written to at will. A form of fast update is used to minimize display times. Text in windows can be wrapped and the windows may scroll. Any terminal is supported using the termcap functions of OS-9.

OS-9 USER'S GROUP/ PUBLIC DOMAIN SOFTWARE

OS-9 USER'S GROUP

715 East Fowler Avenue
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OS-9 User's Group Membership Information

The OS-9 User's Group is an international non-profit organization of approximately 800 members (and growing) devoted to the exchange and distribution of information and public domain software for all available versions of the OS-9 Operating System.

The OS-9 User's Group periodically publishes a newsletter entitled "MOTD" which contains many useful articles, software listings, and other information helpful in keeping OS-9 computing enjoyable and rewarding. Other membership benefits include free technical help referrals (by mail or electronic BBS) and significant discounts on the purchase of individual volumes of the OS-9 User's Group Public Domain Software Library.

One year memberships in the group cost $25.00 for individuals and $150 for companies (corporate membership). Your membership includes a 1 year subscription to the MOTD newsletter, one free disk of public domain software (archive set of entire Library for corporate members) and the right to purchase additional disks of software at a very reasonable cost.

The group's public domain software library currently has over 56 individual volumes of software comprised of almost 300 individual programs. The library is constantly growing due to the group's policy of sending one volume (disk) from the library free for each individual program donated by a member.

Upon your acceptance into the OS-9 User's Group, you will receive a copy of the current issue of the OS-9 User's Group newsletter, **MOTD**, and the "starter" diskette, User's Group Library **Volume #0**, with software useful in getting you started with both OS-9 and the OS-9 User's Group. Additional volumes in the OS-9 User's Group Library may then be purchased by members at any time.

Current members who renew their membership will receive a User's Group "donation credit" post card, which may be redeemed for most User's Group products and services at any time during your membership.

OS-9 USER'S GROUP

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OS-9 User's Group Membership Information

If you have any further questions regarding the OS-9 User's Group or any of their services, you may contact them at the address given above or on any one of the OS-9 forums on CompuServe, Delphi or Genie on-line networks by using the information listed below.

Electronic Mail for OS-9 User's Group Officers:

	CompuServe	Delphi	Genie
David L. Kaleita, *President*	**70150,521**	**OS9UGPRES**	
Pete Lyall, *Vice President*	**76703,4230**	**OS9UGVP**	
George Dorner, *Treasurer*	**70536,106**	**OS9UGTRES**	**G.DORNER**
Kevin Darling, *Secretary*	**76703,4227**	**KDARLING**	
Carl Kreider, *Librarian*	**71076,76**	**OS9UGLIB**	
Bill Brady, *Editor*	**70126,267**	**S9UGED**	**B.BRADY**
Dale Puckett, *Director*	**71446,736**	**DALEP**	**D.PUCKETT2**

OS-9 USER'S GROUP

715 East Fowler Avenue
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Public Domain Software Library:

Volume 0: New User Information

Volume #0, New User Information

Title: REMOTE *Communication*
Function: "Links" user to a specified remote terminal path for communication.
Lang: ASM.6809 Source

Title: LLOAD *Communication*
Function: Uploads a text file, one line at a time, to a full-duplex bulletin board system.
Lang: BASIC Source

Title: DOCGEN3 *File Maintenance*
Function: Generates the necessary data and documentation files to accompany all submissions to the OS-9 User's Group software library
Lang: BASIC Source & Object

Title: ATTR_CHG *File Maintenance*
Function: ATTR_CHG program on User's Group Volume 0. Allows optional verification of changes before they are made. Fixes a bug.
Lang: BASIC Source

Title: HCOPY *File Maintenance*
Function: Prompting "copy" utility
Lang: BASIC Source

Title: HDEL *File Maintenance*
Function: Modified HDEL from User's Group Disk #0 to handle empty files and to be run by RunB without leaving procedure docmd in memory.
Lang: BASIC Source

Title: HDIR *File Maintenance*
Function: Executes a hierarchical directory listing for an entire directory.
Lang: BASIC Source

Title: REHOOK *File Maintenance*
Function: Moves a file from one directory to another (on the same device) without "copy/delete". Works like the C utility "graft".
Lang: BASIC Source

OS-9 USER'S GROUP

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Public Domain Software Library:

Volume 0: New User Information

Title: DLIST *Programming Aid*
Function: Disk dump utility. Works like "dump /d0@", except you can start at any sector on the disk.
Lang: BASIC Source

Title: DDIR *System Utility*
Function: Lists active system devices, their path descriptor address, physical address, system buffer, device driver & file manager.
Lang: ASM.6809 Source

Title: HELP.A *System Utility*
Function: Prints user information on the specified file name.
Lang: ASM.6809 Source

Title: INSTALL *System Utility*
Function: Makes bootable disk by "linking" a named file. Update of earlier version.
Lang: ASM.6809 Source & Object

Title: BOOTSPLIT *System Utility*
Function: Splits merged Object files (such as "OS9boot") into separate modules.
Lang: BASIC Source

Title: MODLIST *System Utility*
Function: Prompting "ident" utility
Lang: BASIC Source

Title: QDIR *System Utility*
Function: QDIR program submitted on disk 0 by C.R. Kreider. Modified to output to standard output.
Lang: BASIC Source

Title: LISTN *Text File Processing*
Function: Debugged and modified LISTN from User's Group Disk #0 to exit correctly and to allow standard output path redirection by shell.
Lang: BASIC Source

Title: RMLOCATE *Database Management*
Function: Calculates a "rms" record number for a given key field.
Lang: BASIC Source

OS-9 USER'S GROUP

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Public Domain Software Library:

Volume 0: New User Information

Title: RMNEW *Database Management*
Function: BASIC09-callable equivalent to Washington Computer Services' "rmsnew" utility. Used to generate a blank data file for "rms".
Lang: BASIC Source

Title: DOCGEN4 *Database Management*
Function: Generates OS-9 User's Group software submission files. Adapted from Dave Kaleita's original BASIC09 "docgen3" program. Updated by D. Kaleita.
Lang: C_MW.6809 Source & Object

OS-9 USER'S GROUP

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Public Domain Software Library:

Volume 1: Spell Checker
Volume 2: Spelling Dictionary

Volume #1, Spelling Checker

Title: SPELL *Word Processing*
Function: Spelling checker. Lists words in document not found in dictionary.
Lang: C_MW.68000 Source & Object

Title: DICT *Word Processing*
Function: Dictionary look-up. Finds words in dictionary, or, if not found, attempts to correct the spelling.
Lang: C_MW.68000 Source & Object

Title: UNWORDS *Word Processing*
Function: Produces a coded (compressed) dictionary as used by the programs "words", "spell", and "dict".
Lang: C_MW.68000 Source & Object

Title: WORDS.C *Word Processing*
Function: Prints uncoded words from the file "/dd/misc/dictionary", as created by the utility "unwords".;
Lang: C_MW.68000 Source & Object

Volume #2, Spelling Dictionary

This volume does not have a separate title;
it is considered to be a companion to Volume #1.

