FreeBSD

Chapter 7 :

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: 2004   8   7

: 2005   3   8

: 1.0

FreeBSD Documentation Project   FreeBSD Handbook   2004   8

7   . FreeBSD Handbook   ,

, CVS Repository

.

,   .

.   KFUG(Korea FreeBSD Users Group)

,   KFUG

.

"FreeBSD Handbook"   "FreeBSD Documentation Project"   ,   "   FreeBSD

"   "   (Young-oak Lee)"   .

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KFUG   ,   .
.

7

7.1

FreeBSD

. FreeBSD   MPEG   3(MP3), WAV   Ogg
Vorbis

.   FreeBSD

MIDI   .

FreeBSD   DVD   .

.   FreeBSD   audio/sox

.

.

. **XFree86**(5   )

.

:

- .

- .

- .

- MP3   .

- **XFree86**   .

-                          /

- DVD, .mpg   .avi   .

- CD   DVD   .

                                                              :

- ●   (8   )

                XFree86 4.X   (x11/XFree86-4)   . **XFree86 3.X**
                                                                .

XFree86 3.X   .

                    :   CD   DVD   mount(8)
                                                            .   ISO-
                                                        .

7.2

7.2.1

                                      ,   PCI/ISA
        . FreeBSD   PCI   ISA
                                    pcm(4)   .
                                    .

- ● Crystal 4237, 4236, 4232, 4231
- ● Yamaha OPL-Sax
- ● OPTi931
- ● Ensoniq AudioPCI 1370/1371
- ● ESS Solo-1/1E
- ● NeoMagic 256AV/ZX
- ● Sound Blaster Pro, 16, 32, AWE64, AWE128, Live
- ● Creative ViBRA16
- ● Advanced Asound 100, 110, and Logic ALS120

- ES 1868, 1869, 1879, 1888
- Gravis UltraSound
- Aureal Vortex 1 or 2

.

.

kldload(8)   .

.   .

8   .

7.2.1.1 Creative, Advance   ESS

:

device pcm

PnP ISA   :

device sbc

PnP ISA   :

device pcm
device sbc0 at isa? port 0x220 irq 5 drq 1 flags 0x15

.   IRQ   .

sbc(4)   .

Note: FreeBSD
4.0   .   STABLE
.

7.2.1.2 Gravis

KFUG   ,   .
.

PnP ISA   :

device pcm
device gusc

PnP ISA   :

device pcm
device gus0 at isa? port 0x220 irq 5 drq 1 flags 0x13

                                    IRQ   .   gusc(4)
                    .

7.2.1.3

                                                                                         :

device pcm
device csa

7.2.1.4

PnP ISA   PCI   :

device pcm

                                        PnP ISA
                    :

device pcm0 at isa? irq 10 drq 1 flags 0x0

                                    IRQ   .

                    KFUG   ,   .
                                                    .

7.2.1.5 Onboard

:

options PNPBIOS

> **Note:** FreeBSD 5.0 *PNPBIOS* .
> .

7.2.2

/var/run/dmesg.boot :

 # grep pcm /var/run/dmesg.boot

pcm0: <SB16 DSP 4.11> on sbc0

. pcm

.

. 7.2.2.1 .

> **Note**: FreeBSD 5.0
> . 5.0 devfs(5) .

pcm0 root :

 # cd /dev
 # sh MAKEDEV snd0

pcm1 snd0 snd1 .

> **Note**: /dev/snd !

MAKEDEV :

/dev/audio	SPARC- .
/dev/dsp	.
/dev/dspW	/dev/dsp 16 bits .
/dev/midi	Raw midi .
/dev/mixer	.
/dev/music	2 sequencer .
/dev/sequencer	Sequencer .
/dev/pss	.

. CD-ROM   DVD-ROM

CD   cdrontrol(1)

:

% **cdcontrol -f /dev/acd0c play 1**

audio/workman   . MP3

audio/mpg123   .

7.2.2.1

unsupported subdevice XX	. .
sb_dspwr(XX) timed out	I/O .
bad irq XX	IRQ . IRQ IRQ .
xxx: gus pcm not attached, out of memory	.
xxx: can't open /dev/dsp!	fstat |grep dsp . **esound KDE** .

7.2.3

esound   artsd

.

FreeBSD   sysctl(8)   .

