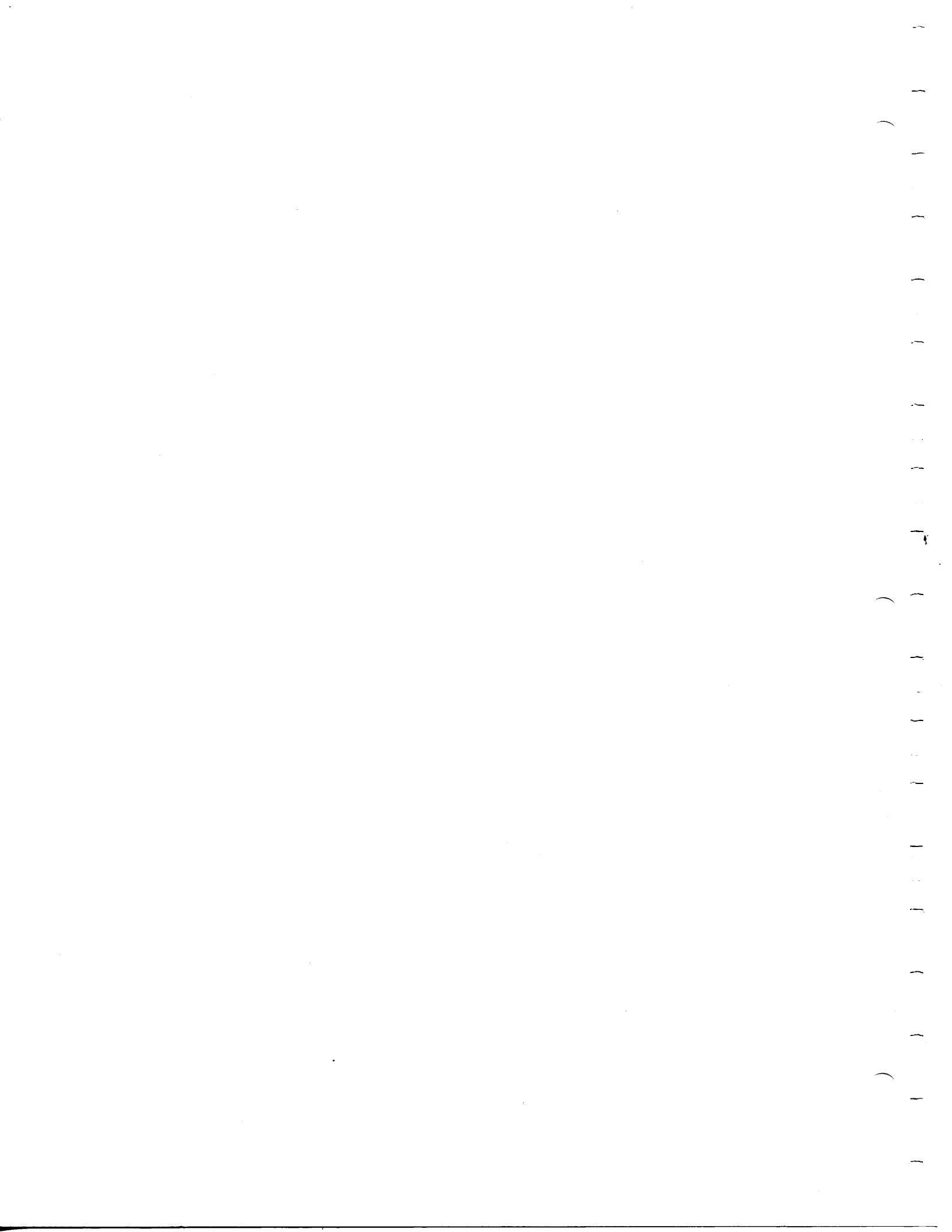# 31 CALCULATOR PROM PREPARATION INSTRUCTIONS

TEKTRONIX®

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Tektronix, Inc.
P.O. Box 500, Beaverton, Ore. 97005, U.S.A.

31 CALCULATOR PROM PREPARATION INSTRUCTIONS

TEKTRONIX®

excellence in
information display

062-1642-00

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TEKTRONIX 31 CALCULATOR

PROM PREPARATION INSTRUCTIONS

Your order for a Programmed Read Only Memory (PROM) for your

Tektronix 31 Calculator indicates that you are making a signifi-

cant investment to allow dedication of a part of the calculator

to a specific application. To protect your PROM investment, it is

necessary that you provide complete documentation of the PROM

program. By completing and returning this instruction book, along

with the enclosed tape cartridge and unprogrammed PROM, you will

be providing that documentation. This will ensure proper pro-

gramming by the Tektronix Manufacturing Facility, and also pro-

vide a permanent record for ordering duplicate PROM's at a later

date.

I. IDENTIFICATION

Fill in the program name and any information required to iden-
tify the programmer(s). The reference number and preparation date
will be supplied by the Tektronix Manufacturing Facility.