Volume #3, Word Processing Utilities

Title: WORDS.A *File Processing Filter*
Function: Parses input into words and outputs each word on a separate line. (Note that "ADJ W1" and "SPLIF" also perform this function).
Lang: ASM.6809 Source

Title: TEXCOM *Programming Aid*
Function: Compare two text files a line at a time.
Lang: BASIC Source

Title: TC *Programming Aid*
Function: Does line by line compare of text files & prints lines that differ.
Lang: C_MW.6809 Source & Object

Title: SQSH *Text File Processing*
Function: "Squashes" text files by replacing every carriage return character with a "/" and every string of more than 1 space with 1 space.
Lang: ASM.6809 Source

Title: TRANSLIT *Text File Processing*
Function: Transliteration, as described in sections 2.7 thru 2.9 of the book **Software Tools** by Kernighan and Plauger.
Lang: BASIC Source

Title: TAB.09 *Text File Processing*
Function: Converts spaces in a text file into tabs (ASCII 9) and spaces; tabs replace groups of 8 spaces (for file size reduction).
Lang: C_INTROL.6809 Source & Object

Title: UNTAB *Text File Processing*
Function: Replaces tab (ASCII 9) characters in the specified input file with eight spaces. For undoing the "tab" filter.
Lang: C_INTROL.6809 Source & Object

Title: PRINT.B *Text File Output Routine*
Function: File printing utility adapted from K & P's **Software Tools**.
Lang: BASIC Source

Title: SPLIT.09 *Text File Output Routine*
Function: Lists two specified text files, side-by-side on an 80 column screen. Allows visual comparison of first 38 characters of each line of each file.
Lang: C_INTROL.6809 Source & Object

Volume #4, Programming Utilities

Title: MODULE *Binary File Processing*
Function: Removes the named modules from the specified file and sends result to standard output. Works like "ident" if no names are given.
Lang: C_INTROL.6809 Source & Object

Title: DCOPY.09 *File Maintenance*
Function: Full directory copy utility.
Lang: BASIC Source

Title: GRAFT *File Maintenance*
Function: Copies a sub-tree of a directory structure. Works similar to "dsave", except an intermediate procedure file is not created.
Lang: C_INTROL.6809 Source & Object

Title: MV.09 *File Maintenance*
Function: Moves files from one subdirectory to another by manipulating directory references (no data is actually moved... very fast!)
Lang: C_INTROL.6809 Source & Object

Title: BINCOM *Programming Aid*
Function: Performs a byte-for-byte comparison of two specified files.
Lang: BASIC Source

Title: MODBUILD *Programming Aid*
Function: Prompting file "merge" utility.
Lang: BASIC Source

Title: PWD *System Utility*
Function: More powerful version of Microware's "pwd" command.
Lang: ASM.6809 Source

Title: LATEST *System Utility*
Function: Scans named directory and all directories below it, printing the path name of files whose last modified date is later than {date}.
Lang: C_INTROL.6809 Source & Object

Volume #5, File Processing Utilities

Title: HX *File Processing Filter*
Function: Converts standard input data to readable hex dump format output.
Lang: ASM.6809 Source

Title: NEWSTRIP *File Processing Filter*
Function: Filter to strip all control characters except carriage returns out of standard input path.
Lang: BASIC Source

Title: SORT *File Processing Filter*
Function: Sorts lines of text appearing at standard input and sends sorted version to standard output.
Lang: C_INTROL.6809 Source & Object

Title: PATCH *Programming Aid*
Function: Changes selected bytes of any file.
Lang: C_INTROL.6809 Source & Object

Title: INTRUDER *System Utility*
Function: Prints a formatted hex and ASCII "dump" of the specified sector of the named input file (including directory files).
Lang: C_INTROL.6809 Source & Object

Title: EQUFIX *Text File Processing*
Function: Strips comments, blank lines, and pseudo ops from equate files.
Lang: BASIC Source

Title: PAD *Text File Processing*
Function: Improves readability of disassemblies by inserting blank lines after control transfer statements etc.
Lang: BASIC Source

Title: STRIPNUM *Text File Processing*
Function: Strips a specified number of characters from the beginning of each line in a text file; a new file is created as the output.
Lang: BASIC Source

Title: EQUFIX *Text File Processing*
Function: Strips comments, blank lines, and pseudo ops from equate files.
Lang: BASIC Source

Title: PAD *Text File Processing*
Function: Improves readability of disassemblies by inserting blank lines after control transfer statements etc.
Lang: BASIC Source

Title: STRIPNUM *Text File Processing*
Function: Strips a specified number of characters from the beginning of each line in a text file; a new file is created as the output.
Lang: BASIC Source

Title: STRIPREM *Text File Processing*
Function: Strips all "rem" statements out of the specified input file (which is not modified); a new "procedure" is created as output.
Lang: BASIC Source

Title: STRIPZ *Text File Processing*
Function: Copies zxxxx labels from disassembly to separate file for creation of substitution file with editor.
Lang: BASIC Source

Title: EXTRACT *Text File Processing*
Function: Filters a single C function definition from a C source text file. The specified function appears on standard output.
Lang: C_INTROL.6809 Source & Object

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Public Domain Software Library:

Volume 6 & 7: Adventure Source/Object
Volume 8: General Interest

Volumes #6 & #7, Adventure (source and object)

Title: ADVENT *Game*
Function: Adventure game.
Lang: C_MW.6809 Object

Volume #8, General Interest

Title: JERRYBENCH *Demonstration*
Function: 10 X 10 Matrix multiply benchmark
Lang: BASIC Source

Title: SIEVE *Demonstration*
Function: Self-timing benchmark
Lang: BASIC Source

Title: CHECKBOOK *Finance*
Function: Simple program to help user balance a checkbook.
Lang: BASIC Source

Title: FINANCE *Finance*
Function: Menu-driven program that makes a number of financial calculations.
Lang: BASIC Source

Title: OTHELLO *Game*
Function: OS-9 Version of traditional board game
Lang: C_INTROL.6809 Source & Object

Title: MAKDIR.A09 File Maintenance
Function: Introl C subroutine to perform "makdir" function without calling shell.
Lang: ASM.6809 Source

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Public Domain Software Library:

Volume 9: C Programmer's Toolkit
Volume 10: Math & Electronics

Volume #9, C Programmer's Toolkit

Title: CB *File Processing Filter*
Function: Converts poorly laid-out C programs to K & R style.
Lang: C_MW.6809 Source & Object

Title: FINDFUNC *Programming Aid*
Function: Generates a list of functions from C source, including the file and line.
Lang: C_MW.6809 Source & Object

Title: LIB *Programming Aid*
Function: Splits the Microware C library back into modules for modification or addition, generates a file of the module names.
Lang: C_MW.6809 Source & Object

Title: XC *Programming Aid*
Function: Cross reference generator for C programs
Lang: C_MW.6809 Source & Object

Title: PPC *Text File Output Routine*
Function: Titles, dates and paginates C listings.
Lang: C_MW.6809 Source & Object

Volume #10, Math & Electronics

Title: AVERAGE_STDEV *Mathematics*
Function: Calculates means, standard deviations, cross products and sums of squares for two arrays of numbers.
Lang: BASIC Source

Title: FAST_FOURIER *Mathematics*
Function: Performs the complex fast Fourier transform of arrays up to 2048 entries. Also inverse transform.
Lang: 3BASIC Source

Title: LINEFIT *Mathematics*
Function: Finds least square fit lines through a set of data points (x y) as well as their means, standard development and correlation coefficient.
Lang: BASIC Source

Title: NETWORK *Mathematics*
Function: Electronic circuit network design/analysis.
Lang: BASIC Source

Title: NORMAL *Mathematics*
Function: Normal calls rnd_smpl repeatedly to demonstrate this rnd function which returns random variates from a normal distribution.
Lang: BASIC Source

