Merge 386TM OEM Kit Manual

GN00202-06.REV02 March 1989

Release 1.3

Locus Computing Corporation

Proprietary and Confidential Protected Under Nondisclosure

IBM is a registered trademark, and PC and PC AT are trademarks of International Business Machines Corporation.

Intel, followed by any number, is a trademark of Intel Corporation.

Merge 386 and Merge 286 are trademarks of Locus Computing Corporation.

MS-DOS is a registered trademark of Microsoft Corporation.

PC-Interface is a trademark of Locus Computing Corporation.

PostScript is a trademark of Adobe Systems Incorporated.

PC Station is a trademark of TeleVideo Systems, Inc.

UNIX is a registered trademark of AT&T.

TeleVideo is a registered trademark of TeleVideo Systems, Inc.

VT100 is a trademark of Digital Equipment Corporation.

WordStar is a registered trademark of MicroPro International Corporation.

Xsight is a registered trademark of Locus Computing Corporation.

© 1988, 1989 Locus Computing Corporation.

Locus Computing Corporation, 9800 La Cienega Blvd, Inglewood CA 90301-4440

All rights reserved. No part of this publication may be reproduced by any means without written permission from Locus Computing Corporation.

The information in this publication is believed to be accurate in all respects. However, Locus Computing Corporation cannot assume responsibility for any consequences resulting from the use thereof. The information contained herein is subject to change. Revisions to this publication or new editions of it may be issued to incorporate such changes.

Printed in U.S.A.

Contents

Introduction

About This Document	IN-3
Typographic Conventions	IN-4
The Merge 386 Operating Environment	IN-4
User-Interface Transparency	IN-4
Program-Interface Transparency	IN-5
High Performance	
Merge 386 Architecture	
Introduction	AR-3
Merge 386 Architecture	AR-3
How UNIX Recognizes DOS Programs	AR-3
How UNIX Starts a DOS Application	
UNIX Tasks and the Virtual Machine	AR-4
The Virtual Machine Monitor	AR-5
Virtual PC Devices	AR-6
PC-Compatible Devices	AR-8
File Service	AR-9
Terminals and Other Non-Compatible Displays	AR-11
The Xcrt Display Process	AR-12
The Virtual Keyboard Process	AR-13
Well-Behaved DOS Programs	AR-14
Starting a vm86 Task	AR-15

Merge 386 Binary Installation

	Introduction	BI-3
	The Install Script	BI-3
	Media Format and Contents	
	Invoking the Merge 386 Install Script	
	Merge 386 Installation Described	BI-3
	Installation Steps In Chronological Order	BI-4
Th	he Merge 386 Porting Process	
	Introduction	PP-3
	Planning the Port	PP-3
	Porting Merge 386	PP-4
	DOS Programs	PP-5
	Kernel Hooks	PP-5
	UNIX Device Drivers	PP-5
	Kernel Merge Modules	PP-7
	Displays	PP-7
	UNIX Utilities	PP-8
	Installation	PP-8
	Limited Login Support	PP-8

Modifications to the Base UNIX Kernel and Utilities

~	
Functions Provided by the Merge Kernel Hooks	
Process Control	
Virtual Clock	
DOS Program Execution	
Synchronization with vm86 Process	
Memory Management	
Mapped Files	••••••
I/O Permission Bit Map Support	•••••••••••••••••••••••••••••••••••••••
Utility Modifications	
getty and stty Modifications	
terminfo Support for Scancode Terminals	
Modifications to the SYSI86 System Call	K
Service Requests	K
ge 386 Device Driver Modifications	
ge 386 Device Driver Modifications	
ge 386 Device Driver Modifications Introduction	•••••••••••••••••••••••••••••••••••••••
ge 386 Device Driver Modifications Introductionasy Driver Modifications	
rge 386 Device Driver Modifications Introduction	•••••••••••••••••••••••••••••••••••••••
rge 386 Device Driver Modifications Introduction	
rge 386 Device Driver Modifications Introduction	•••••••••••••••••••••••••••••••••••••••
Introduction	
rge 386 Device Driver Modifications Introduction	D
Introduction	

Console Driver and Virtual Terminal Merge Hooks	
Process Mode	DD-23
Merge kd ioctl	
Keyboard LEDs	
Keyboard Shift State	
Routing Key Events to Merge	
Summary	
VPI/PPI Development Guide	
Introduction	
Virtual Port Interface — Overview	VP-3
Physical Port Interface — Overview	
VPI/PPI Implementation Guide	VP-3
Overview of Development Steps	VP-4
The UNIX Device Drivers	VP-5
VPI/PPI Initialization and Attachment	VP-5
Device Emulation	
I/O Request Handling and VPI-to-PPI Commands	
Interrupts and PPI-to-VPI Commands	
Virtual Interrupt Handling	VP-9
Virtual DMA Handling	
PPI Device Access	
VPI Exit Processing	
Manual Pages for Merge Kernel Functions	VP-10
add_vmdevsw	VP-11
dma_connect	
irq_connect	
vmgetmen	
vmirq	VP-15
VPI/PPI	
Merge 386 Test Tools	
Introduction	TT-3
Installing the Test Tools	TT 2
What the Tests Exercise	11-3
Running the Tests	
	11-4

Floating Point Test	Detailed Description of Merge 386 Tests	TT-5
Video Mode Tests	Floating Point Test	TT-5
DOS System Call Tests	Merge 386 Make-Image Tests	TT-5
Stress Tests	Video Mode Tests	TT-6
Expanded Memory Tests	DOS System Call Tests	TT-6
Documentation Source Distribution Introduction	Stress Tests	TT-6
Introduction	Expanded Memory Tests	TT-7
Documents Included in the Distribution	Documentation Source Distribution	
Contents of the Documentation Source Distribution	Introduction	DS-3
Additional Prerequisites for Printing the Merge Manuals	Documents Included in the Distribution	DS-3
How to Print the Merge Manuals	Contents of the Documentation Source Distribution	DS-3
How to Customize the Merge Manuals	Additional Prerequisites for Printing the Merge Manuals	DS-4
Documentation Source For Merge 386 Releases Incompatible with the IBM AT	How to Print the Merge Manuals	DS-5
Incompatible with the IBM AT	How to Customize the Merge Manuals	DS-5
Related Documents		
Appendices: Locus Troff Macro Guide	Incompatible with the IBM AT	DS-6
Locus Troff Macro Guide	Related Documents	DS-7
	Appendices:	
A Beginner's Guide to Nroff and Troff and the mX Macro Package	Locus Troff Macro Guide	
	A Beginner's Guide to Nroff and Troff and the mX Macro Package	

tmac.Xlong

Man Pages

Introduction	M-3
DOS Commands	M-4
ON Command	
PRINT.COM Command	
PRINTER Command	
Other DOS Executables	
DOSADMIN Command	
HICON.SYS	M-38
PART.SYS	
DOS Special Files	
CONFIG.SYS	M-40
Section 1	
dos	M-46
Section 1M	M-53
crt	
mkimg	
mkvdisk	M-56
mkvfloppy	M-57
S80merge	M-58
tkbd	
Section 4	
dosapp/dosenv	
kt70/kt70pcix	
tvipcs1-S	
wy60-S/wy60ix/wy60pc	
Section 7	
vcom1/vcom2	