



**Burroughs Corporation**



COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077

## PRODUCT SPECIFICATION

REV LTR	REVISION ISSUE DATE	APPROVED BY	REVISIONS
A	10/15/79	<i>Hick</i>	Original issue - Software Release Level Mark 9.0
B	4/14/81	<i>J. Hale</i>	Changes for MARK 10.0 Release 1-1 Updated "ICM FILES" section. 2-1 Major updates to "OPERATING PROCEDURES" section. 3-1 Updated "SYNTAX OVERVIEW". A-1 Added "<ICM name>" Error Message. B-1 Added "CARDS, REMOTE, and OUTPUT" Internal Files.

"THE INFORMATION CONTAINED IN THIS DOCUMENT IS CONFIDENTIAL AND PROPRIETARY TO BURROUGHS CORPORATION AND IS NOT TO BE DISCLOSED TO ANYONE OUTSIDE OF BURROUGHS CORPORATION WITHOUT THE PRIOR WRITTEN RELEASE FROM THE PATENT DIVISION OF BURROUGHS CORPORATION"

16

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

### TABLE OF CONTENTS

INTRODUCTION TO FORTRAN77 ANALYZER . . . . .	1-1
FUNCTION . . . . .	1-1
FEATURES . . . . .	1-1
ICM FILES . . . . .	1-1
RELATED DOCUMENTATION . . . . .	1-1
OPERATING PROCEDURES . . . . .	2-1
EXECUTION . . . . .	2-1
SWITCH SETTINGS AND I/O MODE SELECTION . . . . .	2-1
PROGRAM INPUT . . . . .	2-2
SUMMARY OF OPTIONS . . . . .	3-1
SYNTAX OVERVIEW . . . . .	3-1
ERROR MESSAGES . . . . .	A-1
INTERNAL FILES . . . . .	B-1

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

## INTRODUCTION TO FORTRAN77 ANALYZER

### FUNCTION

The program FORTRAN77 ANALYZER serves to analyze either a FORTRAN77 code file, a FORTRAN77 ICM file, or both of these files.

### FEATURES

#### ICM FILES

A FORTRAN77 ICM file is an intermediate code file generated by the control card image option SAVEICM. The following entities in FORTRAN77 generate an intermediate code module (ICM): the main program, a subroutine, a function, common block, or one or more FILE declarations. The file consists of a directory and one or more ICMs.

The directory records the number of ICMs, their names, and their locations in the file.

An ICM consists of a header describing information pertinent to the module, as well as the address and size information of the following parts of the module:

- Data (preinitialized data, code addresses to be resolved and symbol table information)
- the File Parameter Block (if any)
- the code (subroutine, function, or main program)
- the Reference Table (where in the code subroutines, functions, and common blocks are referenced)

### RELATED DOCUMENTATION

For further information on the structure of FORTRAN77 code and ICM files, refer to the FORTRAN77 S-LANGUAGE product specification 2222 2749.

**SECTION II**

**OPERATING PROCEDURES**

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

## OPERATING PROCEDURES

### EXECUTION

To execute the program use the following statement.

```
EX FORTRAN77/ANALYZER
```

### SWITCH SETTINGS AND I/O MODE SELECTION

```
-----  
| SW0      | Default = 0      |  
+-----+  
| SW0 = 0 | All input and output is to remote terminal |  
|         | except when output is directed to line |  
|         | by commands preceeded by "p" or "print". |  
+-----+  
| SW0 = 1 | All input is from CDT, using "ACCEPTS" and |  
|         | prompted by "DISPLAYS". All the output is |  
|         | to line printer. |  
+-----+  
| SW0 = 2 | Same as SW0 = 0 |  
+-----+  
| SW0 = 3 | All input is from card reader and all |  
|         | output to line printer. |  
+-----+  
| SW1      | Default = 0      |  
+-----+  
| SW1 = 0 | Page ejects insertec in output to line |  
|         | printer. |  
+-----+  
| SW1 = 1 | Page ejects suppressed. |  
+-----+
```

BURROLGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

### PROGRAM INPUT

The user provides options over remote terminal, ODT or card reader depending on the selected I/O mode (see SWITCH SETTING). In response to the command prompt ENTER FILE NAME, the user enters the following statement:

<Code file name or ICM file name>

This statement should be preceded by the mix number if the analyzer operates in ODT mode. Independent of the selected mode, the analyzer verifies the file name and either gives an error message or responds with the command prompt:

ENTER OPTIONS, NULL OR BYE TO STOP, OR HELP

If the user enters HELP, the analyzer provides a list of appropriate options according to the file type the user has indicated. These options determined the part of the code or ICM file to be analyzed.

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 FORTRAN77 ANALYZER  
 P.S. 2222 3077 (B)

The list of options displayed for a code file is:

PPB	Program Parameter Block
FPB	File Parameter Block
SC	Code Segment Dictionary
DC	Data Page Dictionary
DP [page number]	Data Page (one or all) *
LT [number or name]	Layout Table
CODE [number or name]	
ALL	All of the above
GET file_name	Get another file named file_name

\*If a page number is not specified, the default is all pages.