Title: RC *Mathematics*
Function: Generates data illustrating behavior of simple resistor-capacitor circuit.
Lang: BASIC Source

Title: RESRAT1HC *Mathematics*
Function: Prints all 1% resistor combinations that fit the specified resistor ratio and error (tolerance) limits.
Lang: BASIC Source

Title: UNIVARIATE *Mathematics*
Function: Computes all standard statistics for a set of single variable observations.
Lang: BASIC Source

Volume #11, Word Processing Utilities

Title: WC FILE *Processing Filter*
Function: Counts words, characters and lines in a text file.
Lang: C_MW.6809 Source & Object

Title: COL FILE *Processing Filter*
Function: Columnates standard input to standard output.
Lang: PASCAL_OMG.6809 Source & Object

Title: FINDS *Text File Processing*
Function: Finds specified strings in a file.
Lang: C_MW.6809 Source & Object

Title: UPLOW *Text File Processing*
Function: Converts text to all upper or all lower case.
Lang: C_MW.6809 Source & Object

Title: PF *Text File Output Routine*
Function: Formatted print program. Accounts for line feed in long lines in BASIC09 list files. Allows arbitrary header.
Lang: C_MW.6809 Source & Object

Title: PRINT.C *Text File Output Routine*
Function: File printing program.
Lang: C_MW.6809 Source & Object

Volume #12, Programming Utilities

Title: SHOREGS *Programming Aid*
Function: Shows the 6809 registers on the standard error path. Used in debugging assembly language programs.
Lang: ASM.6809 Source

Title: SYSTEST *Programming Aid*
Function: Facilitates testing the effects of OS-9 System Calls from a "stable" environment.
Lang: BASIC Source

Title: TCMP *Programming Aid*
Function: Text file compare, with re-synchronization.
Lang: C_MW.6809 Source & Object

Title: ASCIIFY *Text File Processing*
Function: Converts file into HEX/ASCII form.
Lang: PASCAL_OMG.6809 Source & Object

Title: DEASCII *Text File Processing*
Function: Inverse function of ASCIIFY. Converts files from HEX/ASCII form to original.
Lang: PASCAL_OMG.6809 Source & Object

Title: LISA *Text File Output Routine*
Function: Lists bunched up Assembly Language sources in a tabbed assembler format to standard output.
Lang: ASM.6809 Source

Title: SHOWC *Text File Output Routine*
Function: Lists file showing non-printable characters.
Lang: C_MW.6809 Source & Object

Volume #13, File Processing Utilities

Title: GREP *File Processing Filter*
Function: The UNIX pattern finding utility.
Lang: C_MW.6809 Source & Object

Title: SPINT *File Processing Filter*
Function: Grep-like utility to match text patterns and print lines with (or without) the pattern.
Lang: C_MW.6809 Source & Object

Title: UNIQ *File Processing Filter*
Function: The UNIX Uniq utility.
Lang: C_MW.6809 Source & Object

Title: TR *Text File Processing*
Function: The K & P tools translit utility.
Lang: C_MW.6809 Source & Object

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Public Domain Software Library:

Volume 14: File Maintenance
Volume 15: Communication

Volume #14, File Maintenance

Title: ARC — *File Maintenance*
Function: Archiving file structures by date.
Lang: C_MW.6809 Source & Object

Title: DELW — *File Maintenance*
Function: Wild card delete.
Lang: C_MW.6809 Source & Object

Title: DIRW — *File Maintenance*
Function: Wild card dir program.
Lang: C_MW.6809 Source & Object

Title: TREE — *File Maintenance*
Function: Prints tree structure of disk, optionally reporting space used.
Lang: C_MW.6809 Source & Object

Volume #15, Communication

Title: KILL13 — *Binary File Processing*
Function: Strips all "$13" (x-off) characters from a file.
Lang: BASIC Source

Title: ACIA.MAPIN — *Communication*
Function: Filter to change control strings from a terminal into corresponding ANSI strings.
Lang: ASM.6809 Source

Title: ACIA.MAPOUT — *Communication*
Function: Appendage for the ACIA driver; gets control of init, read, and write and passes them through ACIA to the physical device.
Lang: ASM.6809 Source

Title: DNLOAD *Communication*
Function: Copies input from specified device to standard output. Echoes received characters back to host as signal to send more.
Lang: ASM.6809 Source

Title: MODEM *Communication*
Function: Copies characters to/from specified device. This is a revised version of the original program.
Lang: ASM.6809 Object

Title: UPLOAD *Communication*
Function: Copies standard input to specified device. Waits for characters to be echoed back.
Lang: ASM.6809 Source

Title: TUBE *Communication*
Function: Copies characters to/from device (1200/300 baud speed change capability).
Lang: C_INTROL.6809 Source & Object

Title: FM *Text File Processing*
Function: Creates a file of message originators when fed downloaded CIS messages (see INSERT & NINSERT).
Lang: BASIC Source

Title: INSERT *Text File Processing*
Function: Reads the file created by "FM" and inserts new users into the "users" file.
Lang: BASIC Source

Title: NINSERT *Text File Processing*
Function: Generates a file (nusers) sorted by CIS number from the file "users".
Lang: BASIC Source

Volume #16, Hardware Customizations

Title: PRSET_10X *System Utility*
Function: Sets some of the programmable parameters of the Gemini 10x line printer.
Lang: PASCAL_OMG.6809 Source & Object

Title: ANSI.GOTOXY *System Software*
Function: Video terminal data module for ANSI-standard term; for use with "Dynastar" screen editor.
Lang: ASM.6809 Source

Title: CCGOTOXY *System Software*
Function: GOTOXY module for normal Dynastar and either O-PAK or WORDPAK. Completely remapped Color Computer keyboard.
Lang: ASM.6809 Source

Title: CLOCK *System Software*
Function: Clock driver module for Computerware 6800 CL4 calclock/timer board.
Lang: ASM.6809 Source

Title: P1 *System Software*
Function: Parallel printer driver for TRS-80 Color Computer.
Lang: ASM.6809 Source

Title: SERIAL *System Software*
Function: Interrupt driven device driver to replace the CoCo RS-232 driver. Allows operation up to 19.2 Kbaud.
Lang: ASM.6809 Source

Title: PRSET *System Utility*
Function: Sets the programmable parameters of the GE (Genicom) 3404 line printer.
Lang: PASCAL_OMG.6809 Source & Object

Volume #17, BASIC09 Programmer's Toolkit

Title: CHECK_FILE *File Maintenance*
Function: Determines file status of specified input file.
Lang: BASIC Source

Title: BLANKO *Programming Aid*
Function: Blanks a complex data structure to nulls.
Lang: BASIC Source

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Public Domain Software Library:

Volume 17: BASIC09 Toolkit

Title: CHAR_TO_INT_TO_CHAR *Programming Aid*
Function: Two procedures to convert BASIC09 strings to integers and vice versa.
Lang: BASIC Source

Title: GETNUMB *Programming Aid*
Function: More powerful version of the BASIC09 "val" function.
Lang: BASIC Source

Title: DOLLAR_PRINT *Finance*
Function: Converts "real" amount (<=999.99) to "string" "dollar" format.
Lang: BASIC Source

Title: PWD_NAME *System Utility*
Function: Does a "pwd" and returns the result (output) as a BASIC09-readable string variable.
Lang: BASIC Source

Title: TERM_CTL *System Utility*
Function: Performs special terminal control sequences.
Lang: BASIC Source