.

root   sysctl   :

 # sysctl hw.snd.pcm0.vchans=4
 # sysctl hw.snd.maxautovchans=4

4   .

hw.snd.pcm0.vchans   pcm0
    . *hw.snd.maxautovchans*   kldload(8)
      . pcm
hw.snd.maxautovchans

    .

devfs(5)   /dev/dsp0.*x*   .   *x*
hw.snd.pcm.0.vchans   4   0   3   .
devfs(5)   .

7.3 MP3

MP3(MPEG   3   )   CD   FreeBSD
                    .

7.3.1 MP3

                    XFree86 MP3   **XMMS**(X   )   . GUI   Nullsoft
Winamp   **Winamp**   **XMMS**   .   **XMMS**
              .

[7-1.bmp]

XMMS   multimedia/xmms   .

XMMS   .

    Winamp   **XMMS**   .

audio/mpg123   MP3   .

mpg123   MP3   :

 # mpg123 -a /dev/dsp1.0 Foobar-GreatestHits.mp3

High Performance MPEG 1.0/2.0/2.5 Audio Player for Layer 1, 2 and 3.

Version 0.59r (1999/Jun/15). Written and copyrights by Michael Hipp.

Uses code from various people. See 'README' for more!

THIS SOFTWARE COMES WITH ABSOLUTELY NO WARRANTY! USE AT YOUR OWN

RISK!

Playing MPEG stream from BT - Foobar-GreastHits.mp3 ...

MPEG 1.0 layer III, 128 kbit/s, 44100 Hz joint-stereo

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/dev/dsp1.0   dsp   .
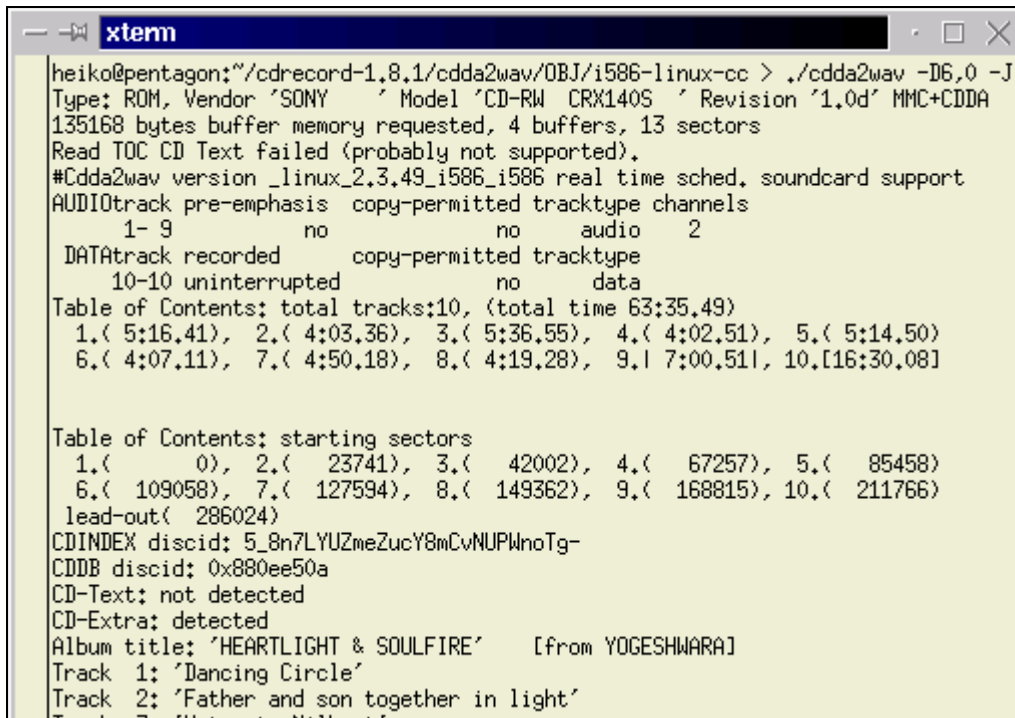
7.3.2 CD

CD   CD   MP3   CD
                              . raw CDDA(CD   )   WAV
       .

sysutils/cdrtools   cdda2wav   CD   CD
        .

[7-2.bmp]

        CD   (root   )   CD   (   )
WAV   :

cdda2wav -D *0,1,0* **-B**

cdda2wav   ATAPI(IDE) CDROM   . IDE   SCSI
                                    .   IDE   7
                        .

cdda2wav -D */dev/acd0a* -t 7

-D 0,1,0   cdrecord -scanbus   SCSI   0,1,0   .
                                                    -t   :

cdda2wav -D *0,1,0* -t 7

                        CDROM   7   .   1   7
                                    :

cdda2wav -D *0,1,0* -t 1+7

            dd(1)   ATAPI   .
16.5.5   .

