Intermec
Technologies Corporation

DOS Signature Capture Utility

PROGRAMMER'S REFERENCE GUIDE

P/N: 977-054-006
Revision C
February 1998

▶ **NOTICE**

The information contained herein is proprietary and is provided solely for the purpose of allowing customers to operate and service Intermec manufactured equipment and is not to be released, reproduced, or used for any other purpose without written permission of Intermec.

Disclaimer of Warranties. The sample source code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided **"AS IS WITH ALL FAULTS." ALL WARRANTIES ARE EXPRESSLY DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

We welcome your comments concerning this publication. Although every effort has been made to keep it free of errors, some may occur. When reporting a specific problem, please describe it briefly and include the book title and part number, as well as the paragraph or figure number and the page number.

Send your comments to:
Intermec Technologies Corporation
Publications Department
550 Second Street SE
Cedar Rapids, IA 52401

ANTARES, INTERMEC, NORAND, NOR*WARE, PEN*KEY, ROUTEPOWER, TRAKKER, and TRAKKER ANTARES are registered trademarks and ENTERPRISE WIRELESS LAN, INCA, Mobile Framework, MobileLAN, TE 2000, UAP, and UNIVERSAL ACCESS POINT are trademarks of Intermec Technologies Corporation.

© 1997 Intermec Technologies Corporation. All rights reserved.

Acknowledgments

ActiveX, Microsoft, MS, and *MS-DOS, Windows,* and *Windows NT* are registered trademarks and *MSDN, Visual Basic, Visual C++,* and *Windows for Pen* are trademarks of Microsoft Corporation.

CONTENTS

SECTION 1

Introduction

Audience 1-1
About this Guide 1-2
Scope 1-2
Related Documents 1-3
Contents of Package 1-3
Other Required Software Components 1-4
Hardware Requirements 1-4
Licensing 1-4
Customer Support 1-5
    Customer Support Center 1-5
    Web Site 1-5
    Bulletin Board Service 1-6

SECTION 2

Frequently Asked Questions

How Does It Work? 2-1
What Does the Signature Screen Look Like? 2-2
What Do I Do with the Output File? 2-2

SECTION 3

Component Reference

PSIGM0C.EXE 3-1
Command Line 3-1
Parameters 3-2
Return Value 3-2
Usage Notes 3-3
PL/N Programming Example 3-3
PSIGP0C.EXE 3-5
Command Line 3-5
Parameters 3-5
Return Value 3-6
Usage Notes 3-6
PL/N Programming Example 3-7
PSIGM0C.INI 3-9

FIGURES

Figure 2-1 Sample Signature Screen 2-2

Section 1

Introduction

This programmer's reference guide provides information about using the DOS Signature Capture Utility package for the PEN*KEY® 6100, 6210, and 6300 Series Hand-Held Computers.

Audience

This guide is intended for use by persons responsible for developing an application software program to run on the above mentioned computers.

About this Guide

This guide is arranged into several sections to allow quick reference to relevant information.

Section 1, Introduction
This section contains information about the product.

Section 2, Frequently Asked Questions
Read this section to understand the DOS Signature Capture Utility program and what it can do.

Section 3, Component Reference
The DOS Signature Capture Utility program, PSIGM0C.EXE, the Signature Print Utility program, PSIGP0C.EXE, and the configuration file, PSIGM0C.INI are described in this section.

Scope

The DOS Signature Capture Utility package, which includes software and this programmer's reference guide, is a supplement to your computer's respective programmer's reference guide. The programmer's reference guide contains important information about configuring the system. The DOS Signature Capture Utility package provides supplementary information needed to integrate the DOS Signature Capture Utility into a system, but does not document those areas covered in the programmer's reference guide. Below is each computer type with its applicable programmer's reference guide and part number:

- 6100 Computer:
  *PEN*KEY 6100 Computer Programmer's Reference Guide* (P/N: 977-054-001)
- 6210 and 6300 Series Computers:
  *PEN*KEY 6200/6300 Computer Programmer's Reference Guide* (P/N: 977-054-003)

Related Documents

- *NORLIB Library Collection Volume A Programmer's Reference Guide*
  P/N: 977-052-007
- *NORLIB Library Collection Volume B Programmer's Reference Guide*
  P/N: 977-052-008
- *Application Compatibility Enhancement (ACE) Program User's Guide* (applies to 6100 Computers)
  P/N: 961-052-003

Contents of Package

The DOS Signature Capture Utility package includes the following software components:

- PSIGM0C.EXE — DOS Signature Capture Utility executable program
- PSIGP0C.EXE — Signature Print Utility executable program
- PSIGM0C.INI — Sample configuration file