Title: INKEY *System Utility*
Function: Determines if a key has been typed on the given path, and if so, returns the next input character as the string variable.
Lang: ASM.6809 Source

Title: INKEY_HAL *System Utility*
Function: Read individual key depressions.
Lang: ASM.6809 Source

Title: LOWUP *System Utility*
Function: A subroutine for BASIC09 for converting up to 252 string variables to all upper case ASCII characters.
Lang: ASM.6809 Source

Title: MODLINKB *System Utility*
Function: Used to link to a data module so that data may be passed thrrough the data module to/from all other processes that have linked to it.
Lang: ASM.6809 Source

Title: SYSCALL *System Utility*
Function: Universal system call subroutine-Microware version.
Lang: ASM.6809 Source

Title: SYSCALL_HAL *System Utility*
Function: Execute an OS-9 system call from BASIC09. This is a smaller, but un-ROMable version of the Microware routine "syscall".
Lang: ASM.6809 Source

Title: DATE_CVT [201z
Function: Converts date between two formats: mm/dd/yy to/from yyddd (where "ddd" is the Julian day of year form 1-365).
Lang: BASIC Source

Title: ERREPORT *System Utility*
Function: Prints message on line 2 of terminal, waits for cntl-F acknowledgment.
Lang: BASIC Source

Title: POPEN *System Utility*
Function: Creates a pipe by duping one of the standard paths & using the path as the pipe that will go to or from the forked pipeline process.
Lang: BASIC Source

Title: ISAM *Database Management*
Function: Primitive ISAM package.
Lang: BASIC Source

Volume #18, System Utilities

Title: NEW_HEX_DUMP *File Processing Filter*
Function: Filter that outputs a hex dump of standard input path. Works well in a pipeline.
Lang: BASIC Source

Title: DDISPLAY *System Utility*
Function: Same as "display" utility, except characters to be displayed are specified in decimal, rather than hex.
Lang: ASM.6809 Source

Title: ERROR *System Utility*
Function: Prints an English error message that corresponds to the error code (number) passed to it. Completely self-contained.
Lang: ASM.6809 Source

Title: MRENAME *System Utility*
Function: Changes name of module in memory and corrects CRC.
Lang: ASM.6809 Source

Title: PURGE.A *System Utility*
Function: Purge will unlink a module until it's gone. Great for those left behind by BASIC09 during debugging.
Lang: ASM.6809 Source

Title: ILEAV *System Utility*
Function: Prints disk interleave tables.
Lang: BASIC Source

Title: RIDSECT *System Utility*
Function: Read disk ID sector and decode and display the information.
Lang: BASIC Source

Title: ALIAS *System Utility*
Function: Creates an alternate name for an OS-9 command.
Lang: C_MW.6809 Source & Object

Title: EMD *System Utility*
Function: Extended memory dump for LII.
Lang: C_MW.6809 Source & Object

Title: TODAY *System Utility*
Function: List date and time in a legible format. Can be used as a base for other date related programs.
Lang: C_MW.6809 Source & Object

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Public Domain Software Library:

Volume 19 & 20: Xlisp Source/Object
Volume 21: Fiile Maintenance

Volumes #19 & #20, Xlisp (source and object)

Title: XLISP *Language*
Function: LISP-like language with object-oriented functions.
Lang: C_MW.6809 Source & Object

Volume #21, File Maintenance

Title: APPEND *File Maintenance*
Function: Appends one or more infiles (which may include standard input) to output file (which may be standard output).
Lang: ASM.6809 Source & Object

Title: DIR *File Maintenance*
Function: "Dir" command for 64-column format screens.
Lang: ASM.6809 Source

Title: DL *File Maintenance*
Function: Delete utility with option to read list of file names from standard input instead of as parameters.
Lang: ASM.6809 Source & Object

Title: DIRLISTER *File Maintenance*
Function: To print-out a hierarchical directory listing.
Lang: BASIC Source

Title: FCOPY *File Maintenance*
Function: Reads a file of files and generates a shell script to copy those files.
Lang: BASIC Source

Title: POST *File Maintenance*
Function: Utility to merge "_rms" data files - useful for posting smaller files into the master data base.
Lang: BASIC Source

Title: D *File Maintenance*
Function: Lists current directory one entry per line with wild card matching.
Lang: C_MW.6809 Source & Object

Title: OWNER *File Maintenance*
Function: Changes owners of files and directories.
Lang: C_MW.6809 Source & Object

Title: DEL.P *File Maintenance*
Function: Identical to Microware's "del" except it returns its own error messages (ideal for Level II) and does not stop deleting files on errors.
Lang: PASCAL_OMG.6809 Source & Object

Volume #22, Programming Utilities

Title: FLEXBIN.A *File Processing Filter*
Function: Expands FLEX format binary files into full image (full size, position-dependent) binary files, ready to "ROM".
Lang: ASM.6809 Source

Title: FLEXEX *File Processing Filter*
Function: Converts FLEX format binary files to Motorola S-Record format.
Lang: ASM.6809 Source

Title: GO *Programming Aid*
Function: 1K job control language which uses either current working directory or a macro library for macro input.
Lang: ASM.6809 Source & Object

Title: FORMS2.GNX *Programming Aid*
Function: 100% replacement for Micro Focus FORMS2 package update template. Includes the files FORMS2.GN1 and FORMS2.GN2.
Lang: COBOL_MW.6809 Source

Title: BIN2BCD *Mathematics*
Function: Convert binary to BCD and BCD to CHAR
Lang: ASM.6809 Source

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Public Domain Software Library:

Volume 23: File Processing Utilities
Volume 24: General Interest

Volume #23, File Processing Utilities

Title: COMPRESS *File Processing Filter*
Function: Data compression filter.
Lang: C_MW.6809 Source & Object

Title: CRYPT.C *File Processing Filter*
Function: Four-rotor Enigma machine encryption/decryption filter.
Lang: C_MW.6809 Object

Title: FIELD *File Processing Filter*
Function: Select fields or columns from standard input and send to standard output.
Lang: C_MW.6809 Source & Object

Title: STRIP.C *File Processing Filter*
Function: Optionally strips any combination of control characters, carriage returns, and/or line feeds from a text file.
Lang: C_MW.6809 Source & Object

Title: CRYPT.A *File Processing Filter*
Function: Encodes and decodes files using a personal keyword.
Lang: ASM.6809 Source & Object

Volume #24, General Interest

Title: MORTGAGE *Finance*
Function: The best mortgage program ever.
Lang: BASIC Source

Title: CHKNG *Finance*
Function: Electronic checkbook - allows users to enter & edit check info, mark cleared transactions, & obtain cleared & actual balances.
Lang: C_INTROL.6809 Source & Object

Title: MUSIC *Database Management*
Function: Audio recording cataloging system.
Lang: BASIC Source

Volume #25, Word Processing Utilities

Title: CHECK *File Maintenance*
Function: Compares BIN/ASCII files & prints differences. Looks for matches, insertions, deletions (fairly smart & a little slow).
Lang: BASIC Source

Title: ADJ *File Processing Filter*
Function: Limits maximum line length in a text file without splitting words. Can also be used to parse a file to one word per line.
Lang: ASM.6809 Source

Title: SPACES *File Processing Filter*
Function: Strips all trailing spaces from each line in a text file. Can also reduce all strings of spaces in a file to a specified length.
Lang: ASM.6809 Source