7.3.3 MP3

            mp3   **lame**   . **Lame**   audio/lame   .
            WAV   audio01.wav   audio01.mp3   :

lame -h -b 128 \
--tt "Foo Song Title" \
--ta "FooBar Artist" \
--tl "FooBar Album" \
--ty "2001" \
--tc "Ripped and encoded by Foo" \
--tg "Genre" \
audio01.wav audio01.mp3

128 kbits   MP3   160   192

. MP3 . -h

" " . –t MP3

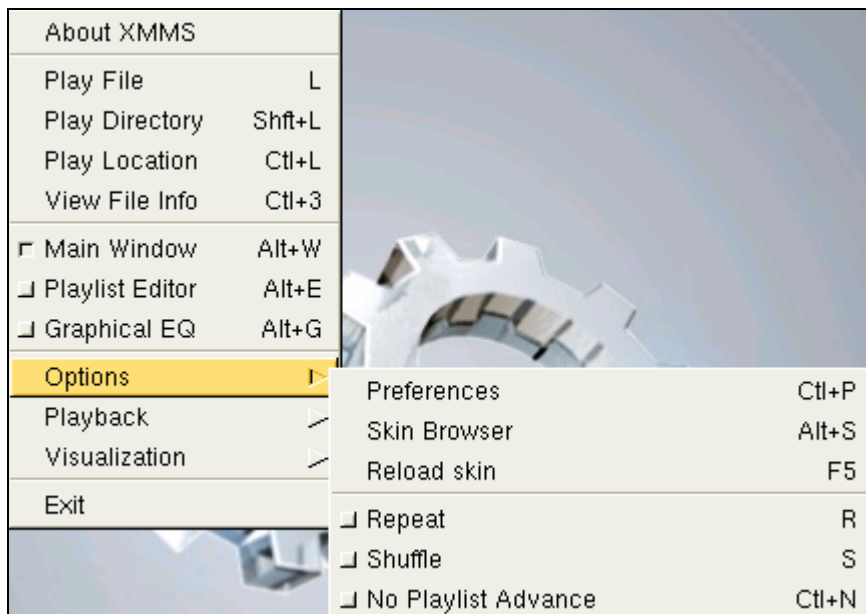ID3 . lame

.

7.3.4 MP3

MP3 CD WAV .

XMMS mpg123 MP3 .

XMMS .

[: XMMS]

1. **XMMS** .

   % **xmms &**

2. **XMMS** .

```
About XMMS
Play File                L
Play Directory          Shft+L
Play Location           Ctl+L
View File Info          Ctl+3
□ Main Window           Alt+W
□ Playlist Editor       Alt+E
□ Graphical EQ          Alt+G
Options              ▶      Preferences           Ctl+P
Playback                    Skin Browser          Alt+S
Visualization               Reload skin           F5
Exit                        □ Repeat              R
                            □ Shuffle             S
                            □ No Playlist Advance Ctl+N
```

[7-4.bmp]

3. *Options* *Preference* .
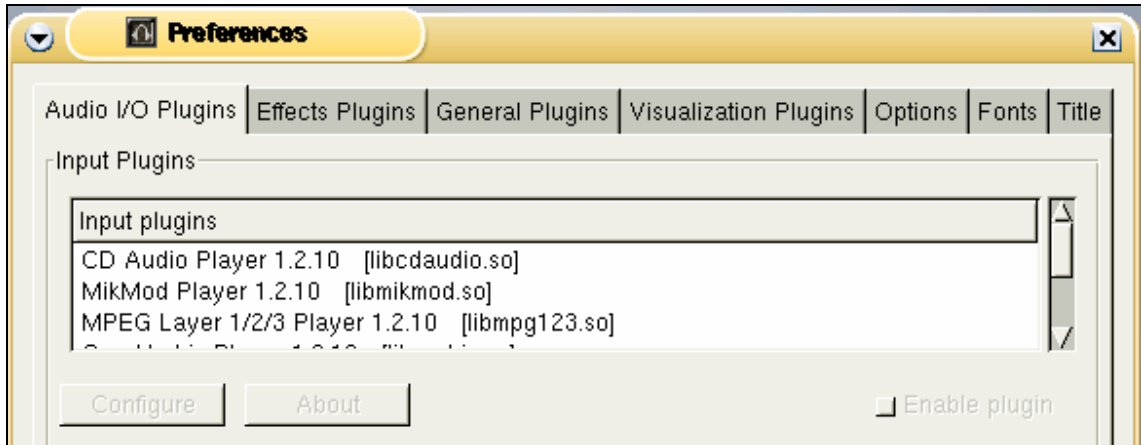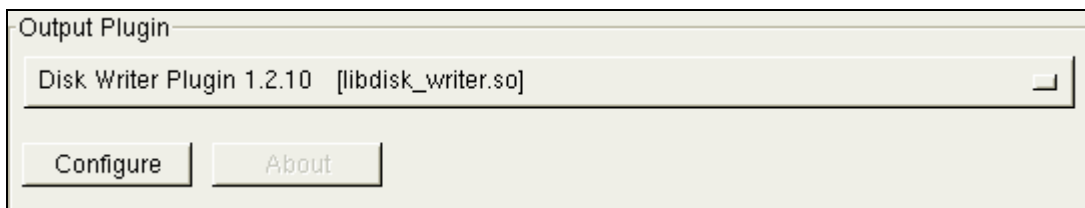

