

```

EEEEEEEEEEEE XX   XX   AAAAAA MM   MM   PPPPPPPP LL   EEEEEEEEEEE SSSSSSSSS
EEEEEEEEEEEE XX   XX   AAAAAA MM   MM   PPPPPPPP LL   EEEEEEEEEEE SSSSSSSSS
EEEEEEEEEEEE XX   XX   AAAAAA MM   MM   PPPPPPPP LL   EEEEEEEEEEE SSSSSSSSS
EE           XX   XX   AA     AA  MMMM  MMMM  PP     PP  LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MMMM  MMMM  PP     PP  LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MMMM  MMMM  PP     PP  LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     PP  LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     PP  LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     PP  LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     PP  LL   EEEEEEEEEEE SS
EEEEEEEEEEEE XX   XX   AA     AA  MM   MM   PPPPPPPP LL   EEEEEEEEEEE SSSSSSS
EEEEEEEEEEEE XX   XX   AA     AA  MM   MM   PPPPPPPP LL   EEEEEEEEEEE SSSSSSS
EEEEEEEEEEEE XX   XX   AA     AA  MM   MM   PPPPPPPP LL   EEEEEEEEEEE SSSSSSS
EE           XX   XX   AAAAAAAAAA MM   MM   PP     LL   EEEEEEEEEEE SS
EE           XX   XX   AAAAAAAAAA MM   MM   PP     LL   EEEEEEEEEEE SS
EE           XX   XX   AAAAAAAAAA MM   MM   PP     LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     LL   EEEEEEEEEEE SS
EE           XX   XX   AA     AA  MM   MM   PP     LL   EEEEEEEEEEE SS
EEEEEEEEEEEE XX   XX   AA     AA  MM   MM   PP     LLLLLLLLLLLL EEEEEEEEEEE SSSSSSSSS
EEEEEEEEEEEE XX   XX   AA     AA  MM   MM   PP     LLLLLLLLLLLL EEEEEEEEEEE SSSSSSSSS
EEEEEEEEEEEE XX   XX   AA     AA  MM   MM   PP     LLLLLLLLLLLL EEEEEEEEEEE SSSSSSSSS

```

```

LL      AAAAAA  BBBB8888  IIIIII  000000  PPPPPPPP  EEEEEEEEEE  AAAAAA  KK      KK
LL      AAAAAA  BBBB8888  IIIIII  000000  PPPPPPPP  EEEEEEEEEE  AAAAAA  KK      KK
LL      AA      AA  BB      BB      II      00      00  PP      PP  EE      AA      AA  KK      KK
LL      AA      AA  BB      BB      II      00      00  PP      PP  EE      AA      AA  KK      KK
LL      AA      AA  BB      BB      II      00      00  PP      PP  EE      AA      AA  KK      KK
LL      AA      AA  BB      BB      II      00      00  PP      PP  EE      AA      AA  KK      KK
LL      AA      AA  BBBB8888  II      00      00  PPPPPPPP  EEEEEEEE  AA      AA  KKKKKK
LL      AA      AA  BBBB8888  II      00      00  PPPPPPPP  EEEEEEEE  AA      AA  KKKKKK
LL      AAAAAAAAAA  BB      BB      II      00      00  PP      AA      AA  KK      KK
LL      AAAAAAAAAA  BB      BB      II      00      00  PP      AA      AA  KK      KK
LL      AA      AA  BB      BB      II      00      00  PP      AA      AA  KK      KK
LL      AA      AA  BB      BB      II      00      00  PP      AA      AA  KK      KK
LLLLLLLLLL  AA      AA  BBBB8888  IIIIII  000000  PP      AA      AA  KK      KK
LLLLLLLLLL  AA      AA  BBBB8888  IIIIII  000000  PP      AA      AA  KK      KK

```

```

FFFFFFFFFF  000000  RRRRRRRR
FFFFFFFFFF  000000  RRRRRRRR
FF      00      00  RR      RR
FF      00      00  RR      RR
FF      00      00  RR      RR
FF      00      00  RRRRRRRR
FFFFFFFFFF  00      00  RRRRRRRR
FFFFFFFFFF  00      00  RR      RR
FF      00      00  RR      RR
FF      00      00  RR      RR
FF      00      00  RR      RR
FF      00      00  RR      RR
FF      000000  RR      RR
FF      000000  RR      RR

```

File: LABIOPEAK.FOR  
Version 'V04-000'

```

*****
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```

```

Program LABIO_PEAK
! This routine continuously samples channel #1 search for peaks.
! The sample rate is 1/TIC. It reports the PEAK height and position
! to logical channel 'LABIO_PEAK_DATA'

Include 'LABCHNDEF.FOR'

Parameter MBX_NAME = 'LABIO_PEAK'
Character*130 RETURN
Character*15 COMMAND
Character*24 DATE_TIME
Logical*4 SUCCESS,SYSSCREMBX

Parameter AD_CHANNEL = 1           ! Channel Number
Parameter AD_RATE = 1             ! Rate
Parameter AD_BUF_SIZE = 512       ! Buffer Size

Parameter MAX_PEAKS = 10
Integer*4 ITABLE(10),INLAST,INPTR,OUTPUT(2,MAX_PEAKS),IDIMO,NPEAKS
Integer*2 INPUT(AD_BUF_SIZE*2)