Title: STRIP.A *File Processing Filter*
Function: Used to optionally strip, add, or process any combination of the following: crs, lfs, backspaces, parity, control characters.
Lang: ASM.6809 Source

Title: BUILD *Text File Processing*
Function: Buffered version of build which writes to the disk less often and terminates at eof.
Lang: ASM.6809 Source

Title: CAT.09 *Text File Processing*
Function: Concatenates files to standard output.
Lang: C_MW.6809 Source & Object

Title: ONELINE *Text File Processing*
Function: De-format an article for submission to publisher with automatic text formatting programs.
Lang: C_MW.6809 Source & Object

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Public Domain Software Library:

Volume 26: C Language Math Library
Volume 28: 68K Utilities

Volume #26, C Language Math Library (6809 only)

Title: TRANS_LIB.A *Mathematics*
Function: Replacement for CLIB.L that includes transcendental functions.
Lang: C_MW.6809 Source & Object

Volume #28, 68K Utilities

Title: DEDT *Binary File Processing*
Function: Binary editor for disk files. Edits files directly on the disk.
Lang: BASIC Source

Title: CHOWN *File Maintenance*
Function: Utility to allow the changing of the group user-id of any file or directory.
Lang: C_MW.68000 Source & Object

Title: DCOPY *File Maintenance*
Function: Multiple file disk copy utility.
Lang: C_MW.68000 Source & Object

Title: DMP *File Maintenance*
Function: Disk dump and patch utility.
Lang: C_MW.68000 Source & Object

Title: LS *File Maintenance*
Function: List directory (sorted) UNIX style.
Lang: C_MW.68000 Source & Object

Title: MV *File Maintenance*
Function: UNIX-style file or directory move without copying the file.
Lang: C_MW.68000 Source & Object

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Volume #29, File Maintenance

Title: DEL.A *File Maintenance*
Function: Similar to Microware "del", except does not abort on error until all file names passed are processed.
Lang: ASM.6809 Source

Title: ERASE *File Maintenance*
Function: Erases file from RBF media to protect sensitive information. This makes it totally unrecoverable.
Lang: ASM.6809 Source

Title: HDIR.A *File Maintenance*
Function: A multi-level, hierarchical directory.
Lang: ASM.6809 Source

Title: PURGE.B *File Maintenance*
Function: Permanently erases unused portions of RBF media to protect sensitive information.
Lang: BASIC Source

Title: SCAN *File Maintenance*
Function: SCAN attempts to read each sector of a file/device; any errors encountered on the way are displayed.
Lang: BASIC Source

Title: SORTDIR *File Maintenance*
Function: Sorts directory entries in increasing ASCII order.
Lang: BASIC Source

Title: CHOWN.09 *File Maintenance*
Function: Changes the ownership of a non-directory file.
Lang: C_MW.6809 Source & Object

Title: FCAT *File Maintenance*
Function: Concatenate files to standard output, either from a list on the command line or from a list on standard input
Lang: C_MW.6809 Source & Object

Title: RM *File Maintenance*
Function: Deletes files, as specified on the command line of on standard input.
Lang: C_MW.6809 Source & Object

Title: AP *File Maintenance*
Function: An append utility to append to a file or to append several files into one.
Lang: ASM.6809 Source & Object

Volume #30, File Processing Utilities

Title: COM *File Processing Filter*
Function: Filter which clears the most significant bit of every byte in a text file.
Lang: ASM.6809 Source

Title: PAGE *File Processing Filter*
Function: Breaks text files into 58-line pages, separated by form feed characters.
Lang: ASM.6809 Source

Title: UPPER *File Processing Filter*
Function: Equivalent to the UNIX counterpart. Converts a file to upper-case ASCII.
Lang: ASM.6809 Source & Object

Title: ASC *File Processing Filter*
Function: Converts file to upper- or lower-case ASCII.
Lang: C_MW.6809 Source & Object

Title: WCL *File Processing Filter*
Function: Counts the characters, words, and lines in a file using 32-bit numbers.
Lang: C_MW.6809 Source & Object

Title: STRIPARITY *Text File Processing*
Function: Clears the parity bit on all characters in a file. (See "STRIP.A" if you want to do this and remove all control characters).
Lang: BASIC Source

Title: UPPERCASE *Text File Processing*
Function: Converts a text file to upper case.
Lang: BASIC Source & Object

Title: ROF *Text File Output Routine*
Function: Text formatter; reads standard text file with command codes, generates formatted, printable output.
Lang: ASM.6809 Object

Title: PAGPRT *Text File Output Routine*
Function: Paginates a file_list obeying settings for top bottom & left margins page length spacing and starting point in file.
Lang: BASIC Source

Title: NROFF *Text File Output Routine*
Function: Text processor based on **Software Tools**.
Lang: C_DYNA.6809 Source

Volume #31, Hardware Customizations

Title: COCO_CONFIGURATIONS *System Software*
Function: Configuration information needed to run RMS Dynacalc and Dynastar (standard versions) on Color Computer with PBJ WORDPAK or FHL.
Lang: MISC.6809 Text

Title: KIMTRON *System Software*
Function: Set of files to aid in the use of the Kimtron ABM85 terminal with OS-9. Start-up file will auto-program function keys; DS Gotoxy Inc.
Lang: MISC.6809 Source & Text

Volume #32, Hardware Customizations

Title: TVI970_CONFIGURATIONS *System Software*
Function: Configuration and programming programs for televideo 970 for running Dynastar and Dynacalc.
Lang: MISC.6809 Text

Title: NEWID *System Utility*
Function: NEWID displays and allows change to the disk identification parameters on LSN-0. It is menu-driven and can access drives 0-3.
Lang: BASIC Source

Volume #33, System Utilities

Title: MAPMEM *System Utility*
Function: Maps Level II extended memory to BASIC09 space.
Lang: ASM.6809 Source

Title: CHVOLNAM *System Utility*
Function: Change the name of a volume (disk).
Lang: BASIC Source

Title: DISKLOCK *System Utility*
Function: Makes an OS-9 disk inaccessible to normal system commands.
Lang: BASIC Source

Title: DUMPMEM *System Utility*
Function: Level II memory dump by full extended address representation.
Lang: BASIC Source

Title: LOADMEM *System Utility*
Function: Level II memory load with full extended address representation.
Lang: BASIC Source

Title: MODMEM *System Utility*
Function: Level II memory modify with full extended address representation.
Lang: BASIC Source

Title: SAVEMEM *System Utility*
Function: Save portion of Level II (full extended address) RAM.
Lang: BASIC Source

Title: SETMEM *System Utility*
Function: Wipes out memory. Useful for deleting sensitive info from battery RAM.
Lang: BASIC Source

Title: DATES *System Utility*
Function: Keeps track of dates, appointments, birthdays etc. Warns if they are coming up soon.
Lang: C_MW.6809 Source & Object

Volume #34, Hardware Customizations

Title: TERM_UTILS *System Utility*
Function: Utilities for screen formatting and data entry.
Lang: BASIC Source

Title: BASUTIL *System Utility*
Function: Used from BASIC to set a user ID or return a terminal name.
Lang: ASM.6809 Source & Object

Title: CHANGETERM *System Utility*
Function: Dynamically modify your terminal configuration.
Lang: BASIC Source

Title: SETERM *System Utility*
Function: Configures the terminal from configuration files.
Lang: BASIC Source

Title: SETPARAM *System Utility*
Function: Modify the terminal configuration files.
Lang: BASIC Source

