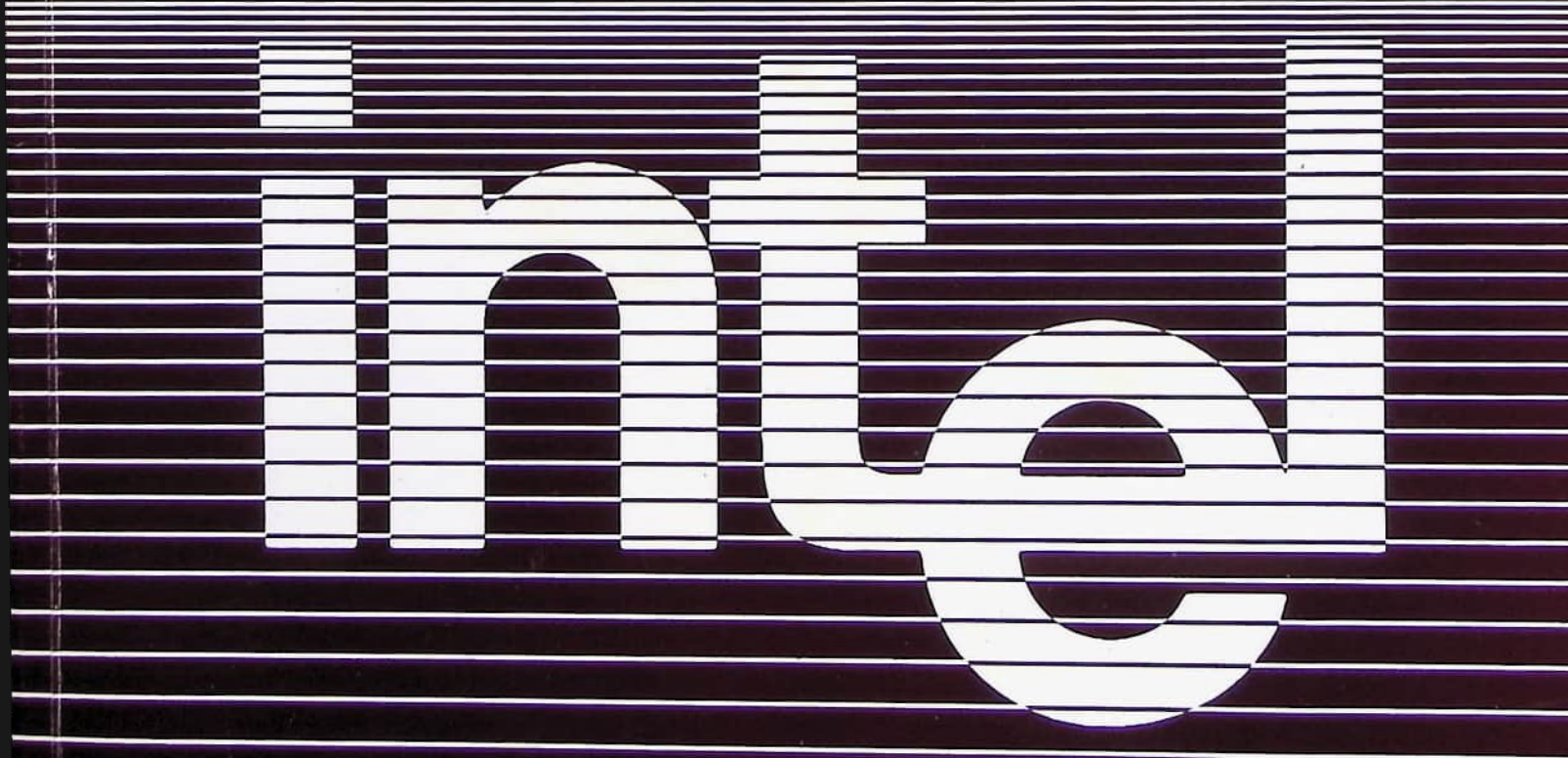
Insite™
User's Program Library



INSITE
USER'S PROGRAM LIBRARY
CATALOG

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CHAPTER 1 : GENERAL INFORMATION

- Programs for 8048/8052, 8080/8085, 8086/8087/8088, 80186/80286, and 8096/80C196 Processors
- Diskettes and Listings Available for Library Programs
- Accepted Program Submittals Entitle You to a FREE Membership or FREE Program Package
- FREE Membership to Customers under Standard Software Support Contract or Warranty
- Worldwide Offices to Serve you
- Program Library Catalog Offering Hundreds of Programs

Insite, Intel's Software Index and Technology Exchange Library, is a varied collection of programs and routines that have been written by users of Intel microcomputers, single-board computers, and development systems. This expanding library of programs covers a broad range of software tools that includes monitors, conversion routines, peripheral drivers, translators, math packages, and games. As a library member, you can acquire a copy of any program within the library on any of its available types of media. By taking advantage of the availability of existing library programs, numerous hours of coding and debugging time can be saved and routine or redundant programming operations can be eliminated. The Insite Program Library also serves as a learning tool for individuals unfamiliar with assembly or high-level languages associated with Intel's family of microcomputers.

MEMBERSHIP: Membership in Insite is available on an annual basis. Intel customers under Software Support Contract or Warranty are entitled to FREE membership.

CATEGORY "E" SOFTWARE: Insite software falls under Category "E" - it is unsupported. Once an Insite program is purchased, the customer is free to use the software as they choose. No License Agreements are needed.

PROGRAM SUBMITTALS: The Insite Library is built on program submittals contributed by users. Customers are encouraged to submit their programs. For each accepted program, submittors will receive a choice of 3 free programs or a free one year membership.

PROGRAM LIBRARY SERVICE: Each member will be sent the Program Library Catalog consisting of an abstract for each program indicating the function of the routine, required hardware and software, and memory requirements. Diskettes or Source Listings are available for Insite programs.

CATALOG UPDATES: Insite members will be updated with abstracts of new programs submitted to the Library during the subscription period. For catalog and yearly subscription fee information, please refer to the Intel OEM Price List or contact the nearest Intel Sales Office.

ORDER PROCEDURES: An order form must be completed with each program order. A sample form is included in this catalog. Each order will be filled according to the specifications of the user and completed on the order form. Any errors in order information will be the responsibility of the user, and the user must bear the cost of reordering. No exchanges will be made for programs found not to fulfill the user's needs. Refunds will not be issued under any circumstances.

PROGRAM MEDIA: Programs are available on printed source listings or on the following diskette formats: Intel ISIS-II, CP/M, iPDS ISIS, iPDS CP/M, iNDX, PC-MS/DOS, and iRMX. Media availability per individual program is referenced at the end of each program description. Media must be specified on order forms to ensure prompt processing. (Note: Not all programs are available on all media offered).

PROGRAM CODE: Programs offered in source code may require assembly/compilation. The programming language for each program is stated on the program information sheet. Assemblers/compilers required are Intel standard. Program assembly/compilation is the responsibility of the user. Programs offered in absolute object code are furnished as executable object code.

PRICE CODES: Price codes are indicated for each program by a letter in parentheses following media availability in the program description, e.g., "DISKETTE (A)". Refer to the Insite Price List for the corresponding program prices. Documentation, when available, is included with the program at no additional cost.

SUBMITTAL REQUIREMENTS

Programs submitted for Insite review must contain the following information.

Programs must be written in a language capable of compilation and assembly by the currently-supported version of an Intel standard compiler/assembler.

A well-documented source code furnished on diskette.

A source listing of the program must be included. This must be the output listing of a compilation or an assembly. No consideration will be given to incomplete programs or duplications of programs already in the library.

A link and locate (or equivalent) listing.

A demonstration program which assures the validity of the contributed program must be included. This must show the accurate operation of the program.

A complete submittal form.

Licensed software or copyrighted material must be accompanied by a written release from the appropriate, authorized person.

Math package submittals should include: format and precision of operands and of the results; execution times; examples of how to call the submitted routines.

PROGRAM VERIFICATION: Programs should operate properly under the author's original configuration, however, Insite cannot assume responsibility for any other configurations. "Program Certification and Review" forms are included in this catalog to determine whether a program functions accurately and according to the author's documentation.

PROGRAM REVISIONS: Program revisions are submitted in the same manner as original program submittals. The revision submitted should be referenced in a cover letter, noting the Insite program order number and detailing the specific revisions.

NEW INSITE PROGRAM SUBMITTALS

This catalog contains several new Insite Library programs. Below is a list of the new submittals.

Order #	Title
AB29	DRIVER: MODIFIED 82530 DRIVER
AD28	COMMUNICATION: B-52 iPDS TO BASIC-52 CHIP VIA RS-232
AD29	COMMUNICATION: MS-KERMIT V2.26
AD30	COMMUNICATION: ISIS-KERMIT FOR SERIES II/III/IV
AD31	COMMUNICATION: iPDS-KERMIT
AD32	COMMUNICATION: XENIX 286 KERMIT
AD40	OH286 CONVERSION
AE16	UTILITIES: iACX-96 UTILITIES
AE17	UTILITIES: iACX-96 DIAGNOSTIC LIBRARY
BB30	CMO-286 V1.1 - INTEL 286 OMF TO MICROSOFT 86-REL OMF
BD45	SIM386
BF11	INTERPRETER: BASIC 8052 SOURCE CODE
BG71	UTILITIES: iPDS BITBUS UTILITIES
BG75	LINE PRINTER SPOOLER
BG76	SDB CUSPS FOR iRMX 86
BG77	SDB CUSPS FOR iRMX 286
CA26	FFT ALGORITHM FOR THE MCS-96 FAMILY
E10	NDS-II/SERIES IV/OpenNET TOOLBOX
K286	iAPX 286 ARCHITECTURE EXTENSION KERNEL

CHAPTER AA : MONITORS

AA1, MONITOR: INTELLEC 8/MOD80

Submitted by: Frank Faff, Atlantic Research Corp., Alexandria VA

Abstract: This monitor provides most commonly used debug functions in a single 256-byte EPROM. Functions include : -GOTO, -SUBSTITUTE, -DISPLAY, -HESARITHMETIC, -FIND/MOVE BYTE. With modifications, can be used with any user-designed hardware which has ASCII I/O capability. ASCII characters used: 0-9, A-F, G, H, M and S. Output is ASCII characters corresponding to hexadecimal memory addresses and contents.

Hardware Required: Intellec 8/MOD80, TTY-ASR33

Software Required: None

Registers Modified: All. Required: RAM/11 bytes for stack; ROM/256 bytes; BLOCKS/81

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA2, MONITOR: iSBC 86/12 NUMERIC PROCESSOR EXTENSION (NPX) MONITOR

Submitted by: K. Gullentops, Univerite Catholique de Louvain, Louvain, Belgium

Abstract: This is an enhanced version of the iSBC-86/12 monitor (iSBC-957). In addition to the existing 86/12 monitor functions, this version allows memory display in various formats including ASCII strings, words, integers, and reals in hex and decimal formats. It also allows Numeric Data Processor (8087) register display in two formats: a top-of-stack relative display of the stack registers, and a general display of all registers, including status registers. The monitor is entirely written in PL/M-86 and fits into 8K.

Hardware Required: Intellec Development System; iSBC-86/12; optional iSBC-337 (8087)

Software Required: PL/M-86

Registers Modified: All. Required: ROM/8K, RAM/512 bytes; BLOCKS/1781

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.1

Libraries: 8087.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST, HEX; SOURCE LISTING (L); DOCUMENTATION

AA3, MONITOR: SDK-85, V2.0

Submitted by: Intel Corporation

Abstract: This program provides minimum level functions for the SDK-85; -Memory/register manipulation; -Program load/execution; -Single-step capability.

Hardware Required: SDK-85

Software Required: None

Registers Modified: All. Required: RAM/38 bytes + stack; ROM/2K bytes; BLOCKS/705

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0.

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA4, MONITOR: SDK-86 SERIAL, V1.1

Submitted by: Janet Takami, Intel Corporation

Abstract: This program is the ROM-based interactive monitor with commands for examining/modifying registers and memory, controlling program execution using breakpoints or single step, moving memory blocks, inputting from or outputting to I/O ports, and reading and writing HEX/Object files on paper tape.

Hardware Required: SDK-86, ASR-33 Teletype or CRT

Software Required: N/A

Registers Modified: All. Required: RAM/256 bytes; ROM/4 bytes; BLOCKS/398

Programming Language: PL/M. Assembler/Compiler: PL/M-86, V1.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA5, MONITOR: SDK-86 KEYPAD

Submitted by: Janet Takami, Intel Corporation

Abstract: This program is a ROM-based Keypad monitor for the SDK-86, providing a moderate-level capability to examine/modify memory/registers, and execute programs.

Hardware Required: SDK-86

Software Required: N/A

Registers Modified: RAM/256 bytes; ROM/4K bytes; BLOCKS/312

Programming Language: PL/M. Assembler/Compiler: PL/M-86, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA6, MONITOR: INTELLEC DEVELOPMENT SYSTEM, V2.0

Submitted by: Intel Corporation

Abstract: This program is an interactive monitor handling six I/O devices and utility routines for display/modification of memory/registers.

Hardware Required: Intellec Development System 800

Software Required: N/A

Registers Modified: All. Required: RAM/2K bytes

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V2.4

Libraries: SYSTEM.LIB

Media Availability (Price Code): SOURCE LISTING (L)

AA7, MONITOR: iSBC 544

Submitted by: D. Jurasek, Intel Corporation

Abstract: This program is a minimal monitor providing: -Memory/register display/modifications; -Program execution; -Console/paper tape I/O support.

Hardware Required: iSBC 544, EPROM 2716, PROM, programming capabilities

Software Required: N/A

Required: ROM/16K; BLOCKS/667

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA8, EXECUTIVE: REAL TIME

Submitted by: Ted Clowes, Cubic Corporation, San Diego, CA

Abstract: This is a control design to perform the necessary scheduling; task initialization and termination that can be found in a Real Time environment.

Hardware Required: 8080, Timer that causes periodic interrupt

Software Required: N/A

Registers Modified: All. Required: RAM/22 bytes for minimum; ROM/256 bytes; Blocks/63

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA9, MONITOR: iSBC 250 1-MEGABIT BUBBLE MEMORY

Submitted by: Paul Wells, Intel Magnetics, Intel Corporation

Abstract: This BMDS software package provides modules for the interfacing and use of the iSBC 250 1-megabit bubble memory board. The package is designed to be used in an Intellec Microcomputer Development System or configured with the same, then used with any iSBC host board.

Hardware Required: iSBC 250, Intellec Model 230 or Intellec Model 800

Software Required: ISIS-II

Registers Modified: RAM/32K bytes; BLOCKS/2527

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

AA10, MONITOR: BUBBLE MEMORY DEVELOPMENT SOFTWARE FOR INTEL BPK-72

Submitted by: Paul Wells, Intel Corporation

Abstract: This program, BMDS-86, is a bubble memory monitor which performs basic communication with, and diagnostics on, the BPK-72 1-Megabit Bubble Memory Prototype Kit.

Hardware Required: SDK-86 and BPK-72 kits

Software Required: None

Required: ROM/4K, (EPROM)

Programming Language: 8086 Assembly Language. Assembler/Compiler: MCS-86 Macro Assembler, V2.1

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, LST; DOCUMENTATION

AA11, MONITOR: iSBC-254 BUBBLE MEMORY BOARD MONITOR

Submitted by: Chee Ho, Intel Corporation

Abstract: This program provides the user with an immediate interactive interface to the iSBC-254 Bubble Memory Board when used with Intel's MDS and ISIS-II operating system.

Hardware Required: MDS-800 or Intellec Series II 220/225/230/235/240/245 iSBC-254 Bubble Memory Board

Software Required: ISIS-II, V4.1

Required: RAM/32 bytes, ROM/none, BLOCKS/1080

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (D), SRC; DOCUMENTATION

AA12, INTERPRETER: INTERACTIVE 8087 INSTRUCTION INTERPRETER

Submitted by: Bill Rash, Intel Corporation

Abstract: This program allows quick examination of 8087 behavior and verifies its operation. Version 187 allows all 8087 instructions to be executed and all 8087-related values to be displayed for each examination. All 8087 supported data types may be set and displayed in hex and decimal. Data formats and instructions are compatible with ASM86. A version of 187, called E187, offers the same functions, except using the 8087 emulator. 187 provides a window into the 8087 environment. From the console any aspect of an 8087 may be examined and modified. Individual instructions may be typed, 187 immediately executes them, and the results may be examined.

Hardware Required: 86/20 or 88/20 or 86/10 with E8087, or 88/10 with E8087, with iSBC 957A monitor on an 86/12 board and download link.

Software Required: iSBC 957A monitor and iSBC 861

Registers Modified: All. Required: RAM/10K for 86/20, 26K for 86/10; BLOCKS/1938

Programming Language: PL/M and Assembly. Assembler/Compiler: PL/M-86; 8086/8087/8088 Macro Assembler.

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; DOCUMENTATION (extensive)

AA13, MONITOR: HSE-49 EXPANSION MONITOR

Submitted by: Roger Finger, Intel Corporation

Abstract: This program is a hardware/software modification on HSE-49 to support the following enhancements as new keyboard functions: 1) Download a user program stored in a 2716 to HSE memory; 2) Compare PROM to HSE-49 RAM; 3) Check for burned out LED segments; 4) Check for stuck bits and short-circuit faults; 5) Provides parser tables for users to write their own routines.

Hardware Required: HSE-49 plus expansion monitor firmware, a zero insertion force socket will be added in the prototype area.

Software Required: Two HEX files to burn into firmware

Registers Modified: R0-R7. Required. RAM/None; ROM/2K-2716; BLOCKS/1495

Programming Language: Assembly. Assembler/Compiler: ASM48, V4.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; DOCUMENTATION

AA14, MONITOR: iSBC 80/05 or 80/04

Submitted by: Intel Corporation

Abstract: This program is a 2K-byte debug monitor for the iSBC 80/05 or 80/04, providing; -Simple memory/-register display; -Program execution with breakpoints; -Modification commands; -Paper tape I/O support using a TTY.

Hardware Required: iSBC 80/05 or 80/04 with console CRT or TTY; PROM programming capabilities

Software Required: None

Registers Modified: All. Required: RAM/31 bytes + stack; ROM/1714 byte; BLOCKS/454

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA15, MONITOR: iSBC 80/10

Submitted by: Wayne Stahnke, Wayne Stahnke Co., Santa Monica CA

Abstract: This is a resident interactive monitor for the iSBC 80/10. Some features included: All commands are checked for validity before being executed. Paper tape input is buffered to allow checksum validation before being installed. The "Program Execute" command permits the setting and clearing of breakpoints. Provision is made for a front-panel hardware interrupt switch.

Hardware Required: iSBC 80/10, ASR-33 TTY or equivalent

Software Required: N/A

Required: RAM/64 bytes; ROM/1024 bytes; BLOCKS/297

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

AA16, MONITOR: iSBC 80/10 OR 80/10A

Submitted by: Intel Corporation

Abstract: This program runs on the iSBC 80/10 board and is designed to provide the user with a minimal monitor with which to examine and change memory or CPU registers, load a program (in absolute hex) into RAM, and execute instructions already in memory. The monitor also provides the user with routines for performing console I/O and paper tape I/O.

Hardware Required: iSBC 80/10 or 80/10A, PROM programming capabilities, CRT or TTY

Software Required: None

Registers Modified: All. Required: RAM/16 + stack usage; ROM/1374 bytes; BLOCKS/512

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA17, MONITOR: iSBC 80/20 or 80/20-4

Submitted by: Intel Corporation

Abstract: This program runs on the iSBC 80/20 board and is designed to provide the user with a minimal monitor with which to examine and change memory or CPU registers, load a program (in absolute hex) into RAM, and execute instructions already in memory. The monitor also provides the user with routines for performing console I/O and paper tape I/O. The 80/20 monitor can reside in two 8708 PROMs, both of which are required for monitor operations.

Hardware Required: iSBC 80/20 or 80/20-4; PROM programming capabilities

Software Required: None

Registers Modified: All. Required: RAM/45 + stack; ROM/1708 bytes; BLOCKS/564

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA18, MONITOR: iSBC -80/24

Submitted by: Tom Dale, Intel Corporation

Abstract: This program runs on the iSBC-80/24 board and is designed to provide the user with a minimal monitor. By using the program, the user can examine and change memory or CPU registers, load a program (in ABSOLUTE HEX) into RAM, and execute instructions already in memory. The monitor also provides the user with routines for performing console I/O and paper tape I/O. The 80/24 monitor can reside in one 2716 PROM.

Hardware Required: iSBC-8024, PROM programming capabilities

Software Required: None

Registers Modified: All. Required: RAM/98 bytes; ROM/2080 bytes; BLOCKS 675

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; SOURCE LISTING (L)

AA19, MONITOR: iSBC 80/30

Submitted by: Intel Corporation

Abstract: This program runs on the iSBC 80/30 board and is designed to provide the user with a minimal monitor, with which the user can examine and change memory or CPU registers, load a program (in absolute hex) into RAM, and execute instructions already in memory. The monitor also provides the user with routines for performing console I/O and paper tape I/O. The 80/30 monitor can reside in one 2716 PROM.

Hardware Required: PROM programming capabilities; iSBC 80/30

Software Required: N/A

Registers Modified: All. Required: RAM/96 bytes; ROM/2040 bytes; BLOCKS/662

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AA20, MONITOR: SUPER MONITOR 80

Submitted by: David Jurasek, Intel Corporation

Abstract: This monitor is a super set of earlier 80/10, 80/20, 80/30, and iSBC 544 monitors. Additional features include: UPLOAD/DOWNLOAD, error logging, disassembler, user-selectable system test, RAM re-read on RAM test, on-line assembler. The monitor is intended to be used with a Hazeltine 1510 terminal or equivalent and may be interfaced to Intellec Series II, Series III, or MDS-800 Development Systems.

Hardware Required: iSBC 80/10/10B/20/30/544

Software Required: None

Registers Modified: All. Required: RAM/4K; ROM/8K maximum; BLOCKS/1817

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; DOCUMENTATION

AA21, MONITOR: SUPER MONITOR 86

Submitted by: Scott Tetrick, Intel Corporation with additions by David Jurasek

Abstract: Super Monitor 86 is a diagnostic monitor for hardware products using the 8086 family processor. It is designed to allow quick and thorough debug or major hardware functions. Super Monitor 86 is the successor of the iSBC monitors and attempts to maintain compatibility in command structures and testing methods. The monitor can be interfaced to Intellec Series II, Series III or MDS-800 Development Systems.

Hardware Required: iSBC 86/05/12/12A/14/30; CRT (preferable Hazeltine 1510); RS232 cabling.

Software Required: None

Registers Modified: All. Required: RAM/2K bytes; ROM/8K bytes; BLOCKS/3240

Programming Language: ASM86. Assembler/Compiler: MCS-86 Assembler

Media Availability (Price Code): DISKETTE (F), SRC, OBJ, ABS.OBJ; DOCUMENTATION

AA22, MONITOR: SUPER MONITOR 86 FOR THE iSBC 88/45

Submitted by: Richard Haslam, Intel Corporation

Abstract: This program provides a monitor and test suite to exercise the onboard I/O devices of the iSBC 88/45. It must be programmed from hex files into three 2764 EPROMs. The monitor will support an iSBX 351 on either of the 88/45's iSBX connectors or else will default to an iSBC 116A card for its serial port.

Hardware Required: iSBC 88/45; iSBX 351 or iSBC 116A; EPROM programmer and three 2764 EPROMs; RS232 and RS422 loopback connectors

Software Required: None to execute, PL/M-86, ASM86, LINK86, LOC86, OH86 to modify.

Required: RAM/16K; ROM/24K; BLOCKS/3366

Programming Language: PL/M-86, ASM86. Assembler/Compiler: PL/M-86, V2.0; 8086/87/88 Macro Assembler R215

Media Availability (Price Code): DISKETTE (F), SRC, OBJ, HEX; DOCUMENTATION

CHAPTER AB : PERIPHERAL DRIVERS

AB1, DRIVER: 8085 SERIAL I/O

Submitted by: John Wharton, Intel Corporation

Abstract: This software package contains subroutines performing: -Interface of 8085 to CRT; -Utilities for recording and reloading an audio cassette recorder.

Hardware Required: 8085 CPU; CRT; cassette tape unit; 5V power supply

Software Required: None

Registers Modified: All. Required: RAM/4 bytes + stack; ROM/326 bytes; BLOCKS/78

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB2, CONTROLLER: PROMPT-48 INTERACTIVE

Submitted by: Peter Glasmacher, Ingenie, Glasmacher, Munchen, West Germany

Abstract: This program provides remote interactive control of Prompt-48 using an Intellec and CRT.

Hardware Required: Intellec 8080-based; Prompt-48

Software Required: ISIS II, Insite Program Order # AD3.

Registers Modified: All. Required: RAM/32K; ROM/None; BLOCKS/116

Programming Language: PL/M. Assembler/Compiler: PL/M-80

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB3, DRIVER: TEKTRONIX 4010 GRAPHIC SCREEN

Submitted by: Henning Nielsen, Institute for Elektroniske Systemer, Aalborg Denmark

Abstract: This program is a set of PL/M procedures for controlling a Tektronix 4010 Graphic Screen as the output device on an 8080 system.

Hardware Required: Intellec 8080-based; Tektronix 4010 Graphic Screen

Software Required: Intellec System Monitor

Registers Modified: All. Required: RAM/0.75K; BLOCKS/44

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB4, DRIVER: T.I. OMNI 810 LINEPRINTER

Submitted by: Kevin King, Compugraphic, Wilmington MA

Abstract: This program initializes baud rate and USARTs in an MDS-230, defines a Texas Instruments Omni 810 lineprinter as a valid ISIS device, and sets up tabs in the printer.

Hardware Required: MDS-230; T.I. Omni 810 printer with RS232 interface; interface cable

Software Required: ISIS II

Registers Modified: None. Required: RAM/15 bytes; ROM/none; BLOCKS/109

Programming Language: ASM-80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AB5, DRIVER: 8048 SEVEN-SEGMENT DISPLAY

Submitted by: J. Wharton, Intel Corporation

Abstract: This driver package is a collection of utility subroutines which may be used with the 8048 family to: 1) Scan keyboard matrix; 2) Debounce and encode key depressions; 3) Drive a multiplexed 7-segment display. The code is written so that various hardware configurations can be accommodated by redefining the initial variables.

Hardware Required: Intellec 8048-based; X-Y matrix to 64 switches; 7-segment display.

Software Required: ISIS II

Registers Modified: Pointers and one in blank 0 and four in blank 1

Required: RAM/12 bytes; ROM/250 bytes; BLOCKS/223

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AB6, DRIVER: AUDIO CASSETTE RECORDER

Submitted by: Guenter Ruschitzka, ZuZenhausen, West Germany

Abstract: This routine outputs RAM data to an audio cassette recorder paralleled to a CRT terminal. Data can be read back using the monitor's I-command.

Hardware Required: SDK-80 or other 8080 computer; CRT; audio cassette recorder

Software Required: SDK-80 Monitor

Required: RAM/79 bytes; ROM/none; BLOCKS/21

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB7, DRIVER: CASSETTE OPERATING SYSTEM

Submitted by: Robert A. McCormick, Frye Electronics Inc., Tigard OR

Abstract: This program provides practical substitution of a cassette storage for a paper tape device. Cassette storage is buffer-oriented.