Other Required Software Components

Other software required to use the DOS Signature Capture Utility program is listed below. Documentation on these components is in your computer's applicable toolkit:

- 61MOUSE.COM — PEN*KEY 6100 Mouse Driver, included in 6100 Toolkit
- 62MOUSE.COM — PEN*KEY 6200 Mouse Driver, included in 6200/6300 Toolkit
- 63MOUSE.COM — PEN*KEY 6300 Mouse Driver, included in 6200/6300 Toolkit
- CALIB.EXE — Mouse calibration utility, included in the 6100 and the 6200/6300 Toolkits
- 62CALIB.EXE — 6200 Mouse calibration utility, included in the 6200/6300 Toolkit

Hardware Requirements

Use a desktop or laptop "development" PC running MS-DOS Version 5.0 or higher to develop the DOS Signature Capture Utility program.

The development PC needs to communicate with the computer, using an SRAM Card Reader and Writer or a null modem serial cable connection. Contact your Account Representative for assistance in obtaining the required tools.

6210 Computers must be equipped with the optional touch screen to use this utility.

Licensing

This package includes one DOS Signature Capture Utility license for use on a single hand-held computer. The DOS Signature Capture Utility source code is not available.

Customer Support

Customer Support Center

The Intermec Customer Support Center (technical support) telephone number is 800-755-5505 (U.S.A. or Canada) or 425-356-1799. The facsimile number is 425-356-1688. Email is *support@intermec.com*.

If you email or fax a problem or question include the following information in your message: your name, your company name and address, phone number and email to respond to, and problem description or question (the more specific, the better). Please indicate if the equipment was purchased through a value-added reseller.

Web Site

The Customer Support File Libraries, including Hot Tips and Product Awareness Bulletins, are available via the Intermec Product Support page at this URL: *http://norbbs.norand.com/index.htm*. New users can sign up for a new account on this page.

Visit our Web site at *http://www.intermec.com* to download many of our current manuals in PDF format. To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Bulletin Board Service

The Customer Support Bulletin Board (BBS), maintained by Intermec Technologies Corporation, provides software and documentation:

- **Phone number:** 319-369-3515 (14.4 kbps modem)
  319-369-3516 (28.8 kbps modem)
- **Protocol:** Full duplex, ANSI or ANSI-BBS; 300 to 28,800 bps; v.32bis; 8 bits, no parity, 1 stop bit. *For high-speed modems, disable XON/XOFF and enable RTS/CTS.*

This is the same location available via the web site. If your web access uses high-speed phone lines, the web interface provides a faster response.

Section 2

Frequently Asked Questions

The DOS Signature Capture Utility allows users to add the ability to capture an electronic signature on a PEN*KEY® 6100, 6210, or 6300 Series Hand-Held Computer, with minimal changes to their program. This section provides answers to Frequently Asked Questions (FAQ).

How Does It Work?

The DOS Signature Capture Utility puts the display in graphics mode to display an area for a signature and buttons that allow the signature to be accepted, cancelled, or cleared. The utility then monitors touch screen activity, drawing ink where the user touches. The image is saved to a file that the application can upload or print.

What Does the Signature Screen Look Like?

The signature screen can be either portrait mode or landscape mode. The default is landscape:

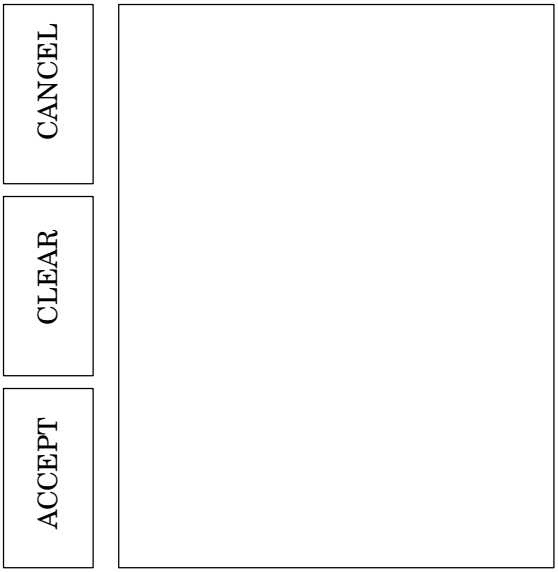

Figure 2-1
Sample Signature Screen

What Do I Do with the Output File?

The file created by the DOS Signature Capture Utility is in PCX format, an industry standard graphics format accepted by many graphics, word processing, and desktop publishing programs. Most often, this file is uploaded to a host computer.