[7-5.bmp]
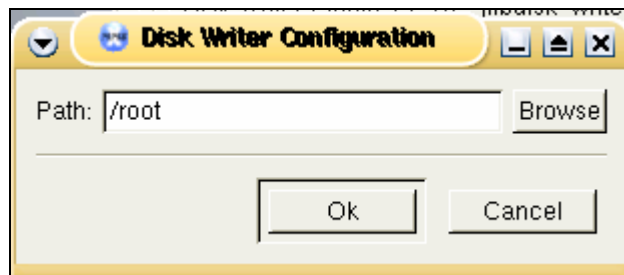
4. "Disk Writer Plugin" .

[7-6.bmp]

5. **Configure** .

6. ( ).

[7-7.bmp]

7. 　　　　　　100%, EQ 　　　　　　　　　　　　　　MP3 　　　　**XMMS** 　　　　　.

8. *Play* 　　　　　　**--XMMS** 　MP 　　　　　　　　　　　　　　　　. 　　　　　MP3

　　　　　　　　　.

[7-8.bmp]

9. MP3

　　　　　.

[　　　　　　　　　]

mpg123 　　　　　　　　　　　　　　　　　　　　　　　　.

% **mpg123 -s** *audio01.mp3* **> audio01.pcm**

XMMS 　WAV 　　　　　　　　　　　　　　**mpg123** 　MP3 　raw PCM

　　　　. 　　　　　**cdrecord** 　　　　CD 　　　　　　　　　　　. raw PCM

burncd(8) 　　　　　　　. WAV 　　　　　　　　　　　　　　　　　WAV

　　　　　　　　　　. **SoX** 　　　　　(audio/sox

　) WAV 　　　　　　　　　　　:

% **sox -t wav -r 44100 -s -w -c 2 track.wav track.raw**

FreeBSD 　　　CD 　　　　　　　　　　　16.6 　　　　　.

7.4

KFUG 　　　　　　　　　　　　，　　　　　　　　　　　　　　　.

.

.

.

XFree86

. X

, X11   xdpyinfo(1)   .

MPEG

.   DVD   DVD

/dev/devd   ,

:

ln -sf /dev/acd0c /dev/dvd

ln -sf /dev/racd0c /dev/rdvd

devfs(5)   FreeBSD 5.X   :

ln -sf /dev/acd0c /dev/dvd

ln -sf /dev/acd0c /dev/rdvd

devfs(5)

/etc/devfs.conf

:

link acd0 dvd

link acd0 rdvd

DVD-ROM   DVD   DVD

.

.

:

option CPU_ENABLE_SSE

option USER_LDT

Note: *option USER_LDT* FreeBSD 5.X .

X11   sysctl(8)   :

kern.ipc.shmmax=67108864
kern.ipc.shmall=32768

7.4.1

X11   .
                       .   .
X11   XFree86
                     .