Hardware Required: Intellec 800; audio cassette recorder with I/O

Software Required: Intellec System Monitor, V2.0

Registers Modified: All. Required: RAM/0.75 bytes; ROM/1.25 bytes; BLOCKS/107

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB8, DRIVER: SYCOR 135 CASSETTE OPERATING SYSTEM

Submitted by: Dalibor Nemac and Karel Janu, Michle, Czechoslovakia

Abstract: This program provides all functions to create a cassette operating system of the Sycor 135 type (other tape units can be used). The following commands are available: -Format a tape; -List directory on CRT; -Record a file; -Read a file; -Delete a file; -Rewind on leader.

Hardware Required: Intellec System, 8080-based; 8-bit output port, 4-bit input port (8255) serial transmitter/receiver (8251); timer (8253); cassette tape unit (Sycor 135 or other).

Software Required: Monitor

Registers Modified: All. Required: RAM/20 bytes + data files; ROM/1593 bytes; BLOCKS/998

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB9, DRIVER: INTELLEC DEVELOPMENT SYSTEM SERIES II AS DUMB TERMINAL

Submitted by: Dave Mabry, Chrysler Corporation, Detroit MI

Abstract: This program allows the Intellec Series II keyboard/CRT to be used as a "dumb" terminal.

Hardware Required: Intellec Series II

Software Required: ISIS II

Registers Modified: A, C, D, E, SP, H, L. Required: RAM/128 bytes; ROM/none; BLOCKS/33

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB10, DRIVER: DUMB TERMINAL SIMULATOR

Submitted by: Sam Smity, Rothe Development, San Antonio TX

Abstract: This program allows users of Intellec Models 220 and 230 to use them as "dumb" terminals for connection to a modem or another computer. The dumb terminal I/O is through serial connector 1 (TTY) to allow operation in either current loop or RS232 interface modes. Good for use with a modem and dial-up timesharing service.

Hardware Required: Intellec 220 or 230

Software Required: ISIS II, Series II Monitor

Registers Modified: All. Required: RAM/2K; ROM/Series II Monitor; BLOCKS/104

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AB11, CONTROLLER: DUAL FLOPPY DISK DRIVE

Submitted by: Robert J. Anderson, Lawrence Livermore Laboratory, Livermore CA

Abstract: This program allows the user to read and write a 200 (octal) word block to and from a user-specified buffer onto the desired track and sector.

Hardware Required: 8080, floppy disk

Software Required: None

Registers Modified: A, only if in error. Required: RAM/191 bytes + stack; ROM/12300 bytes; BLOCKS/290

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L);

AB12, DRIVER: iRMX 80 FOR iSBC 534

Submitted by: Joe Barthmaier and Steve Verleye, Intel Corporation

Abstract: This program is a driver for the iSBC 534 Communications Expansion Board utilizing iRMX 80.

Hardware Required: iSBC 80/10, 80/10A, 80/20, or 80/20-4; iSBC 534

Software Required: iRMX 80

Registers Modified: All. Required: RAM/256; ROM/1555; BLOCKS/438

Programming Language: PL/M. Assembler/Compiler: ISIS II PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB13, DRIVER: iRMX 80, FOR SBC-215 CONTROLLER BOARD

Submitted by: Larry Telle, Xerox Corporation, Webster NY

Abstract: This program interfaces the SBC-215 Winchester Controller to iRMX 80. Files may be created, deleted and ch anged; data may be accessed sequentially and randomly. The user is given the flexibility to configure various complements of Intel disk drives and controllers.

Hardware Required: SBC-215, Shugart SA-1004, 10 megabytes Winchester disk drive, Shugart SA-1200 data separator, harnesses, Multibus System

Software Required: iRMX 80, V1.4

Registers Modified: All. Required: RAM/64 bytes + DFS; ROM/2500 bytes + DFS; BLOCKS/2947

Programming Language: Assembly, PL/M-80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0, PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; DOCUMENTATION

AB14, DRIVER: iRMX 80 FOR THE iSBC 254 BUBBLE MEMORY WITH 80/10 BOARD

Submitted by: Lenore Kirvay, Intel Corporation

Abstract: This is a set of two programs to run under iRMX 80. The Bubble Memory I/O program controls the iSBC 254 bubble memory board for data storage and retrieval. The Bubble Memory Manager program allocates and de-allocates bubble memory pages on the iSBC 254 board.

Hardware Required: iSBC 254; iSBC 80/10; bus-addressable memory; cardcage

Software Required: iRMX 80 nucleus, BUBIO, BMGR (this program), configured information about iSBC 254. See documentation.

Required: BLOCKS/1208

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB15, DRIVERS: iRMX 80 FOR THE iSBC 254 BUBBLE MEMORY WITH 80/20/30 BOARD

Submitted by: Lenore Kirvay, Intel Corporation

Abstract: This is a set of two programs to run under iRMX 80. The Bubble Memory I/O program controls the iSBC 254 bubble memory board for data storage and retrieval. The Bubble allocates and de-allocates bubble memory pages on the iSBC 254 board.

Hardware Required: iSBC 254; iSBC 80/20 or iSBC 80/30; bus-addressable memory; cardcage

Software Required: iRMX 80 nucleus; BUBIO, BMGR (this program), configured information about iSBC 254

Required: BLOCKS/1207

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

AB16, DRIVER: iRMX 86, FOR THE iSBC 254 BUBBLE MEMORY BOARD

Submitted by: Lenore Kirvay, Intel Corporation

Abstract: This program is an iSBC 254 random-access driver supporting the following functions: F$READ, F$WRITE, F$SEEK, F$ATTACH$DEVICE, F$DETACH$DEVICE, F$OPEN, and F$CLOSE.

Hardware Required: iSBC 254 board, 86/12 board

Software Required: iRMX 86 and its I/O system, configured with these programs as the iSBC 254 driver

Required: BLOCKS/1256

Programming Language: PL/M. Assembler/Compiler: PL/M-86, V2.1

Libraries: SYSTEM.LIB, PLM86.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, LST; DOCUMENTATION

AB17, DRIVER: iRMX 86, FOR THE iPAB-128, iSBX-251 BUBBLE MEMORY PRODUCTS

Submitted by: J. Wolfeld, Intel Corporation

Abstract: This program allows the iPAB-128/iPAB-256/iSBX-251 bubble memory products to be standard random access devices under iRMX 86 R4.0. On each interrupt level, the driver can support one iSBX-152 Multimodule board, or up to eight iPAB-128 units and/or iPAB-256 units, with related hardware.

Hardware Required: 8086/88-based systems with iSBX connector; iSBX-251 Bubble Memory Multimodule or Intel Plug-A-Bubble System.

Software Required: iRMX 86 Operating System, R4.0

Registers Modified: None. Required: BLOCKS/2287

Programming Language: PL/M-86, ASM86. Assembler/Compiler: PL/M-86, V2.0; ASM86, V3.0

Libraries: PLM86.LIB

Media Availability (Price Code): DISKETTE (H), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

AB18, DRIVER: iRMX 86 HIGH PERFORMANCE DRIVER FOR iSBC-550 ETHERNET COMMUNICATIONS CONTROLLER

Submitted by: Narjala Bhasker, Intel Corporation

Abstract: This driver provides a simple mailbox-based interface to iSBC-550 Ethernet controller. External Data Link messages are accepted from a client layer at a mailbox and transmitted to the iSBC-550 board, and EDL messages from the board are passed back via a mailbox to the client layer. The program uses a simplified Multibus Interprocessor Protocol implementation to minimize

overhead.

Hardware Required: Host system capable of running iRMX 86 nucleus and terminal handler; iSBC-550 Ethernet Communications Controller.

Software Required: iRMX 86 R5.0; iRMX 86 Terminal Handler R5.0; 8086 Utilities V2.0

Required: RAM/Approx. 6K; BLOCKS/2859

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.0

Libraries: RPIFC.LIB

Media Availability (Price Code): DISKETTE (H), SRC, OBJ, ABS.OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

AB19, DRIVER: iSBC-86/12 REAL TIME CLOCK DRIVER

Submitted by: Michael Finch, Micro-Comm System, Inc., Augoura CA

Abstract: This is an interrupt drive clock driver that increments a 32-bit system variable each interrupt and calls external routine every tenth interrupt. The initialization sequence is included to set up the on-board 8253 timer chip to create interrupts at 100 ms intervals, thus creating a 1 second real time clock.

Hardware Required: Intel iSBC-86/12 card

Software Required: None

Registers Modified: None

Programming Language: 8086 Assembly Language. Assembler/Compiler: MCS-86 Assembler

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB20, CONTROLLER: PID CONTROL LOOPS (SOFTWARE FOR AP-114)

Submitted by: Pete Andersen, Intel Corporation

Abstract: This program provides 1 to 8 Proportional, Integral, and Derivative (PID) control loops using the iSBC-88/40 Measurement and Control Computer. The software functions as a task set under the iRMX 88 Real Time Executive. Each PID loop requires only 5 msec.

Hardware Required: iSBC-88/40 Measurement and Control Computer, iSBC-337 Multimodule Numeric Data Processor, iSBC 328 Multimodule Analog output board

Software Required: iRMX 88 Real Time Executive

Registers Modified: All. Required: RAM/5562 + iRMX 88 Nucleus; ROM/9360 + iRMX 88 Nucleus; BLOCKS/1206

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V1.2

Libraries: TH088.LIB, TH188.LIB, RMXMAX.LIB, 8087.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB21, DRIVER: USART FOR iSBC-86 XX

Submitted by: Steve Cooper, Intel Corporation

Abstract: This program provides run-time support for terminal input and output via the USART on an iSBC 86/05, 86/12A, 86/14, 86/30, or 88/25. This run-time support is used in conjunction with Pascal-86 or FORTRAN-86.

Hardware Required: Development System, ICE-86, ICE-88, or iSBC-957B for downloading, target system including an iSBC-86/05, 86/12A, 86/14, 86/30 or 88/25 board.

Software Required: LINK, LOCATE, iSBC-957B

Registers Modified: None. Required: RAM/68D; BLOCKS/108

Programming Language: PL/M. Assembler/Compiler: PL/M-86, V2.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB22, DRIVER: BIOS AND BOOT PROGRAM FOR CP/M-80

Submitted by: Jim Grier, Harvey Electronics, Woodbury NY

Abstract: This program provides a BIOS to run CP/M-80, V2.2 in the iSBC-80/24 environment. BIOS and BOOT files are burned into EPROM on the 80/24. On reset, the BOOT copies the BIOS from EPROM into upper RAM and jumps to the cold start routine in the BIOS, thus booting up CP/M. Disk formatting and track-by-track copying utilities are also supplied.

Hardware Required: iSBC-80/24 strapped to 4.84 MHz operation. iSBX-218 strapped for NON-DMA operation DBC-064, cardcage, power supply, single or double density disk drives, RS232 monitor.

Software Required: Single or double density CP/M system diskette

Required: RAM/64K bytes; ROM/4K bytes, two 2716's; BLOCKS/518

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (H), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AB23, DRIVER: iPDS AS DUMB TERMINAL

Submitted by: Matthew Legrand, Intel Corporation

Abstract: This program allows the iPDS to function as a dumb terminal, communicating through its serial port in half or full duplex mode.

Hardware Required: iPDS; 3-wire RS232-compatible cable; host device with serial I/O port

Software Required: ISIS-iPDS Operating System, including program SERIAL

Required: RAM/1274; ROM/8 blocks, 906 bytes; BLOCKS/98

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSPDS.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, LST; SOURCE LISTING (L)

AB24, REMOTE: TERMINAL CONTROL ON SERIES II UNDER CP/M-80

Submitted by: Paul Zahorosky, Products Unlimited, Garfield NJ

Abstract: This program allows operation of an Intellec Model 225 or compatible Development System from a remote terminal connected to serial channel 1 (TTY) under CP/M-80. A system reset returns console I/O to the Intellec and cold-boots CP/M.

Hardware Required: Intellec Model 225 or compatible; remote terminal

Software Required: CP/M-80

Registers Modified: All. Required: RAM/1046 bytes; ROM/None; BYTES/30K

Programming Language: Assembly. Assembler/Compiler: CP/M Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, COM, HEX, PRN; SOURCE LISTING (L)

AB25, DRIVER: OKIDATA MICROLINE 84 LINE PRINTER

Submitted by: Venugopal Puthernpurayil, Intel Corporation

Abstract: This is a stand-alone program which will set up the print quality, print size, and line spacing on an OKIDATA Microline 84 line printer connected to an Intellec Development System running under ISIS II.

Hardware Required: MDS-800 or Series II/III; OKIDATA ML84 printer

Software Required: ISIS II

Required: RAM/Code 1847 bytes, Variables 12 bytes; ROM/Stack size 8 bytes; BLOCKS/93

Programming Language: PL/M-80. Assembler/Compiler: ISIS II, PL/M-80, V3.1

Libraries: SYSTEM.LIB, PL/M80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AB26, iPPS (iUP 20X PROM PROGRAMMING SOFTWARE) V1.1

Submitted by: Intel Corporation

Abstract: iPPS provides PROM programming capability for iRMX-based systems. This software is restricted in supporting personality modules iUPF 27128, iUPF 3632, iUPF 8744A, iUPF 8751A.

Hardware Required: iPPS 20X, iSBX 351, RMX execution vehicle

Software Required: iRMX 86 R6.0

Registers Modified: All.

Programming Language: ASM, PL/M-86

Media Availability (Price Code): DISKETTE (D), OBJ; DOCUMENTATION

AB27, DRIVER: PLOTTING LIBRARY FOR TEKTRONIC DEVICES

Submitted by: J. How, M. Combould, Sig-fusion, CEN-G

Abstract: General plot library. PLTLIB and programs support Tektronic compatible, CALCOMP-type calls. PLTLIB has character mapping algorithm for plotting.

Hardware Required: System 3XX

Software Required: iRMX 86 R6.0

Registers Modified: All.

Programming Language: Fortran 86

Media Availability (Price Code): DISKETTE (C), OBJ; DOCUMENTATION

AB28, DRIVER: CAMAC DATA ACQUISITION DRIVER FOR LARGE EXPERIMENTS

Submitted by: J. How, M. Combould, Sig-fusion, CEW-G

Abstract: Shot library contains software routines for CAMAC-based Data Acquisition system. These routines support data acquisition and analysis for large scale experiments (e.g., Tokamak).

Hardware Required: System 3XX

Software Required: iRMX 86 R6.0

Registers Modified: All.

Programming Language: Fortran 86

Media Availability (Price Code): DISKETTE (D), OBJ; DOCUMENTATION

AB29, DRIVER: MODIFIED 82530 DRIVER

Submitted by: Intel Corporation

Abstract: This program provides limited hardware handshake for output to slow devices such as a line printer. The peripheral device must be able to control the DTR input to the port. If DTR is inactive (ground) the transmitter of the 82530 is disabled. If DTR is active (high) the transmitter resumes output. Control-S and Control-Q are still functional in normal mode.

Hardware Required: iSBX-354

Software Required: iRMX 86 Release 6, Update 4 or later

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.0

Media Availability (Price Code): DISKETTE (D), OBJ, DOCUMENTATION

CHAPTER AC : SLAVE PROCESSORS

AC1, CONTROLLER: UPI-41 8-DIGIT LED DISPLAY

Submitted by: Robin Jigour, Intel Corporation

Abstract: This program uses the UPI-41 as an LED display controller which scans and refreshes 8 multiplexed, 7-segment LED displays. Characters are defined by input from the master microprocessor. Thirty two alphanumeric characters are available for display. Applications: clock or temperature readout, message display, etc.

Hardware Required: UPI-41; 8085 CPU; LEDs

Software Required: UPI-41

Registers Modified: A, RB1, R0, R2, R3, R7 (within UPI-41); Required: RAM/14 bytes (within UPI-41); ROM/115 bytes (within UPI-41); BLOCKS/83

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AC2, DEVICE, I/O: UPI-41A COMBINATION

Submitted by: John Beaston, Intel Corporation

Abstract: This program uses the UPI-41A as a combination serial and parallel I/O device. Serial: Full duplex asynchronous with programmable baud rate and transmitter and receiver, double-buffered receiver, and checks for framing and overrun errors.

Hardware Required: Intellec System; UPI-41A

Software Required: ISIS II; UPI-41A

Required: RAM/12 bytes; ROM/363 bytes; BLOCKS/158

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (C), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AC3, CONTROLLER: 8278 KEYBOARD/DISPLAY

Submitted by: John Beaston, Intel Corporation

Abstract: This program is the source code for the UPI-41 A-based 8278 Keyboard/Display Controller. Features of the 8278 are: -128-key scanning logic; -16-digit LED display multiplexing; -Interface for either contact or capacitively-coupled keyboards; -N-Key rollover; -8-character keyboard FIFO; -Right or left entry display.

Hardware Required: Intellec System; UPI-41A

Software Required: ISIS II; UPI-41A; 8243 I/O Expander

Required: RAM/64 bytes; ROM/865 bytes; BLOCKS/141

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (C), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AC4, CONTROLLER: 8292 ON 8741A

Submitted by: T. Voll, Intel Corporation

Abstract: This program implements the iEEE-488 control function (8292 CPIB controller) on the 8741A.

Hardware Required: Intellec System; 8741A

Software Required: ISIS II

Required: ROM/1K bytes; BLOCKS/277

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AC5, CONTROLLER: UPI-41 A/42 DIGITAL CASSETTE, V2.5

Submitted by: James Kahn, Intel Corporation

Abstract: This program uses the UPI-41A or UPI-42 as a digital cassette controller for the Braemer CM-600 cassette transport. Available commands include: -Read a block; -Seek a block; -Rewind; -Unit select (allows controller to support up to four CM-600 transports); -Modify parameters (to handle different drive or format requirements); -Reset.

Hardware Required: Intellec System; UPI-41A/42; Braemer CM-600; PROM programming capabilities

Software Required: ISIS II

Registers Modified: RAM/64 bytes; ROM/1024 bytes; BLOCKS/251

Programming Language: ASM80. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V4.2

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AC6, PROGRAM: 8741A AS iSBC-941

Submitted by: Brian Addington, Intel Corporation

Abstract: This program allows the user to program an 8741A so that it is the iSBC 841 Industrial Digital Processor.

Hardware Required: Intel MDS 800 or Series II or III; floppy disk drives :F0: and :F1:; UPP 833 Universal Prom Programmer with UPP 848 personality module and adapter; erased 8741A

Software Required: ISIS system files, including FPAL.LIB; UPM

Required: RAM/64K; ROM/system monitor; BLOCKS/1185

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler

Libraries: SYSTEM.LIB, PLM80.LIB, FPAL.LIB

Media Availability (Price Code): DISKETTE (E), SRC, OBJ, HEX; SOURCE LISTING (L); DOCUMENTATION

AC7, CONTROLLER: FIRMWARE FOR iSBC-589

Submitted by: Phil Drain, Intel Corporation

Abstract: This is the resident firmware for the iSBC-589 Intelligent DMA Controller Board. Included are the iSBC-589 memory map code, the iSBC-589 Multichannel Slave Code, the iSBC-589 Master code, a Submit file to assemble link, and locate, and List files. The located firmware may be put into two 2732A EPROMs.

Hardware Required: iSBC-589 Intelligent DMA Controller Board

Software Required: 8089 Assembler

Required: ROM/8K; BLOCKS/3757

Programming Language: ASM890. Assembler/Compiler: ISIS-II 8089 Assembler X004

Media Availability (Price Code): DISKETTE (J), SRC, LST, ABS.OBJ

CHAPTER AD : SYSTEM COMMUNICATIONS

AD1, COMMUNICATION: HEWLETT-PACKARD CALCULATOR WITH INTELLEC DEVELOPMENT SYSTEM 800

Submitted by: J.E. Kiesling, Quality Measurement Systems, Penfield NY

Abstract: This program inputs and outputs data and instructions between the HP9815 programmable calculator and the Intellec 800 memory.

Hardware Required: Intellec 800; Hewlett-Packard 9815 Calculator

Software Required: Monitor

Registers Modified: A, C, D, E, H, L. Required: RAM/100D + data storage; BLOCKS/34

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

AD2, COMMUNICATION: INTELLEC DEVELOPMENT SYSTEM SERIES I WITH PROMPT-48

Submitted by: P. Bushell, MicroGenics, Bourne End, England

Abstract: This program downloads an MCS-48 program from a hex file to the Prompt-48, using serial channel 2 on a Series II development system.

Hardware Required: Intellec Series II; Prompt-48; male-to-female RS232 cable; diskette operating system

Software Required: ISIS II; Prompt-48 Monitor

Registers Modified: All. Required: RAM/1206H bytes, including a 4K buffer; BLOCKS/49

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD3, COMMUNICATION: INTELLEC DEVELOPMENT SYSTEM TO PROMPT-48 OR PROMPT-80

Submitted by: Peter Glasmacher, Munchen 45 , West Germany

Abstract: This routine sends/receives 1 byte from the Intellec system to the Prompt-48 or Prompt-80 via Prompt-SPP cable.

Hardware Required: Intellec System, 8080-based; Prompt-48 or Prompt-80; Prompt SPP Cable

Software Required: ISIS II

Registers Modified: A, B, C, D, E. Required: RAM/none; ROM/98 bytes; BLOCKS/31

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

AD4, COMMUNICATION: INTELLEC DEVELOPMENT SYSTEM 220/230 WITH SDK-85, V1.0

Submitted by: Max Jensen, Denmark

Abstract: This program loads an object-file from as Intellec 220/230 to the SDK-85 through the serial TTY port on the system via the SDK's TTY monitor.

Hardware Required: Intellec 220/230; SDK-85; interconnecting cables; opto couplers

Software Required: ISIS II

Registers Modified: All. Required: RAM/32-64K; ROM/monitor; BLOCKS/208

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD5, RECEIVE

Submitted by: Dave Mabry, Chrysler Corporation, Detroit MI

Abstract: This program allows data to be received through serial port #2 on a Series II Development System and written to a file. Uses entire "Memory" block available as input buffer.

Hardware Required: Intellec Series II Models 22X, 23X, 24X

Software Required: ISIS II; ASM80; "Dumb" terminal program (Insite # AB9) or equivalent

Registers Modified: All. Required: RAM/304 + buffer; ROM/None; BLOCKS/57

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD6, COMMUNICATION: INTELLEC MODEL 220/230 TO TIMESHARING COMPUTER

Submitted by: Dave Mabry, Chrysler Corporation, Detroit MI

Abstract: This program reads an ISIS II file and sends it out Serial Port #2. Channel #2 can talk to a modem or acoustic coupler, so this can be used to load a file from the Intellec 220/230 to a timesharing computer.

Hardware Required: Intellec Model 220/230

Software Required: ISIS II

Registers Modified: All. Required: RAM/255 bytes minimum, 512 bytes nomial; ROM/none; BLOCKS/55

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD7, COMMUNICATION: TWO INTELLEC SERIES II DEVELOPMENT SYSTEMS

Submitted by: Herb Chin, Intel Corporation

Abstract: This program provides for Intellec communications/file passing between two Series IIs via modems and telephone lines.

Hardware Required: Intellec Series II, acoustic coupler; CRT cable (P/N 4000417)

Software Required: ISIS II

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST, ABS.OBJ; DOCUMENTATION

AD8, COMMUNICATION: INTELLEC MODEL 800 TO/FROM DEC PDP-10

Submitted by: Intel Corporation

Abstract: This program provides three functions to use the Intellec 800 as a terminal or to transfer files to/from a DEC PDP-10; -ONLINE; -UPLOAD; -DOWNLOAD

Hardware Required: Intellec 800; PDP-10 serial port; RS232

Software Required: ISIS II; driver on host computer

Registers Modified: All. Required: BLOCKS/426

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0; PL/M-80

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD9, COMMUNICATION: INTELLEC DEVELOPMENT SYSTEM SERIES II WITH MINICOMPUTER

Submitted by: Intel Corporation

Abstract: This program uploads and downloads files between a Series II and host computer. It makes the Intellec Series II emulate a CRT for use on minicomputer systems.

Hardware Required: Intellec System 220/230/240; host computer

Software Required: ISIS II

Registers Modified: All. Required: RAM/32K minimum, 64K preferred; ROM/none; BLOCKS/3391

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; DOCUMENTATION

AD10, COMMUNICATION: INTELLEC DEVELOPMENT SYSTEM TO/FROM DEC

Submitted by: D. Pfaltzgraff, Frederick Electronics Corporation, Frederick MD

Abstract: This program allows the MDS-800 or MDS-230 to act as a dumb terminal to a timesharing line. The program conforms to the EC RSTS/E PIPEXT utility and can be easily modified to support other systems.

Hardware Required: MDS-230 TTY PORT 0, MDS-800 TTY PORT, timesharing system, current loop interface

Software Required: ISIS II and ROM monitor. PL/M-80, LINK, LOCATE

Registers Modified: All. Required: RAM/All available used; ROM/none; BLOCKS/458

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AD11, COMMUNICATION: INTELLEC DEVELOPMENT SYSTEM TO/FROM TEKTRONIX 8001

Submitted by: D. Higgins and T. Ward, Lanier Business Products, Atlanta GA

Abstract: This program has two routines that may be used to communicate between an Intellec and a Tektronix 8001 emulator station. HEXTHX converts a file from Intel HEX format to Tektronix HEX format. TEKCOM handles uploading and downloading between the Intellec and the Tektronix 8001.

Hardware Required: Intellec Series II; Diskette Operating System; Tektronix 8001 Emulator Station; null-modem cable

Software Required: ISIS II

Registers Modified: All. Required: RAM/64K; BLOCKS/374

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD12, COMMUNICATION: TEKTRONIX DAS 9100 DIGITAL ANALYSIS SYSTEM TO INTEL DEVELOPMENT SYSTEM

Submitted by: Roy Kravitz, Intel Corporation

Abstract: This program may be used to control the operation of a Tektronix DAS 9100 Digital Analysis System equipped with I/O option and connected to an Intel Development System. The program allows the user to hold a dialog with the DAS (through GPIB commands), save and restore DAS menu setups, and save the contents of the DAS acquisition memory. Communication is via an RS232C link between the DAS 9100 and Development System.

Hardware Required: 8080/8085-based; iSBC-534 communication expansion board; Tektronix DAS 9100 (with I/O option); RS232 Cable

Software Required: ISIS II, V4.1

Registers Modified: All. Required: BLOCKS/1541

Programming Language: PL/M-80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0; PL/M-80, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AD13, COMMUNICATION: INTEL DEVELOPMENT SYSTEM TO/FROM VAX 11

Submitted by: F.M. Cady and S.A. Davidson, Montana State University, Bozemen MT

Abstract: This program allows an Intel Microcomputer Development system to transfer files to and from a VAX 11 running the VMS operating system, and to use the MDS as a transparent terminal on the VAX. No provision is made for error checking.