For an ICM file, the list of options displayed is:

ALL	Directory and all ICMs
DIRECTORY	Directory listing
an ICM name	ICM name to be analyzed
HEADER	ICM Header
DATA	ICM Data
FPB	ICM File Parameter Block
CODE	ICM Code
REF	ICM Reference Table
GET file_name	Get another file named file_name

Options are entered individually or serially. If entered serially, they are separated by commas and/or blanks.

If CODE is specified, it may be followed by either a code segment number, a code segment name, or the word ALL indicating that all code segments are to be analyzed. If CODE is entered without qualifications, the program prompts the user to enter more information.

If ICM is specified, only one name can be specified at a time. If qualifying options are not specified, the default is an analysis of the entire ICM.

To terminate the program, a bye or null entry is transmitted.



**SECTION III**

**SUMMARY OF OPTIONS**

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 FORTRAN77 ANALYZER  
 P.S. 2222 3077 (8)

SUMMARY OF OPTIONS

SYNTAX OVERVIEW

Note : /1 \ indicates crossing one time at most.  
 /1\* \ indicates crossing one time at least.

For FORTRAN77 code file,

		<code>&lt;blank character&gt;</code>	<code>----</code>	<code>/1* \</code>	<code>-----</code>
				<code>,</code>	<code>-----&gt;</code>
<code>[PERINT]</code>	<code>-----</code>				<code>-&gt;#</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>FPB</code>
					<code>-----&gt;</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>PPB</code>
					<code>-----&gt;</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>SC</code>
					<code>-----&gt;</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>DD</code>
					<code>-----&gt;</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>DP</code>
					<code>-----&gt;</code>
		<code>----</code>	<code>&lt;page number&gt;</code>	<code>-----</code>	<code>----</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>LT</code>
				<code>----</code>	<code>/1 \ &lt;segment number&gt;</code>
					<code>----</code>
				<code>----</code>	<code>/1 \ &lt;segment name&gt;</code>
					<code>----</code>
	<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>CODE</code>	<code>-----</code>
				<code>----</code>	<code>/1 \ &lt;segment&gt;</code>
					<code>number</code>
		<code>----</code>	<code>&lt;blank&gt;</code>	<code>-----</code>	<code>/1 \ &lt;segment&gt;</code>
		<code>character</code>			<code>name</code>
				<code>----</code>	<code>/1 \ ALL</code>
		<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>ALL</code>
					<code>-----</code>
	<code>----</code>	<code>/1 \</code>	<code>----</code>	<code>GET</code>	<code>-- &lt;file name&gt;</code>

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 FORTRAN77 ANALYZER  
 P.S. 2222 3077 (B)

For FORTRAN77 ICM file,

```

|<-- <blank character> -- /1*\ -----|
|----->--- , ----->-----|
|
|----->#
[PRINT]]----->#
|
|--- /1\ ---- DIRECTORY ----->|
|
|--- /1\ ---- <an ICM name> ----->|
|
|   -- <blank character> --
|
|-----> <blank character> ----- /1*\ -|----->|
|   |-----> , ----->-----|
|
|--- /1\ ----- HEADER ----->|
|
|--- /1\ ----- DATA ----->|
|
|--- /1\ ----- FPB ----->|
|
|--- /1\ ----- CODE ----->|
|
|--- /1\ ----- REF ----->|
|
|--- /1\ ---- ALL ----->|
|
|--- /1\ ---- GET -- <file name> ----->|

```

**APPENDIX A**

**ERROR MESSAGES**

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

## ERROR MESSAGES

"<segment name> : INVALID SEGMENT NAME. TRY AGAIN."

"<option name> : INVALID OPTION. TRY AGAIN."

"<page number> : PAGE NUMBER OUT OF BOUND. TRY AGAIN."

"<segment number> : SEGMENT OUT OF BOUND. TRY AGAIN."

"<token entered> : EITHER INVALID OPTION  
OR INVALID ICM NAME  
OR MORE THAN ONE ICM SPECIFIED."

"<ICM name> : ICM NOT FOUND"

"FILE MISSING : <file name entered>"

"INVALID FILE NAME"

"FORTRAN77 ICM OR CODE FILE REQUIRED"

**APPENDIX B**

**INTERNAL FILES**

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
81800/81700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

### INTERNAL FILES

File Name  
-----

Function  
-----

CODE  
LINE  
CARDS  
REMOTE  
OUTPUT

Disk file to be analyzed.  
Output file.  
Input file  
I/O file  
Switch file

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 FORTRAN77 ANALYZER  
P.S. 2222 3077 (B)

## INDEX

COMMAND PROMPTS 2-1  
CODE B-1

ERROR MESSAGES A-1  
EXECUTION OF PROGRAM 2-1

FEATURES 1-1  
FUNCTION OF PROGRAM 1-1

ICM 1-1  
INPUT 2-1  
INTERMEDIATE CODE MODULE 1-1  
INTERNAL FILES B-1  
INTRODUCTION 1-1

LINE B-1, 2-1

OPERATING PROCEDURES 2-1  
OPTICON DISPLAYS 2-3  
OPTICON ENTRY 2-3  
OPTICON SUMMARY 3-1

PAGE SKIPPING 2-1

RELATED DOCUMENTATION 1-1

SUMMARY OF OPTIONS 3-1, 2-3  
SWITCH SETTINGS 2-1  
SYNTAX OVERVIEW 3-1

TERMINATION OF PROGRAM 2-1