Ablage
Anleitungen

MICRONTA

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READ.ME   FILE
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MICRONTA (R)   Cat. No. 22-182   READ.ME   file Version 1.0,
July, 1992.

MULTIMETER

CONTENTS

1. INTRODUCTION

The 22-182 can turn any PC-compatible computer into a data acquisition
system using its bi-directional serial interface.
This section is designed to help you to develop applications and
contains basic information necessary for safe operation.

2. PRELIMINARY NOTES

2-1. The DMM (Digital Multimeter) has two modes of communication to

Host computer :
Transmit Data and/or Receive Data.

2-2. The DMM is equipped with photo-coupler devices.

2-3. The DMM's communications interface is a modified one of the RS-232
standard.
The DMM sends data to the computer : RxD Mode.
The computer sends commands to the DMM : TxD Mode.
The other signal lines are for Signal Ground (SG),
Data Terminal Ready (DTR) and Request To Send (RTS).

2-4. Communications Specifications:
   Baud rate: 1200 BPS
   Parity bit: None
   Data bit: 7 Bits ASCII
   Stop bit: 2 Bits

2-5. A Data frame consists of 14 bytes in length.
   The frames are set as follows:

   Byte)   1 2 3 4 5 6 7 8 9 A B C D E
   Ex. 1)   D C   1 . 9 9 9   V   CR
   Ex. 2)   1 . 9 9 9   M o h m CR
   N.B.) The byte 14 is set for a carriage return character.

2-6. Set-Up

o Connect the supplied interface cable to the socket of the DMM
  and to the COM port on your PC.
o Turn on the DMM.
o Load the supplied software on your PC.
o Run the demonstration program from the disk and press [ENTER]
when the
        opening screen appears.
        (To stop during execution or to escape under device I/O error,
        press [CTRL + BREAK] at the same time).

3. MEMORY RECORDING

    The 22-182 can store up to 5 measured values and send the data to
the
    Host computer.
    This feature is useful for recording readings taken when not
connected
    to a Host computer.

  3-1. RECORDING

        To store a reading in the DMM, set the Range/Function switch to
        the appropriate setting for the measurement. After the
measurement
        is made and is shown on the LCD, press the COMM switch once.
        The reading is now memorized.
        Press the COMM switch once again to return to the Normal mode.
        If you need to record more readings, repeat this process.
        This memorization process is also possible in the Data Hold (D-
H) mode.
        Note that the DMM will not memorize the reading if the meter is
        overloaded, is in the Logic range, or is in the
Diode/Continuity
        test range.

  3-2. To activate transmission of the data from the DMM to the Host
computer,
        the computer must give the DMM the [D] command.
        Refer to sections NO.4-2 and NO.5-2, for further information.

  3-3. To clear the memories, switch the DMM off or give the DMM
        the [C] Memory-Clear command via the Host computer.
        Refer to sections NO.4-2 and NO.5-4 for further information.

  3-4. To transmit the memories, give the DMM the [M] Memory-Call
command
        via the Host computer.
        Refer to sections NO. 4-2 and NO. 5-3 for further information.

  4. APPLIED PROGRAMS FOR DEMONSTRATION

    This section contains sample programs to demonstrate the DMM's
    communications ability.

            o DMM.EXE
            o METDEMO.EXE

  4-1. This section intentionally omitted.

  4-2. DMM.EXE

The program provides the main menu:

1. PORT CONFIGURATION
2. RxD ONLY
3. RxD & TxD
4. RxD & TxD (Zoom)
5. MEMORY CALL
6. MEMORY CLEAR

To facilitate usage of this program, the operation instruction message
is provided in every section of the menu.
You should pay attention to the message to avoid any possible device
input/output error.
The data memorized in the DMM can be transmitted to the display
of the Host computer via the command NO. 5 Memory Call.
The data memorized in the DMM can be cleared via the command
NO. 6 Memory Clear.

4-3. METDEMO.EXE

The program provides a control menu, at the lower left of the screen,
with the following options:

F=Function	I=Interval	
P=Printer		
L=File	B=Beep	
C=Compare		
R=Run	O=Port	Q=Quit

Each option is selected by pressing the indicated single letter key.
The use of each option follows :

4-3-1. FUNCTION

This allows you to record the current multimeter function;
e.g. DCV, ACV, etc.
This information is used only on the screen.
The computer cannot set the DMM's function.

4-3-2. INTERVAL TIME

This option allows the interval between reading to be set from
1 to 60 seconds.
If you want to capture readings manually, set "S."

4-3-3. PRINTER

This option allows values to be sent to a printer.

4-3-4. FILE

A data file can be opened to record measurements as they
are received.
This file must be closed again at the completion of data acquisition.
To open the file press '1.' then enter your file name.
The message "TIME RECORDING?" will appear on the screen.

Press '1' if you want the time to be recorded along with
each reading.
To close the file, return to the 'F' option and press '2.'

4-3-5. BEEP

If BEEP is activated, a beep will sound as each measurement
is
received.

4-3-6. COMPARE

This option allows low and high limits to be set for
comparison with
the received readings.
Once activated, the message "LO," "PASS" or "HI" will appear
at the
upper right of the screen to indicate whether the measurement
is
below, within or above the set limits.

4-3-7. RUN

Having setting the other options, press "R" on the PC
keyboard to
commence data acquisition.
To end execution, press "N" in response to the "REQUEST DATA?
(Y/N)"
prompt.
The cursor will return to the main menu.

4-3-8. PORT

This allows you to choose to which COM port the DMM is
connected.

4-3-9. QUIT

Choosing this option ends program execution and returns you
to DOS.

5. PROGRAM EXAMPLES

Since the DMM has no parity and control line for
communication,
programs should allow for multiple readings to judge whether
the
data is being transmitted to the Host computer or not.
The following examples written in BASIC are used to
demonsrate
the functions programmed in each section.

You are encouraged to write your own programs in BASIC or
other
programming language you may be familiar with, in order to
maximize
the utility of this sophisticated testing instrument.

5-1. RXD ONLY

```
10 OPEN "COM1:1200,N,7,2,RS,CS,DS,CD" AS #1
20 IN$ = INPUT$ (14, #1)
30 PRINT #1, IN$
```

```
      40 CLOSE #1
      50 END
```

5-2. RxD & TxD

```
      10 OPEN "COM1:1200,N,7,2,RS,CS,DS,CD" AS #1
      20 A$ = "D"
      30 PRINT #1, A$;
      40 IN$ = INPUT$ (14, #1)
      50 PRINT IN$
      60 CLOSE #1
      70 END
```

5-3. MEMORY CALL

```
      10 OPEN "COM1:1200,N,7,2,RS,CS,DS,CD" AS #1
      20 A$ = "M"
      30 PRINT #1, A$;
      40 IN$ = INPUT$ (14, #1)
      50 PRINT IN$
      60 CLOSE #1
      70 END
```

5-4. MEMORY CLEAR

```
      10 OPEN "COM1:1200,N,7,2,RS,CS,DS,CD" AS #1
      20 A$ = "C"
      30 PRINT #1, A$;
      40 CLOSE #1
      50 END
```

5-5. ACCESS TO THE DATA FILE FOR METDEMO

```
      10 OPEN "I", #2, "KIM.PRN"
      20 WHILE NOT EOF(2)
      30 INPUT #2, R$;
      40 PRINT R$
      50 WEND
      60 CLOSE #2
      70 END
```


end of file