Hardware Required: Intellec Series II; serial port on a VAX with VMS

Software Required: ISIS II

Registers Modified: All. Required: RAM/25 blocks; BLOCKS/451

Programming Language: PL/M-80; VAX FORTRAN. Assembler/Compiler: PL/M-80, V3.1; VAX FORTRAN Compiler

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

AD14, COMMUNICATION: INTELLEC SYSTEM TO SERIAL OUTPUT DEVICE

Submitted by: Kenneth Hyams, Sloan Technology Corporation

Abstract: This program sends an Intellec Series II or III text file out serial channel 2 to a serial output device, such as a DECwriter with optional tab spacing.

Hardware Required: Intellec Series II or III

Software Required: ISIS II

Registers Modified: All. Required: RAM/64K; ROM/none; BLOCKS/119

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AD15, COMMUNICATION: INTEL DEVELOPMENT SYSTEM TO/FROM HEWLETT-PACKARD COMPUTER

Submitted by: R.C. Turnock, Atlantis Flight Research, Downsview, Ontario

Abstract: This program allows an Intel Development System to transfer files to and from devices on a Hewlett-Packard computer running RTE. Transfers at 9600 baud, full duplex, can be achieved without any loss of data. ENQ ACK and XON protocols are supported and the necessary conversions (tabs, etc.) are made.

Hardware Required: Intellec Series II; Hewlett-Packard computer running RTE with a serial port

Software Required: ISIS II; RTE; FORTRAN

Registers Modified: All. Required: RAM/36K; ROM/None; BLOCKS/1018

Programming Language: ASM80, FORTRAN. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1 FORTRAN

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (F), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AD16, COMMUNICATION: XEROX FILE TRANSFER FACILITY

Submitted by: S. Packer, Intel Corporation

Abstract: This program permits a System 86/330 to transfer files to or from another 86/330 using Ethernet and Xerox higher level protocols. (Source files provided by Insite under ISIS II format must be converted by the user to iRMX 86 format, after which submit files may be used to build and link the entire package under iRMX).

Hardware Required: System 86/330 or equivalent; iSBC-550 Ethernet Controller; ISIS II to iRMX 86 file conversion capabilities

Software Required: iRMX 86 Operating Sysetm, R4.0, configurable; Driver for iSBC-550 Ethernet Controller (Insite Order # AB18). PL/M-86 and ASM86.

Required: RAM/512K; BLOCKS/1439

Programming Language: PL/M-86, ASM86. Assembler/Compiler: PL/M-86, V1.0

Media Availability (Price Code): DISKETTE (H), SRC, DOCUMENTATION

AD17, REMOTE: NDS-II COMMUNICATION WITH iPDS RUNNING CP/M-80

Submitted by: Application Engineering, Intel Corporation

Abstract: This program enables an iPDS running CP/M-80 to act as a smart terminal connected to an ISIS cluster board of an NDS-II network. UPLOAD and DNLOAD of files is provided.

Hardware Required: iPDS; null modem cable; NDS-II workstation; ISIS cluster board

Software Required: ISIS III; iPDS CP/M-80

Required: BLOCKS/202, on ISIS formatted diskette; BYTES/6K, on iPDS CP/M-80 formatted diskette (both supplied by Insite).

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), COM

AD18, DOWNLOAD: iPDS TO SERIAL PORT

Submitted by: M. Legrand, Intel Corporation

Abstract: This program allows a file or user-entered sequence of bytes to be transmitted to a serial I/O port.

Hardware Required: iPDS; 3-wire RS232-compatible cable; device with serial I/O port

Software Required: ISIS-iPDS Operating System, including program SERIAL; user program to receive and load code from serial port

Required: RAM/9K; ROM/8 blocks, 1627 bytes; BLOCKS/205

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSPDS.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST, ABS.OBJ; SOURCE LISTING (L)

AD19, COMMUNICATION: iPDS TO/FROM MDS-800 UNDER CP/M-80

Submitted by: Duane O'Shea, Elizabeth CO

Abstract: This program enables a user to transfer files between an iPDS running CP/M-80 and an MDS-800 also running CP/M-80. It will handle binary as well as text files.

Hardware Required: iPDS; MDS-800; special cable (full duplex modem eliminator - instructions included)

Software Required: CP/M-80, V2.2 on both machines

Registers Modified: All. Required: RAM/16K; ROM/None; BLOCKS/on MDS-800/355; RECORDS (on iPDS)/345

Programming Language: ASM under CP/M. Assembler/Compiler: CP/M-80 V2.2 ASM

Media Availability (Price Code): DISKETTE (C), SRC, COM; SOURCE LISTING (L); DOCUMENTATION

AD20/21, REMOTE: NDS-II COMMUNICATION WITH iPDS/SERIES II/III/IV

Submitted by: Brian Valentine, Intel Corporation

Abstract: This program gives the remote iPDS or Series II, III, or IV user complete access to an NDS-II system with an ISIS cluster board, including file upload/download capability. The program is menu-driven and includes: serial channel select; 8253 clock select; break key select; baud rate select; modem present/not-present; dial/touch-tone select; add-to-outcall option.

Hardware Required: Intellec Development System; NDS-II with ISIS cluster board; Hayes Smart Modem 1200

Software Required: ISIS Operating System

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (F), SRC, OBJ, ABS.OBJ; DOCUMENTATION

AD22, REMOTE: NDS-II COMMUNICATION WITH IBM PC RUNNING MS/DOS

Submitted by: Brian Valentine, Intel Corporation

Abstract: This program enables an IBM Personel Computer running MS/DOS to act as a dumb terminal connected to an ISIS cluster board of an NDS-II network, and to send and receive files to and from the network.

Hardware Required: IBM PC; NDS-II workstation with ISIS cluster board; serial cable

Software Required: MS/DOS; ISIS III; C Compiler for IBM PC and data entry capability

Programming Language: C and PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (H), SRC, ABS.OBJ, DOCUMENTATION

AD23, COMMUNICATION: SERIES III TO/FROM IBM PC OR PC-COMPATIBLE

This program has been discontinued from the Insite Library.

AD24, REMOTE: iRMX 86 COMMUNICATION PROGRAM

Submitted by: Paul Cohen, Intel Corporation

Abstract: This program enables an iSBC-86/300 or compatible system to use one of the following devices as a dumb terminal, and to send and receive ASCII files to and from one of the following devices: 1) another iSBC-86/300; 2) an iPDS running ISIS; 3) a Development System or NDS-II workstation running ISIS: 4) an IBM PC running MS/DOS (Please specify one of these systems when ordering. Please also note: Source files of this program are provided by Intel under ISIS or CP/M format, and where necessary, must be converted by the user to iRMX 86 and/or MS/DOS formats).

Hardware Required: host iSBC-86/300 or compatible system; remote iSBC-86/300 or one of the other systems listed above; serial line

Software Required: iRMX 86; PL/M-86; optionally, ISIS-PDS, ISIS II/III, or MS/DOS with UDI

Programming Language: PL/M-86. Assembler/Compiler: Series III PL/M-86, V2.0

Libraries: RMXLIB/LARGE.LIB, RMXLIB/RPIFL.LIB, RMXLIB/HPIFL.LIB

Media Availability (Price Code): DISKETTE (F), SRC, DOCUMENTATION

AD25, MSCOPY: MS/DOS-iNDX DISKETTE COPY UTILITY

Submitted by: Fred Dunlap, Intel Corporation

Abstract: This utility enables the user to insert an MS/DOS diskette into the floppy drive of a Series IV or NRM and do the following: 1) write iNDX files to the PC disk; 2) read PC files to iNDX files; 3) relabel the PC disk; 4) sort the PC directory; 5) change directories on PC disk files; 6) get directory listings of PC disk

Hardware Required: Series IV or NRM

Software Required: iNDX V2.5 or greater

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.3

Media Availability (Price Code): DISKETTE (H), EXECUTABLE; DOCUMENTATION

AD26, CONNECT: VAX COMPUTER WITH INTEL DEVELOPMENT SYSTEM(S)

Submitted by: DSSO Applications Engineering, Intel Corporation

Abstract: This program allows a VAX/VMS development engineer to access, from his/her VAX terminal, any Intel Series II, III, or IV Development System connected to the VAX. PSCOPE, ICE, or I2ICE may be used by the engineer to perform debugging and in-circuit emulation directly from his/her VAX terminal. Program features: user-friendly human interface; flexible menu for selecting MDS workstation; support of VAX environment with multiple VAX/MDS workstations (performs keyboard lockout); and source code to allow customization to user needs.

Hardware Required: Series II, III, or IV connected to VAX via RS232 serial cable

Software Required: VAX/VMS, V3.6 or later; iNDX, V2.5 or ISIS

Programming Language: VAX C. Assembler/Compiler: VAX C, V1.3 for VMX, V3.6

Media Availability (Price Code): DISKETTE (L), SRC, EXECUTABLE: DOCUMENTATION

AD27, COMMUNICATION: SERIES IV TO/FROM MDS-800

Submitted by: Chris Feetham, Intel Corporation

Abstract: This program allows serial file transfer between Series IV and MDS-800 Development Systems via serial channel 2 on the Series IV and the CRT serial channel of the MDS-800.

Hardware Required: Series IV; MDS-800 with double density disk drives; RS232 serial cable with pins 2 and 3 crossed

Software Required: ISIS and iNDX operating systems, including program S4FPRT

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.3

Media Availability (Price Code): DISKETTE (A), ABS.OBJ; DOCUMENTATION

AD28, COMMUNICATION: B-52 PDS TO BASIC-52 CHIP VIA RS-232

Submitted by: Chuck Simmers

Abstract: This software provides communication and upload/download facilities between a iPDS-100 system and a 8052BH-BASIC chip using standard RS-232 interface techniques.

Hardware Required: iPDS-100, BASIC-52 target system w/RS-232 interface.

Software Required: ISIS-PDS, BASIC-52 V1.0 or higher.

Registers Modified: All. Required: RAM/ All bytes; ROM/ ; BLOCKS/

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE; DOCUMENTATION

AD29, COMMUNICATION: MS-KERMIT V2.26

Submitted by: Columbia University

Abstract: MS-KERMIT is a communication and file transfer facility that allows an IBM-PC or IBM-PC clone to communicate and transfer files to/from a large number of different computers. KERMIT has been ported to the iPDS-100 (AD31), Series II, III, IV (AD30), XENIX 286 (AD32), VAX, VMS and UNIX, and a growing number of mainframes, minicomputers and microcomputers.

Hardware Required: IBM-PC or clone

Software Required: PC or MS/DOS

Registers Modified: All. Required: RAM/ bytes; ROM/ ; BLOCKS/

Programming Language: ASM86

Media Availability (Price Code): DISKETTE (A), OBJ; DOCUMENTATION

AD30, COMMUNICATION: ISIS-KERMIT

Submitted by: Columbia University & Intel Corporation

Abstract: ISIS-KERMIT is a minimum implementation of the connect and file transfer facilities of KERMIT. It allows for the transfer of ASCII and binary files to/from another system running KERMIT. The set command allows for some configuration setting such as baud rate and debug facilities. Baud rates from 110 to 19.2K are supported.

Hardware Required: Series II/III/IV

Software Required: ISIS

Registers Modified: All. Required: RAM/ bytes; ROM/ ; BLOCKS/

Programming Language: PL/M-80 Assembler/Compiler: PL/M-80

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; DOCUMENTATION

AD31, COMMUNICATION: PDS-KERMIT

Submitted by: Intel Corporation

Abstract: PDS-KERMIT is a simple porting of ISIS-KERMIT (AD30).

Hardware Required: iPDS-100

Software Required: ISIS-PDS

Registers Modified: All. Required: RAM/ bytes; ROM/ ; BLOCKS/

Programming Language: PL/M-80 Assembler/Compiler: PL/M-80

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE; DOCUMENTATION

AD32, COMMUNICATION: XENIX 286 KERMIT

Submitted by: Intel Corporation

Abstract: This is a minimum port of UNIX[TM] KERMIT for XENIX 286.

Hardware Required: Available RS-232C port.

Software Required: XENIX 286 R3.0

Registers Modified: All. Required: RAM/ bytes; ROM/ ; BLOCKS

Programming Language: "C" Assembler/Compiler: cc

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; ABC.OBJ; SOURCE; DOCUMENTATION

AD40, OH286 CONVERSION

Submitted by: D. Douge, Matra Communications, France

Abstract: OH286 converts 80286 bootloadable absolute object modules to 80286 hexadecimal format.

Hardware Required: VAX

Software Required: VMS

Media Availability (Price Code): DISKETTE (J); DOCUMENTATION

CHAPTER AE : SYSTEM TESTING

AE1, TEST: 8080 CPU

Submitted by: W. Iwamoto and R. Lonchar, North Electric Co., Columbus OH

Abstract: This program is designed as an on-line periodic exercising program. Executes almost all 8080 instructions to ensure proper functioning of the CPU. Program either passes or halts upon error.

Hardware Required: Intellec System, 8080-based

Software Required: Monitor

Registers Modified: All. Required: RAM/3 bytes; ROM/376 bytes; BLOCKS/65

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE2, DIAGNOSTICS: 8080 I/O

Submitted by: S.G. Thompson, Harris Controls, Melbourne FL

Abstract: This program allows interactive testing of Intellec I/O ports. It also allows saving and reloading of the test program.

Hardware Required: Intellec System 8080-based; Diskette Operating System

Software Required: ISIS-II

Registers Modified: All. Required: RAM/2340 bytes; ROM/none; BLOCKS/395

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE3, TEST: iSBC 80/10 I/O PORTS

Submitted by: Jeffrey W. Scott, Computer Applications, Sausalito CA

Abstract: This program is an aid in debug of hardware interfacing to PPI ports. The user inputs port-values through the keyboard. The program outputs patterns to the PPI ports.

Hardware Required: iSBC 80/10; PROM programming capabilities

Software Required: ISIS II

Registers Modified: All. Required: RAM/100 bytes; ROM/1024 bytes; BLOCKS/142

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE4, TEST: MEMORY

Submitted by: Floyd L. Nordin, Nordin Enterprises, Cupertino CA

Abstract: This program performs extensive bit pattern testing to RAM located above 0300H.

Hardware Required: Intellec 800 console device

Software Required: Monitor

Registers Modified: All. Required: RAM/750 bytes; BLOCKS/72

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembly, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

AE5, TEST: MEMORY

Submitted by: H.R. Pinnick Jr., S.E. Missouri State University

Abstract: This program does a barber-pole test on memory using the pattern 00H, 11H, 22H, 44H, 88H, 0EEH, 0DDH, 0BBH, 77H. The odd number is an attempt to flag any memory overlap. This barber-pole will work for NKx4 RAMs.

Hardware Required: 8080/8085 with 8251

Software Required: None

Registers Modified: All. Required: RAM/15H; ROM/2B3H; BLOCKS/574

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE6, DEMO SOFTWARE: 8275

Submitted by: Tom Rossi, Intel Corporation

Abstract: This is a program for the 8275 demo board, including character generator.

Hardware Required: 8275 low-cost CRT demo board

Software Required: ISIS-II, ASM80

Registers Modified: All. Required: RAM/all; ROM/2 2716s; BLOCKS/429

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE7, DEMO: iSBC-208

Submitted by: Harley Johnson, Intel Corporation

Abstract: This program provides 17 commands to demonstrate the functionality of the iSBC 208 Flexible Disk Controller.

Hardware Required: Modular Chassis W/Power Supply, iSBC-064 RAM Board, iSBC-208 FDC

Software Required: D20810.OBJ or D20824.OBJ, FP208.OBJ. DR208.OBJ

Registers Modified: All. Required: RAM/64K bytes, ROM/8K bytes; BLOCKS/3168

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; DOCUMENTATION

AE8, DEMO, iRMX 86 MULTI-TASKING SPECTRUM ANALYSIS

Submitted by: Gary Heider, Intel Corporation

Abstract: This program illustrates the multi-tasking system described in detail in AP Note 110. The system will sample an analog input signal and produce a spectrum display of the input signal.

Hardware Required: iSBC 711 Analog Input Board, iSBC 86/12A Single Board Computer, Hazeltine CRT Terminal, and a signal source. A signal source can be a microphone and a preamplifier or a signal generator.

Software Required: iRMX 86 Nucleus

Registers Modified: All. Required: RAM/16K bytes, ROM/32K bytes, BLOCKS/2684

Programming Language: Assembly. Assembler/Compiler: MCS-86 Macro Assembly, V3.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE9, DIAGNOSTIC: DISKETTE

Submitted by: F.M. Cady, Montana State University, Bozeman MT

Abstract: This disk diagnostic package enables a user to read and write desired sectors of the disk for troubleshooting and error recovery purposes. Operations can be performed in an auto-repeat mode which allows the user to observe control signals with an oscilloscope.

Hardware Required: Series II or III

Software Required: PL/M-80, LINK, LOCATE, MDS monitor, V1.2

Registers Modified: None. Required: RAM/6K; ROM/MONITOR, V1.2; BLOCKS/731

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

AE10, TEST: MCS-48 FAMILY CPU

Submitted by: John Wharton, Intel Corporation

Abstract: This program tests the functionality of SPUs of the MCS-48 family. The hex file is to be programmed into an 8755A EPROM, and the functionality of the processor under test will be indicated by a blinking or non-blinking LED on a circuit board.

Hardware Required: 8755A EPROM, simple circuit board with LED; test 8035/39, 8048/49, 8748; 8243 I/O expander

Software Required: None

Required: BLOCKS/436

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (C), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AE11, COMPARE: 8048 OR 8049 ROMS

Submitted by: John Wharton, Intel Corporation

Abstract: This program allows an 8748 to read a test 8048 or 8049 ROM array and compare it to a reference 8048 or 8049 ROM. Alternatively, the test 8048 may be compared to another 8748 programmed with the desired object code, or the test 8049 may be compared to a 2K EPROM.

Hardware Required: 8748; simple circuit board with LED; test 8048/49; or reference 8748 or 2K EPROM

Software Required: None

Required: BLOCKS/199

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (C), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

AE12, TEST: ERROR CORRECTING CODE

Submitted by: R. Cohen, Intel Corporation

Abstract: This program performs an Error Correcting Code (ECC) Test for the iSBC boards listed below. It runs under the supervision of Super Monitor 86 (Insite Order # AA21). Two tests are available; 8206 test and ECC Systems Test.

Hardware Required: iSBC 305/306/028X/056CX/012CX/028C/056C/012C (iSBC 305/306 runs System Test only and requires iSBC 028A/056A RAM Board); 8086-based iSBC board.

Software Required: Super Moniotor 86

Registers Modified: All. Required: RAM/0-800H; ROM/16K; BLOCKS/722

Programming Language: ASM86. Assembler/Compiler: MCS-86 Macro Assembler, V2.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE13, DEMO: iAPX-88

Submitted by: Dan Lenehan, Intel Corporation

Abstract: This package consists of four demonstration programs (Tiny Monitor, Tiny Basic Interpreter, 2K Chess and 4K Chess) for the 4-chip or 7-chip iAPX-88 board described in Chapter 4 of The iAPX-88 Book , (4K Chess works only with the full 7-chip configuration).

Hardware Required: 8088 CPU; 8284 clock generator; 8755A-2 EPROM; 8185 RAM; optionally, for full 7-chip configuration; another 8755A-2 EPROM; another 8185 RAM; 8155-2 RAM

Software Required: None

Registers Modified: BLOCKS/2250

Programming Language: ASM86 Assembler/Compiler: MCS-86 Macro Assembler, V2.1

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, HEX, LST (SRC and LST not available for Chess programs); SOURCE LISTING (L) (not available for Chess); DOCUMENTATION

AE14, TEST: RAM

Submitted by: Roy Cyrus, Fairchild Weston Systems, Syosset NY

Abstract: This program performs a walking ones and zeroes test on all system RAM locations and a unique address test on all RAM chips. The user must provide starting and ending addresses and RAM chip size in the form of program equates.

Hardware Required: 8080/8085-based

Software Required: ASM80

Registers Modified: All. Required: RAM/None; ROM/153 bytes; BLOCKS/43

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

AE15, GRAPHICS: iSBX 275 GRAPHICS CONTROLLER BOARD ROUTINES

Submitted by: Bradford Janeway, Intel Corporation

Abstract: This is a set of PL/M-86 routines which provide a high-level programming interface to the iSBX-275 Graphics Controller Multimodule Board. Included are two sample applications of the board (PLANE and REACTOR) which utilize these graphics procedures and demonstrate the capabilities of the board. Please note: Source files for this program are provided by Insite under ISIS format and must be converted by the user to iRMX 86 format, after which submit files may be used to build and link the entire package under iRMX.

Hardware Required: iSBX 275 Graphics Controller Multimodule Board; 8087 Numeric Coprocessor on baseboard (for UACMD and UCCMD [draw arc and draw circle] routines); Atari joystick for PLANE application; TTL level color monitor and calbe.

Software Required: iRMX 86 execution environment; PL/M-86, V1.0 for PLANE applicaiton (if modifications desired)

Programming Language: PL/M-86, V2.3 (1.0). Assembler/Compiler: iRMX 86 PL/M-86 V2.3

Media Availability (Price Code): DISKETTE (D), SRC, EXECUTABLE; DOCUMENTATION

AE16, UTILITIES: iACX-96 UTILITIES

Submitted by: Intel Corporation

Abstract: Contains the source, object and list files for the utilities contained in Application Note AP-248-USING THE 8096. It includes examples on motor control, pulse width modulation using the A/D converter and pulse width measurement.

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; DOCUMENTATION

AE17, UTILITIES: iACX-96 DIAGNOSTIC LIBRARY

Submitted by: Intel Corporation

Abstract: The routines contained in the library can be used in power-up self-test, periodic system test and reliability testing. The diskette contains all of the source and object code described in the Application Note titled the MCS-96 Diagnostic Library.

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; DOCUMENTATION

CHAPTER BA : OFFICE TOOLS

BA1, PRINT: COVER PAGE

Submitted by: Phil Greenburg, Conrac Corporation, West Caldwell NJ

Abstract: This program composes/prints a cover (identification) page from information supplied by the user. The program prompts user for: -Date; -Disk Name; -File Name; -Programmer's Name

Hardware Required: Intellec System, 8080-based; Dual Diskette Operating System

Software Required: ISIS II

Registers Modified: All. Required: RAM/3950 bytes; ROM/none; BLOCKS/249

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BA2, RECOVERY: DISKETTE FILE

Submitted by: Ross Morgan, Intel Corporation

Abstract: This program finds and recovers data from a diskette file that was lost while using an ISIS editor.

Hardware Required: Intellec 800; Diskette Operating System, single density

Software Required: ISIS Text Editor, V1.1 or 1.6; ISIS I or ISIS II

Registers Modified: All. Required: RAM/32K; BLOCKS/54

Programming Language: Assembly. Assembler/Compiler: ISIS 800 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA3, EDITOR: TEXT, ISIS, X111

Submitted by: Intel Corporation

Abstract: This program creates and edits text. It is an enhanced version of the Intel ISIS system editor, X106.

Hardware Required: Intellec System, 8080-based; Diskette Operating System

Software Required: ISIS II

Required: BLOCKS/86

Media Availability (Price Code): DISKETTE (B), OBJ; DOCUMENTATION

BA4, EDIT: TEXT

Submitted by: Triyono, Naval Postgraduate School, Monterey CA

Abstract: This program edits text. The editor is line-oriented, facilitating input, substitution, locate, and line moves/copies/deletes.

Hardware Required: Intellec, 8080-based; Diskette Operating System

Software Required: ISIS II

Registers Modified: None. Required: ROM/15K; BLOCKS/1297

Programming Language: PL/M. Assembler/Compiler: ISIS-II, PL/M-80 V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA5, PROCESSOR: TEXT

Submitted by: Intel Corporation

Abstract: This program processes text into the intended format using the format command language. Commands are interspersed within the source text. The user can specify margins, case headings and footings, paragraphs, center text, right justify, page footnote, underline, create tables, and more.

Hardware Required: Intellec, 8080-based; Diskette Operating System

Software Required: ISIS II

Registers Modified: None. Required: ROM/8K; BLOCKS/1165

Programming Language: PL/M. Assembler/Compiler: PL/M-80

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; DOCUMENTATION

BA6, CHECKBOOK

Submitted by: Kerry Howell, Almac/Stroum Electronics, Portland OR

Abstract: This program maintains a file (complete with password) of checks and deposits with a description of each. The program returns the balance to the console.

Hardware Required: Intellec 800/220/230

Software Required: ISIS II, V2.0 or V3.4

Registers Modified: All. Required: RAM/64K; ROM/2K monitor; BLOCKS/354

Programming Language: FORTRAN. Assembler/Compiler: FORTRAN-80, V1.01

Libraries: F80RUN.LIB, F80ISS.LIB, FPEF.LIB, FPSOFT.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA7, PRINT: DISCOUNTED CASH FLOW

Submitted by: Gordon Flynn, Southern States Cooperative, Inc., Richmond VA

Abstract: This program finds the percent discount for a cash flow for up to 100 years and prints out the cash flow and present worth for N years.

Hardware Required: Intellec 8080/8085-based

Software Required: ISIS II

Required: BLOCKS/359

Programming Language: FORTRAN 77. Assembler/Compiler: FORTRAN 80 V2.0

Libraries: F80RUN.LIB, F80ISS.LIB, FPEF.LIB, FPSOFT.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L)

BA8, GENERATE: CALENDAR

Submitted by: William R. Ot, Applied Data Communications, Santa Ana CA

Abstract: This program generates/prints - on list device - a calendar for any operator-specified year.

Hardware Required: Intellec, 8080-based

Software Required: Monitor

Registers Modified: All. Required: RAM/708H; ROM/monitor I/O handlers or equal; BLOCKS/141

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BA9, MAIL LIST

Submitted by: Kerry P. Howell, Almac/Stroum, Portland OR

Abstract: This program allows the user to maintain a disk-based mailing list of name, company, phone, address, and optional attributes. The mailing list may then be printed to the console or onto shipping labels on the lineprinter. Required labels: Dennison #42-551-0

Hardware Required: Intellec 800, 220, 230; diskette

Software Required: ISIS II; monitor

Registers Modified: All. Required: RAM/32K bytes; ROM/2K bytes; BLOCKS/314

Programming Language: FORTRAN. Assembler/Compiler: FORTRAN 80, V1.0

Libraries: F80RUN.LIB, F80ISS.LIB, FPEF.LIB, FPSOFT.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA10, MERGE: MAILING LIST

Submitted by: Kerry Howell, Almac/Stroum Electronics, Portland OR

Abstract: This program merges two mailing lists (created by Program BA9) into one file, checking for name duplication; does not append duplications.

Hardware Required: Intellec 800/200/230; Diskette Operating System

Software Required: ISIS II, V2.2 or V3.4; Program # BA9

Registers Modified: All. Required: RAM/32K bytes; ROM/2K; BLOCKS/237

Programming Language: FORTRAN. Assembler/Compiler: FORTRAN 80 V2.0

Libraries: F80RUN.LIB, F80ISS.LIB, FPEF.LIB, FPSOFT.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L)

BA11, MAIL LIST

Submitted by: B.L. Masteller, Bendix-Mishawaka, Mishawaka IN

Abstract: This program outputs a list of names/addresses that have been generated by the user to mail labels on the lineprinter. (Prints two labels per name).