Section 3

Component Reference

This section describes the DOS Signature Capture Utility program's executable file (PSIGM0C.EXE), the Signature Print Utility program's executable file (PSIGP0C.EXE), and the configuration file (PSIGM0C.INI).

PSIGM0C.EXE

This program implements a "signature capture" screen on a PEN*KEY® Hand-Held Computer with a touch screen. The signature capture screen contains an area for a signature, optional text, and buttons that allow the signature to be accepted, canceled, or cleared. An accepted signature is saved to a file in .PCX format. The attributes of the screen can be configured by the calling application.

Command Line

```
PSIGM0C [options] [<.ini file>]
```

Parameters

-?
This option causes PSIGM0C to display a usage message and then exit.

<.ini file>
This optional parameter is the name of a file that contains configuration information for PSIGM0C. If this parameter is not specified, PSIGM0C reads the PSIGM0C.INI file for configuration information. If this parameter is not specified and PSIGM0C.INI does not exist, PSIGM0C uses default values. See page 3-9 for a description of the PSIGM0C.INI format and default values.

Return Value

This program returns zero (0) if successful, or a nonzero error code:

Value	Meaning
0	Signature was accepted and successfully saved.
1	User canceled the signature capture by pressing the cancel button or keyboard equivalent.
252	An invalid command line parameter was specified or the –? command line option was specified.
253	.INI file is missing a required entry, or an entry with a fixed set of values has an invalid value.
254	The specified .INI file could not be accessed.
255	An error occurred while saving the signature to the file.

Usage Notes

A touch screen driver must be loaded before calling PSIGM0C, such as 61mouse.com, 62mouse.com, or 63mouse.com.

For 6100 Computers only:
VROTATE.EXE and PSEKM0C.EXE do *not* need to be disabled before calling PSIGM0C. PSIGM0C detects the presence of these programs, disables them while it executes, then enables them again before exiting. PSIGM0C restores PSEKM0C plane 0. If another plane is required, the calling application must set it after PSIGM0C exits.

For 6210 Computers only:
FONTMAP.EXE does *not* need to be disabled before calling PSIGM0C.

PL/N Programming Example

```
EXTERNALS
NUMERIC FUNCTION SPAWNDOS =        IPFSDP6
STRING  FUNCTION STR =             IPFSTR6
SUBROUTINE       INIFILE  =        PGINI1P

LOCAL VARIABLES
01 RESPONSE       BINARY BYTE

FD INIFD
01 INIBUF            PIC X(128)

01 RESULT            BINARY WORD

; This updates the configuration file for the signature utility.
; A template configuration file is bundled with the program files
; so that the location entries can be specific to the 6100 and
; 6200 Computers, yet the same program is used on both the 6100
; and 6200 Computers.

OPEN (INIFD, INIBUF) ME_NAME & 'PSIGM0C.INI',
         ME_READ+ME_WRITE
```

```
;Displays the invoice total in a text window.

INIFILE( 1, INIFD, ‘Text window 0’, ‘Text’, &
            ‘“INVOICE TOTAL: ’ & STR(INVOICE_TOTAL) & ’”’)

; Specifies a file name that includes the invoice number to tie
; the signature file to the appropriate invoice.

INIFILE( 1, INIFD, ‘Capture window’, ‘File’, &
            STR(INVOICE_NUMBER) & ‘.PCX’)
CLOSE (INIFD)

; Executes the signature capture utility.

RESULT = SPAWNDOS( ‘PSIGM0C.EXE’ )
IF RESULT = 0 THEN
   ; THE SIGNATURE WAS ACCEPTED.
   . . .
ELSEIF RESULT =1 THEN
   ; SIGNATURE CAPTURE WAS CANCELED BY USER
   . . .
ELSE
   ; AN ERROR OCCURRED
   OUT (KBD) (KB_HOME)
   &  ‘SIGNATURE’, CRLF,
   &  ‘CAPTURE ERROR!’, CRLF,
   &  ‘ERROR #’, RESULT, BEL, CRLF
   &  ‘PRESS ENTER’
   RESPONSE = INPUT(S+F)
ENDIF
```

PSIGP0C.EXE

This program generates a file which contains the printer commands necessary to print an image that is stored in a .PCX file such as the type created by PSIGM0C.EXE, the signature capture utility. PSIGP0C.EXE can create a file suitable for printing to a 4810, 4815, 4820, 6805, or 6820 Printer.

Command Line

```
PSIGP0C [options] .PCX-file output-file
```

Parameters

.PCX-file
This is the name of the .PCX file with the image.

output-file
This is the name of the output file to be generated.

Options to PSIGP0C must always precede the filenames but may be listed in any order. These options are available:

-?
Causes PSIGP0C to display a usage message, then exit.