Volume #35, System Utilities

Title: DISKID *File Maintenance*
Function: Will allow the user to rewrite the disk name and date on LSN 0 after the back-up command has overwritten it.
Lang: BASIC Source

Title: DISASM.A *Programming Aid*
Function: OS-9/6809 disassembler. Adapted from program in *BYTE* Magazine, Feb 1982. Includes OS-9 system calls.
Lang: ASM.6809 Source

Title: CHANGEPASSWORD *System Utility*
Function: Allows users to change their password.
Lang: BASIC Source

Title: LISTPASSWORDS *System Utility*
Function: Provides the super user with a list of the users and their passwords.
Lang: BASIC Source

Title: LISTUSERS *System Utility*
Function: Allows the user to get a list of the users of the system.
Lang: BASIC Source

Title: MAKETOPICS *System Utility*
Function: Will build a list (file) of all help files available with header and footer and date stamp.
Lang: MISC.6809 Text

Volume #36, General Interest

Title: AMORT *Finance*
Function: AMORT will print to your printer a complete amortized schedule of a monthly payment type loan and give yearly totals.
Lang: BASIC Source

Title: EPS *System Utility*
Function: Allows one to set up an Epson printer using English commands.
Lang: C_DYNA.6809 Source

Title: OKI *System Utility*
Function: Allows one to setup Okidata 82/92 printer using English language commands.
Lang: C_DYNA.6809 Source

Title: HANGMAN *Game*
Function: Revised version of Tim Grovac's Hangman game, downloaded from the OS-9 Forum on CompuServe.
Lang: BASIC Source

Title: KALAH *Game*
Function: Plays two versions of the interactive strategy board game.
Lang: C_MW.6809 Source & Object

Volume #37, Kermit

Title: KERMIT *Communication*
Function: Serial line file transfer with error correction.
Lang: C_MW.68000 Source & Object

Volume #38, Programming Utilities

Title: S1FLEX *Binary File Processing*
Function: Converts Motorola S1 format to FLEX binary format.
Lang: C_MW.6809 Source & Object

Title: S1INTEL *Binary File Processing*
Function: Converts Motorola S1 format to Intel format.
Lang: C_MW.6809 Source & Object

Title: S1LOAD *Binary File Processing*
Function: Converts Motorola S1 format to OS-9 binary format.
Lang: C_MW.6809 Source & Object

Title: S1UNFLEX *Binary File Processing*
Function: Converts FLEX binary format to Motorola S1 format.
Lang: C_MW.6809 Source & Object

Title: S1UNLOAD *Binary File Processing*
Function: Converts OS-9 binary format to Motorola S1 format.
Lang: C_MW.6809 Source & Object

Title: S1XREF *Binary File Processing*
Function: Prints sorted X-Reference from a Motorola S1 format file.
Lang: C_MW.6809 Source & Object

Title: REPLACE *Text File Processing*
Function: Replaces strings in text files.
Lang: C_MW.6809 Source & Object

Volume #39, XCom9

Title: BREAK *Communication*
Function: Sends a break on a 6850 ACIA port by directly accessing the chip CSR. Has some tutorial value for Level II users.
Lang: ASM.6809 Source & Object

Title: XCOM9 *Communication*
Function: Modem PGM with XMODEM support, non-XMODEM capture and upload modes, expansible capture buffer and much more.
Lang: ASM.6809 Source & Object

Volume #40, System Utilities

Title: MAKE *System Utility*
Function: Make a file based on dependency files.
Lang: ASM.6809 Source & Object

Title: SETIME.NEW *System Utility*
Function: User friendly version of OS-9 setime program.
Lang: ASM.6809 Source & Object

Title: HELP.C *System Utility*
Function: Upgrade of ASM version; list help files on the help directory.
Lang: C_MW.6809 Source

Title: SST *System Utility*
Function: Shows system block size; total system RAM; block allocation map for system state & system state free memory.
Lang: C_MW.6809 Source

Volume #41, Programming Utilities

Title: SHOMEM *Programming Aid*
Function: Does a Hex and ASCII dump of a region of memory to standard error. Designed to be used in debugging ML programs.
Lang: ASM.6809 Source

Title: VERMOD *Programming Aid*
Function: This program will compare a memory module, device descriptor, etc. to a saved-disk file.
Lang: ASM.6809 Source & Object

Title: BDUMP *Programming Aid*
Function: Displays memory in Hex and characters. Allows for input of FROM, TO, INC. INC permits readable displays for blocked tables, etc.
Lang: BASIC Source

Title: DISASM.B *Programming Aid*
Function: Takes a beginning and ending address, then outputs a disassembly to output file of your choice.
Lang: BASIC Source

Title: FILLFILE *Programming Aid*
Function: Builds disk files filled with a specified character. Used for padding object code before copying to a ROM.
Lang: BASIC Text

OS-9 USER'S GROUP

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Public Domain Software Library:

Volume 41: Programming Utilities

Title: PEEK *Programming Aid*
Function: Displays the memory map and register stack for a given process ID.
Lang: C_MW.6809 Source & Object

Title: DATES.B *System Utility*
Function: Six procedures for inputting dates, converting them from one format to another and printing them.
Lang: BASIC Text

Title: MAKARG *System Utility*
Function: Splits a string into an array of words. Returns word count and word array. Used to extract arguments from a command line.
Lang: BASIC Source

Title: HEXIFY *Programming Aid*
Function: Dumps a file in Hex with one Hex byte per line - good for finding control characters, etc.
Lang: C_MW.6809 Source & Object

Title: PRINTCOL *Text File Output Routine*
Function: Formats a text string into a column specified by the user and outputs it to a specified path.
Lang: BASIC Text

Title: HEXSTRINGS *Mathematics*
Function: Two procedures: (1) convert hexadecimal string to a real number and (2) convert a real number to a hex string.
Lang: BASIC Text

Title: RANDOMIZE *Mathematics*
Function: The program randomizes the random number generator in BASIC09 by time-of-day clock.
Lang: BASIC Source

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Public Domain Software Library:

Volume 42: CoCo Graphics
Volume 43: System Utilities

Volume #42, CoCo Graphics

Title: GFXDUMP2 *Graphics*
Function: Dumps the CoCo graphics display to a line printer VII or compatible.
Lang: BASIC Source

Title: RATMAZE *Game*
Function: Uses the CoCo graphics to simulate a rat's-eye view of a maze.
Lang: C_DYNA.6809 Source

Title: THREE_D_GRAPHICS *Graphics*
Function: This program generates 3-dimensional graphics using the CoCo Hires screen. It also has routines for disk and printer.
Lang: BASIC Source

Volume #43, System Utilities

Title: DISKEDIT *Binary File Processing*
Function: Revised version of DISKEDIT.B09. It allows the examination and modification of disk sectors (see also DEDT).
Lang: BASIC Source

Title: ERRCMD *System Utility*
Function: Converts an OS-9 error number into the corresponding English description of the error.
Lang: ASM.6809 Source

Title: ERROR.A *System Utility*
Function: Looks up error messages in /d0/sys/errmsg on demand.
Lang: ASM.6809 Source

Title: INIZ *System Utility*
Function: Attaches a device to the system. Usually placed in "startup" file to initialize hardware.
Lang: ASM.6809 Source

Title: LINK *System Utility*
Function: Similar to Microware "link" command, except does not abort on error until an attempt is made to link all passed path names.
Lang: ASM.6809 Source