Hardware Required: Intellec 800; lineprinter

Software Required: ISIS II

Registers Modified: All. Required: RAM/1160 + address file storage; BLOCKS/53

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BA12, MAIL LISTS FOR BASIC-80

Submitted by: Terry T. Steeden, MCT Corporation, Roseville MN

Abstract: This program allows the user to maintain disk files for mailing lists. Sorting is alphanumeric by zip code, last name, or company/title. Prints 3 or 4 line labels and complete reports.

Hardware Required: Intellec 800/220/230; lineprinter

Software Required: BASIC-80

Registers Modified: All. Required: RAM/64K; BLOCKS/235

Programming Language: BASIC. Assembler/Compiler: BASIC-80, V1.1

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA13, SORT: GENERAL

Submitted by: Maessen JL, Bell Telephone Fgf. ITT, Geel, Belgium

Abstract: This sorting program works on complete lines or fields (e.g., Locate File: 1234H-PUB-NAME).

Hardware Required: Intellec Model 800; Diskette Operating System

Software Required: ISIS II; monitor

Registers Modified: All. Required: RAM/1K bytes; BLOCKS/228

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L);

BA14, GENERATE: SOFTWARE DOCUMENTATION

Submitted by: Tom Dale, Intel Corporation

Abstract: This program generates documentation files from the comment fields of source or list files, accepting comments from PL/M, ASM, or FORTRAN.

Hardware Required: Intellec System 800 or Series II or III

Software Required: ISIS II

Registers Modified: All. Required: RAM/32K; BLOCKS/147

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BA15, GENERATE: DISK DIRECTORY LIBRARY

Submitted by: Stephen F. Bean, Autech Corporation, Columbus OH

Abstract: This program constructs an alphabetically arranged library of program names from directories of several diskettes. The library is output to the system list device.

Hardware Required: Intellec 800 or Series II

Software Required: ISIS II

Registers Modified: All. Required: RAM/4864 bytes; BLOCKS/125

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA16, GENERATE: TABS

Submitted by: Bob Glossman, Intel Corporation

Abstract: This routine expands "Control-I" as a tab character for legible listings.

Hardware Required: Intellec 8080-based; Diskette Operating System

Software Required: ISIS II

Required: BLOCKS/44

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BA17, PRINT: FILE

Submitted by: L.R. Shenfield, Data Peripherals, Sunnyvale CA

Abstract: This routine allows a file to be output to the lineprinter by typing "Print Filename" instead of "Copy filename to :LP".

Hardware Required: Intellec Series II

Software Required: ISIS II

Required: RAM/33K bytes; BLOCKS/32

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA18, PRINT: FILES

Submitted by: Phillip Weinstein, New York NY

Abstract: This program copies files to a Texas Instruments Omni 800 or Okidata Microline printer or to a disk file or CRT. Various control parameters support formatting of printed text and re-programming of software-settable printers.

Hardware Required: Intellec 8080/8085-based; T.I. Omni 800 or Okidata Microline printer

Software Required: ISIS II; PL/M-80

Registers Modified: None. Required: RAM/None; ROM/None; BLOCKS/249

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BA19, PRINT: FILES

Submitted by: G.F. Long, New Zealand Electricity, Wellington New Zealand

Abstract: This program copies up to 100 files in a single statement to a line printer or CRT. Various control parameters allow the user to format text, number and title pages, select certain pages only for printing, print only those pages having error messages or a specified character string, etc.

Hardware Required: Intel MDS with Disk Operating System; Printer

Software Required: ISIS II

Registers Modified: None. Required: RAM/None; BLOCKS/1503

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BA20, WORD PROCESSOR

Submitted by: Charles Chernack, Consultant, Los Altos CA

Abstract: This package is a set of special CREDIT macros and a format/listing program which makes document preparation easy using a Series II Intellec System. Output can be directed to the lineprinter, to a Diablo 1650 printer on the :TO: port, or to an ISIS II or NDS-II disk file. Some of the functions included are: -Centering of lines; -Paragraphs without internal carriage returns, facilitating insertions and deletion of phrases; -Variable left margin; -Automatic pagination; -Auto-deletion of blocks of text; -Underlining; -Fast movement of cursor; -120-column "wide mode" for processing of .LST files; -Etc.

Hardware Required: Intellec Series II

Software Required: ISIS II; CREDIT, V2.1

Required: BLOCKS/2151

Programming Language: PL/M-80; ASM80. Assembler/Compiler: PL/M, V3.1; 8080/8085 Macro Assembler, V4.0

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; DOCUMENTATION

BA21, SPELL

Submitted by: J. Hambler, S. Wachtel, Georgia Tech, Atlanta GA

Abstract: This program collects words from an input text file. Any words not found in its 10,000 word dictionary will be in an output file.

Hardware Required: 8080/8085-based system

Software Required: Pascal-80, V2.0

Registers Modified: None. Required: RAM/64K/ ROM/None; BLOCKS/1544

Programming Language: Pascal-80. Assembler/Compiler: Pascal-80, V2.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BA22, MACROS: ENHANCEMENTS FOR CREDIT TEXT EDITOR

Submitted by: Kate Konopka, Tractor Inc., New London CT

Abstract: This is a package of special macro commands for users of Intel's ISIS II CREDIT text editor. Included are commands which facilitate several kinds of quick cursor movement, deletion commands, interactive find-and-insert commands, and simplified block move and block copy commands.

Hardware Required: Intellec Development System

Software Required: ISIS II, CREDIT

Registers Modified: N/A. Required: RAM/None; BLOCKS/225

Programming Language: None, CREDIT macro files only

Media Availability (Price Code): DISKETTE (B), MAC; DOCUMENTATION

CHAPTER BB : CONVERSION TOOLS

BB1, CONVERSION: ASCII TO/FROM EBCDIC

Submitted by: W.R. Ott, Applied Data Communications, Santa Ana CA

Abstract: This routine converts an ASCII character in the accumulator, upon entry, to an EBCDIC character in the accumulator upon return. All other registers are safe.

Hardware Required: Intellec 8080-based.

Software Required: Monitor.

Registers Modified: All. Required: RAM/411 bytes; ROM/None; BLOCKS/36

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BB2, CONVERSION: HEX TO ASCII

Submitted by: Mike Lippman, Fluke Trendar, Mt. View CA

Abstract: This subroutine converts a string of hexadecimal bytes in memory (string length variable up to 255) into an ASCII character string in memory for display or transmission.

Hardware Required: Intellec System, 8080-based

Software Required: Subroutine call with input parameters initialized

Registers Modified: A, H, L, D, E, B. Required: RAM/dependent on input string length; ROM/49 bytes; BLOCKS/74

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, LIST; SOURCE LISTING (L)

BB3, CONVERSION: MCON-6800 SOURCE CODE TO 8086/8088 SOURCE CODE

Submitted by: Intel Corporation

Abstract: MCON is a stand-alone program written to convert 6800 (Motorola) source code to 8086 or 8088 source code.

Hardware Required: 8086/8088

Software Required: ISIS II

Required: BLOCKS/138

Media Availability (Price Code): DISKETTE (B), OBJ; DOCUMENTATION

BB4, CONVERSION: ZCON-Z80 TO 8086/8088 SOURCE CONVERTER

Submitted by: Intel Corporation

Abstract: This is a stand-alone program whose purpose is to convert a source program written in standard (Mostek) Z80 assembly language into 8086 source language as defined by Version 1.0 of Intel's 8086 Cross Assembler.

Hardware Required: 8080/8085

Software Required: ISIS II

Required: BLOCKS/645

Programming Language: PL/M-80

Media Availability (Price Code): DISKETTE (B), OBJ; DOCUMENTATION

BB5, CONVERSION: ASCII FLOATING POINT NUMBERS TO AM9711 AND INTEL 8231 4-BYTE FP FORMAT

Submitted by: Kent C. Leonard, Bowditch Navigation Systems, Orange CA

Abstract: This program converts a FP number in ASCII format to a 4-byte number in AM9511 FP format. The mantissa values before and after the decimal point, and the exponent values, are all converted into AM9511 4-byte integers. The mantissa sign, exponent sign, and number of digits in the mantissa after the decimal point are saved. Then the integer values are floated and the desired floating point is computed.

Hardware Required: AM9511 connected either to two 8-bit I/O ports or two DMA locations are necessary.

Software Required: ISIS II

Registers Modified: All. Required: RAM/01C4H bytes; ROM/0013H bytes; BLOCKS/75

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB6, CONVERSION: BINARY TO BCD

Submitted by: J.G. Errington, University of Canterbury, Christchurch, New Zealand

Abstract: This routine converts up to 31 binary bytes to BCD.

Hardware Required: 8048 Processor

Software Required: N/A

Registers Modified: R0, R1, R6, A. Required: RAM/Variable, user-defined; ROM/2A bytes; BLOCKS/108

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, LST; SOURCE LISTING (L)

BB7, CONVERSION: BINARY TO BCD

Submitted by: Michael Cerulo, John Deere PEC, Waterloo IA

Abstract: This program has four routines to handle conversion and manipulation of binary and BCD for the 8048; 1) 8-bit binary to 2-digit BCD conversion; 2) 2-digit BCD to 8-bit binary conversion; 3) formation of the negative of an n-digit BCD number; 4) comparison of two 2-digit BCD numbers.

Hardware Required: 8048 or 8748

Software Required: None.

Registers Modified: Accumulator, R0, R1, R2. Required: RAM/19 bytes max; BLOCKS/25

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

BB8, CONVERSION: CONVERT/FORMAT/PRINT

Submitted by: James Haag, University of San Francisco, San Francisco CA

Abstract: This program converts, formats and prints internal data types and strings. Provides print capabilities similar to Pascal write and PL/1 put list.

Hardware Required: 8080-based system

Software Required: Write routine per ISIS II specification

Registers Modified: All. Required: RAM/size of write + 1900; ROM/None; BLOCKS/158

Programming Language: PLM. Assembler/Compiler: PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB9, CONVERSION: DECIMAL TO/FROM FLOATING POINT

Submitted by: G. DeGrandi, N. Coppo, Comm. of European Communities JRC 1st. of Ispra, Ispra (Varese), Italy

Abstract: This program acquires the decimal number from the console and converts/displays the equivalent floating point number.

Hardware Required: Intellec 800

Software Required: ISIS II

Registers Modified: All. Required: RAM/5FH; ROM/D93H; BLOCKS/600

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB, FPAL.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

BB10, CONVERSION: FORTRAN OR FPAL FLOATING POINT TO/FROM DECIMAL

Submitted by: Sang, Hoechst Ag, Tes, West Germany

Abstract: This utility routine converts a FORTRAN or FPAL floating point number from their internal representation to/from a decimal notation.

Hardware Required: Micro Development System.

Software Required: ISIS II

Registers Modified: All. Required: RAM/32K; BLOCKS/547

Programming Language: FORTRAN. Assembler/Compiler: FORTRAN-80, V2.1

F80RUN.LIB, F80ISS.LIB, FPEF.LIB, FPSOFT.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB11, CONVERSION: ASCII TO/FROM FLOATING POINT

Submitted by: P.M. Callihan, Goodyear Atomic Corporation, Piketon OH

Abstract: This program converts a free-form ASCII string to/from a floating point nubmer.

Hardware Required: Intellec System, 8080-based.

Software Required: ISIS II

Registers Modified: A, D, E, H, L. Required: RAM/23 bytes; ROM/587 bytes; BLOCKS/489

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB, FPAL.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, LST; SOURCE LISTING (L)

BB12, CONVERSION: ASCII CODE TO/FROM INTEL FLOATING POINT

Submitted by: Bart Evans, Durrum Instrument, Sunnyvale CA

Abstract: There are two modules to this program which: 1) converts an ASCII string to a floating point number in the Floating Point Record; and 2) converts floating point number in FPR to ASCII string of 14 characters.

Hardware Required: Intellec 800

Software Required: ISIS II

Registers Modified: All. Required: RAM/24 variable + 4 stack; ROM/813; BLOCKS/150

Programming Language: PL/M. Assembler/Compiler: PL/M-80 Compiler, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB, FPAL.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L)

BB13, CONVERSION: ASCII-DECIMAL TO/FROM FPAL NUMBER

Submitted by: Kelly P. Golden, Dupont Instruments, Wilmington DL

Abstract: This program converts a decimal number in the FPAL range to a 4-byte hexadecimal representation of the FPAL floating point result. The program also does vice versa. FORTRAN-80 subroutines are used to acquire decimal number and to print out decimal equivalent.

Hardware Required: Intellec System

Software Required: ISIS II

Required: BLOCKS/508

Programming Language: PL/M and FORTRAN. Assembler/Compiler: PL/M-80, V3.0 and FORTRAN-80, V2.0

Libraries: F80RUN.LIB, F80ISS.LIB, FPEF.LIB, FPSOFT.LIB. FPAL.LIB, SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, LST, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB14, CONVERSION: ASCII TO FLOATING POINT

Submitted by: Jan Duits, SKF Engineering and Research Center, The Netherlands

Abstract: This program contains four FPAL compatible routines: 1) Converts an ASCII String into a floating point number; 2) Converts a signed 16-bit integer into a floating point number; 3) Converts the float to ASCII conversion with the length and precision specified, and 4) Converts a floating point number to an ASCII string with length and precision specified. All four routines are fully reentrant and are not using any fixed RAM area.

Hardware Required: 8080/8085-based system

Software Required: PL/M-80, FPAL.LIB

Required: BLOCKS/80

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: FPAL.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB15, COPY: PDP-11 DISK FILE TO INTEL ISIS-II DISK FILE

Submitted by: S.M. Freeman, Ameromatic Corp., Birmingham AL

Abstract: This program copies PDP-11, RT-11 structured file on drive 1 to ISIS II structures file on drive 0.

Hardware Required: DEC PDP-11 with Sykes disk drives

Software Required: ISIS II, RT-11

Required: RAM/1K-bytes; BLOCKS/46

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L)

BB16, COMMUNICATION: DEC PDP-11 TO INTELLEC DEVELOPMENT SYSTEM

Submitted by: C. Jones & G. Caplan, Nova Biomedical, Newton MA

Abstract: This program copies first file from a PDP-11 single density diskette (RT-11) to an Intellec Microcomputer Development System ISIS II diskette file. PDP-11 diskette must have been recorded on DEC RX-1 (or equivalent) diskette drive using DEC RT-11 source driver.

Hardware Required: Intellec Model 800

Software Required: ISIS II

Required: RAM/less than 1K; BLOCKS/102

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB17, UTILITIES: RT11 DISKETTE UTILITY FOR INTELLEC 800

Submitted by: B.G. Dealhoy, AES Data Ltd., Mississauga, Ontario, Canada

Abstract: This package allows an Intellec Model 800 user to perform file- and block-oriented operations between a PDP-11 diskette on drive 1 and a single-density ISIS II diskette on drive 0, included operations are dumps, prints, file transfers, absolute disk copies, verifications, directory manipulation.

Hardware Required: Intellec Model 800

Software Required: ISIS II, LINK, LOCATE

Registers Modified: All. Required: RAM/9.7K + 17K for data; ROM/none; BLOCKS/768

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB18, CONVERSION: ISIS II TO/FROM CP/M

Submitted by: Peter Rajcan, VS Martin, Czechoslovakia

Abstract: This program converts ASCII or HEX files between operating systems ISIS II and CP/M, using single-density drives :F0: and :F1:.

Hardware Required: Intellec MDS with 64K RAM; single-density drives :F0: and :F1:

Software Required: ISIS II

Required: BLOCKS/290

Programming Language: Assembly. Assembler/Compiler: ASM80, V4.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABJ.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB19, SIMULATOR: 8048/49 CODE, V1.3

Submitted by: E.L. Jones, Wits University, Johannesburg, South Africa

Abstract: This program simulates an 8048/49 microprocessor with 8243 I/O expander. It accepts a hexadecimal code file containing 8048 machine instructions.

Hardware Required: Intellec 800; Diskette Operating System

Software Required: ISIS II, 8048 Assembler

Registers Modified: All. Required: RAM/32K; ROM/219BH; BLOCKS/240

Programming Language: Assembly and PL/M. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB20, SIMULATOR: 8048/49 SIMULATOR

Submitted by: F.E. Rohling, Georgia Tech, Atlanta GA

Abstract: This program simulates an 8048/49 microprocessor on an Intel MDS system. The user can disassemble instructions and display the contents of all internal registers.

Hardware Required: MDS system with 64K RAM

Software Required: ASM48, PL/M-80, ADM80

Registers Modified: N/A. Required: RAM/64K; ROM/none; BLOCKS/2091

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB21, CONVERT: FIXED POINT TO FLOATING POINT

Submitted by: Jean-Pol Mura, Sereg Jauges Nucleometre, Sarcelles, France

Abstract: This routine converts a two-byte integer into a four-byte floating point number and returns the address of that number to the calling program. The routine requires 38 bytes of ROM vs. the FLTDS routine of FPAL.LIB which requires 116 bytes.

Hardware Required: 8080/8085-based

Software Required: FPAL.LIB

Registers Modified: H, L, B, C, A, D, E. Required: RAM/4 bytes; ROM/38 bytes; BLOCKS/58

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Libraries: FPAL.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BB22, CONVERT: DOUBLEWORD TO ASCII STRING

Submitted by: R.F. Carlson, Micro-Managers, Inc., Madison WI

Abstract: This routine converts a doubleword in memory to an ASCII string in any base desired. The string may be of variable length and may have any leading characters.

Hardware Required: 8086 or 8088-based.

Software Required: Series III PL/M-86, V2.0

Registers Modified: All. Required: RAM/273 bytes; ROM/none; BLOCKS/113

Programming Language: PL/M-86. Assembler/Compiler: Series-III PL/M-86, V2.0

Libraries: PLM86.LIB, LARGE.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BB23, CONVERT: ISIS OBJECT MODULE TO CP/M OBJECT MODULE

Submitted by: Brian Valentine, Intel Corporation

Abstract: This program converts ISIS object module formats to CP/M object module formats on an ISIS diskette. The resultant object module may then be transferred to a CP/M-formatted diskette by means of another program (such as Insite Programs AD17 or BB18). The primary use of this program is to enable software intended to run under CP/M to be written in an ISIS-based language, such as PL/M-80.

Hardware Required: Intellec Development System

Software Required: ISIS Operating System

Required: BLOCKS/116

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: PLM80.LIB, ISIS III(N) SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB24, CONVERT: 8051 BINARY TO/FROM BCD

Submitted by: Terry T. Steeden, Tau Sigma Consultation, Inc., Richfield MN

Abstract: These two routines convert binary numbers in registers to packed BCD numbers and convert packed BCD to binary. The routines handle numbers up to 65,535,99, including binary and BCD fractions (binary remainder to eight bits and BCD to two digits).

Hardware Required: 8051 family processor

Software Required: ASM51

Registers Modified: A, B, PSW, DPTR, R0-R7. Required: RAM/None; ROM/240 bytes; BLOCKS/61

Programming Language: ASM51. Assembler/Compiler: ASM51, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB25, CONVERT: INTEL HEX CODE TO BASIC DATA STATEMENTS

Submitted by: Paul Schmidt, Neil Brown Instrument Systems, Inc., Cataumet MA

Abstract: This program converts a non-BASIC subroutine in an Intel HEX code file to an ASCII file of BASIC DATA statements. This ASCII file may then be MERGEd with the main BASIC program and POKEd into the correct locations as a USR function subroutine.

Hardware Required: Intellec System

Software Required: ISIS II; BASIC-80

Registers Modified: All. Required: RAM/64K; BLOCKS/91

Programming Language: BASIC-80. Assembler/Compiler: BASIC-80, V1.1

Media Availability (Price Code): DISKETTE (A), OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

BB26, CONVERT: 8086 HEX FILE TO 8080 HEX FILE

Submitted by: Richard C. Noonan, NOVA Biomedical, Inc., Newton MA

Abstract: This program converts 8086 hexadecimal files to 8080 hexadecimal files so that 8086 code may be sent to an EPROM programmer which does not recognize the base address records in 8086 HEX files (Program ignores any data records with addresses below 0C0000H [RAM data records]).

Hardware Required: Intellec Development System

Software Required: ISIS II

Registers Modified: All. Required: RAM/1630 bytes; BLOCKS/197

Programming Language: ASM80. Assembler/Compiler: ASM80, V4.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB27, CONVERT: ASCII OCTAL/DECIMAL/HEXADECIMAL TO ASCII OCTAL/DECIMAL/HEXADECIMAL/INTERNAL BINARY

Submitted by: Robert Harris, McDonnell-Douglas Corp., St. Louis MO

Abstract: This routine converts ASCII octal, decimal, or hexadecimal number arrays to ASCII octal, decimal, hexadecimal, or internal binary (non-ASCII) number arrays. Included is a demonstration program which prompts for type of conversion and a number and displays the result in ASCII octal, decimal, hexadecimal, or binary representation.

Hardware Required: Series II or later Development System

Software Required: ISIS Operating System

Required: BLOCKS/204

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BB28, CONVERT: FPAL NUMBERS TO/FROM IBM 32-BIT FLOATING POINT FORMAT

Submitted by: Steve Walton, Comspec, Inc., Houston TX

Abstract: This routine converts 8080/8085 FPAL.LIB numbers into IBM 32-bit floating point and vice versa. A demonstration program which runs under ISIS II is included.

Hardware Required: 8080/8085-based.

Software Required: FPAL.LIB; calling program

Registers Modified: All. Required: RAM/None; ROM/153 bytes; BLOCKS/123

Programming Language: ASM80. Assembler/Compiler: ASM80, V4.1

Libraries: PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BB29, NETWORK CP/M-80

Submitted by: John Hyde and Brian Valentine, Intel Corporation

Abstract: This package enables a Series II or ISIS cluster board to run CP/M-80 while connected to NDS-II network. The user can do all microprocessor design, development, and debug using ISIS, then, with the ease of one command, load CP/M-80 and execute CP/M's word processing programs, management packages, etc., at Ethernet speeds. When finished with CP/M-80, ISIS may be reloaded with a single CP/M-80 command. Seven ISIS/CPM utilities are provided for reading/writing CP/M disks, etc.

Hardware Required: Series II or ISIS cluster board connected to NDS-II

Software Required: ISIS III (N) or (C); one copy of CP/M-80 operating system for each workstation (may be purchased from Intel)

Programming Language: PL/M-80 and ASM80. Assembler/Compiler: PL/M-80, V4.0; ASM80, V4.1

Media Availability (Price Code): DISKETTE (H), SRC (for CP/M loader and utilities; BIOS source not included), EXECUTABLE; DOCUMENTATION

BB30, CMO-286 V1.1 - INTEL 286 OMF TO MICROSOFT 86-REL OMF

Submitted by: Intel Corporation

Abstract: CMO-286 V1.1 converts object files from the Intel 286 OMF format into the Microsoft 86-REL format. This product is shipped with XENIX 286 resident PL/M-286 and Fortran 286. It is used by customers working on a XENIX 286 operating system with Microsoft C-286 (or other Microsoft object files) and Intel languages. This version of CMO-286 increases limits encountered in version 1.0 of CMO-286 and incorporates bug fixes.

Hardware Required: XENIX 286 System

Software Required: XENIX 286 Operating System V3.2 or later

Media Availability (Price Code): DISKETTE (D), DOCUMENTATION

CHAPTER BC : CROSS TRANSLATORS

BC1, ASSEMBLER: CROSS: MCS-48

Submitted by: M.A. Pordes, GEC Hirst Research Centre, London, England

Abstract: This program provides MCS-48 interpretive cross-assembly running on the Intellec 8/MOD80, with complete listing of address, machine code, and assembly language mnemonic for each instruction.

Hardware Required: Intellec 8/MOD80, TTY-ASR-33

Software Required: Intellec 8/MOD80 Monitor, V3.0

Registers Modified: All. Required: RAM/11 bytes + stack; ROM/2412 bytes; BLOCKS/201

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC; SOURCE LISTING (L); DOCUMENTATION

BC2, ASSEMBLER, CROSS: DEC PDP-8 OR PDP-11

Submitted by: Rex Tracy, Colorado State University, Ft. Collins, CO

Abstract: This program assembles programs written in standard Intel 8080 assembly code on a DEC system. The output is a listing with symbol table and a hex file (Intel compatible).

Hardware Required: DEC PDP-8 or PDP-11

Software Required: OS8 (PDP-8) or RT-11 (PDP-11)

Required: RAM/16K bytes; BLOCKS/281

Programming Language: FORTRAN

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L)

BC3, ASSEMBLER, CROSS: DEC PDP-11

Submitted by: John Anderson and William Galway, University of Utah

Abstract: This program contains PDP-11 macros to define the Intel 8080 Macro Assembler. It performs assembly of 8080 assembly language source programs. The output is an assembly listing and PDP-11 format binary code.

Hardware Required: DEC PDP-11

Software Required: DOS; PDP-11 Macro Assembler

Required: RAM/4K bytes; BLOCKS/96

Programming Language: Assembly

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L)

BC4, ASSEMBLER, CROSS: PDP-11

Submitted by: R.A. Parker, Loyalist College, Belleville, Ontario

Abstract: This program accepts a source file and converts the 8080/8085 mnemonics into a hexidecimal file for loading into memory, and a listing file.

Hardware Required: Digital Equipment Corporation. PDP-11 with RSTS Basic-plus. Could be modified to operate under any extended Basic.

Software Required: An editor for preparation of the source file

Registers Modified: BLOCKS/117

Programming Language: BASIC

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L)

BC5, ASSEMBLER, CROSS: 8008 CODE

Submitted by: H. Webster, Bedford Computer Systems, Bedford MA

Abstract: This program provides two functions: -MACRO definition set which permits assembly of programs written in 8008 assembly language using an 8080 Macro Assembler; -Post assembly processor which reads the created list file and outputs a readable object listing to the lineprinter.

Hardware Required: Intellec, 8080-based; lineprinter

Software Required: ISIS II

Required: RAM/905 bytes; ROM/3108 bytes; BLOCKS/248

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L)

BC6, ASSEMBLER, CROSS: 8048 ON DG NOVA

Submitted by: Robert Capuder, Fairchild Weston Systems, Syossett NY

Abstract: This program is a 2-pass assembler for 8048 source code in a Data General disk file. It outputs a hex file suitable for burning a PROM or punching a paper tape, and a listing file.

Hardware Required: Any DG Nova or Eclipse series minicomputer with 64K

Software Required: RDOS, FORTRAN IV

Required: RAM/52K; ROM/none; BLOCKS/366

Programming Language: DG FORTRAN IV

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L); DOCUMENTATION

CHAPTER BD : DEBUG TOOLS

BD1, DISASSEMBLER: 8080 CODE

Submitted by: Manuel Puigbo, Elecma Barcelona, Spain

Abstract: This program transforms machine code in memory to a listing of: -Addresses; -Machine codes.

Hardware Required: Intellec 8/MOD80; TTY; ASR-33

Software Required: Intellec 8/MOD80 Monitor, V3.0

Registers Modified: A, B, C, D, E, H, L. Required: RAM/225 bytes; ROM/1024; BLOCKS/86

Programming Language: Assembly. Assembler/Compiler: 80808/8085 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BD2, DISASSEMBLER: 8080 OBJECT CODE

Submitted by: S.N. Brunner, General Electric, Erie PA

Abstract: DISASM is intended as a software development and debugging aid. Operating on resident object at a given memory address and steps sequentially through memory until manually halted.

