

**in**

<b>COLLABORATORS</b>
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	TITLE :  in		
ACTION	NAME	DATE	SIGNATURE
WRITTEN BY		March 28, 2025	

<b>REVISION HISTORY</b>
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NUMBER	DATE	DESCRIPTION	NAME

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# Chapter 1

## in

### 1.1 ModuleInformation

ShowModule v1.10 (c) 1992 \$#!  
now showing: "graphics/monitor.m"  
NOTE: don't use this output in your code, use the module instead.

```
(----) OBJECT monitorspec
(  0)   xln:xln (or ARRAY OF xln)
( 24)   flags:INT
( 26)   ratioh:LONG
( 30)   ratiov:LONG
( 34)   total_rows:INT
( 36)   total_colorclocks:INT
( 38)   denisemaxdisplaycolumn:INT
( 40)   beamcon0:INT
( 42)   min_row:INT
( 44)   special:PTR TO specialmonitor
( 48)   opencount:INT
( 50)   transform:LONG
( 54)   translate:LONG
( 58)   scale:LONG
( 62)   xoffset:INT
( 64)   yoffset:INT
( 66)   legalview:rectangle (or ARRAY OF rectangle)
( 74)   maxoscan:LONG
( 78)   videoscan:LONG
( 82)   denisemindisplaycolumn:INT
( 84)   displaycompatible:LONG
( 88)   displayinfodatabase:lh (or ARRAY OF lh)
(102)   didbsemaphore:ss (or ARRAY OF ss)
(148)   mrgcop:LONG
(152)   loadview:LONG
(156)   killview:LONG
(----) ENDOBJECT      /* SIZEOF=160 */

(----) OBJECT specialmonitor
(  0)   xln:xln (or ARRAY OF xln)
( 24)   flags:INT
( 26)   do_monitor:LONG
( 30)   reserved1:LONG
```

```

( 34)    reserved2:LONG
( 38)    reserved3:LONG
( 42)    hblank:analogsignalinterval (or ARRAY OF analogsignalinterval)
( 46)    vblank:analogsignalinterval (or ARRAY OF analogsignalinterval)
( 50)    hsync:analogsignalinterval (or ARRAY OF analogsignalinterval)
( 54)    vsync:analogsignalinterval (or ARRAY OF analogsignalinterval)
(----) ENDOBJECT      /* SIZEOF=58 */

(----) OBJECT analogsignalinterval
(  0)    start:INT
(  2)    stop:INT
(----) ENDOBJECT      /* SIZEOF=4 */

CONST STANDARD_VIEW_X=$81,
      STANDARD_VIEW_X=$81,
      STANDARD_VIEW_Y=$2C,
      STANDARD_VIEW_Y=$2C,
      REQUEST_SPECIAL=4,
      MSF_REQUEST_SPECIAL=4,
      MSB_REQUEST_SPECIAL=2,
      REQUEST_A2024=8,
      MSF_REQUEST_A2024=8,
      MSB_REQUEST_A2024=3,
      BROADCAST_BEAMCON=$808,
      SPECIAL_BEAMCON=$1B8A,
      STANDARD_PAL_BEAMCON=$20,
      STANDARD_NTSC_BEAMCON=0,
      VGA_TOTAL_ROWS=$83,
      STANDARD_PAL_ROWS=$138,
      STANDARD_NTSC_ROWS=$106,
      MSF_DOUBLE_SPRITES=16,
      MSB_DOUBLE_SPRITES=4,
      MIN_VGA_ROW=29,
      MIN_PAL_ROW=29,
      MIN_NTSC_ROW=21,
      STANDARD_MONITOR_MASK=3,
      BROADCAST_VBSTOP=$1C40,
      BROADCAST_VSSTOP=$54C,
      BROADCAST_HBSTOP=$27,
      BROADCAST_HSSTOP=23,
      VGA_VBSTOP=$CCD,
      VGA_VSSTOP=$235,
      VGA_HBSTOP=30,
      VGA_HSSTOP=28,
      STANDARD_VBSTOP=$1066,
      STANDARD_VSSTOP=$3AA,
      STANDARD_HBSTOP=$2C,
      STANDARD_HSSTOP=28,
      RATIO_FIXEDPART=4,
      VGA_DENISE_MIN=$3B,
      STANDARD_DENISE_MIN=$5D,
      RATIO_UNITY=16,
      REQUEST_NTSC=1,
      MSF_REQUEST_NTSC=1,
      MSB_REQUEST_NTSC=0,
      VGA_COLORCLOCKS=$71,
      STANDARD_COLORCLOCKS=$E2,

```

---

```
BROADCAST_VSSTRT=$2A6,  
BROADCAST_VBSTRT=0,  
BROADCAST_HSSTRT=6,  
BROADCAST_HBSTRT=1,  
VGA_VSSTRT=$153,  
VGA_VBSTRT=0,  
VGA_HSSTRT=14,  
VGA_HBSTRT=8,  
STANDARD_VSSTRT=$2A6,  
STANDARD_VBSTRT=$122,  
STANDARD_HSSTRT=11,  
STANDARD_HBSTRT=6,  
FROM_MONITOR=1,  
TO_MONITOR=0,  
STANDARD_YOFFSET=0,  
STANDARD_XOFFSET=9,  
REQUEST_PAL=2,  
MSF_REQUEST_PAL=2,  
MSB_REQUEST_PAL=1,  
STANDARD_DENISE_MAX=$1C7
```

```
#define VGA_MONITOR_NAME/0  
#define PAL_MONITOR_NAME/0  
#define NTSC_MONITOR_NAME/0  
#define DEFAULT_MONITOR_NAME/0
```