Title: LOAD *System Utility*
Function: Similar to Microware "load" command, except does not abort on error until an attempt is made to load all passed path names.
Lang: ASM.6809 Source

Title: UNLINK *System Utility*
Function: Similar to Microware "unlink" command, except does not abort on error until an attempt is made to unlink all passed path names.
Lang: ASM.6809 Source

Title: DISPLAYHELP *System Utility*
Function: Prepares manual of help files with sorted index. Allows 150 file names (names are lowercased before sorting).
Lang: BASIC Source

Title: PUTDOS *System Utility*
Function: Makes a ss or ds disk bootable with RS disk BASIC 1.0 or 1.1.
Lang: BASIC Source

Title: ERROR.C *System Utility*
Function: Looks up error messages in /d0/sys/errmsg on demand.
Lang: C_MW.6809 Source

Volume #44, Communication (Smod8)

Title: COMM_BAS *Communication*
Function: A smart terminal program that also allows you to send files.
Lang: BASIC Source

Title: SETPARAM_COCO *Communication*
Function: Easy change of deluxe RS232 parameters.
Lang: BASIC Source

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Public Domain Software Library:

Volume 44: Communication (Smod8)
Volume 45: CoCo Graphics
Volume 46: Sled
Volume 47: 68K Runoff

Title: SMOD8 *Communication*
Function: Modem program with CIS B protocol support.
Lang: C_MW.6809 Source & Object

Volume #45, CoCo Graphics

Title: MXY *Graphics*
Function: Multi-file multi-machine x-y pen plotter driver applications package.
Lang: BASIC DIRECTORY

Volume #46, Sled

Title: SLED *Text File Processing*
Function: SLED, a screen editor, and the included utilities form a good program editing system.
Lang: C_MW.6809 Source & Object

Volume #47, 68K Runoff

Title: RF *Text File Output Routine*
Function: NROFF-style text formatter.
Lang: C_MW.68000 Source & Object

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Public Domain Software Library:

Volume 49: MicroEMACS
Volume 50: 68K Utilities

Volume #49, MicroEMACS

Title: MICROEMACS *Text File Processing*
Function: Text editor.
Lang: C_MW.68000 Source & Object

Volume #50, 68K Utilities

Title: FSIZE *File Maintenance*
Function: File size display for individual files or files in a directory.
Lang: C_MW.68000 Source

Title: MORE *File Processing Filter*
Function: File list filter for page mode display capability.
Lang: C_MW.68000 Source & Object

Title: MORE1 *File Processing Filter*
Function: File list filter for the VT100/VT200-type terminals that provides page mode output.
Lang: C_MW.68000 Source & Object

Title: GREG *System Utility*
Function: Example of a routine to convert Julian date format back to Gregorian date format for 68000 OS-9.
Lang: C_MW.68000 Source & Object

Title: BCMP *Programming Aid*
Function: Text or binary file compare program, simple version.
Lang: C_MW.68000 Source

Title: CXREF *Programming Aid*
Function: C cross reference and list program.
Lang: C_MW.68000 Source & Object

Title: TIME *Programming Aid*
Function: Time the execution of a command.
Lang: C_MW.68000 Source & Object

Title: ITOA *System Utility*
Function: Integer to ASCII conversion routine for C on 68000.
Lang: ASM.68000 Source

Title: CAT *Text File Processing*
Function: UNIX-style file concatenate filter.
Lang: C_MW.68000 Source & Object

Title: MAX *Mathematics*
Function: Return the maximum value for two integers i.e. i = max(a, b);
Lang: ASM.68000 Source

Title: MIN *Mathematics*
Function: C function to return the minimum of two integers i = min(a, b);
Lang: ASM.68000 Source

Volume #51, 68K Utilities

Title: DEFS.C *System Software*
Function: This is a directory of C function library files for use when compiling any of Dave Partington's C_Microware 68000 software.
Lang: C_MW.68000 Source

Title: SECURITY *System Utility*
Function: User login and password programs using DESs Encryption technique.
Lang: C_MW.68000 Source & Object

Title: WHO *System Utility*
Function: UNIX-style who and whoami which display users by name from the process directory.
Lang: C_MW.68000 Source & Object

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Public Domain Software Library:

Volume 52: Math & Electronics
Volume 53: 68K Utilities

Volume #52, Math & Electronics

Title: ANTENNA *Mathematics*
Function: Designs amateur radio VHF long YAGI antennas.
Lang: BASIC Source

Title: BESSEL *Mathematics*
Function: Calculates the Bessel function of integer order using a new method suited to small computers. High accuracy for large orders.
Lang: BASIC Source

Title: LEQB05 *Mathematics*
Function: Solves linear, least squares, eigen value and non_linear problems by the singular value decomposition method, very stable numerical method.
Lang: BASIC Source

Title: MATRIXLIB_1 *Mathematics*
Function: 5 Routines for matrices. Input, printout, add, subtract, multiply and transpose. Matrices are 2-D any size up to 2500 elements.
Lang: BASIC Source

Volume #53, 68K Utilities

Title: DATAIO *Miscellaneous*
Function: Remote control interface for a Dataio PROM programmer.
Lang: C_MW.68000 Source

Title: MEM_SAVE *System Utility*
Function: Program to save a selected area of memory to a file.
Lang: C_MW.68000 Source & Object

Title: PAGE_SIZE *System Utility*
Function: Function for C which returns the page length of an SCF path i = page_size(path_number);
Lang: C_MW.68000 Source

Title: RBMODE *System Utility*
Function: Xmode utility for RBF-type descriptors.
Lang: C_MW.68000 Source

Title: SND_SIG *System Utility*
Function: Send a signal to a process.
Lang: C_MW.68000 Source & Object

Title: SPLIT *System Utility*
Function: Program to split merged object file into separate module eg. OS9Boot for 68000.
Lang: C_MW.68000 Source

Title: HEAD *Text File Output Routine*
Function: List the contents at the head of a file.
Lang: C_MW.68000 Source & Object

Title: TAB *Text File Processing*
Function: De-tab a text file.
Lang: C_MW.68000 Source

Title: TAIL *Text File Output Routine*
Function: Display the tail of a text file.
Lang: C_MW.68000 Source & Object

Title: PPR *Text File Output Routine*
Function: UNIX-style PR command for formatted printing of text files.
Lang: C_MW.68000 Source & Object

Volume #54, File Maintenance

Title: HCOVER *File Maintenance*
Function: Creates a disk cover(jacket) in YGS 2 pocket style, with hierarchical disk information and file position right on hand.
Lang: BASIC Source & Object

Title: ULDIR *File Maintenance*
Function: Uppercase all directory names and lowercase all non-directory names.
Lang: BASIC Source

Title: HDIR.C *File Maintenance*
Function: Provides a hierarchical display of directories. Options: full path, file details, no subdirectories, exec path and directory files only.
Lang: C_INTROL.6809 Source & Object

Title: NDSAVE *File Maintenance*
Function: Simple hand-holding dsave.
Lang: MISC.6809 Text

Title: SHDIR *File Processing Filter*
Function: A filter for the mdir e command.
Lang: ASM.6809 Source

Title: HEAD.09 *Text File Output Routine*
Function: Lists a specified number of lines from the front of a file(s) which can be on the command line or standard input.
Lang: C_MW.6809 Source & Object

Title: TAIL.09 *Text File Output Routine*
Function: Lists a specified number of lines from the end of a file(s), from a list on the command line or standard input.
Lang: C_MW.6809 Source & Object

Volume #55, QED
(Level Two)

Title: FLEXBIN.B *Binary File Processing*
Function: Converts "FLEX-format" (compressed) binary files into full image (full size, position-dependent) binary files, ready to "ROM".
Lang: BASIC Source

Title: QED *Text File Processing*
Function: Line editor that is compatible with the UNIX line editor.
Lang: C_MW.6809 Source & Object

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Volume #56, SDB
(Level Two)

Title: SDB — *Database Management*
Function: Small data base manager.
Lang: C_MW.6809 Source & Object

APPENDIX

SOFTWARE CROSS REFERENCE

SOFTWARE CROSS REFERENCE

Bohme & Weihs GmbH
Certified Software Corporation
Clearbrook Software Group, Inc.
Computer Systems Center
Computer Systems Consultants, Inc.