Hardware Required: Intellec Model 8/MOD80; TTY; ASR-33

Software Required: Intellec 8/MOD80 Monitor

Registers Modified: A, B, C, D, H, L. Required: RAM/2 bytes; ROM/791 bytes; BLOCKS/40

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BD3, DISASSEMBLER: ICE-80, V2.1

Submitted by: Ove Anderson, Intel Scandinavia, Copenhagen, Denmark

Abstract: This program translates control-block information to assembly statements that are output to the selected list device.

Hardware Required: Intellec System; ICE-80

Software Required: ICE-80, V2.0 and Monitor V1.0 or ICE-80, V1.0 and Monitor V1.2

Registers Modified: All. Required: RAM/1121 bytes; BLOCKS/118

Programming Language: Assembly.

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD4, DISASSEMBLER: 8080 CODE

Submitted by: Erick Serdahl, Acurex Corp. Icore Div. Mountain View CA

Abstract: This program generates a symbolic assembly language program suitable for editing and assembly. The input is in ISIS II hex format file.

Hardware Required: Intellec 800 System

Software Required: PL/M-80 Compiler; ISIS II

Registers Modified: All. Required: RAM/32-64K; BLOCKS/218

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD5, DISASSEMBLER: ISIS-II OBJECT FILES

Submitted by: Dave Jacobs and Larry Joba, Coherent Medical, Palo Alto CA

Abstract: This is a two-pass disassembler designed to run under an ISIS II operating system. It takes a standard object file as input and generates an assembly language listing of the object file.

Hardware Required: 8080/8085

Software Required: ISIS II with 64K of memory; monitor

Required: RAM/38K bytes; BLOCKS/258

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD6, DISASM

Submitted by: Susan Papa, Fairchild Weston System, Syosset NY

Abstract: This program operates on the resident hex object code located between a given starting and ending memory location and disassembles it into it's corresponding 8080/8085A Assembly Language mnemonics.

Hardware Required: MDS System 800 or Series II or III

Software Required: ISIS II, 32K bytes of memory

Registers Modified: All. Required: RAM/2.4K bytes, ROM/none, BLOCKS/177

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD7, INTERPRETER: SINGLE-STEP

Submitted by: F. Postbauer, Electronikbau, Linz Austria

Abstract: This program is a debugging aid which allows single-step interpretation of instructions, displays processor activities in disassembled 8080/8085 Assembly language mnemonics, and displays contents of registers and flags.

Hardware Required: Intellec MDS or user hardware with terminal

Software Required: Intellec MDS monitor or I/O-compatible monitor

Registers Modified: None. Required: RAM/64K; ROM/none; BLOCKS/252

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OJB; SOURCE LISTING (L); DOCUMENTATION

BD8, DISASSEMBLER: 8048 OBJECT CODE

Submitted by: Udo Klocke, Schoppe & Faeser Gmbh, West Germany

Abstract: This program disassembles an 8048 object code program previously loaded into the MDS memory (e.g., with UPM). The object code may be at every memory location greater than 6000H. Outputs program listing to disk with only symbolic code and tab characters; or outputs absolute location, object code, line number and the symbolic code to any output device.

Hardware Required: Intellec with at least 32K-byte memory

Software Required: ISIS II, V3.4 or later, monitor, V2.0

Required: RAM/6014 bytes; BLOCKS/309

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD9, TRACE: ICE-80

Submitted by: C.J. Lusby Taylor, Intel Corporation

Abstract: This program is an ICE MDSCALL which gives comprehensive dump and trace information on the console device. The output displays the current timer, all flags as symbols, all registers in hex, P.C. in hex and symbolic mnemonic, operand in hex and symbolic. All display is on one line. Symbols are taken from the ICE symbol tables and PL/M line number tables. In addition, in GO mode, trace displays the 44-cycle history, by symbolic disassembly.

Hardware Required: Intellec System; ICE-80

Software Required: ISIS II; ICE-80

Required: RAM/1121; BLOCKS/117

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0; Trace, ICE-80, V4.4

Media Availability (Price Code): DISKETTE (C), SRC; SOURCE LISTING (L)

BD10, COUNT: ICE-8080 MACHINE CYCLES

Submitted by: Dalilbor Nemec and Karel Janu, Czechoslovakia

Abstract: This program enables a user by means of an Interrupt 7 to display the length of emulated instructions in machine cycles since the last INT7 depression.

Hardware Required: Intel MDS; ICE-80

Software Required: ISIS II; ICE-80

Required: BLOCKS/44

Programming Language: PL/M-80. Assembler/Compiler: PL/M_*0, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD11, COMPARE: FILES

Submitted by: D.W. Wright, Standard Telecommunication Laboratories Ltd., Harlow UK

Abstract: This program compares two files for similarities. If the files are identical, a message to that effect is output to the console; if not, the differences are listed on the console, along with the hex location, for the first eight bytes that differ (beyond that, further differences are not output, but the total number of differences is stated at the end).

Hardware Required: Intellec 800; console device

Software Required: ISIS II

Registers Modified: All. Required: RAM/32K; BLOCKS/74

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.0 and 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD12, LIST: FILE ERRORS

Submitted by: M. Polad, Data Card Corp., Minneapolis MN

Abstract: This program searches a diskette list file for assembly errors and lists lines containing the errors to the console device.

Hardware Required: Intellec 800; Diskette Operating System

Software Required: Monitor

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BD13, LIST: PL/M COMPILER ERRORS

Submitted by: Prof. Ing, Dalibor Nemec, VSE, Pelhrimovska, Praha, Czechoslovakia

Abstract: This program lists to the console device errors of the output listing file from a PL/M compilation.

Hardware Required: Intellec Model 800; dual diskette

Software Required: ISIS II

Registers Modified: All. Required: RAM/315; ROM/none; BLOCKS/21

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BD14, LIST: SAVE ERROR

Submitted by: Philip Weinstein, New York NY

Abstract: This program builds a history file or end-compilation error messages resulting from a sequence of compilations and assemblies. This program is most useful is a SUBMIT control file.

Hardware Required: 8080/8085-based system

Software Required: PL/M, ISIS II

Registers Modified: All. Required: RAM/1K; ROM/4K; BLOCKS/598

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD15, BREAKPOINT: 8089

Submitted by: Dave Ferguson, Intel Corporation

Abstract: This routine is the 8089 breakpoint routine for saving and displaying (on CRT) all registers.

Hardware Required: Intellec 8086-based; 8089

Software Required: 8086 Monitor

Required: BLOCKS/98

Programming Language: PL/M-86. Assembler/Compiler: ISIS II, PL/M-86, V2.1

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L); DOCUMENTATION

BD16, CALCULATE: CHECKSUM

Submitted by: Diego Sanchez Hernandez, G.E.E., Electromedicina, Madrid, Spain

Abstract: This program calculates two verification digits for a data string until 1K bytes and types them out on the console output device.

Hardware Required: Intellec, 8080-based

Software Required: ISIS II

Required: RAM/32K bytes; BLOCKS/28

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BD17, TEST: PROM/ROM CHECKSUM SELF-TEST

Submitted by: W. Birthisel, Honeycomb Systems, Inc., Biddeford, MAINE

Abstract: This program generates 24-bit sum of ROM contents and compares result with 3-byte signatures. Unique sum for ROM spaces to 64K.

Hardware Required: Listing device.

Software Required: Driver for listing device.

Registers Modified: All. Required: RAM/none; ROM/74 sub 10; BLOCKS/24

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD18, GENERATE: PROM CHECKSUM CALCULATION

Submitted by: John Hall, Eastman Kodak Co., Rochester NY

Abstract: This program reads previously programmed PROMs, computes several different types of checksums, and allows the user to program the checksum value into an unprogrammed area in the PROM. Works only with 8-bit-wide PROMs.

Hardware Required: Intellec Series II 220/230/240; Universal PROM Programmer

Software Required: ISIS II

Required: RAM/3680H to 45EDH; BLOCKS/477

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD19, GENERATE: IBM BI-SYNC CRC16

Submitted by: Andy Belton, Tech-nel Data Products Ltd., Brackley, England

Abstract: This subroutine generates IBM CRC 16 check bytes using the polynomial; x16 + x15 + x2 + 1.

Hardware Required: Intellec 8048-based

Software Required: Calling program

Required: RAM/user defined; ROM/55 bytes; BLOCKS/23

Programming Language: ASM-48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC; SOURCE LISTING (L)

BD20, GENERATE: FAST GENERATION OF IBM BI-SYNC CRC16

Submitted by: Paul Yeung, Cathay Pacific Airwys LTD., Hong Kong

Abstract: This routine does a fast computation of IBM BI-SYNC CRC16 on character bases using the generating polynomial x16 + x15 + x2 + 1. An interactive demonstration program is included.

Hardware Required: Series II or III (MDS-800 not supported)

Software Required: ISIS II

Registers Modified: A, B, C, D, E, H, L. Required: RAM/user definable; ROM/44 bytes; BLOCKS/74

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD21, DUMP: SYMBOL TABLE

Submitted by: Gary Carleton, Intel Corporation

Abstract: This program lists a symbol table of a located program, sorting alphanumerically or by address. Publics, local symbols and PL/M line numbers are included.

Hardware Required: Intellec, 8080 or 8085-based; Diskette Operating System

Software Required: ISIS II

Registers Modified: All. Required: RAM/32K; BLOCKS/48

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Media Availability (Price Code): DISKETTE (B), OBJ; DOCUMENTATION

BD22, SORT: SYMBOL TABLE FROM AN ABSOLUTE FILE

Submitted by: W. Marshall, Nordson, Amherst OH

Abstract: This utility file produces a sorted symbol table from an absolute (linked and located) ISIS II file.

Hardware Required: Intellec, 8080-based.

Software Required: ISIS II

Registers Modified: All. Required: RAM/40K; ROM/none; BLOCKS/101

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L)

BD23, GENERATE: SYMBOL TABLE FOR BASIC-80

Submitted by: Andy Belton, Technel Data Products, LTD., Brackley, England

Abstract: This program generates an X-Ref symbol table in ASCII format for a "BASIC" program.

Hardware Required: Intellec System; Diskette Operating System

Software Required: ISIS II; BASIC-80

Required: BLOCKS/85

Programming Language: BASIC-80. Assembler/Compiler: BASIC-80, V1.1

Media Availability (Price Code): DISKETTE (B), SRC, LST; SOURCE LISTING (L)

BD24, GENERATE: PUBLIC SYMBOL CROSS-REFERENCE LISTING

Submitted by: Thomas Brumm, Nestler Electronics, Lahr/Schwarzwald, Germany

Abstract: This program creates a composite, alphabetically arranged cross-reference list of public symbols used in a set of 8085 or 8086 object modules, indicating the module in which each symbol was declared PUBLIC and in which other module(s) it was declared EXTERNAL. The list is saved on a disk file, and the printout format is user-selectable.

Hardware Required: Intellec with 64K memory and two disk drives (:F0:, :F1:)

Software Required: ISIS II

Required: BLOCKS/1929

Programming Language: PL/M-80 and ASM80. Assembler/Compiler: PL/M-80, V4.0, 8080/8085 Macro Assembler, V4.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, LST, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD25, GENERATE: PL/M CROSS REFERENCE

Submitted by: Douglas Kandle, Intel Corporation

Abstract: This program cross references symbols and numbers in multi-module programs.

Hardware Required: Series III

Software Required: PL/M-86, NPEX, RUN.STOPIF

Registers Modified: None. Required: RAM/64K (will use more if available); ROM/none; BLOCKS/2940

Programming Language: PL/M. Assembler/Compiler: PL/M-86, V1.0

Libraries: COMPAC.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD26, DUMP: DISKETTE FILE

Submitted by: Stu Adler, Litton Energy Control, Chatsworth CA

Abstract: This program dumps ISIS II diskette files in hex and ASCII to the specified output device.

Hardware Required: Intellec, 8080-base; console device system

Software Required: ISIS-II

Required: BLOCKS/78

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L)

BD27, DUMP: DISKETTE

Submitted by: Carl Harcout, Naval Avionics Center, Indianapolis IN

Abstract: This program dumps diskette data on a block basis to specified output device in hex and ASCII format.

Hardware Required: Intellec, 8080-based; Diskette Operating System

Software Required: ISIS II; monitor

Registers Modified: All. Required: RAM/32K; BLOCKS/93

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

BD28, DUMP: DISKETTE FILE

Submitted by: Garth Eaglesfield, Micro Focus Ltd., London, England

Abstract: This program dumps an ISIS II diskette file to a specified file in printable form. Hex, octal and ASCII representations are included.

Hardware Required: Intellec, 8080-based; Diskette Operating System; console device

Software Required: ISIS II; MDS Monitor

Required: BLOCKS/92

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC; SOURCE LISTING (L)

BD29, DUMP: iSBC 86/12 MEMORY

Submitted by: Paul Curley, C.S. Draper Lab., Inc., Cambridge MA

Abstract: This program is a software debugging tool to be used with an iSBC 86/12. It allows memory locations with data stored in integer or floating point format to be output in decimal through the serial port, after which the program returns to the monitor.

Hardware Required: iSBC 86/12 Memory, Development System

Software Required: SBC861 Loader, PLM86 and 86 Utilities

Registers Modified: All. Required: RAM/9831/469 (if program is put in ROM); ROM/N/A/9362 (if program is put in ROM)

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V1.2

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD30, DUMP: iAPX-86/88 ABSOLUTE OBJECT FILE

Submitted by: John H. Hall, Eastman Kodak Co., Rochester NY

Abstract: This program prints a formatted dump of iAPX-86/88 absolute object files to the console or to any ISIS II device. It may be used to determine the name and position of all L-modules. T-modules, and overlays in an absolute object file, and is a useful tool when writing and debugging loaders for iAPX-86/88 systems.

Hardware Required: Intellec Series II or III

Software Required: ISIS II

Registers Modified: All. Required: RAM/147EH; ROM/none; BLOCKS/1067

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

BD31, EDIT: HEX FILE

Submitted by: Ben A. Harris, Techtran Industries, Rochester NY

Abstract: This program provides modification facilities for hexadecimal diskette files. Patches in machine language may be made to located object files, thereby avoiding reassembling and locating.

Hardware Required: Intellec, 8080-based

Software Required: ISIS II

Required: RAM/1070 bytes; BLOCKS/133

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC; SOURCE LISTING (L); DOCUMENTATION

BD32, EDIT: INSPECT AND CHANGE FILE

Submitted by: Dan Cody, Action Communication Systems, Inc., Dallas TX

Abstract: This is a program allowing the user to display and modify data with a disk file, accessing each byte by its relative position in the file. Subroutines allow the user to write an ASCII/HEX dump of the specified data to a file and to copy specified binary data to a file.

Hardware Required: Intellec 230

Software Required: ISIS II, V3.4 or later

Registers Modified: All. Required: RAM/3802; BLOCKS/245

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD33, EDIT: DISK

Submitted by: J. Broadhurst and J.J. Cooper, ICL, Winsford, Cheshire England

Abstract: This program allows users to view blocks of data from a file, in both ASCII and HEX, and enables HEX input to any part of the file.

Hardware Required: Intellec, 8080/8085-based

Software Required: ISIS II

Required: RAM/227 bytes; ROM/2060 bytes; BLOCKS/451

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD34, DEBUG: CAT88 (iRMX 88 TASK DEBUGGER)

Submitted by: Shivram Shetty, Eastman Kodak, Rochester NY

Abstract: Console Aided Testing (CAT88) provides testing and interactive debugging for iRMX 88 V2.0 target application tasks. The user is provided with symbolic definitions for procedure names, literals, data buffers, and pattern definitions. It allows input and output command to be executed from the console. Through extended address symbol definition, any routine can be invoked or any location can be displayed. During the interactive Configuration Utility, the user is allowed to specify two options with regard to addressing and type of compilation: 1) Megabyte/Non-Megabyte (version of the Nucleus), 2) Large or Compact option in compiling a PL/M-86 target module.

Hardware Required: iAPX-88 or 86-based sytem; ICE-86 or iSBC-957B for down-loading or application

Software Required: iRMX 88 V2.0

Registers Modified: All. Required: RAM/26K; ROM/none; BLOCKS/3659

Programming Language: PL/M-86; ASM86. Assembler/Compiler: PL/M-86, V1.0; ASM86, V1.0

Libraries: RMXMAX.LIB, TH088.LIB, TH188.LIB, 8087.LIB, DCON87.LIB

Media Availability (Price Code): DISKETTE (E), SRC, OBJ; DOCUMENTATION

BD35, GENERATE: HIGH AND LOW BYTES FROM 8086 HEX FILE

Submitted by: Hubert Maencher, Institute Fur Regelungstechnik, West Germany

Abstract: This program splits an absolute hex file containing 8086 code or data into its "high" and "low" bytes, storing those bytes with even addresses into one 8080-hex-format file and those with odd addresses in another, and writing a short address protocol to a third file.

Hardware Required: Intel or Siemens Development System with Disk Storage

Software Required: ISIS II

Registers Modified: All. Required: RAM/At least 20K bytes; ROM/none; BLOCKS/243

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD36, CONSOLE ACCESS: INPUT AND OUTPUT FOR SERIES III

Submitted by: Ajit Deora, Intel Corporation

Abstract: This program makes access to console input and output on the Series III boards compatible with the Series II boards of the Intellec MDS systems. The user could include these CI and CO routines as part of a library and call them as external functions/procedures in order to aid in easy debugging of 8080/8085-based PL/M-86 programs.

Hardware Required: Intellec Series III

Software Required: ISIS II; PL/M-86 (Series III) for 8080/8085-based system

Registers Modified: All. Required: RAM/295 bytes; ROM/none; BLOCKS/96

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.0

Libraries: LARGE.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD37, GENERATE: CCITT CYCLIC REDUNDANCY CHECK

Submitted by: Nha Nguyen, Intel Corporation

Abstract: This routine computes a CRC checksum using a 16-bit partial remainder generated by the CCITT polynomial x16 + x12 + x5 + 1.

Hardware Required: 8080/8085-based

Software Required: ISIS II

Registers Modified: All. Required: RAM/2bytes; ROM/40 bytes; BLOCKS/36

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BD38, GENERATE: PUBLIC SYMBOL CROSS REFERENCE

Submitted by: Daryl Raymond, Gilford Instrument Laboratories, Oberlin OH

Abstract: This program sorts alphabetically and lists to a disk file public symbols from the object modules or libraries specified, together with the names of the modules in which they appear. The defining module for each symbol is identified as to segment type. Various control parameters support the listing of publics from specified library modules only, of publics from modules that satisfy unresolved externals only, etc. The number of multiply-defined symbols and unresolved externals is output to the console, and the associated module names are listed to a separate file.

Hardware Required: Intel Development System or NDS-I or NDS-II

Software Required: ISIS Operating System

Registers Modified: All. Required: RAM/64K; BLOCKS/2627

Programming Language: PL/M-80, ASM80. Assembler/Compiler: PL/M-80, V3.1, 8080/8085 Macro Assembler, V4.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD39, SORT: PUBLIC SYMBOLS

Submitted by: C.J. Audigler, Oxford Automation LTD., Milton Keynes, England

Abstract: This program takes as input the public symbol table created by the PRINT and PUBLICS controls of the ISIS II Locater and outputs the public symbols to a file in three adjacent columns; unsorted, sorted numerically by address and alphabetically sorted.

Hardware Required: Intel Development System

Software Required: ISIS II

Required: RAM/32K; BLOCKS/167

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L)

BD40, SIMULATE: iACX-96

Submitted by: D. Livshin and I. Beer, Intel Israel

Abstract: This program provides simulation and debugging facilities for object files produced by Intel's 8096 software development tools. Features include: symbolic debugging with high-level language support; single-step, line-step, and multiple-breakpoint simulation; memory and special registers display/change commands; save/restore simulation state; symbolic disassembly; and extensible I/O simulation.

Hardware Required: Series III with 128K RAM

Software Required: NONE

Required: RAM/128K; BLOCKS/1201

Programming Language: ASM96 and PL/M-86. Assembler/Compiler: 8096 Assembler; Series-III PL/M-86

Libraries: COMPAC.LIB, PLM86.LIB

Media Availability (Price Code): DISKETTE (J), ABS.OBJ; DOCUMENTATION

BD41, LIST: 8086 PUBLIC AND EXTERNAL SYMBOLS

Submitted by: Bill Feero, ATEK NC Corp., Monroe CT

Abstract: This program reads a set of 8086 object modules and lists, for each module: 1) all symbols found in the module, 2) whether each symbol was public or external.

Hardware Required: Intellec Series III

Software Required: ISIS II RUN 8086

Registers Modified: All. Required: RAM/32K; BLOCKS/250

Programming Language: PL/M-86. Assembler/Compiler: Series III, PL/M-86

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD42, PURGE: SYMBOL TABLES

Submitted by: William J. Hinkle, Comtec, Inc., Twinsburg OH

Abstract: This program optimizes an MCS-80/85 load file for ICE-80/85. It reduces the size of the symbol table in linked and located 80/85 object files by removing redundant debug information and unneeded public symbol information. By concatenating short records into long records, ICE load time is also reduced.

Hardware Required: Intellec Development System

Software Required: ISIS II

Registers Modified: All. Required: RAM/1655 bytes; ROM/None; BLOCKS/109

Programming Language: PL/M-80 and ASM80. Assembler/Compiler: PL/M-80, V4.0; 8080/8085 Macro Assembler, V4.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BD43, MSA-48: MCS-48 DISASSEMBLER AND PROGRAM CONTROL FLOW ANALYSIS

Submitted by: D.P. Ullathorne, British Gas Corp., London UK

Abstract: This program analyzes and disassembles ISIS II MCS-48 Hexadecimal disk files. Extensive control list options allow for automatic program tracing or for interactive examination of up to 2K bytes of code. The output file may include results of the automatic or interactive program examinations, with hex address and data preceding the assembly language mnemonics, and a symbol list. Assembler mnemonics for the different members of the MCS-48 family of microprocessors can be selected by control.

Hardware Required: Intellec Series II or later Development System with 64K RAM

Software Required: ISIS II

Registers Modified: All. Required: RAM/64K; BLOCKS/3570

Programming Language: PL/M-80; ASM80. Assembler/Compiler: PL/M-80, V4.0; ASM80, V4.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, ABS.OBJ; DOCUMENTATION

BD44, FDUMP.86: FILE DUMP UTILITY

Submitted by: Brian Valentine, Intel Corporation

Abstract: This program runs on the Series IV or NRM and dumps a specified file to the screen in one of four formats: Hex, Binary, Octal, or Decimal, uses Series IV graphics.

Hardware Required: Series IV or NRM

Software Required: iNDX, V2.5 or greater

Programming Language: iC-86. Assembler/Compiler: Series IV, iC-86, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; DOCUMENTATION

BD45, SIM386

Submitted by: Intel Corporation

Abstract: SIM386 is a Xenix 286 resident software simulator of the 80386 processor, designed to support the development of 80386 programs, systems, and operating system nuclei prior to the availability of the processor. SIM386 provides a simulated execution environment for 80386 programs, together with facilities for program loading and symbolic debugging. SIM386 simulates the functions available on the 80386 processor in protected mode.

Hardware Required: 80286-based development system with a 80287 co-processor

Software Required: 386 translator (ASM386), BND386, BLD386

Media Availability (Price Code): DISKETTE (H), DOCUMENTATION

CHAPTER BE : PERIPHERAL APPLICATION

BE1, THERMOMETER: THERMISTOR CONTROLLER

Submitted by: Ray Simmons, L.A. Varah, Hamilton, Ontario, Canada

Abstract: This program converts temperature to a digital count. The count is used as an address pointer (to the temperature value stored). Temperature is displayed on the external display in Celsius degrees.

Hardware Required: SDK-85; Phillips Thermistor, 832001A1K3

Software Required: SDK-85 Monitor

Registers Modified: A, B, D, H, L, FLAGS. Required: RAM/none; ROM/512 bytes; BLOCKS/36

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC; SOURCE LISTING (L)

BE2, HANDLER: iRMX 80 MINIMAL TERMINAL

Submitted by: Thomas Rolander, San Jose CA

Abstract: This program provides all the basic requirements for a terminal handler.

Hardware Required: iSBC 80/20

Software Required: iRMX 80 Nucleus

Registers Modified: All. Required: RAM/67; ROM 570 bytes; BLOCKS/45

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BE3, READ/PUNCH: PAPER TAPE TO/FROM SDK-85 RAM

Submitted by: P. Bhanu Prasad, with contributions by R.S. Mahajan and S.K. Subrahmanyan, Central Electronics Engineering Research Institute, Pilani, India

Abstract: This program; 1) reads a paper tape created by an SDK-85 RAM or an Intellec Development System into any specified area of SDK-85 RAM; 2) punches data on TTY from SDK-85 RAM in Intel's hexadecimal paper tape format.

Hardware Required: SDK-85; ASR-33 TTY

Software Required: SDK-85 monitor

Registers Modified: All. Required: RAM/20ACH-202CH for PUNCH; 207CH-20B7H for READ; ROM/2K + OFDH bytes for PUNCH; 2K + 062DH for READ; BLOCKS/488

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BE4, PROGRAMMER: PROMS 2708/16/32

Submitted by: Gerhard Trayser, Hospital of Geneva, Switzerland

Abstract: This program programs/reads/verifies 2708, 2716, and 2732 EPROMS from an MDS 230. It includes an automatic test for erased EPROM before programming.

Hardware Required: MDS 230; Parallel I/O card PGPIO

Software Required: ISIS II

Required: BLOCKS/284

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BE5, PROGRAMMER: EPROM, 8755A

Submitted by: Max Jensen, Nordisk Elektroakustic A/S, Lynge Denmark

Abstract: This program has a routine to program an Intel 8755A EPROM and a routine to load the programmer via ICE-85 module. The programmer may read contents of EPROM back into the Intellec before and after actual programming. A special section allows the programmer to execute a compare function between source program and EPROM. The program verifies after each step that programming has been effective.

Hardware Required: Intellec 220; ICE-85; SDK-85; programming interface

Software Required: ISIS II, ICE-85 software

Registers Modified: All. Required: RAM/32K; BLOCKS/140

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BE6, EXERCISE: DATA TRANSLATION MULTI-BUS ANALOG I/O BOARDS

Submitted by: Dave Mabry, Chrysler Corporation, Highland Park MI

Abstract: This program exercises a data translation I/O board from the 1700 or 1800 Series on a development system. It also provides PL/M callable routines that can be used in application systems.

Hardware Required: Intellec Model 800 or Series II; data translation analog interface board

Software Required: ISIS II

Registers Modified: All. Required: RAM/2165; ROM/none; BLOCKS/512

Programming Language: Assembly and PL/M. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BE7, DRIVER: PROM PROGRAMMER

Submitted by: James C. Follansbee, Desert Microsystems, Inc., Pasco WA

Abstract: This program interfaces the data I/O system 17/19 PROM programmer with an Intellec 800. Serial interface utilizing iSBC 116/I/O Expansion Board.

