Digital Equipment Corporation
Maynard, Massachusetts

digital

PDP-8
Maintenance Manual

TC08

DECtape Controller

DEC-08-H3DA-D

PDP-8
TC08
DECTAPE CONTROLLER
MAINTENANCE MANUAL

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

1st Printing June 1970
2nd Printing May 1971
3rd Printing October 1971
4th Printing February 1972

Copyright © 1970, 1971, 1972 by Digital Equipment Corporation

The material in this manual is for information purposes and is subject to change without notice.

The following are trademarks of Digital Equipment Corporation, Maynard, Massachusetts:

DEC	PDP
FLIP CHIP	FOCAL
DIGITAL	COMPUTER LAB

CONTENTS

		Page
CHAPTER 1	INTRODUCTION	
1.1	The Type TC08 and TC08N Controllers	1-1
1.2	The TU55 and TU56 Transports	1-1
1.3	Installation and Environmental Requirements	1-3
CHAPTER 2	THEORY OF OPERATION	
2.1	DECtape Recording Format	2-1
2.2	DECtape Data Format	2-2
2.2.1	Block Lengths	2-4
2.3	Bidirectional Reading and Writing	2-4
2.4	The TC08 Block Diagram	2-7
2.4.1	The Data Transfer Section	2-8
2.4.2	The Control Section	2-10
2.5	Functions and Flags of the Control Section	2-11
2.5.1	Functions of the Status A Register	2-11
2.5.2	Errors and Flags of the Status B Register	2-13
2.6	Programming DECtape	2-14
2.6.1	Example 1: Rewind Tape	2-15
2.6.2	Example 2: Find a Block	2-16
2.6.3	Summary of TC08 Timing Data	2-17
2.7	TC08 Operator Controls and Indicators	2-18
CHAPTER 3	TC08 - TC08N LOGICAL OPERATION	
3.1	A Review of Magnetic Tape Recording	3-1
3.1.1	Magnetic Recording in General	3-1
3.1.2	The DECtape Read/Write Electronics	3-2
3.1.3	The DECtape Recording Technique	3-3
3.2	The DECtape System	3-5
3.2.1	The DECtape Controller	3-5
3.3	The TC08 System Timing	3-24
3.3.1	Write Timing and Mark Track	3-24
3.3.2	Search and Write Data or Write All	3-24