Rockwell

RM 65-0122
RM 65 RUN-TIME BASIC INTERPRETER ROM

BASIC LANGUAGE

BASIC is a simple but powerful computer program language. Originally developed at Dartmouth University, BASIC has gained universal acceptance and is commonly used world-wide in schools, industry, and science.

The heart of BASIC is a set of easily learned English words which are used as commands. Complex and powerful statements can be constructed by adding operands and operators to the commands. Equations involving complex formulas and multiple variables can easily be solved. Internal floating point arithmetic handles a wide range of numeric values (2.93873588E−39 to 1.70141183E+38) and provides nine-digit accuracy to most calculations. In addition to addition, subtraction, multiplication and division, a full set of transcendental functions support trigonometric, exponential, square, square root, polynomial and logarithmic operations.

PRODUCT OVERVIEW

RM 65 Run-Time BASIC, consisting of input formatter, lister, interpreter, floating point functions and input/output linkage, is contained in an 8K-byte ROM that plugs into an RM65-1000 Single Board Computer (SBC) or RM65-3216 PROM/ROM module for development or run-time operation in the RM 65 environment. This run-time package allows an application program written in BASIC to be developed on an AIM 65 Microcomputer using its on-board peripherals (keyboard, single line display and printer) and ROM resident Debug Monitor and Text Editor and then transferred to the RM 65 module for run-time operation.

All input/output functions for use with RM 65 Run-Time BASIC are user-provided and link to the application program through one or more of the 10 I/O vectors provided in the run-time ROM. BASIC words such as LOAD, SAVE, PRINT, INPUT, READ and GET link through these vectors to the I/O functions.

The RM 65 Run-Time BASIC can be used in the development mode by user-provided AIM 65 equivalent input/output functions. In fact, the RM 65 Run-Time BASIC ROM can be installed on an RM 65 PROM/ROM module, the module connected to an AIM 65 Microcomputer, the I/O vectors loaded to point to AIM 65 Monitor ROM functions, then development and/or final program validation performed on the AIM 65 Microcomputer before transferring the application program object code to PROM/ROM.

LANGUAGE FEATURES

- BASIC is easy to learn
- Microsoft BASIC is universally accepted
- BASIC is widely used
- Supports simple and complex statements
- Floating point arithmetic functions
  - —Add, subtract, multiply, divide
  - —Trigonometric (sine, cosine, tangent, arctangent)
  - —Exponential, square, square root
  - —Natural logarithm
- String variables and arrays
- Integer variables
- Subroutine calls
- Conditional expressions
- User function

INTERPRETER FEATURES

- RM 65 Single Board Computer (SBC) module host and/or target
- ROM resident for immediate operation
- Compatible with indirect statements entered on AIM 65 Microcomputer with AIM 65 BASIC
- I/O vectors link to user-provided peripheral drivers

ORDERING INFORMATION

Part No.	Description
RM65-0122	RM 65 Run-time BASIC ROM
A65-020	AIM 65 BASIC ROMs
Order No.	**Description**
810	RM 65 Run-time BASIC User's Manual[1]
221	AIM 65 BASIC User's Manual[2]

Notes:
1. Included with RM65-0122.
2. Included with A65-020.

MEMORY MAP

Address (Hex)	Contents
$B000-$CFFF	BASIC Program
$248-$2DC	BASIC Input/Output Buffers
$218-$247	BASIC Variables
$200-$217	BASIC I/O Vectors
	BASIC Variables

PROM PROGRAMMING

The application program object code can be programmed into a PROM for operation in an OEM or end-user environment using an AIM 65 PROM Programmer & CO-ED module (A65-901) or an RM 65 PROM Programmer module (RM65-2901E) connected to the AIM 65 Microcomputer.

STATEMENTS

Program Statements	Commands	String Functions
DEF FN	CLEAR	ASC
DIM	CONT	CHR$
END	FRE	LEFT$
FOR	LIST	LEN
GOSUB	LOAD	MID$
GOTO	NEW	RIGHT$
IF . . . GOTO	PEEK	STR$
IF . . . THEN	POKE	VAL
LET	RUN	
NEXT	SAVE	**Arithmetic Functions**
ON . . . GOSUB		ABS
ON . . . GOTO	**Input/Output***	ATN
REM	DATA	COS
RESTORE	GET	EXP
RETURN	INPUT	INT
STOP	READ	LOG
USR	PRINT	RND
WAIT	SPC	SIN
	TAB	SGN
	POS	SQR
		TAN

*Input/output functions link through I/O vectors to user-defined functions.

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