Hardware Required: Intellec 800 System; serial I/O channel, iSBC 116, configured RS-232C

Software Required: ISIS II, Monitor

Registers Modified: All. Required: RAM/32K bytes; ROM/none; BLOCKS/78

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BE8, COMMUNICATION: INTEL MDS - DATA I/O PROGRAMMER INTERFACE

Submitted by: D. Murdock, Syncronetics, Inc., Bellevue WA

Abstract: This interface program allows the Intel MDS to remotely control operation of the Data I/O Programmer. This program also includes basic data manipulation and editing capabilities for the MDS operator's use to prevent the need for several different programs during the software updating and device reprogramming.

Hardware Required: MDS Series II or III, DATA I/O Model 17, 19 or 20 with Computer Remote Control Software.

Software Required: ISIS 3, 4 or newer.

Registers Modified: All. Required: RAM/317H + Buffer; ROM/2EB5H; BLOCKS/1301

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (F), SRC, OBJ, ABS.OBJ; DOCUMENTATION

BE9, SEND: INTEL HEX CODE TO PROM PROGRAMMER

Submitted by: Paul Schmidt, Neil Brown Instrument Systems, Inc., Cataumet MA

Abstract: This BASIC program enables the user to send individual or successive sections of Intel HEX code to a compatible PROM programmer. It displays first and last lines sent on CRT and appends an end-of-file line to each sections sent.

Hardware Required: Intellec Series II or III

Software Required: ISIS II; BASIC-80

Registers Modified: All. Required: RAM/64K; BLOCKS/87

Programming Language: BASIC-80. Assembler/Compiler: ISIS II BASIC-80, V1.1

Media Availability (Price Code): DISKETTE (A), LST, OBJ; SOURCE LISTING (L); DOCUMENTATION

BE10, HANDLER: ENHANCED iRMX 80 TERMINAL HANDLER

Submitted by: J. Lookadoo, Lucas Industries, Inc., Little Rock AR

Abstract: This package allows faster output times between characters sent to the CRT, as compared to the standard iRMX 80 terminal handler, by reducing interrupt overhead processing (savings begin to show for speeds above 4800 baud). While written for an iSBC-80/30 board, code can be easily modified for 80/20 or 80/24.

Hardware Required: iSBC-80/30; CRT

Software Required: iRMX 80

Required: RAM/19 bytes; ROM/269 bytes; BLOCKS/391

Programming Language: PL/M-80. Assembler/Compiler: ISIS-II, PL/M-80, V4.0

Libraries: RMXOPT.LIB, RMXMIN.LIB, UNRSLV.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CHAPTER BF : RESIDENT TRANSLATORS

BF1, COMPILER: PASCAL

Submitted by: Thomas A. Rolander, Campbell CA

Abstract: This program provides sequential PASCAL compiler and virtual machine implementation for an Intel 8080A-based Intellec.

Hardware Required: Intellec, 8080-based; Dual Diskette Operating System

Software Required: ISIS II

Required: RAM/64K bytes; BLOCKS/3200 (on two diskettes)

Programming Language: PL/M

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; DOCUMENTATION

BF2, INTERPRETER: PILOT-80

Submitted by: John Starkweather and Ron Williams, University of California

Abstract: PILOT is a programming system for controlling interactive conversations. It can be used as an author language for computer-assisted instructions. Designed to be simple in its syntax, PILOT allows those without prior computer experience to easily learn to control its features. Dialogue programs can be rapidly constructed and tested.

Hardware Required: Intellec, 8080-based

Software Required: ISIS II

Registers Modified: All. Required: RAM/4K-72K editor and program requirements; BLOCKS/557

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (C), SRC; SOURCE LISTING (L); DOCUMENTATION

BF3, ASSEMBLER: MCS-48

Submitted by: Richard C. Turnock, Atlantis Flight Research, Downsview Ontario

Abstract: This program is written in BASIC and assembles standard MCS-48 assembly language code. It generates a listing similar to Intel assembler and a file that can be copied via a serial link to a Prompt-48 for testing and debugging.

Hardware Required: Development System with serial link to Prompt-48

Software Required: ISIS II; BASIC-80

Registers Modified: All. Required: RAM/48K; ROM/None; BLOCKS/371

Programming Language: BASIC-80. Assembler/Compiler: BASIC-80, V1.1

Media Availability (Price Code): DISKETTE (B), LST, OBJ; SOURCE LISTING (L); DOCUMENTATION

BF4, ASSEMBLER: 8080 MACRO, V4.1

Submitted by: Intel Corporation

Abstract: This program assembles 8080 assembly language programs.

Hardware Required: Intellec, 8080-based

Software Required: Monitor

Registers Modified: All.

Programming Language: PL/M

Media Availability (Price Code): SOURCE LISTING (L)

BF5, ASSEMBLER: ON-LINE

Submitted by: Bruce C. Wright, Duke Medical Center, Durhan NC

Abstract: This program allows instructions to be entered by mnemonics rather than absolute binary for experimental or debug purposes. Especially useful on small machines without much I/O capability.

Hardware Required: Intellec, 8080-based

Software Required: Monitor; terminal interface

Registers Modified: All. Required: ROM/1K bytes; BLOCKS/131

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L)

BF6, PROCESSOR: MACRO

Submitted by: Bruce W. Ravenel, Intel Corporation

Abstract: This program is a language-independent macro processor to be used to implement machine-independent software. It is suitable for use as a prepass for any language translator to provide macro capabilities.

Hardware Required: Intellec Model 800; Diskette Operating System

Software Required: ISIS II

Required: RAM/48K minimum; BLOCKS/772

Programming Language: PL/M

Media Availability (Price Code): DISKETTE (B), SRC; DOCUMENTATION

BF7, INTERPRETER: LLL BASIC-II

Submitted by: Eugene Fisher, Lawrence Livermore Laboratory, Livermore CA

Abstract: This program is designed to operate with an 8080-based Intellec. This interpreter consists of an 8K-byte ROM-resident interpreter for program debug and generation.

Hardware Required: Intellec, 8080-based

Software Required: N/A

Registers Modified: All. Required: ROM/8K; BLOCKS/2046

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (D), SRC; ; SOURCE LISTING (L); DOCUMENTATION

BF8, INTERPRETER: LLL/CHERNACK BASIC

Submitted by: Charles Chernack, Consultant, Los Altos CA

Hardware Required: Intellec, 8080-based

Software Required: ISIS II

Required: RAM/32K bytes; BLOCKS/2008

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, LST, CSD; SOURCE LISTING (L); DOCUMENTATION

BF9, INTERPRETER: 8086/8088 TINY BASIC

Submitted by: Bob Glossman, Intel Corporation

Abstract: This program is a very small (less than 1K of code) BASIC interpreter allowing 26 variables and one array.

Hardware Required: Intellec, 8080-based; iSBC 86

Software Required: ISIS II

Required: RAM/48K; BLOCKS/1040

Programming Language: Assembly. Assembler/Compiler: MCS-86 Assembler, X084

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST; SOURCE LISTING (L); DOCUMENTATION

BF10, INTERPRETER: MCS-51 TINY BASIC, V2.2

Submitted by: Honore Bates, Intel Corporation

Abstract: This program provides a BASIC interpreter for the Intel MCS-51 family of single-chip microcontrollers. Provision is made for hexadecimal arithmetic, logical operations, and bit manipulation for microcontroller-oriented applicaitons. Rudimentary system monitor capabilities are also provided.

Hardware Required: 8031 or 8751 with level shifters on serial I/O pins; CRT; PROM programming capabilities (External program and/or data memory may be added to develop and execute large programs).

Software Required: None

Registers Modified: All. Required: RAM/User's option (128 bytes provided on 8051/8751; ROM/4K; BLOCKS/2313)

Programming Language: ASM51. Assembler/Compiler: MCS-51 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (D), SRC, OBJ, LST, HEX; DOCUMENTATION

BF11, INTERPRETER: MCS BASIC - 52 SOURCE CODE

Submitted by: Intel Corporation

Abstract: This program functions as a BASIC interpreter occupying 8K of ROM in Intel's 8052AH microcontroller.

Hardware Required: Preprogrammed 8052-BASIC or an 8752BH

Software Required: None

Registers Modified: All. Required: RAM/1K; ROM/8K

Programming Language: Assembly. Assembler/Compiler: ASM51

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CHAPTER BG : UTILITIES

BG1, LOAD/SAVE: RAM

Submitted by: C. Harcourt, Naval Avionics Facility, Indianapolis IN

Abstract: This program provides utilities to load/save ISIS files to/from memory.

Hardware Required: Intellec Model 800

Software Required: ISIS I or ISIS II; monitor

Registers Modified: All. Required: RAM/32K; BLOCKS/63

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

BG2, RECOVER: DISKETTE

Submitted by: Intel Corporation

Abstract: This program permits recovery of files on an ISIS-formatted diskette whose directory file has been destroyed, but which is otherwise intact (i.e., not for use with ISIS Error 24).

Hardware Required: Intellec Model 800

Software Required: ISIS II

Registers Modified: All. Required: BLOCKS/36

Programming Language: PL/M. Assembler/Compiler: PL/M-80 or Cross PL/M Compiler

Media Availability (Price Code): DISKETTE (B), OBJ; DOCUMENTATION

BG3, UTILITIES: CIRCULAR LISTS

Submitted by: George Woodley

Abstract: This program provides three utility subroutines: -Initialize; -Put; -Get.

Hardware Required: Intellec 8080-based

Software Required: N/A

Required: RAM/211 bytes; BLOCKS/60

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG4, INTERPRETER: iRMX 80 COMMAND LINE

Submitted by: Ken Burgett, Dharma Systems, San Jose CA

Abstract: This program provides operator control of iRMX tasks, giving operator means to invoke a task via a console command. Several procedures are used to perform simple text handling and numerical processing.

Hardware Required: iSBC 80/20

Software Required: iRMX 80 Nucleus; Free Space Manager Terminal Handler

Registers Modified: All. Required: RAM/46; ROM/988 bytes; BLOCKS/108

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG5, GENERATE: OUTPUT SIGNAL

Submitted by: Pentzlin, Informatik-Forum GMBH, Munchen, West Germany

Abstract: The Intellec command SIGNAL outputs a visible signal (broad line) and an audible signal (two long beeps for CRT, several bells for TTY). If SIGNAL is the last command in a SUBMIT file, the user will hear when an execution of the SUBMIT file is finished, and can see it clearly even if he is too far from the console to read text.

Hardware Required: Intellec, Series II

Software Required: ISIS II

Required: RAM/1K bytes; BLOCKS/35

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG6, SUBMIT: ISIS COMMAND STRING

Submitted by: William J. Hinkle, Comtec, Inc., Twinsburg OH

Abstract: This "submit quick" program permits the operator to enter a string of ISIS commands separated by semicolons. The system is then controlled by these commands just as in an ordinary SUBMIT file, but without parameter substitution and without the necessity of creating (and later deleting) a CSD file.

Hardware Required: MDS-800 or Series II

Software Required: ISIS II

Registers Modified: All. Required: RAM/2285 bytes; ROM/none; BLOCKS/155

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG7, PROCEDURES: PL/M UTILITIES

Submitted by: Intel Corporation

Abstract: This module consists of a group of utility procedures which ease file-oriented I/O under ISIS II.

Hardware Required: Intellec, 8080-based; Diskette Operating System; console device

Software Required: ISIS II

Required: RAM/380; ROM/656 bytes; BLOCKS/74

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG8, PROCEDURES: PL/M OUTPUT

Submitted by: Karl Pentzlin, Informatik-Forum GmbH, Munchen West Germany

Abstract: This program contains several procedures to be called by PL/M programs for formatted output of address/byte values or output of characters and strings.

Hardware Required: Intellec Model 800

Software Required: ISIS II

Registers Modified: All. Required: RMA/206; ROM/2804 bytes; BLOCKS/131

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG9, PROCEDURE: PL/M DOCASE

Submitted by: Friedrich Laher, Siemens AG, Munchen West Germany

Abstract: This procedure can be called in place of the PL/M-80 DOCASE statement. It calls a subroutine, so it is more code efficient than DOCASE.

Hardware Required: 8080/8085

Software Required: PL/M-80

Required: BLOCKS/50

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG10, MACROS: BLOCK STRUCTURES

Submitted by: Stephen R. Wachtel, Georgia Institute of Technology, Atlanta GA

Abstract: These block structured macros generate, for assembly language, commonly used control structures normally found in high-level languages.

Hardware Required: Intellec system

Software Required: ISIS II

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBj; SOURCE LISTING (L); DOCUMENTATION

BG11, MACROS: BLOCK STRUCTURES

Submitted by: Steven R. Wachtel, Georgia Institute of Technology, Atlanta GA

Abstract: This program generates commonly used control structures normally found in high-level languages for the Intel MCS-48 assembler. These macros enhance program development and documentation of routines that must be written in Assembly language because of execution speed or memory usage constraints.

Hardware Required: 8048

Software Required: ISIS-II

Required: BLOCKS/667

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L)

BG12, FIFO

Submitted by: Harry B. Steward, Neoteric, Los Gatos CA

Abstract: This package provides complete support for the creation and management of any number of first-in first-out buffers, utilizing a rotary queueing mechanism for speed. There are 3 routines in the package: -FIFO initialization routine; -Get character from FIFO; -Put character to FIFO.

Hardware Required: Intellec 8080-based

Software Required: ISIS II

Registers Modified: None. Required: RAM/user specified; ROM/72 bytes; BLOCKS/43

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L)

BG13, FIFO

Submitted by: Mervin Doda, Canadair Ltd., Montreal Canada

Abstract: This program performs the function of first-in/first-out buffer. It consists of two subroutines; -Load; -Store.

Hardware Required: Intellec, 8080-based

Software Required: Monitor

Registers Modified: All. Required: RAM/259; ROM/118 bytes; BLOCKS/20

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L)

BG14, LIST/PRINT/TYPE

Submitted by: Brian Halla, Intel Corporation

Abstract: This program lists a file on the lineprinter, allowing for tab spacing.

Hardware Required: Intellec 8080-based; Diskette Operating System; lineprinter

Software Required: ISIS II

Required: RAM/32K; BLOCKS/40

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG15, LIST: FILE

Submitted by: R.C. Taylor, McMichael Ltd., Slough, Berks England

Abstract: This program enables any file to be listed on a VDU terminal. It will prompt for a return after writing a page of information.

Hardware Required: Intellec System; LSI ADM-3 VDU

Software Required: ISIS II; monitor

Required: RAM/48K; ROM/none; BLOCKS/48

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assember, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG16, LIST: FILE

Submitted by: Esko Lehtinen, AB Bofors, Bofors Sweden

Abstract: This program provides for visual examination of a lengthy diskette file. The file is transferred, line by line, to the CRT console with tab characters replaced by spaces. The display can be frozen and the speed of output changed. Quick jumps of maximum 25600 characters can be specified, both forward and backward. After such a jump, the CRT screen will be filled up with text and the display frozen.

Hardware Required: Intellec Model 800; Diskette Operating System

Software Required: ISIS II; monitor console routines

Required: BLOCKS/60

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG17, LIST: DISKETTE DIRECTORY

Submitted by: S. Bann, Xerox, El Segundo CA

Abstract: This program outputs an alphabetized listing of a diskette to the lineprinter.

Hardware Required: Intellec 8080 or 8085 based; Diskette Operating System

Software Required: ISIS II monitor

Registers Modified: A, F, B, C, D, E, H, I, SP, PC. Required: RAM/205 bytes; BLOCKS/40

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG18, LIST: DIRECTORY, ISIS DISKETTE/NDS DISK

Submitted by: Dave Mabry, Chrysler Corporation, Detroit MI

Abstract: This program outputs an alphabetized listing of an ISIS diskette directory or an NDS-II disk partition to the system console or printer. The new ISIS system call GETD is also used to print file size and attribute information if the directory is in the form of an ISIS diskette.

Hardware Required: MDS-800, Series II or Series III with 64K bytes of RAM

Software Required: ISIS II, V4.2 or later or ISIS II

Registers Modified: All. Required: RAM/6922 bytes; ROM/None; BLOCKS/212

Programming Language: PL/M-80, Assembly. Assembler/Compiler: PL/M-80, V3.2; 8080/8085 Macro Assembler, V4.0

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG19, SORT: DISK DIRECTORY

Submitted by: K. Sell, Posidata, Basingstoke, Hampshire U.K.

Abstract: This program sorts an ISIS diskette directory.

Hardware Required: Intellec; Diskette Operating System

Software Required: ISIS II, V2.2 or V3.4

Registers Modified: All, flags. Required: RAM//64K; ROM/none; BLOCKS/80

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG20, SORT: DISK DIRECTORY

Submitted by: Gary Gold, John Deere PEC, Waterloo IA

Abstract: This program sorts a disk directory and displays it in alphanumeric order.

Hardware Required: Intellec Development System 230 or 800

Software Required: ISIS II

Required: BLOCKS/262

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG21, SORT: DISKETTE FILE

Submitted by: Andy Belton, Tech-Nel Data Products Ltd., Brackley England

Abstract: This routine sorts an ISIS disk file into ascending order. The file must contain fixed-length records, each containing a sort key. The calling structure is similar to an ISIS call, enabling the program to be added to SYSTEM.LIB and used as a utility porgram; or it could be adapted to allow calls from both ASM80 and PLM80.

Hardware Required: Intellec, 8080-based

Software Required: ISIS II

Registers Modified: All. Required: RAM/705 bytes; ROM/none; BLOCKS/105

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG22, SORT: BUBBLE SORT AND BINARY SEARCH ROUTINES

Submitted by: Wade Noxon, Lucas Inc., Little Rock Arkansas

Abstract: This program consists of routines to sort numerical input into an ascending array, conduct a binary search of a 512-element array, and to demonstrate these functions.

Hardware Required: 8080/8085-based with Disk Operating System

Software Required: ISIS-II

Required: BLOCKS/123

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG23, INITIALIZE: BAUD RATE

Submitted by: Tom Wrenn, Dayton Scientific Inc., Dayton OH

Abstract: This program initializes serial ports 1 and 2 for the Intellec 220/230. Baud rate, stop bits, parity, and word length are selected by operator control for both ports.

Hardware Required: Intellec 220/230

Software Required: ISIS II

Registers Modified: All. Required: RAM/2K; ROM/2K; BLOCKS/75

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG24, INITIALIZE: BAUD RATE

Submitted by: Jon Luckey, Imlac Corporation, Needham MA

Abstract: This program sets baud rates on TTY0 and TTY1 of Intellec Model 230.

Hardware Required: Intellec with 8251/8253

Software Required: ISIS II, calls, CI, CO, exit

Registers Modified: All. Required: RAM/650 bytes; BLOCKS/81

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG25, BAUD RATE: MODIFY

Submitted by: Dave Mabry, Chrysler Corporation, Highland Park MI

Abstract: This program takes input from the system console for the baud rate to be selected on serial ports 1 or 2 of an Intellec Series II Microcomputer Development System. After setting the baud rate it returns to ISIS.

Hardware Required: Series II or Series III with 32K bytes of RAM

Software Required: ISIS II, V3.4 or later, or ISIS III

Registers Modified: All. Required: RAM/758 bytes; ROM/none; BLOCKS/85

Programming Language: ASM-80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG26, BAUD RATE: MODIFY UNDER CP/M

Submitted by: Dave Mabry, Chrysler Corporation, Highland Park MI

Abstract: This program takes input from the system console for the baud rate to be selected on serial ports 1 or 2 or an Intellec Series II Microcomputer Development System. The program is identical to Insite Program # BG25, except that it has been modified to run under the CP/M-80 operating system.

Hardware Required: Series II or Series III with 32K bytes of RAM

Software Required: CP/M-80, V2.2 or later

Registers Modified: All. Required: RAM/590 bytes; ROM/none; BLOCKS/164

Programming Language: ASM. Assembler/Compiler: CP/M-80 ASM, V2.2

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG27, COPY: DISKETTE

Submitted by: Larry Malchodi, Boeing Comm., Airplane Co., Seattle WA

Abstract: This program creates copies of floppy disks in three minutes with subroutines to: -Initialize disk to ISIS format; -Copy all data from disk drive 0 to drive 1; -Verify data on disk drive 1.

Hardware Required: Intellec system with 2 single density disk drives and console.

Software Required: ISIS II

Required: BLOCKS/72

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG28, COPY: DISK

Submitted by: M.R. Bankston, UTL Corporation, Plano TX

Abstract: This is a fast disk copy routine that formats, copies, and verifies single or double density floppy disks on single or multiple drive systems (does not work with the integrated drive in the Intellec 220/225).

Hardware Required: Intellec Model 800/220/230 with 1 or more external disk drives; CRT console

Software Required: Monitor

Required: RAM/48K minimum; ROM/none; BLOCKS/143

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG29, CLOCK: REAL TIME

Submitted by: J.L. Marcel LaLonde, Agriculture Canada, Ottawa, Ontario

Abstract: This program contains three routines: -Initialize system RTC and store data/time; -Display data/time; -Service RTC interrupts.

Hardware Required: Intellec, 8080-based; system real-time clock

Software Required: ISIS II, V2.2; monitor, V2.0

Registers Modified: All. Required: RAM/580 bytes; BLOCKS/45

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG30, CLOCK: 8748 CLOCK AND LCD TACHOMETER

Submitted by: Gary Heckendorn, Intel Corporation

Abstract: This program is designed to operate an 8748 and LCD as a 12 hour clock and a digital tachometer in either solid state ignition automobiles or point/condenser automobiles.

Hardware Required: As documented by schematic.

Software Required: ASM48

Required: ROM/an 8748; BLOCKS/55

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG31, CLOCK: MICRO/SYS MC1460 REAL TIME CLOCK BOARD UTILITIES

Submitted by: Wade Noxon, Lucas Inc., Little Rock Arkansas

Abstract: This program consists of utilities for the Micro/Sys MC1460 Real Time Clock Board under iRMX-80, along with a demonstration program.

Hardware Required: Intellec 8080/8085-based; Micro/Sys MC1460 clock board

Software Required: ISIS II; iRMX 80

Required: BLOCKS/481

Programming Language: PL/M-80, Assembly. Assembler/Compiler: PL/M-80, V3.1; 8080/8085 Macro Assembler, V4.0

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG32, PRINT: HIGH SPEED PRINT UTILITY

Submitted by: K.P. Golden, DuPont Instruments, Wilmington DL

Abstract: This program supports 3 types of printer interfaces for high speed printing: 1) Intellec Model 800 uses standard hardware and monitor, 2) Intellec Series II version use standard hardware and monitor (if a special PCB is not installed); 3) Intellec Series II version uses special interface PCG and/or a special monitor. The routine is self-assigning. Series II drivers are used if needed; the special PCB is used if present.

Hardware Required: See abstract.

Software Required: See abstract.

Required: RAM/64K bytes; BLOCKS/111

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG33, CREDIT: USED ON MODIFIED HAZELTINE 1500

Submitted by: J. Abram, Summer Hill, Australia

Abstract: This program is put into two 2716 EPROMs in the HAZELTINE 1500 and allows the use of the standard Intel CREDIT program, modifying some HAZELTINE 1500 keys for use with CREDIT.

Hardware Required: HAZELTINE 1500

Software Required: UPM

Required: ROM/2 2716s; BLOCKS/424

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assebler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG34, PROCEDURES: PASCAL 86, SCREEN/CURSOR CONTROL

Submitted by: T. Schottle, EG&G Washington Analytical Services Center

Abstract: This program provides several Pascal procedures for screen control on the Series III CRT. These procedures may be included in a program by use of the files and read commands of CREDIT.

Hardware Required: MDS Series III

Software Required: Pascal 86

Registers Modified: None. Required: RAM/64K; ROM/none; BLOCKS/233

Programming Language: Pascal. Assembler/Compiler: Pasca 86, V1.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG35, BIT HANDLING: 8048

Submitted by: K. Murai, Mitsubishi Heavy Industries, Nagoya, Japan

Abstract: This is a functional subroutine package to facilitate bit setting and resetting in registers.

Hardware Required: 8048

Software Required: None

Required: RAM/none; ROM/102 bytes; BLOCKS/32

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG36, LINKAGE: SERIES III i8087 LINKAGE MODULES

Submitted by: Mike Silverstone, Brunswick Corporation, Costa Mesa CA

Abstract: This program consists of modules which link the interrupt output of the i8087 Numeric Data Processor on an iSBC-337 Multimodule Math Board installed on a Series III RPBB-86 board to the Fortran 86 and Pascal 86 exception handlers and the RUN program's default math exception handler (ISIS II RUN, V1.0 and 1.3, do not recognize the existence of an 8087 in the Intellec Series III). Included are modules compatible with the PL/M-86 small, compact, medium and large models for compilation.

Hardware Required: Series III Development System; iSBC-337 Multimodule Math Board

Software Required: ISIS II RUN 8086; any Series III resident language translator or cross-translator, ASM86

Registers Modified: All. Required: RAM/14 bytes; ROM/none; BLOCKS/130

Programming Language: ASM86. Assembler/Compiler: 8086/8087/8088 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG37, BRANCH: MCS-48 BRANCH TABLE ROUTINE

Submitted by: Andy Belton, Tech-Nel Data Products Ltd., England

Abstract: This routine performs a RELATIVE BRANCH, by adding an index in the ACCUMULATOR to the RETURN ADDRESS program counter. This routine is intended for large ON, GOTO type statements. Simple modifications of the routine will enable other types to be implemented.

Hardware Required: 8048 Microcomputer

Software Required: ISIS II, 8048 Assembler

Required: BLOCKS/30

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG38, COMMANDS: META-PROGRAMS

Submitted by: J. Kracht, Intel Corporation

Abstract: This PL/M-86 program subset will provide presentational and control data aids to anyone writing a repeated, menu-selection command.

Hardware Required: Intellec Series III; Intel CRT

Software Required: ISIS II; PL/M-86; LINK86; COMPAC.LIB

Registers Modified: None. Required: RAM/depends on usage; ROM/none; BLOCKS/88

Programming Language: PL/M-86. Assembler/Compiler: PL/M-86, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG39, INCREMENT: PROGRAM COUNTER

Submitted by: Phillip Weinstein, Hastings-On-Hudson, New York

Abstract: This program searches for the first occurrence or multiple occurrences of a character string within a file and increments the next integer it finds on the same line. It is most useful in SUBMIT control files for advancing program counters.

Hardware Required: Intellec 8085-based

Software Required: ISIS II

Registers Modified: All. Required: RAM/3K; ROM/5K; BLOCKS/290

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80 V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG40, COUNT: PROGRAM USAGE

Submitted by: Bernard J. Verreau, Intel Corporation

Abstract: This program, when linked to any 8080-based software, will keep a count of the number of times the program has been executed. It may be used to monitor program usage or to automatically delete a program after a given number of executions.

Hardware Required: Intel MDS

Software Required: PL/M-80, LINK, LOCATE, PLM80.LIB, SYSTEM.LIB

Registers Modified: All. Required: RAM/165 bytes; ROM/538 bytes; BLOCKS/118

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG41, RELOCATE

Submitted by: Newell D. Sanders, Fairview Park OH

Abstract: This program permits loading and executing object programs at new addresses without reassembly. The relocate program changes addresses references in the object program during the first execution of the user's program. The relocate program is not called during subsequent executions of the user's program.