-g graphics-mode:
Selects the printer graphics mode to use. Valid values for graphics-mode are:
1 = Single density (default)
2 = Double density

-m left-margin:
Sets the left margin at which the image is printed. Values for left-margin are in increments of 1/100 of an inch, such as “10” is “10/100 inch”. Default value is 0 (zero).

-p printer-type:
Selects the printer type. Valid values for printer-type are “4810”, “4815”, “4820”, “6805”, and “6820” (default). The values “4815”, “4820”, and “6820” produce identical output files.

-v
Verbose mode. Displays status messages.

Return Value

Return values 0–66 indicate success. For printer types “4815,” “4820,” and “6820,” this value is the number of print lines needed to print the image, based on a line spacing factor of six lines per inch. A value of 66 means that the image takes 66 or more print lines. This value can be used by the calling application to determine if a formfeed is needed to avoid printing the image across a page perforation. For other printer types, this value is always zero.

Return values greater than 66 indicate error conditions. The following values are defined:

Value	Meaning
251	Cannot open output file.
252	Cannot access .PCX file.
253	An error occured while writing output file. One possible cause is that the width of the image exceeds the capability of the printer.
254	Out of memory. Unable to allocate memory.
255	An invalid or missing command line parameter encountered, or –? specified.

Usage Notes

If the output file exists when this program is called, the print data is appended to the file.

The output file is not deleted if an error occurs. The calling application must delete this file.

The output file contains binary data. PL/N applications should execute PUTCTL 1036 (PR_SETESC) and PUTCTL 776 (PR_TRANSPARENT) before printing the contents of the output file, and execute PUTCTL 1037 (PR_NOESC) and PUTCTL 777 (PR_FULL) afterward.

PL/N Programming Example

```
EXTERNALS

   NUMERIC FUNCTION INPUT
   NUMERIC FUNCTION PRINTCTL = PGAPR2P
   NUMERIC FUNCTION SPAWNDOS = IPFSDP6
   STRING  FUNCTION MID      = IPFMID6
CONSTANTS

   LINES_PER_PAGE = 54

LOCAL VARIABLES
   01 RESPONSE                 BINARY BYTE

   FD SIGFD                    ;FD for signature print file
   01 SIGBUF                   PIC X(128)  ;Buffer for signature print file
   01 FRACTION                 BINARY WORD ;Size of fractional record
   01 SIGLINES                 BINARY WORD ;# of lines needed for signature
   01 SAVE_LAST                BINARY WORD ;Saved value of PRT.LAST

   01 RPT_COND                 BINARY BYTE ;Result of PRINTCTL
   01 PRT_STATUS               BINARY WORD ;Parameter for PRINTCTL
. . .

; Execute the signature print utility.
SIGLINES = SPAWNDOS( 'PSIGP0C.EXE', 'SIGNATUR.PCX SIGNATUR.PRN' )
IF SIGLINES > 66 THEN
   ; An error occurred
   OUT (KBD) (KB_HOME)
   &  'SIGNATURE', CRLF,
   &  'PRINT ERROR!', CRLF,
   &  'ERROR #', SIGLINES, BEL, CRLF,
   &  'PRESS ENTER'
   RESPONSE = INPUT(S+F)
   RETURN
ENDIF
. . .

; Print the report.  Because PRINTCTL allows the report to be aborted,
; files must be opened and closed outside of the report procedure.
OPEN (SIGFD, SIGBUF) ME_NAME & 'SIGNATUR.PRN', ME_READ + ME_TRANSPARENT
. . .
```

```
   RPT_COND = PRINTCTL(21,@REPORT,PRT_STATUS,SECURITY_CODE)
. . .

CLOSE (SIGFD)
. . .

PROCEDURE REPORT
   . . .

   ; Print the signature at the bottom of the invoice.  SIGLINES contains
   ; the number of lines needed to print the signature.  Check for end of
   ; page.
   IF ((PRT.LAST AND 255) + SIGLINES > LINES_PER_PAGE) THEN
      PERFORM NEW_PAGE
   ENDIF
   ; Set the print driver to accept binary data.
   PUTCTL (PRT) PR_SETESC
   PUTCTL (PRT) PR_TRANSPARENT
   ; Each out statement increments PRT.LAST.  SIGLINES contains the line
   ; count for the signature, so we manually override PRT.LAST after
   ; printing the signature.
   SAVE_LAST = PRT.LAST
   GET (SIGFD) 0
   WHILE NOT SIGFD.ERROR DO
      IF SIGFD.CURRENT < SIGFD.LAST THEN
         OUT (PRT) SIGBUF
      ELSE     ;Write partial record
         GETCTL (SIGFD) FRACTION, ME_FRACTION
         IF FRACTION THEN
            OUT (PRT) MID(SIGBUF,0,FRACTION)
         ENDIF
      ENDIF
      GET (SIGFD)
   ENDWHILE
   ; Set the proper line count
   PRT.LAST = SAVE_LAST + SIGLINES
   ;Restore print mode
   PUTCTL (PRT) PR_NOESC
   PUTCTL (PRT) PR_FULL
   . . .

END ;Of report
```

PSIGM0C.INI

PSIGM0C.INI entries control the operation of PSIGM0C.EXE, the DOS Signature Capture Utility.

