A MICROCOMPUTER SOFTWARE SYSTEM FOR THE AUTOMATIC REDUCTION OF GAMMA SPECTRAL DATA

by
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Dedicated to our baby

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Summarizing, it is believed that the program system written satisfies the requirements of the users at the Nuclear Science Center. Detailed descriptions of the programs are given in the next chapter, and the results obtained by their use during tests are shown in Chapter 4.

TABLE 4-2

COMPARISON OF KNOWN GAMMA ENERGIES
TO THOSE CALCULATED BY PROGRAM

TABLE 4-9

EXAMPLE RESULTS OF QUANTITATIVE ANALYSIS PROGRAM

APPENDIX A

CURRENT ENTRIES IN ISOTOPE LIBRARY

Cu-64
Cu-66
Cu-67
Dy-165
Dy-165m
Er-171
Eu-152
Eu-152
Eu-154
Eu-155
F-20
Fe-52
Fe-59

I-125
I-128
I-129
I-130
I-131
I-132
In-111
In-113m
In-114m
In-116m
Ir-192
Ir-194
K-40
K-42
K-43

40
6m
7

Sc-44
Sc-46
Sc-46m
Sc-47
Sc-48
Sc-49
Se-75
Sm-153
Sm-155
Sn-113
Sn-123m
Sn-125
Sn-125m
Sr-85
Sr-85m
Sr-87m
Ta-182
Tb-160
Tc-101
Tc-99m
Te-123m
Te-129
Te-131
Te-131m
Th-228
Ti-44
Ti-51
Tl-201
Tm-170
U-239
V-52
W-187
Xe-133
Y-48
Y-88
Y-90m
Yb-169
Yb-175
Zn-65
Zn-65m
Zr-95
Zr-97

Note: When finished, do the following:

1. Press the Home/Page button three times.
2. Remove all tapes from the system.
3. Turn the 4051, the 4924, and the 4631 off.

to be run. This program is

~DATA DUMP~

PUT THE SPECTRUM DATA TAPE IN THE 4051 INTERNAL TAPE DRIVE

Press RETURN to continue.

uctions
inst ompletely be p g

Do you want to

Do you want to g i

```
ARE YOU SURE ??? This will delete all or part
of the data now on the tape. YES

......OK....but remember you said to !
```

Yes or No. A Yes response causes the display on the next page.
A No response causes the program to be restarted.

nding

ed.

The user might wish to make a record of this equation for future reference.

This routine is usually the fastest 'peak search' to run.

p e peak-searched are

channel

Axis crossing : 1200,0
X tic interval : 80
Y tic interval : 23

```
......forget I asked.............
Enter spectrum file number. This must be an EVEN number : 10
Select full spectrum (FULL) or ROI (ROI) search : FULL
```

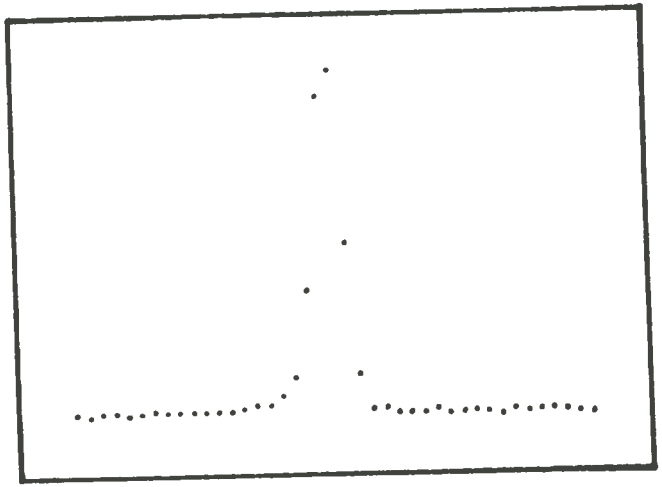
Here we show what occurs when the user declines the KEYBOARD ENTRY peak search option, selects to search the full spectrum rather than parts of it, and on the next page, selects a MANUAL eak search.