Hardware Required: Intellec 8080-based

Software Required: User's object program

Registers Modified: All restored. Required: RAM/36; ROM/none; BLOCKS/22

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG42, CHANGE: LOAD ADDRESSES, iAPX-86/88 OBJECT FILE

Submitted by: John H. Hall, Eastman Kodak Co., Rochester NY

Abstract: This program changes the load addresses in an iAPX-86/88 absolute object file by a specified amount, allowing the code to be loaded at a different address from that at which it is to be executed. This is useful in multiprocessor environments, where the dual-port RAM of different processors is mapped onto different Multibus addresses to avoid addressing conflicts.

Hardware Required: Intellec Series II or III

Software Required: ISIS II

Registers Modified: All. Required: RAM/670H; ROM/none; BLOCKS/251

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG43, COPY: DISKETTE

Submitted by: J. Carr Taliaferro, S.A. Clark & Associates, Marion IA

Abstract: This program does a track-by-track copy of a diskette from drive :F0: to :F1:, placing a user-supplied date (in the form mmddyy) and three-character extension in the label area of the copied diskette. The user is offered the option of copying subsequent diskettes with the same label.

Hardware Required: Intellec Series II; double density drives (MDS-720) :F0: and :F1:

Software Required: None to execute; Software Toolbox libraries PFF.LIB and CUSP5.LIB to modify.

Registers Modified: All. Required: RAM/1993 bytes; RON/none; BLOCKS/142

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB, PFF.LIB, CUSP5.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG44, REPORT: STATUS OF EXPORTED JOB

Submitted by: Applications Engineering, Intel Corporation

Abstract: This program is an ISIS utility for use on a workstation of an NDS-II network system. It enables EXPORTed jobs to report progress to the user who exported the job.

Hardware Required: NDS-II workstation

Software Required: None

Required: BLOCKS/77

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG45, COPY iPDS CP/M-80 DISKETTE

Submitted by: Applications Engineering, Intel Corporation

Abstract: This program duplicates CP/M-80 formatted mini-diskettes on Intel's Personal Development System, informing the user beforehand of the number of disk swaps that will be necessary. It runs under the CP/M-80 operating system.

Hardware Required: iPDS

Software Required: iPDS CP/M-80

Required: BTYES/4K

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Media Availability (Price Code): DISKETTE (A), COM

BG46, DISPLAY: ISIS DIRECTORY UNDER CP/M

Submitted by: Paul Zahorosky, Products Unlimited, Garfield NJ

Abstract: This program allows a system running CP/M-80 to read and display the directory of an ISIS II formatted disk in Drive B.

Hardware Required: Intellec MDS-225x or any CP/M-compatible machine which reads 8" diskettes; single or dual disk drives (single-drive BIOS may prompt for disk swap)

Software Required: CP/M-80, V1.4 or 2.x

Registers Modified: All. Required: RAM/934 bytes; ROM/none; RECORDS/268

Programming Language: Assembly. Assembler/Compiler: CP/M Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, PRN, HEX, COM; SOURCE LISTING (L)

BG47, SWEEP: ISIS II GENERAL DISK FILE UTILITY

Submitted by: Richard Johnston, SCI Systems, Inc., Huntsville AL

Abstract: This is a menu-oriented program for manipulating ISIS disk files. File information can be displayed, files erased, files renamed, files copied or tagged for selective mass copy from one disk to another, allocated and remaining disk space displayed, and echo sent to serial or parallel printer.

Hardware Required: Series II or III Development System with optional printer

Software Required: ISIS Operating System

Registers Modified: All. Required: RAM/48K; ROM/none; BLOCKS/1281

Programming Language: PL/M-80 and ASM80. Assembler/Compiler: ISIS-II PL/M-80, V3.1; 8080/8085 Macro Assembler, V4.0

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ, LST, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

BG48, RUNOFF: ASCII TEXT FILE TO EPSON PRINTER

Submitted by: Joel Leider, Winchester Systems, Inc., Winchester MA

Abstract: This program enables the user to format ASCII text files for an EPSON printer by means of control characters embedded in the text.

Hardware Required: Intellec Series II, Series III, or Model 800; EPSON MX-80, MX-100, or other compatible printer

Software Required: ISIS II; BOOT/MONITOR V1.3

Registers Modified: All. Required: RAM/512 bytes; ROM/None; BLOCKS/59

Programming Language: ASM80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG49, PROCEDURES: PL/M-86 GENERAL PURPOSE LIBRARY

Submitted by: Leonard J. Kaufer, Intel Corporation

Abstract: This library contains thirty-seven procedures of general interest to the PL/M-86 programmer, including string handling number conversion, and most forms of standard input and output.

Hardware Required: Intellec Series II with at least 128K RAM

Software Required: PL/M-86 Compiler software, including LARGE.LIB, PLM86.LIB, E8087.LIB, PE8087

Required: RAM/128K; BLOCKS/2001

Programming Language: PL/M-86. Assembler/Compiler: Series III PL/M-86, V2.0

Libraries: LARGE.LIB, PLM86.LIB, E8087.LIB, PE8087

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG50, BAUD RATE: DETECTION AND SETTING ROUTINE FOR MCS-51

Submitted by: Douglas A. Fraser, Dartmouth College, Hanover NH

Abstract: This routine detects the baud rate of a terminal connected to the serial port of an 8051 and sets the 8051 baud rate timer to match the terminal. The routine is independent of crystal frequency, provided that the frequency chosen is an integer multiple of all required baud rates. It will also allow the 8051 to detect and lock onto many non-standard baud rates.

Hardware Required: 8051/8031/8751

Software Required: ASM51

Registers Modified: R0, DPTR, ACC. Required: RAM/None; ROM/96 bytes; BLOCKS/41

Programming Language: ASM51. Assembler/Compiler: ISIS-II MCS-51 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG51, RECOVER: LOST AEDIT FILES

Submitted by: Frank Zinghini, CHYRON Corporation, Melville NY

Abstract: This program recovers files that have been lost due to fatal crashes of the Series III text editor AEDIT. It enables the user to extract the file that was being worked on from the 86/12's memory (where it was stranded by the AEDIT crash) and copy it to a specified output file.

Hardware Required: Series III Development System

Software Required: Series III AEDIT Text Editor; RUN

Required: BLOCKS/194

Programming Language: PL/M-86. Assembler/Compiler: Series III PL/M-86, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG52, SEND: ISIS-iPDS FILES TO PRINTER VIA MODEMS

Submitted by: Lilyas Sahba, Intel Corporation

Abstract: This program transfers ISIS-format files from the iPDS to a serial printer via modems and telephone lines.

Hardware Required: iPDS; modems; 3-wire RS232C connection

Software Required: ISIS-iPDS, including program SERIAL

Registers Modified: All. Required: RAM/32K; RON/None; BLOCKS/236

Programming Language: ASM80. Assembler/Compiler: ISIS II 8080/8085 Macro Assembler, V4.1

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG53, SEND: CP/M-80 iPDS FILES TO PRINTER VIA MODEMS

Submitted by: Liliyas Sahba, Intel Corporation

Abstract: This program transfers CP/M-format files from the iPDS to a serial printer via modems and telepone lines.

Hardware Required: iPDS; modems; 3-wire RS232C connection

Software Required: iPDS CP/M-80

Registers Modified: All. Required: RAM/32K; ROM/None; BYTES/24K

Programming Language: ASM. Assembler/Compiler: iPDS CP/M-80 Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG54, DUMP: SCREEN

Submitted by: Dave Mabry, Chrysler Corporation, Royal Oak MI

Abstract: This program prints the contents of the Intel Series II/III integrator CRT to the list device or to any valid ISIS pathname.

Hardware Required: Series II/III Development System with iMDX-511 IOC firmware

Software Required: ISIS II or ISIS III (N)

Registers Modified: All. Required: RAM/4K; ROM/None

Programming Language: PL/M-80 and ASM80. Assembler/Compiler: PL/M-80, V4.0; 8080/8085 Macro Assembler, V4.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG55, CAPITALIZE: PL/M-86 KEYWORDS

Submitted by: Eric Linner, Eastman Kodak, Rochester NY

Abstract: This program takes a PL/M-86 source file as input and produces an output source file which has all PL/M keywords capitalized and non-keywords in lower case. This increases the readability of PL/M-86 programs without the tedious necessity of having to type keywords in caps and user identifiers in lower case. By editing an Assembly language file, the user can add to, or delete from, the list of keywords recognized by the program.

Hardware Required: Series III or IV Development System

Software Required: To execute: RUN. To add to/delete from PL/M keyword file: RUN, ASM86, LINK86

Registers Modified: All. Required: RAM/6465 bytes; ROM/None; BLOCKS/1394

Programming Language: PL/M-86, ASM86. Assembler/Compiler: Series III, PL/M-86 V2.3; Series III 8086/87/88/186 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG56, INFO: NDS-II FILE INFORMATION UTILITY

Submitted by: Jeff Lowe, Fellows Corporation, Springfield VT

Abstract: This ISIS-based program extracts and displays NDS-II file information, including file type, size, owner, access rights, and time/date 'stamps' (wildcard file specifications not allowed).

Hardware Required: NDS-II workstation

Software Required: ISIS III (N) or ISIS IV

Registers Modified: All. Required: RAM/312 bytes; BLOCKS/161

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V4.0

Libraries: PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG57, TREE: UTILITIES FOR SERIES IV OR NRM

Submitted by: Brian Valentine, Intel Corporation

Abstract: TREE enables the Series IV or NDS-II Network Resource Manager to 1) 'ARCHIVE' over the network that is ARCHIVE from NRM disks to local S-IV workstation floppies or Winchesters; 2) get DIR listings of a directory tree; 3) search a directory tree for a specified file; 4) delete a directory tree; 5) get the total size used on a disk for a particular user or directory tree

Hardware Required: Series IV or NDS-II

Software Required: iNDX, V2.0, V2.1, V2.5 or V2.8

Programming Language: C. Assembler/Compiler: Series II C86 Compiler, V1.0

Libraries: SMALL.LIB, SCLIB.LIB, OSXCOM.LIB

Media Availability (Price Code): DISKETTE (H), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG58, PRINT.86

Submitted by: Ron Daubenspeck, Intel Corporation

Abstract: This program allows Series II or Series IV users to expand TAB characters with 'n' number of spaces and to send the output to any pathname. The default output pathname is :LP: and the default for 'n' is 4.

Hardware Required: Series III or Series IV Development System

Software Required: iNDX S41, V2.6; or ISIS Operating System and RUN

Programming Language: PL/M-86, V2.3. Assembler/Compiler: Series III PL/M-86, V2.3

Libraries: SMALL.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG59, BAUD RATE: SET ISIS CLUSTER BOARD TO 300/1200 BAUD

Submitted by: DSSO Applications Engineering, Intel Corporation

Abstract: This is a PROM image on diskette, which, when programmed into an Intel 2732 EPROM, will give the ISIS cluster board a 300 or 1200 baud serial interface, allowing the connection of a modem to the board (Standard ISIS cluster board runs at 9600 to 19200 baud).

Hardware Required: 2732 EPROM; PROM programming capability

Software Required: ISIS III (C), V2.0 or greater

Media Availability (Price Code): DISKETTE (B), ABS.OBJ

BG60, DISK DRIVES: REMAP

Submitted by: William J. Hinkle, Comtec, Inc., Twinsburg OH

Abstract: This program enables the user of an Intellec Series II or MDS-800 to transparently remap all disk drive references to other physical drives, as specified by a table (e.g., all references to :F1: could be addressed to physical drive :F7:). This is useful where, for example, the user wants different hardware configurations to appear the same so that the same INCLUDE and CSD files can be used, or where it is desired that DML hard disk drives should look like floppies.

Hardware Required: Series II or MDS-800

Software Required: ASM80.

Registers Modified: All. Required: RAM/512 bytes; ROM/None; BLOCKS/5

Programming Language: ASM80. Assembler/Compiler: ASM80, V4.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG61, PRINTS: SERIES IV/NDS-II PRINT SPOOLER PROGRAM

Submitted by: Chris Feetham, Intel Corporation

Abstract: This program provides a print spooler that supports a serial or parallel printer or spool-to-disk-file for stand-alone Series IV users or for Series II, III, IV or ISIS Cluster board users on the NDS-II network. Using a special SERVER prom, via the prom image supplied, the program can support a serial printer connected directly to an ISIS Cluster board. The program keeps a log of all activity, including error messages, initialization defaults, and information about each file printed (Since the program is ISIS-based, output filenames must conform to ISIS naming conventions).

Hardware Required: Stand-alone Series IV, or Series II/III/IV/ISIS Cluster on NDS-II

Software Required: ISIS and ISIS overlays (.OVO, .OV1, .OV2)

Programming Language: PL/M-80. Assembler/Compiler: ISIS-II PL/M-80, V4.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

BG62, BVCLIB: C SOURCE LANGUAGE FUNCTIONS

Submitted by: Brian Valentine, Intel Corporation

Abstract: BVCLIB is a library of C source functions that may be useful to any programmer using Intel's CC86 C compiler. It includes: -OPEN, CREAT, READ, WRITE, SEEK, and CLOSE (all Kernighan/Ritchie standard functions): -PARSE, STRTOK, and WMATCH string and command line parsers (WMATCHC is also a wildcard

parser); -Miscellaneous functions that convert C strings to PL/MUDI strings and vice versa, etc.

Hardware Required: Series III or IV

Software Required: Intel CC86 C compiler

Programming Language: C86. Assembler/Compiler: CC86 C compiler, V1.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; DOCUMENTATION

BG63, DIRECTORY: SERIES IV/NRM FILE INFORMATION

Submitted by: Brian Valentine, Intel Corporation

Abstract: This program prints, for a specified directory, the names of all directory files or data files contained within the directory and their: 1) owner; 2) size; 3) type (directory or data); 4) owner access rights; 5) World access rights; 6) creation date and time; 7) last modification date and time. Also included is a small object code program called ID.86 which returns the name of the current user to the console.

Hardware Required: Series-IV or NRM

Software Required: iNDX, V2.5 or greater

Programming Language: C86. Assembler/Compiler: CC86 C compiler, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, EXE; DOCUMENTATION

BG64, UTILITIES: iRMX BACKGROUND SUBMIT FACILITY AND NEW CLI

Submitted by: Mike Wright, Intel Corporation, Swindon England

Abstract: This program allows users to execute submit files in the background on an iRMX 86 R6.0 Ref. file.

Hardware Required: System 3XX

Software Required: iRMX 86 R6.0; PL/M-86, V2.3; iRUG utilities

Registers Modified: All.

Programming Language: PL/M-86.

Media Availability (Price Code): DISKETTE (E), SRC, OBJ; DOCUMENTATION

BG65, iRUG (iRMX USER GROUP) DISTRIBUTION DISKETTE

This program is no longer available through Insite. Contact the iRMX User's Group, iRUG, to obtain this software. Phone number is (503) 681-8080, x7038. Attention: Catherine Moon.

BG66, ISIS TO iRMX 86 FILE TRANSFER UTILITIES

Submitted by: John Hyde, Intel Corporation

Abstract: These utilities provide for ISIS to iRMX file transfer facilities. Users may read, write, dump and perform a directory on ISIS SS/SD 8" diskette.

Hardware Required: System 3XX

Software Required: iRMX 86 R6.0

Registers Modified: All.

Programming Language: PL/M-86.

Media Availability (Price Code): DISKETTE (D), OBJ; DOCUMENTATION

BG67, GENERAL INTERACTIVE MENU LIBRARY

This program is no longer available through Insite. Contact the iRMX User's Group, iRUG, to obtain this software. Phone number is (503) 681-8080, x7038. Attention: Catherine Moon.

BG68, DOSX UTILITIES iRMX/MS-DOS FILE TRANSFER UTILITIES

Submitted by: Intel Corporation

Abstract: DOSX provides the iRMX user with the capability to transfer MS-DOS programs from the 5 1/4" diskette to/from his target system.

Hardware Required: System 3XX

Software Required: iRMX 86 R6.0; PL/M-86

Registers Modified: All.

Programming Language: PL/M-86.

Media Availability (Price Code): DISKETTE (D), OBJ; DOCUMENTATION

BG71, UTILITIES: PDS BITBUS UTILITIES

Submitted by: Bob Wells, Intel Corporation

Abstract: This software package contains three programs useful in getting acquainted with DCM/Bitbus products. This software is included in the iPDS Bitbus Kit.

Hardware Required: iPDS-100, iPDS-120, iSBX-344, and iRCB-44/10

Software Required: ISIS-PDS, PL/M-51, iRMX510

Registers Modified: All. Required: RAM/ bytes; ROM/ ; BLOCKS/

Programming Language: PL/M-51 Assembler/Compiler: PL/M-51

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE; DOCUMENTATION

BG75, LINE PRINTER SPOOLER

Submitted by: Jean-Louis Dumont, Intel Paris

Abstract: This program spools files on a line printer through a Centronics or a serial interface in an iRMX 86 or 286 development system.

Hardware Required: iRMX 86 or 286/310 or 380

Software Required: iRMX 86, R6.5 or R7.1; iRMX 286, R 1.5

Media Availability (Price Code): DISKETTE (D), DOCUMENTATION

BG76, SDB CUSPS FOR iRMX 86

Submitted by: Jean-Louis Dumont, Intel Paris

Abstract: The SDB commands, like the system debugger, run under the human interface of an iRMX 86 operating system without stopping it.

Hardware Required: systems iRMX 86 or 286/310 or 380

Software Required: iRMX 86, R6.5 or R7.1

Media Availability (Price Code): DISKETTE (C), DOCUMENTATION

BG77, SDB CUSPS FOR iRMX 286

Submitted by: Jean-Louis Dumont, Intel Paris

Abstract: The SDB commands, like the system debugger, run under the human interface of an iRMX 286 operating system without stopping it.

Hardware Required: systems iRMX 286/310 or 380

Software Required: iRMX 286, R1.5

Media Availability (Price Code): DISKETTE (C), DOCUMENTATION

CHAPTER CA : MULTIFUNCTION MATH PACKAGES

CA1, MATH PACKAGE: FLOAT POINT

Submitted by: C.E. Ohme, Fremont CA

Abstract: This 8008 binary float point system contains subroutines for: -Addition; -Subtraction; -Multiplication; -Division; -Negation; -Absolute Value; -Test of floating point numbers.

Hardware Required: Intellec 8/MOD8, TTY: ASR-33

Software Required: Intellec 8/MOD8 Monitor, V1.0

Required: RAM/63; ROM/768 bytes; BLOCKS/437

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L); DOCUMENTATION

CA2, MATH PACKAGE: FLOATING POINT

Submitted by: O.C. Juelich, Rockwell International, Columbus OH

Abstract: This math package contains routines to calculate: -Square Roots; -Sine/Cosine; -Logarithm; -Arc Tangent; -Exponential Function; -Hyperbolic Sine/Cosine

Hardware Required: Intellec 8/MOD8; TTY:ASR-33

Software Required: Intellec 8/MOD8 Monitor; Insite #CA1

Registers Modified: All. Required: RAM/24; ROM/865 bytes; BLOCKS/641

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L); DOCUMENTATION

CA3, MATH PACKAGE: PL/M MULTIPLE PRECISION

Submitted by: J. Hiley, Vector Internation, Haasrode, Belgium

Abstract: This multiple precision twos complement arithmetic package includes routines performing: -Addition; -Subtraction; -Multiplication; -Division; -Decimal conversion.

Hardware Required: Intellec 8080-based

Software Required: Monitor

Registers Modified: All. Required: RAM/36 bytes; ROM/488 bytes; BLOCKS/94

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembly, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

CA4, MATH PACKAGE: DOUBLE PRECISION INTEGER

Submitted by: Gorge Woodley, Nels Anderson, Woodley Associates, Danville CA

Abstract: This math package contains routines performing: -Computation of sine/cosine of an angle; -Normalization of a 16-bit integer; -Division of a 32-bit integer by a 16-bit divisor to yield a 16-bit quotient; -Multiplication of a 16-bit integer for a 32-bit result.

Hardware Required: Intellec 8080-based

Software Required: Monitor

Registers Modified: All. Required: RAM/30; ROM/581 bytes; BLOCKS/153

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA5, MATH PACKAGE: FIXED AND FLOATING POINT

Submitted by: C.B. Falconer, Yale University, New Haven CT

Abstract: This math package contains routines performing fixed and floating point arithmetic functions, together with a demonstration program that performs algebraic evaluation (from left to right, with no operator precedence) and allows unlimited parenthesis nesting.

Hardware Required: Intellec 8080-based

Software Required: Monitor

Required: RAM/100 bytes; BLOCKS/317

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

CA6, MATH PACKAGE: FLOATING POINT

Submitted by: Dr. Keith J. Caserta, Proctor and Gamble Co., Cincinnati OH

Abstract: This math package contains routines performing: -Addition; -Subtraction; -Multiplication; -Division; -Negation; -BCD conversion.

Hardware Required: Intellec 8080-based

Software Required: Monitor; calling program

Registers Modified: All. Required: RAM/21; ROM/767 bytes; BLOCKS/122

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

CA7, MATH PACKAGE: FLOATING POINT

Submitted by: Richard Allen, Texas Microsystems, Inc., Houston TX

Abstract: This program is a floating point math system, providing the user with the equivalent of a full floating point instruction set for 8080 programs. Includes relocatable routines performing: -Addition; -Subtraction; -Multiplication; -Division; -Negation; -Absolute value; -Trigonometric function; -Integer/Fractional part; -Square root; -Log base E.

Hardware Required: Intellec 8080-based

Software Required: ISIS II

Required: BLOCKS/1971

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (D), SRC, SOURCE LISTING (L); DOCUMENTATION

CA8, MATH PACKAGE: FLOATING POINT UTILITIES FOR FPAL.LIB

Submitted by: J.C. Follansbee, J.F. Microsystems, Pasco WA

Abstract: iSBC 310 floating point system for use with single or multiple iSBC 80/20 processors. Interfaces CPU board with high-speed math board, SBC-310. Software is compatible with FPAL.LIB and may be used at the same time by the iSBC 80/20.

Hardware Required: iSBC 310; at least one iSBC 80/20; Multibus cardcage

Software Required: iSBC 80/20 Monitor, FPAL.LIB

Required: RAM and ROM/function dependent; BLOCKS/365

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Libraries: SYSTEM.LIB, FPAL.LIB, FPALX.LIB

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L); DOCUMENTATION

CA9, MATH PACKAGE: OPTIMIZED FLOATING POINT

Submitted by: Intel Corporation

Abstract: This math package contains the following routines: -Addition; -Subtraction; -Multiplication; -Division; -Squaring; -Square root; -Negation; -Float a 16-bit 2s complement integer; -PL/M interfacing; -Floating Point convert.

Hardware Required: Intellec system iSBC 80/10

Software Required: ISIS II

Required: RAM/35K; ROM/1206 bytes; BLOCKS/335

Programming Language: Assembly and PL/M. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0; PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA10, MATH PACKAGE: OPTIMIZED FLOATING POINT

Submitted by: S.N. Cope and S.E. Evans, Oxford University, Oxford England

Abstract: This math package contains routines that perform floating point arithmetic functions; -Arithmetic; -Subtraction; -Multiplication; -Division; -Squaring of numbers; -Square root (16-bit mantissa, 8-bit exponent). All routines are highly optimized using the minimum storage space for the highest speed.

Hardware Required: iSBC 80/10 or similar

Software Required: iSBC 80/10 P monitor or similar

Registers Modified: All. Required: RAM 1 bytes + stack; ROM/1055; BLOCKS/217

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA11, MATH PACKAGE: ARITHMETIC FUNCTIONS

Submitted by: D. Holden, Miltope, Plainville MA

Abstract: This math package contains routines performing multiple-precision arithmetic operations supporting, in memory-to-memory format: -Addition; -Twos complement; -Subtraction; -Shift left/right; -Multiplication; -Value set to 0; -Division.

Hardware Required: Any MCS-48 microprocessor

Software Required: N/A

Registers Modified: A, R0, R1, R2, R3, R4. Required: RAM/4 X data precision; ROM/150; BLOCKS/73

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembly, V2.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA12, MATH PACKAGE: DOUBLE PRECISION FLOATING POINT

Submitted by: Larry Brookwell and M Master, University of Ottawa Canada

Abstract: This math package expands FPAL.LIB to include double precision functions. It also works with Insite program # CA13.

Hardware Required: Intellec 8080-based; Diskette Operating System

Software Required: ISIS II; FPAL.LIB

Required: BLOCKS/672

Programming Language: Assembly. Assembler/Compiler: N/A

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA13, MATH PACKAGE: 8086 FLOATING POINT LIBRARY

Submitted by: Intel Corporation

Abstract: This single-precision math package for the 8086 is identical to FPAL.LIB for the 8085 in its functions. Your PL/M-80 program can be recompiled using PL/M-86 with no changes needed for the calls to FPAL (however, the program may not be located above 64K in memory).

Hardware Required: Intellec 8080-based

Software Required: MDS-311 8086 Software Support Package

Registers Modified: All. Required: RAM/6811 bytes; BLOCKS/147

Programming Language: PL/M.

Media Availability (Price Code): DISKETTE (B), OBJ

CA14, MATH PACKAGE: 8086 MULTIPLE PRECISION ARITHMETIC

Submitted by: Intel Corporation

Abstract: This math package includes 28 PL/M-86 callable procedures performing double-precision arithmetic functions and submit files for program set-up.

Hardware Required: Intellec 8086-based

Software Required: N/A

Required: BLOCKS/394

Programming Language: Assembly. Assembler/Compiler: MCS-86 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, DOCUMENTATION

CA15, MATH PACKAGE: MULTIPLY/DIVIDE

Submitted by: K. Bartlette, Acurex Corporation

Abstract: This math package contains two subroutines; -Multiplication of two 24-binary numbers yielding a 48-bit result; -Division of a 48-bit binary integer by a 24-bit binary integer.

Hardware Required: Intellec 8080-based

Software Required: N/A

Required: RAM/12 bytes; ROM/259 bytes; BLOCKS/43

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA16, MATH PACKAGE: 8231 ARITHMETIC PROCESSING UNIT

Submitted by: M. Goldberg/D. Mull, Hunterlab, Reston VA

Abstract: This package provides a floating point software driver for the Intel 8231 or AMD9511 arithmetic processing unit.

Hardware Required: Intel 8231 or AMD9511 APU

Software Required: N/A

Registers Modified: All. Required: RAM/21 bytes; ROM/1104 bytes; BLOCKS/102

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA17, MATH PACKAGE: 8231

Submitted by: R. Economos, Honeycomb Systems, Inc., Biddeford MN

Abstract: This program converts numeric data stored in a memory buffer to 8231 compatible floating point data. Converts floating point to ASCII-30H and stores it in the same memory buffer. Also, implements all 8231 math functions.

Hardware Required: 80/24 single board computer with SBX 331 multimodule

Software Required: none

Registers Modified: All. Required: RAM/41 bytes; ROM/1730 bytes; BLOCKS/90

Programming Language: Assembly. Assembler/Compiler: 8080 MDS Macro Assembler, V1.0

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L)

CA18, MATH PACKAGE: 8051

Submitted by: Terry Steeden, MCT Corporation, Roseville MN

Abstract: This program provides the four basic math functions, using packed BCD numbers. All four of the BCD math routines use the same registers for the initial data and answer.