Program Name: Reference Number:

Programmer: Preparation Date:

   Title

   Firm

   Address

II. DESCRIPTION

This section should elaborate on the function of the program(s),
methodology of the algorithm(s) involved, and any general opera-
tor, peripheral, or calculator software requirements. That is, the
program(s) may require operator supervised input/output of certain
data points or program segments. In specific modes, the programs
may require the dedication of certain peripherals; certain pro-
gramming might be required as resident in the normal calculator
program step memory. The description might take the form of de-
cision tables, formulae, flow charts, PERT charts, Markov Chains,
text, or any combination of these.

Program Description:

Program Description (cont.)

III.HARDWARE REQUIREMENTS

The Tektronix 31 options required as a minimal configuration for the PROM and any resident software should be specified. A list of any required peripherals, together with any specific options, should be provided. Program step memory usage should be specified in two increments: normal calculator memory and PROM memory.

Program steps resident in the normal calculator memory need not fill that memory to capacity; similarly, the PROM need not be completely filled. However, the calculator will address the PROM as an extension of the normal calculator memory, whether the normal memory is filled or not. The total or normal calculator program memory steps and PROM steps may not exceed 8192. That is, a 1024 step PROM cannot be used with a Tektronix 31 in the option 10 memory configuration.

This section should also include a listing of register usage for both the K and R registers.

Program Hardware Requirements:

Configuration: Tektronix 31 with Option(s)_____.

Peripherals:

Memory Usage: Calculator

PROM

Register Usage:

K_0 R

K_1 R

K_2 R

K_3 R

K_4 R

K_5 R

K_6 R

K_7 R

K_8 R

K_9 R

IV. SOFTWARE REQUIREMENTS

A list of labels used in the PROM, addresses of important routines in the PROM, and a list and description of any routines required in normal calculator memory should be included in this section. The labels should be listed complete with the relative addresses and functional descriptions of the routines they represent. A PROM may use relocatable addressing by beginning the programming with the following sequence:

$$\text{LBL a EXC b LBL b RAD} = K_d$$

Where a and b represent any two Keystrokes on the Tektronix 31 Keyboard. This sequence allows the user to branch once to the PROM, either from the keyboard or under program control, and then use the sequence:

$$K_d + \text{increment} \text{) GODP}$$

within the PROM to branch to any absolute address determined by the increment and base address in K_d.

Program Software Requirements:

PROM Labels

Label   Address   Function

PROM Routines

Address   Routine   Function

Resident Routines

Address   Routine   Function

V.   SAMPLE RUNS

This section should contain samples of actual program output, photocopies of output, or description of output. Loading and initialization instructions for the PROM and any supporting software on Magnetic Tape should be included. Sample output from the thermal printer may be attached, although a full page layout is more desirable.

Program Sample Runs:

Loading Instructions:

Sample Output:

Program Sample Runs, Sample Output (cont):

VI. OVERLAY

The overlay allows the redefinition of 24 special function keys on the Tektronix 31 Calculator. By using the appropriate key/label in the PROM, the special function keys may be redefined. Fill in the overlay below with the special function key labels as they will be defined and used with the PROM.

USER DEFINABLE OVERLAY   TAPE #   BLOCK #

TITLE

A		G	M		S
B		H	N		T
C		I	O		U
D		J	P		V
E		K	Q		W
F		L	R		X

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VII.LISTING

Include a listing of the PROM programming and any software required to be resident in the normal calculator memory. Full page layouts of the program listings are preferable but thermal printer listings or coding form listings may be enclosed instead.

Program Listing:

Program Listing (cont.):

Program Listing (cont.):

Program Listing (cont.):
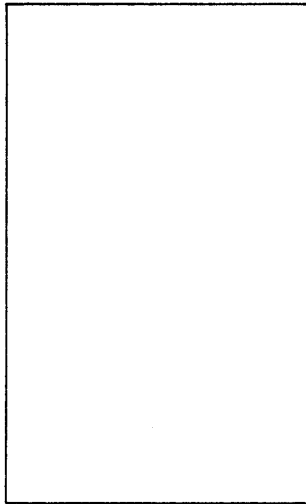
Program Listing (cont.):

Program Listing (cont.):

Program Listing (cont.):

VII. LABEL

Prior to shipment from the factory, a label will be prepared

and placed on the PROM, identifying both the PROM and its function.

Please type your desired PROM label information on a separate piece

of paper and affix it in the below space. Do not include more

information than can be placed in the box provided.

Program PROM Label:

```
┌─────────────┐
│             │
│             │
│             │
│             │
│             │
│             │
│             │
│             │
│             │
└─────────────┘
```


IX. MAGNETIC TAPE COPY

The programming to be placed in your PROM should be loaded,

beginning at relative address 0000 on block Ø, on the Magnetic

Tape provided in this PROM Order Packet.

X. MAILING

Fill in your address on each of the two labels provided in this book. Remove only the label pre-addressed to Tektronix – and use it to mail these instructions, the Magnetic Tape, and the unprogrammed PROM, directly to Tektronix. The label is perforated and gummed for attachment to the outside of the package.

MAILING LABELS

FROM:

Calculator Manufacturing
Tektronix, Inc. 93/400
P.O. Box 500
Beaverton, Oregon   97005

Your address →

To: _____

_____

_____

_____

_____

FROM:

_____

_____

_____

_____

Calculator Manufacturing

Tektronix, Inc. 93/400

P.O. Box 500

Beaverton, Oregon   97005

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