Data ITABLE/10*0/
Data INLAST,INPTR,IDIMO,NPEAKS/0,0,MAX_PEAKS,0/

! Map To the Global Data Base and the event flags

Call LABIO_INIT(0)

! Open Mailbox to LABIO_CONNECT

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!
!   Open ( Unit = 1, Name = 'LABIO_CONNECT' , Type = 'OLD' )
! Create Mailbox for response from LABIO_CONNECT
!   SUCCESS = SYSS$CREMBX(,MBX_CHANNEL,,%Val('FDOO'x),,MBX_NAME)
!   If (.not. SUCCESS ) Call FATAL_ERROR( SUCCESS, 'CREATING MAILBOX')
!
! Open via FORTRAN
!   Open ( Unit = 2, Name = MBX_NAME, Type = 'OLD' )
! Deassign the channel assigned when we created it
!   Call SYSS$DASSGN( %Val(MBX_CHANNEL) )
!
! Open A Data File
!   Open( Unit = 3, Name = 'LABIO_PEAK_DATA' ,Type = 'NEW' )
!
! Connect to the LABIO system
!   COMMAND = 'CONNECT'
!   Write(1,100) COMMAND,MBX_NAME
!
! Wait for Response from LABIO system
!   Read(2,200) RETURN_CODE,RETURN
!   If( RETURN_CODE .ne. 0 ) Go To 99      !Failed to connect!
!
! Allocate Channel AD_CHANNEL
!   Rate = AD_RATE
!   Buffer size = AD_BUF_SIZE
!
!   COMMAND = 'ALLOCATE'
!   Write(1,400) COMMAND,AD_CHANNEL,AD_RATE,AD_BUF_SIZE,0
!   Read(2,200) RETURN_CODE,RETURN
!   If( RETURN_CODE .ne. 0 ) Go To 99      !Failed to allocate!
!
! Enable data acquisition by setting event flag ACTIVITY and NOTIFY
!   Call SYSS$SETEF(%Val(EF_ACTIVITY_OFF+AD_CHANNEL))
!   Call SYSS$SETEF(%Val(EF_NOTIFY_OFF+AD_CHANNEL))
!
! Now, wait for buffer to be filled, event flag STATUS will be set
! when data are ready
!
!   Call SYSS$WAITFR( %Val(EF_STATUS_OFF+AD_CHANNEL) )
!
! Buffer is filled, get the buffer index
!
!   INDEX = AD_BLOCK(7,AD_CHANNEL)
!
! Move data from data buffer to peak processing buffer
```

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!CE

```

      Do 10 I = 1, AD_BUF_SIZE
10      INPUT(I+INLAST) = DATA_BUFFER(I,INDEX,AD_CHANNEL)
         INLAST = INLAST + AD_BUF_SIZE
! Clear the STATUS event flag and notify the I/O process
!
      Call SYSSCLREF( %Val(EF_STATUS_OFF+AD_CHANNEL) )
! (DEBUG) only
      Write (3,600) (DATA_BUFFER(I,INDEX,AD_CHANNEL),I=1,AD_BUF_SIZE)
! Call the peak processing routine
15      Call PEAK(I1ABLE,INPUT,INLAST,INPTR,OUTPUT,MAX_PEAKS,NPEAKS)
! Report the peak info
      PEAK_SWITCH = NPEAKS           !Remember the peak switch
      If( NPEAKS .ne. 0 ) Then       !We have some peaks
         If( NPEAKS .lt. 0 ) NPEAKS = MAX_PEAKS !WE have the max
         Do 20 I = 1, NPEAKS
20          TOTAL_PEAKS = TOTAL_PEAKS + 1 !One more
             Write(3,500) TOTAL_PEAKS,(OUTPUT(J,I), J = 1,2)
         End If
      NPEAKS = 0                     !Reset the pointer
      If( PEAK_SWITCH .lt. 0 ) Go To 15 !More peaks to find
! Move any unprocessed data to the beginning of the input array
      If ( (INPTR .gt. 0) .and. (INPTR .lt. INLAST) ) Then
30      Do 30 I = 1, INLAST-INPTR
         INPUT(I) = INPUT( INPTR+I ) !Move the data
         INLAST = I                 !Last element stored
      Else
         INLAST = 0
      End If
      INPTR = 0                      !Last element processed
! Go wait for more data
      Go To 5
! All done, Call the exit routine
99      Call EXIT(1)                 !Exit
100     Format(' ',A,A)
200     Format(12,A)
400     Format(' ',A,41)
500     Format(3110)
600     Format(15)
      End
![[End of File]

```

XALINK  
MAR

LABIOLINK  
COM

DRMASTER  
FOR

LPATEST  
FOR

LABIOSTR  
COM

XMESSAGE  
MAR

LABIOPEAK  
FOR

XATEST  
FOR

LBRDEMO  
COM

LABTOCOM  
FOR

LABMBXDEF  
FOR

MAILCOMPRESS  
COM

LABIOSAMP  
FOR

LABCHNDEF  
FOR

CONNECT  
COM

LABTOCON  
FOR

LBRDEMO  
FOR

PEAK  
FOR

DRCOPYBLD  
COM

XIDRIVER  
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LABTOSEC  
FOR

DRSLAVE  
FOR

LABTOACQ  
FOR

LABTOCOMP  
COM

LABIOSTAT  
FOR

TESTLABIO  
FOR