Hardware Required: 8031-3, or any family member

Software Required: ASM51

Registers Modified: ACC, DPTR, R0, R1, R2. Required: RAM/2AH-5FH, data memory; ROM/226H any place in code; BLOCKS/363

Programming Language: Assembly. Assembler/Compiler: ASM51, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA19, MATH PACKAGE: RECURSIVE COMPUTATION OR MEAN AND STANDARD DEVIATION

Submitted by: J. Duits, SKF Engineering and Research Center

Abstract: This input program module is a statistical structure in which parameters are passed, and results and intermediate data are stored. All routines are fully reentrant and are not using any fixed variable RAM area.

Hardware Required: 8080/8085-based system

Software Required: PL/M-80, FPAL.LIB

Required: BLOCKS/63

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: FPAL.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA20, MATH PACKAGE: 8080/8085 FUNDAMENTAL SUPPORT PACKAGE (FSP)

Submitted by: Intel Corporation

Abstract: The Fundamental Support Package (FSP) is a set of application subroutines and functions a user can call from their 8080/8085 ASSEMBLY LANGUAGE, PL/M-80, or FORTRAN 80 programs. It offers a standard set of data structures and unified status and error reporting system. All FSP routines are reentrant and come in relocatable object form.

Hardware Required: 8080/8085-based system

Software Required: ISIS II, LINK, LOCATE

Programming Language: 8080/8085 Assembly; PL/M-80, FORTRAN 80 Assembler/Compiler: 8080/8085 Macro Assembler, V4.0, PL/M-80, V3.1 or FORTRAN 80, V2.1

Libraries: PLM80.LIB and/or F80RUN.LIB, F801SS.LIB, FPEF.LIB, FPAL.LIB

Media Availability (Price Code): DISKETTE (L), OBJ; DOCUMENTATION (EXTENSIVE)

CA21, MATH PACKAGE: HIGH-SPEED BINARY MATH PACKAGE FOR 8031/8051

Submitted by: B.M. Estes and T.T. Steeden, MCT Corporation, Roseville MN

Abstract: This program provides routines which perform the four basic math functions on binary numbers up to 3 bytes (24 places) in length. Answers are 3 bytes for addition and subtraction and 6 bytes for multiplication and division.

Hardware Required: 8031 or 8051

Software Required: 8051 Assembler

Registers Modified: Accumulator, B.PSW. Required: RAM/02H-0fH; ROM/168H; BLOCKS/63

Programming Language: ASM51. Assembler/Compiler: MCS-51 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA22, MATH PACKAGE: ARITHMETIC FUNCTIONS FOR MCS-48

Submitted by: Microcomputer Division, KLT Konsult AB, Vaxjo, Sweden

Abstract: This math package contains routines performing the four basic math functions on 24-bit operands, yielding 24-bit results. Other routines calculate square root from a 24-bit value, set a value to zero, and shift left/right one bit.

Hardware Required: MCS-48 based

Software Required: None

Registers Modified: R2-R7. Required: ROM/338 bytes; BLOCKS/127

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V4.2

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

CA23, GENERATE: STOCHASTIC VARIATES AND HISTOGRAMS

Submitted by: Olga Varalli, Bioteco S.P.A., Milan Italy

Abstract: This program generates pseudo-random numbers, generates normally distributed variates, produces a histogram array, and prints the current array.

Hardware Required: Intellec Series II; lineprinter

Software Required: FSP Machine routines of FSP (Insite program # CA20), print routine to output ASCII string to desired device

Required: RAM/DDH; ROM/50AH; BLOCKS/139

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA24, MATH PACKAGE: MULTIPLICATION, DIVISION AND BCD-BINARY BINARY-BCD CONVERSION FOR 8051

Submitted by: C. Holdaway, JC Systems, Inc., San Diego CA

Abstract: This is an 8051 Assembly Language package which can perform double-precision (32-bit) multiplication and division for PL/M-51. It also includes 8 and 16-bit binary-BCD and BCD-binary conversion. Associated routines enable the user to do calls from interrupt procedures using register bank 1 (easily modified for use with banks 2 or 3). PL/M-51 demo routines allow examination of functions under ICE-51.

Hardware Required: 8051-based

Software Required: ISIS, V4.3; PL/M-51, V1.1; PLM51.LIB, V3.0; calling program

Programming Language: ASM51; PL/M-51. Assembler/Compiler: ISIS-II MCS-51 Macro Assembler, V2.0; ISIS-II PL/M-51, V1.1

Libraries: PLM51.LIB

Media Availability (Price Code): DISKETTE (C), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CA25, LEFT/RIGHT INTEGER * 4 ROUTINES

Submitted by: R. Anderson, ABACAC Inc., Houston TX

Abstract: This code adds functions to be called from Fortran 86 or PL/M-86 which shift the integer * 4 variable to the left or right by in bits. When linked with the application code, they provide additional bits manipulation capability to the language.

Hardware Required: System 3XX

Software Required: iRMX 86 R6.0, PL/M-86, FORTRAN 86

Registers Modified: All.

Programming Language: ASM86.

Media Availability (Price Code): DISKETTE (A), OBJ; DOCUMENTATION

CA26, FFT ALGORITHM FOR THE MCS-96 FAMILY

Submitted by: Ira Horden, Intel Corporation

Abstract: This program performs the FFT algorithm on sampled data using the 8097 microcontroller. Also provides code for A to D sampling and a serial port printer plotting routine.

Hardware Required: 8097, Serial Printer

Software Required: ASM 96, RL-96

Registers Modified: All. Required: ROM 2K, RAM none

Assembler/Compiler: ASM 96

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, DOCUMENTATION

CHAPTER CB : ONE FUNCTION MATH ROUTINES

CB1, TRANSFORM: DISCRETE FOURIER

Submitted by: L.G. Durand, Institut de Recherches, Montreal, Quebec

Abstract: This program implements forward and inverse Fourier transform of a complex data vector. This subroutine executes an in-place, decimation-in-time, radix 2, Fast Fourier Transform algorithm originally written in FORTRAN by Cooley, Lewis and Welch.

Hardware Required: Intellec 8/MOD80

Software Required: Intellec 8/MOD80 Monitor; Insite Ref # CA1, CA2

Registers Modified: All. Required: RAM/517; ROM/887 bytes; BLOCKS/68

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CB2, GENERATE 16-BIT RANDOM NUMBER

Submitted by: V.A. Trujillo, Zot Manufacturing Co., Lakewood CO

Abstract: This subroutine generates a 16-bit random number ranging from 0000 to FFFF with a period less than or equivalent to 2**16. An 8-bit random number is available as the upper byte of the 16-bit random number.

Hardware Required: Intellec 8/MOD80; TTY; ASR-33

Software Required: Intellec 8/MOD80 Monitor

Registers Modified: None. Required: RAM/42 bytes; BLOCKS/17

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CB3, CALCULATION: LEAST SQUARES QUADRATIC FITTING

Submitted by: Dr. Keith J. Castra, Proctor and Gamble Co., Cincinnati OH

Abstract: This routine performs summations and matrix manipulation for fitting up to 256 floating point X-Y pairs.

Hardware Required: Intellec 8080-based

Software Required: Monitor; Insite program # CA6

Registers Modified: All. Required: RAM/2359; ROM/1380 bytes; BLOCKS/71

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

CB4, CALCULATION: NATURAL LOGARITHM

Submitted by: B. Hauert, Battelle Institute, Geneva Switzerland

Abstract: This routine computes the natural logarithm of a number between 1 and 65535.

Hardware Required: Intellec 8080-based

Software Required: Monitor

Registers Modified: PSW, H, L. Required: RAM/4; ROM/148 bytes; BLOCKS/17

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

CB5, CALCULATE: SQUARE ROOT

Submitted by: Intel Corporation

Abstract: This routine generates an 8-bit square root of a 16-bit number.

Hardware Required: Intellec 8048-based

Software Required: N/A

Required: RAM/4; ROM/96 bytes; BLOCKS/20

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

CB6, GENERATE: RANDOM NUMBER

Submitted by: K.K. Christian Knudsen, Data Industri, Oslo Norway

Abstract: This program generates uniform random numbers between 0 and user-specified limit. A multiplicative congruential method, based on overflow, is used.

Hardware Required: Intellec 8080-based

Software Required: Monitor

Required: RAM/251 bytes; BLOCKS/16

Programming Language: PL/M.

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L); DOCUMENTATION

CB7, GENERATE: GRAPH

Submitted by: Fernando Jordan, IPT - AIA, Sao Paulo Brazil

Abstract: This program plots up to 100 coordinates on the TTY (or console device), using 64 columns by 64 lines. All coordinates must be integer, positive, from 0 to 1023.

Hardware Required: Intellec Model 800; TTY

Software Required: Monitor, V2.0; Division Routine; BCD to binary conversion routine

Required: RAM/16K bytes; BLOCKS/36

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembly, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CB8, GENERATE: HISTOGRAM

Submitted by: R.A. Mikkelson, System Services, West Los Angeles CA

Abstract: This program will plot a histogram of numeric data between the limits of 00 to 100. It may be useful for graphical analysis distributions, signal quality, probability or any function which required analysis of incidence of data.

Hardware Required: Intellec 8080-based; TTY or lineprinter

Software Required: N/A

Registers Modified: All. Required: RAM/389; BLOCKS/31

Programming Language: Assembly. Assembler/Compiler: Microkit Assembler, V1.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

CB9, GENERATE: X-Y GRAPH

Submitted by: B. Verreau, Intel Corporation

Abstract: This program plots any expression consisting of constants, arithmetic operations, functions. The variable X may be evaluated over a specified range of X, and the resulting values are plotted on an X-Y coordinate map.

Hardware Required: iSBC-86/12A or Series II with 64K RAM, MDS or Hazeltine 1510 terminal

Software Required: Monitor

Registers Modified: All. Required: RAM/64K; ROM/none; BLOCKS/380

Programming Language: PL/M. Assembler/Compiler: PL/M-86, V1.0

Libraries: DCON87.LIB, CEL.LIB, 8087.LIB, EH87.LIB, 87NULL.LIB, E8087.LIB

Media Availability (Price Code): DISKETTE (D), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CB10, MULTIPLICATION: 8748 BCD

Submitted by: K. Heinrichs, Vaaka-Nyholm, Helsinki Finland

Abstract: This routine performs multiplication between a 6-digit and a 4-digit BCD value. The result is 10-digit.

Hardware Required: PROMPT-48

Software Required: PROMPT-48 Monitor

Registers Modified: R0 to R7 and R12 to R16. Required: ROM/61 bytes; BLOCKS/19

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

CB11, ADD AND SUBTRACT: BCD NUMBERS

Submitted by: Y. Hirsch, Lebow Associates, Troy MI

Abstract: These are subroutines which can be used in application programs in which the data is in BCD form. BCD numbers of any length can be added or subtracted, with sign.

Hardware Required: Any MCS-48 Processor

Software Required: None

Registers Modified: R0, R1, R2, R4. Required: RAM/N + 2; ROM/100 bytes; BLOCKS/38

Programming Language: Assembly. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

CB12, DIVISION: 32-BIT BY 16-BIT

Submitted by: F. Lee, UCLA

Abstract: This program divides a 32-bit by a 16-bit number and gives a 16-bit quotient along with a 16-bit remainder while requiring no RAM allocated for intermediate variables. All parameters are transformed through registers. All numbers are in twos complement representation.

Hardware Required: 8080/8085

Software Required: N/A

Registers Modified: All. Required: RAM/6 bytes of stack; ROM/86 bytes; BLOCKS/34

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

CB13, CALCULATE: SINE OR COSINE ROUTINE

Submitted by: R. Wien, EDO Corporation, Wichita KS

Abstract: This routine returns the SINE or COSINE of a 16-bit number.

Hardware Required: 8048 Microcomputer

Software Required: ISIS II

Registers Modified: R0, R1, R2, R3, R4, R6, R7. Required: RAM/2 bytes plus registers; ROM/151D; BLOCKS/28

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

CB14, MULTIPLICATION: 40-BIT

Submitted by: G. Godden, World Wide Weighing, Inc., Bellevue WA

Abstract: This routine will perform multiplication of a 20-bit BINARY number, yielding a 40-bit result.

Hardware Required: Applicable 8048 or 8049 target system

Software Required: N/A

Registers Modified: R0, R1, R2, R3, R4, R5, R6, R7. Required: RAM/25 bytes (DECIMAL); ROM/102 bytes (DECIMAL); BLOCKS/106

Programming Language: ASM48. Assembler/Compiler: MCS-48/UPI-41 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (B), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

CHAPTER D : GAMES

D1, GAME: MAZE

Submitted by: C. Vincent Phillips, Alkon Corporation, Columbus OH

Abstract: This program generates random mazes and prints them on the specified list device.

Hardware Required: Intellec 8080-based; Centronics-compatible line printer

Software Required: Monitor

Registers Modified: All. Required: RAM/2492 bytes; BLOCKS/72

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D2, GAME: MAZE

Submitted by: Dalibor Nemec, Praha-4, Michle, Czechoslovakia

Abstract: In this game a "mouse" makes its way through an invisible maze, mapping the maze when it bumps against the wall. The fewer bumps and steps, the higher the score.

Hardware Required: Intellec Model 800; Console Device: Mini Bee or Intel CRT

Software Required: Monitor

Registers Modified: All. Required: RAM/3.2K bytes; BLOCKS/82

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D3, GAME: BANDIT

Submitted by: P.G.R. Kitson, Marconi Radar Systems Ltd., New Parks England

Abstract: This game is a simulation of a one-armed bandit (slot machine). A static display on the VDU screen is produced.

Hardware Required: Intellec Model 800, CRT; Hazeltine 1200

Software Required: Monitor

Registers Modified: All. Required: RAM/2386 bytes; BLOCKS/85

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembly, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D4, GAME; FRUIT MACHINE

Submitted by: Andy Belton, Tech-nel Data Products, Ltd., Brackley England

Abstract: This game simulates a fruit machine.

Hardware Required: Intellec Series II

Software Required: Monitor

Required: RAM/1.1K bytes; BLOCKS/158

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V2.0

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D5, GAME: CRAPS

Submitted by: Van Herndon and Dave Yonich, J.M. Perry Institute, Yakima WA

Abstract: This game simulates a dice game of chance.

Hardware Required: SDK-80

Software Required: SDK-80 Monitor

Registers Modified: All. Required: RAM/20; ROM/1K bytes; BLOCKS/42

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D6, GAME: DARTS

Submitted by: Gerard L. Dooley, Plesesey Radar Ltd., Liverpool England

Abstract: This game is a dart game for two players. The dart board is displayed on the VDU. Throws are made by depressing a character on the console.

Hardware Required: Intellec 8080-based; CRT

Software Required: Monitor

Registers Modified: All. Required: RAM/32; ROM/1K bytes; BLOCKS/98

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D7, GAME: HANGMAN

Submitted by: Bernard J. Verreau, NCR Corporation, Millsboro DL

Abstract: This game is a word guessing game. The image of a gallows is constructed on the CRT, and the secret word appears as underlined blanks underneath. The player enters his guesses on the keyboard. A wrong guess causes a part to be added to the picture of the hanged man. The object of the game is to guess the word before the picture is completed.

Hardware Required: Intellec Model 800; CRT; Beehive Mini B-2 or Hazeltine 1510

Software Required: Monitor, V2.0

Registers Modified: All. Required: RAM/734 bytes; BLOCKS/52

Programming Language: Assembly. Assembler/Compiler: 8080 Macro Assembler, V1.1

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

D8, GAME: SLALOM, V1.4

Submitted by: U.E. Sporri, UEW Electronics and Software, Stallikon Switzerland

Abstract: This game simulates the Swiss Ski Championship World Cup.

Hardware Required: Intellec 8080-based

Software Required: ISIS II

Required: RAM/10K bytes; BLOCKS/182

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

D9, GAME: MASTERMIND

Submitted by: Intel Corporation

Abstract: This is a game of logic to be played on an SDK-86 and will be useful to SDK-86 users as examples of how to code 8086 programs. There are two versions of the program: -One is written in ASM86; -One is written in PL/M-86. You get both.

Hardware Required: SKD-86

Software Required: PL/M-86 or ASM86, LINK86, LOC86, OH86, SDKIOS.LIB

Registers Modified: All. Required: RAM/5K bytes; BLOCKS/96

Programming Language: PL/M or Assembly. Assembler/Compiler: MCS-86 Assembler

Media Availability (Price Code): DISKETTE (A), SRC, SOURCE LISTING (L)

D10, GAME: OTHELLO

Submitted by: P.J. Agius, Avery-Hardoll Ltd., Havant, Hampshire England

Abstract: This computer plays the game Othello with the operator.

Hardware Required: Intellec; CRT: lineprinter

Software Required: ISIS II

Registers Modified: All. Required: RAM/4912 bytes; BLOCKS/339

Programming Language: PL/M. Assembler/Compiler: PL/M-80, V3.0

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L)

D11, GAME: MUSIC FOR THE SDK-85

Submitted by: J.L. Beaven, Madrid Spain

Abstract: This program produces musical tones which can be configured to reproduce a piece of music. The speaker is energized using the 20mA current loop output of the SDK-85.

Hardware Required: SDK-85; speaker, resistor, capacitor

Software Required: Delay routine from Monitor

Required: RAM/37 bytes; BLOCKS/70

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Media Availability (Price Code): DISKETTE (A), SRC, LST; SOURCE LISTING (L); DOCUMENTATION

D12, GAME: TINY CHESS 86

Submitted by: J. Kuipers, Intel International, Belgium

Abstract: This program plays chess against the user itself. Includes a passant, castling, pawn promotion.

Hardware Required: Intellec system; SDK-86 with 4K bytes of RAM + download cable

Software Required: ISIS and SDK-86 (download program) + SDK-86 Monitor

Registers Modified: All. Required: RAM/4K bytes; ROM/none; BLOCKS/1306

Programming Language: Assembly. Assembler/Compiler: MCS-86 Assembler, X038

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

D13, GAME: BREAKOUT

Submitted by: P. Weinstein, Hastings NY

Abstract: This is a version of the popular "BREAKOUT" video game. The object is to break through a wall of bricks using a bouncing ball and a paddle. Three ball speeds can be selected.

Hardware Required: Intellec Series II or III

Software Required: ISIS-II

Registers Modified: All. Required: RAM/3K; ROM/none; BLOCKS/251

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

D14, GAME: POKER

Submitted by: M. Townsend, Intel Corporation

Abstract: This program plays a very good, generally conservative game of five-card draw poker. The computer will bet, raise, bluff, fold, and occasionally heckle the user.

Hardware Required: Series II or III

Software Required: BASIC-80, V1.1

Required: BLOCKS/238

Programming Language: BASIC-80. Assembler/Compiler: BASIC-80, V1.1

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

D15, GAME: BLACK BOX

Submitted by: R. Morgan, Intel Corporation

Abstract: The aim of this game is to locate five invisible balls hidden in an 8 X 8 matrix by probing the matrix from the sides, using probe balls that the player rolls in.

Hardware Required: Microcomputer Development System with Series II, Beehive, Hazeltine, or Omron terminal.

Software Required: ISIS II

Required: BLOCKS/1059

Programming Language: PL/M-80 and ASM80. Assembler/Compiler: PL/M-80, V4.0; 8080/8085 Macro Assembler, V4.1

Libraries: PLM80.LIB, SYSTEM.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ; SOURCE LISTING (L); DOCUMENTATION

CHAPTER E : TRAINING/TUTORIAL/MISCELLANEOUS

E1, SOURCE FILES: iAPX-86/88 SYSTEM WORKSHOP SUMMARY AND REVIEW

Submitted by: Charles Chernack, Los Altos CA

Abstract: This diskette contains source files of demonstration programs and laboratory exercises from the iAPX-86/88 System Workshop Summary and Review (manual supplied with diskette).

Hardware Required: Series III Development System; SDK-86; ICE-86

Software Required: ISIS II

Required: BLOCKS/436

Programming Language: ASM86, PL/M-86. Assembler/Compiler: MCS-86 Assembler, V1.0; Series-III PL/M-86

Media Availability (Price Code): DISKETTE (D), SRC; DOCUMENTATION

E2, SOURCE FILES: MCS-80/85 SYSTEM WORKSHOP SUMMARY AND REVIEW

Submitted by: Charles Chernack, Los Altos CA

Abstract: This diskette contains source files of demonstration programs and laboratory exercises for the MCS-80/85 System Workshop Summary and Review (manual supplied with diskette).

Hardware Required: Series II Development System; light-switch box

Software Required: ISIS II

Registers Modified: BLOCKS/894

Programming Language: ASM-80, PL/M-80. Assembler/Compiler: 8080/8085 Macro Assembler, V4.0; PL/M-80, V3.1

Media Availability (Price Code): DISKETTE (C), SRC; DOCUMENTATION

E3, MORSE CODE TUTOR V2.0

Submitted by: Hans Georg Giese, West Germany

Abstract: This program is a complete Morse code tutorial with 10 lessons and 4 pages of text.

Hardware Required: 8035 processor

Software Required: None

Registers Modified: None. Required: RAM/none, ROM 1K if no test, else up to 4K

Programming Language: Assembly. Assembler/Compiler: MCS-48 Macro Assembler, V4.0

Media Availability (Price Code): DISKETTE (A), SRC, HEX; SOURCE LISTING (L); DOCUMENTATION

E4, UTILITIES: TALK

Submitted by: Bernard J. Verreau, Intel Corporation

Abstract: This program is designed to return a predefined word or phrase in response to an input query. Individual replies are defined by first typing the input phrase and then the desired output. A variety of applications are possible, including language translation, information retrieval, and tutorials. A very compact data storage technique allows quick access to as many as 8000 different phrases in a 64K system.

Hardware Required: 8080/8085-based system

Software Required: Standard ISIS program software

Registers Modified: All. Required: RAM/16K minimum; ROM/1.2K; BLOCKS/839

Programming Language: Assembly. Assembler/Compiler: 8080/8085 Macro Assembler, V3.0

Libraries: SYSTEM.LIB

Media Availability (Price Code): DISKETTE (C), SRC, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

E5, UTILITIES: MENU

Submitted by: Dror Caspi and Ilan Spillinger, Technion, I.I.T., Haifa Israel

Abstract: This program is intended to enable the novice Series II or Series III user to invoke various ISIS II system commands and related programs, simply by means of choosing from a menu (and sub-menus) of options. The program quizzes the user for any necessary parameters, then constructs, displays, and executes the ISIS command.

Hardware Required: Intel Development System with 64K and Series II or III keyboard and CRT

Software Required: ISIS II; Intel Software Toolbox program CONSOL

Registers Modified: All. Required: RAM/64K; ROM/none; BLOCKS/3612

Programming Language: PL/M-80. Assembler/Compiler: PL/M-80, V3.1

Libraries: SYSTEM.LIB, PLM80.LIB

Media Availability (Price Code): DISKETTE (B), SRC, OBJ, ABS.OBJ; SOURCE LISTING (L); DOCUMENTATION

E6, CREDIT: TUTORIAL

Submitted by: Leonard Kaufer, Intel Corporation

Abstract: This is an easy four-lesson tutorial for users of Intel's CREDIT text editor. It begins with simple screen mode commands and advances to the various command mode features, including Find, Substitute, Block Copy and Block Move, command iteration, etc.

Hardware Required: Intel Development System

Software Required: ISIS II, CREDIT

Registers Modified: None. Required: RAM/none; ROM/none; BLOCKS/307

Programming Language: None; ASCII text files to be CREDITed

Media Availability (Price Code): DISKETTE (A), TEXT; DOCUMENTATION

E7, AEDIT: TUTORIAL

Submitted by: Bob Pryor, Intel Corporation

Abstract: This is a comprehensive, four-lesson tutorial for users of Intel's AEDIT-80 or AEDIT-86 text editors. It begins with simple cursor movement, insertion and deletion commands, and continues on to the more advanced commands, including Find, Replace, Again, Block delete, Block buffer, Block put, Get external file, 'Other' buffer, Set, Hex, etc.

Hardware Required: Any system capable of running AEDIT-80 or AEDIT-86

Software Required: AEDIT-80 or AEDIT-86

Required: BLOCKS/458

Programming Language: N/A (ASCII text files to be AEDITed)

Media Availability (Price Code): DISKETTE (A), TEXT; DOCUMENTATION

E8, SIMULATE: LIGHT BOX

Submitted by: Roy F. Carlson, Micro-Managers, Inc., Madison WI

Abstract: This routine provides a software simulation of the light box hardware used in Intel and other training seminars. Included is a test program wherein the system console serves as light box input and output.

Hardware Required: Series III MDS or other UDI system

Software Required: UDI system calls

Required: RAM/897 bytes; ROM/None; BLOCKS/163

Programming Language: PL/M-86. Assembler/Compiler: Series-III PL/M-86, V2.3

Libraries: LARGE.LIB

Media Availability (Price Code): DISKETTE (A), SRC, OBJ, ABS.OBJ; DOCUMENTATION

E9, COOKBOOK: FOR iSXM 552 IN AN iRMX 86 ENVIRONMENT

Submitted by: Simon Wong, Intel Corporation

Abstract: This cookbook allows the iRMX users to exercise the SXM 552 in an iRMX 86 system. It uses iNA 961 and demonstrates a simple communication.

Hardware Required: System 3XX, iSXM 552 kit (two systems needed for communications)

Software Required: iRMX 86 R6.0, iNA 961

Media Availability (Price Code): DISKETTE (F), SRC, OBJ; DOCUMENTATION

E10, NDS-II/SERIES IV/OpenNET TOOLBOX

Submitted by: Intel Corporation

Abstract: This package includes over 30 applications and engineering tools along with documentation to enhance the iNDX operating system.

Hardware Required: Either a NRM, Series IV, or a Compile Engine.

Software Required: At least Version 2.8 of the iNDX operating system (although some of the utilities require Version 3.1 or later of the iNDX operating sytem).

Registers Modified: All. Required: RAM/128K, ROM - Standard per development system.

Programming Language: C86 and PL/M-86. Assembler/Compiler: ASM-80/86

Media Availability (Price Code): DISKETTE (F), DOCUMENTATION

K286

Submitted by: Intel Corporation

Abstract: K286 is a set of software extensions to the architecture of the iAPX 286. You can use K286 directly as an operating system or as the basis for an operating system of your own design. Whether you are developing a simple or a complex system, K286 can significantly reduce your development time. Contact the nearest Insite office for details.

Media Availability (Price Code): DISKETTE (L); DOCUMENTATION

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Processor

☐ 8048/8051 ☐ 8080/8085 ☐ 8086/8087/8088/80186/80286 ☐ Other _____
Indicate the system the program was created on by checking the appropriate box, and identify other systems the program may be compatible with.

Program Title

Function

Required Hardware

Required Software

Input Parameters

Output Results

Registers Modified:	**Programmer:**
RAM Required:	**Company:**
ROM Required:	**Address:**
Maximum Subroutine Nesting Level:	**City:**
Assembler/Compiler Used:	**State:**
Programming Language:	**Telephone:**

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Were the author's comments accurate?	Yes ☐ No ☐
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Was the documentation sufficient?	Yes ☐ No ☐
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