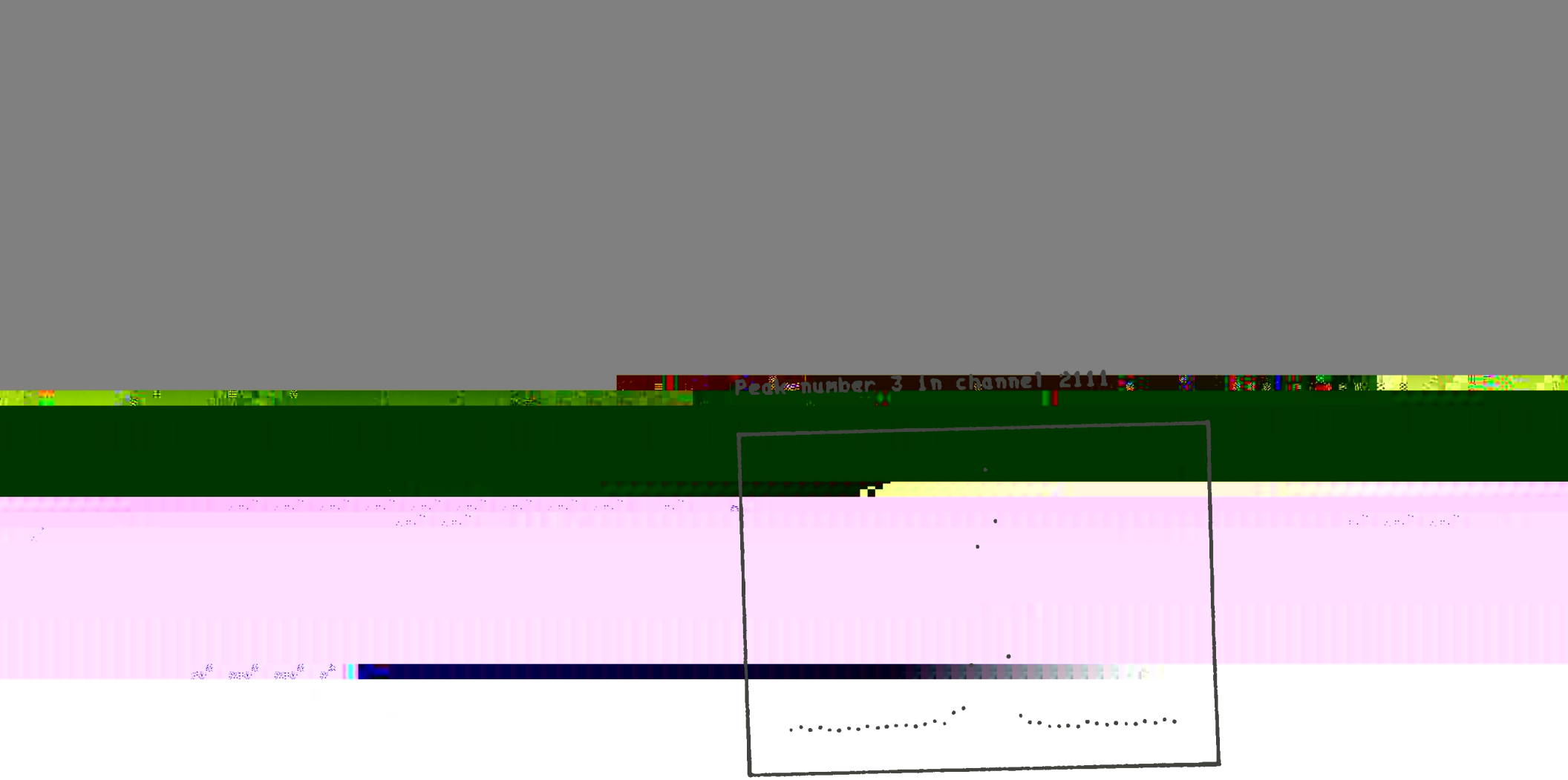
```
Do you w nt AUTO or MANUAL peak search ? MANUAL
```

Peak Number	Channel	Energy (KeV)	Peak Counts
1	511	510.870	187
2	610	609.966	152
3	911	911.259	86
4	1119	1119.461	65
5	1459	1459.791	234
6	1760	1761.084	25

Peak Number
1
2
3
4
5

Peak number 2 in channel 1510





Put the PROGRAM TAPE in the 4051 internal tape drive.

Press RETURN to continue.

The ROI select program terminates by automatically calling the program in file number 9 of the program tape.

No user input data is required by this program.

Note the message to the user indicating that the data tape scanned is full.

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