PSIGM0C.INI comment lines start with ";". PSIGM0C.INI lines can be no longer than 256 characters.

For entries that have a fixed set of possible values, the valid values are listed in upper case separated by "|". The first value listed is the default value used by PSIGM0C.EXE if the entry is not specified. These listed values are *not* substitutes for numeric values. These entries must contain one of the strings as listed.

[Screen]
Some entries have no default value. These entries are required within their sections, and an error is returned if they are omitted. Section names, entry names and values are not case sensitive.

Orientation = LANDSCAPE | PORTRAIT
This entry specifies the screen orientation for the signature capture.

[Capture window]
The capture window is the area of the screen that is saved to a file when the accept button is pressed.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the capture window.

Default value for 6100 and 6300 Series Computers:
50,0,179,319

Default value for 6210 Computers:
30,0,159,199

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the capture window.

File = d:\path\filename.ext
This entry is the name of the file in which the signature is saved. If not specified, the signature is saved to the file PSIGM0C.PCX. If the file exists, it is overwritten. The signature is saved in .PCX format.

[Signature window]
The signature window is the area of the screen in which the signature is written by the user. If this section is not specified, the signature window is the same as the capture window.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the signature window. The default value is the same as for the capture window.

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the signature window.

[Text window n]
Text windows are areas of the screen that display additional information, such as an invoice number or invoice total. Up to ten text windows can be defined, such as `[text window 0]` to `[text window 9]`. Text windows can overlap other windows, including the capture window.

Active = NO | YES
This entry controls whether the text window is displayed.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the text window. This entry is required within this section, there is no default value.

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the text window.

Text = “”
This text is displayed to the user to prompt them to enter a signature. This text may contain the C string escape sequences “\n” and “\\.”

[Status window]
The status window is an area of the screen that displays messages to the user.

Active = NO | YES
This entry controls whether the status window is displayed.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the status window. This entry is required within this section. There is no default value.

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the status window.

Text = “ENTER YOUR\nSIGNATURE”
This text is displayed to the user to prompt them to enter a signature. This text may contain the C string escape sequences “\n” and “\\”.

AcceptText = “SAVING SIGNATURE”
This text is displayed to the user if the accept button is pressed, while the signature file is being written. This text may contain the C string escape sequences “\n” and “\\”.

[Accept button]
Pressing the accept button saves the signature to a file then exits the program.

Active = YES | NO
This entry controls whether the accept button is displayed.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the accept button.

Default value for 6100 and 6300 Series Computers:
0,217,40,319

Default value for 6210 Computers:
0,136,20,199

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the accept button.

Text = "ACCEPT"
This text is displayed in the button.

Key = 13
This entry defines the keyboard equivalent of the button. It is a value returned by Norlib function NRGetch. The default value of 13 is the Enter/Yes key.

[Clear button]
Pressing the clear button clears the signature window so the user can start again.

Active = YES | NO
This entry controls whether the clear button is displayed.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the clear button.

Default value for 6100 and 6300 Series Computers:
0,111,40,213

Default value for 6210 Computers:
0,69,20,132

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the clear button.

Text = "CLEAR"
This text is displayed in the button.

Key = 0
This entry defines the keyboard equivalent of the button. It is a value returned by Norlib function NRGetch. There is no default keyboard equivalent for the clear button.

[Cancel button]
The cancel button exits the program without saving the signature.

Active = YES | NO
This entry controls whether the cancel button is displayed.

Location = x1,y1,x2,y2
This entry specifies the screen coordinates of the cancel button.

Default value for 6100 and 6300 Series Computers:
0,0,40,107

Default value for 6210 Computers:
0,0,20,65

Border = NR_SINGLE_LINE_BORDER | NR_NO_BORDER
This entry controls the type of border used for the cancel button.

Text = "CANCEL"
This text is displayed in the button.

Key = 27
This entry defines the keyboard equivalent of the button. It is a value returned by Norlib function NRGetch. The default value of 27 is the ESC/NO key.