BOHME & WEIHS SYSTEMTECHNIK GmbH

Ferdinadn-Thun-Str. 21
5600 Wuppertal 2
West Germany
Phone: 0202-555073 *Fax: 0202-555074*
Marketing: Heinrich Biermann *Technical: Heinrich Biermann*

CERTIFIED SOFTWARE CORPORATION

616 Camino Caballo
Nipomo, California 93444
Phone: 805-929-1395 *Fax: 805-929-1395*
Marketing: Robert D. Reimiller *Technical: Robert D. Reimiller*

CLEARBROOK SOFTWARE GROUP, Inc.

Box 8000, Suite 499
Sumas, Washington 98295
Phone: 604-853-9118
Marketing: Paul Kehler *Technical: Paul Kehler*

COMPUTER SYSTEMS CENTER

36 Four Seasons Center #332
Chesterfield, Missouri 63017
Phone: 314-576-5020 *Fax: 314-878-4016*
Marketing: Paul Feagan *Technical: Scott Schaeferle*

COMPUTER SYSTEMS CONSULTANTS, Inc.

1454 Latta Lane, N.W.
Conyers, Georgia 30207
Phone: 404-483-4570
Marketing: E.M. Pass *Technical: E.M. Pass*

SOFTWARE CROSS REFERENCE

Computer Systems Consultants, Inc.
Dr. Rudolf Keil GmbH
D.P. Johnson
EKF Elektronik GmbH
Gimpel Software

COMPUTER SYSTEMS CONSULTANTS, Inc. (Continued)

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Gerhart-Hauptmann-Str. 30
D-6915 Dossenheim
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Marketing: Dr. Rudolf Keil *Technical: Borcsok*

D.P. JOHNSON

7655 S.W. Cedarcrest Street
Portland, Oregon 97223
Phone: 503-244-8152
Marketing: Dan Johnson *Technical: Don Johnson*

EKF ELEKTRONIK GmbH

Weidekamp Str. 1A
D-4700 Hamm 1
West Germany
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Marketing: B. Kleeberg *Technical: U. Petersen*

GIMPEL SOFTWARE

3207 Hogarth Lane
Collegeville, Pennsylvania 19426
Phone: 215-584-4261
Marketing: Anneliese Gimpel *Technical: James F. Gimpel*

SOFTWARE CROSS REFERENCE

Grange Square Ltd.
Granite Computer Systems
Hazelwood Computer Systems
H.C. Andersen Computers A/S
Interface Technologies Corporation

GRANGE SQUARE Ltd.

England
Phone: 0675-81661
Marketing: C.L. Page *Technical: C. Preston*

GRANITE COMPUTER SYSTEMS

Route 2, Box 445
Hillboro, New Hampshire 03244
Phone: 603-464-3850
Marketing: Gil Shattuck *Technical: Gil Shattuck*

HAZELWOOD COMPUTER SYSTEMS

Highway 94 at Bluffton
Rhineland, Missouri 65069
Phone: 314-236-4372
Marketing: Mike Smith *Technical: Dave Bridger*

H.C. ANDERSEN COMPUTER A/S

Englandsvej 380
DK-2770 Kastrup
Denmark
Phone: 45 1 52 44 04
Marketing: Henrik Eli Lehd *Technical: Hans Christian Andersen*

INTERFACE TECHNOLOGIES CORPORATION

3336 Richmond, Suite 323
Houston, Texas 77098
Phone: 713-523-8422
Marketing: A.K. Millinger *Technical: A.K. Millinger*

SOFTWARE CROSS REFERENCE

Lloyd I/O, Inc.
Meta Media, Inc.
Palo Alto Shipping Company
Pan Controls Ltd.
Interface Technologies Corporation
Plus Five Computer Services

LLOYD I/O, Inc.

P.O. Box 30945
Portland Oregon 97230
Phone: 800-227-3719 *Fax: 503-667-5224*
Marketing: Frank L. Hoffman *Technical: Frank L. Hoffman*

META MEDIA, Inc.

1240 McLynn Avenue N.E.
Atlanta, Georgia 30306
Phone: 404-892-7921
Marketing: Nancy Pendergast *Technical: Heitzso*

PALO ALTO SHIPPING COMPANY

P.O. Box 7430
Menlo Park, California 94026
Phone: 415-363-1399 *Fax: 415-363-8511*
Marketing: Julie Chavez *Technical: Rick Miley*

PAN CONTROLS Ltd.

Drummore, Doune
Perthshire FK16 6AX
Scotland
Phone: (44) 0786-85261
Marketing: A.J. Shaw-Stewart *Technical: R. Bradford*

PLUS FIVE COMPUTER SERVICES

765 Westwood Drive
St. Louis Missouri 63105
Phone: 314-725-9492
Marketing: David E. Beecher *Technical: Harlan (Hokey) Stenn*

SOFTWARE CROSS REFERENCE

Softworks Limited
Southeast Media - Div. C.P.I.
Speciality Electronics, Inc.
Pan Controls Ltd.
Interface Technologies Corporation
Plus Five Computer Services

SOFTWORKS LIMITED

607 Wellington
Chicago, Illinois 60657
Phone: 312-975-4030 *Fax: 312-975-9849*
Marketing: Bob Salita *Technical: Bob Salita*

SOUTHEAST MEDIA - DIV. C.P.I.

5900 Cassandra Smith Road
Hixson, Tennessee 37343
Phone: 615-842-4600
Marketing: Don Williams *Technical: Don Williams*

SPECIALTY ELECTRONICS, Inc.

909 North Cleveland
Enid, Oklahoma 73703
Phone: 405-233-1632
Marketing: Lewis Hibbets *Technical: Lewis Hibbets*

SOFTWARE CROSS REFERENCE

Systeam KG
Trend Computer Systems
Ultrascience

TREND COMPUTER SYSTEMS

828 - A Dodsworth Avenue
Covina, California 91724
Phone: 818-331-4114
Marketing: W.B. Wheeler *Technical: W.B. Wheller*

ULTRASCIENCE

1824 Wilmette Avenue
Wilmette, Illinois 60091
Phone: 312-256-0080 *Fax: 312-256-0097*
Marketing: Eric Gibbs *Technical: Horace Satmar*

WINDRUSH MICRO SYSTEMS LIMITED

Worstead Labs
North Walsham, Norfollk NR28 9SA
Phone: 0692-404086 *Fax: 0692-404091*
Marketing: J.A. Dickinson *Technical: W.C. Dickinson*

HARDWARE CROSS REFERENCE

MICROWARE SYSTEMS CORPORATION

DES MOINES TOKYO SANTA CLARA