                           :

      X11:   X11
      XVideo: X11 drawabel   X11
      SDL:
      DGA:
      SVGAlib:

7.4.1.1 XVideo
XFree86 4.X

    XVideo (Xvideo, Xv, xv   )   .
      (PIII 400 Mhz   )   .
                          :

    3DFX   3
      i810   i815
      S3 (/IX   /MX   )

                          . **XFree86 4.X**   xv

KFUG

. xvinfo   :

% **xvinfo**

XVideo   :

X-Video Extension version 2.2

screen #0

Adaptor #0: "Savage Streams Engine"

number of ports: 1

port base: 43

operations supported: PutImage

supported visuals:

depth 16, visualID 0x22

depth 16, visualID 0x23

number of attributes: 5

"XV_COLORKEY" (range 0 to 16777215)

client settable attribute

client gettable attribute (current value is 2110)

"XV_BRIGHTNESS" (range -128 to 127)

client settable attribute

client gettable attribute (current value is 0)

"XV_CONTRAST" (range 0 to 255)

client settable attribute

client gettable attribute (current value is 128)

"XV_SATURATION" (range 0 to 255)

client settable attribute

client gettable attribute (current value is 128)

"XV_HUE" (range -180 to 180)

client settable attribute

client gettable attribute (current value is 0)

maximum XvImage size: 1024 x 1024

Number of image formats: 7

id: 0x32595559 (YUY2)

guid: 59555932-0000-0010-8000-00aa00389b71

bits per pixel: 16

number of planes: 1

type: YUV (packed)

id: 0x32315659 (YV12)

guid: 59563132-0000-0010-8000-00aa00389b71

bits per pixel: 12

number of planes: 3

type: YUV (planar)

id: 0x30323449 (I420)

guid: 49343230-0000-0010-8000-00aa00389b71

bits per pixel: 12

number of planes: 3

type: YUV (planar)

id: 0x36315652 (RV16)

guid: 52563135-0000-0000-0000-000000000000

bits per pixel: 16

number of planes: 1

type: RGB (packed)

depth: 0

red, green, blue masks: 0x1f, 0x3e0, 0x7c00

id: 0x35315652 (RV15)

guid: 52563136-0000-0000-0000-000000000000

bits per pixel: 16

number of planes: 1

type: RGB (packed)

depth: 0

red, green, blue masks: 0x1f, 0x7e0, 0xf800

id: 0x31313259 (Y211)

guid: 59323131-0000-0010-8000-00aa00389b71

bits per pixel: 6

number of planes: 3

type: YUV (packed)

id: 0x0

guid: 00000000-0000-0000-0000-000000000000

bits per pixel: 0

number of planes: 0

type: RGB (packed)

depth: 1

red, green, blue masks: 0x0, 0x0, 0x0

(YUV2, YUV12   )   Xvideo

.

:

X-Video Extension version 2.2

screen #0

no adaptors present

XVideo   .

XVideo

.

.   7.4.3   .

7.4.1.2

SDL   Microsoft Windows, BeOS

. SDL   X11

.

SDL   devel/sdl12   .

7.4.1.3

X

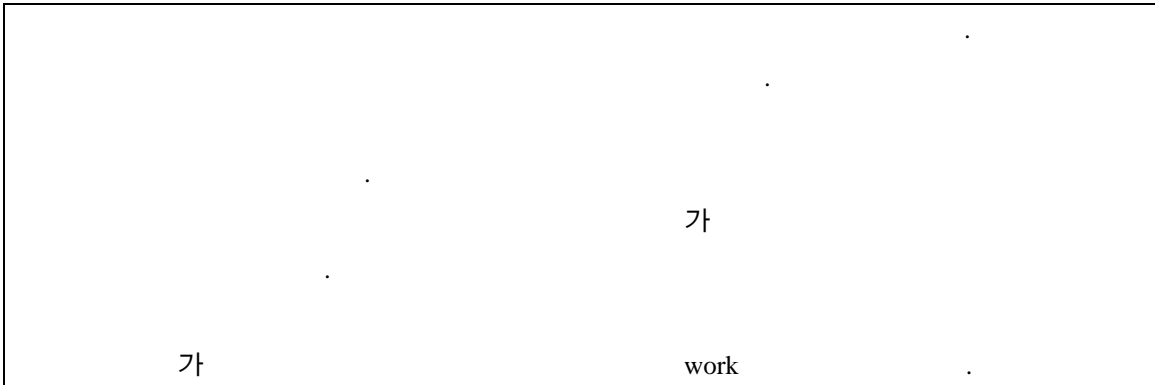XFree86   .

root   .

DGA   dga(1)   . dga

.   **q**   .

7.4.2

FreeBSD

.

.

FreeBSD

.

. FreeBSD

:

```
                                                       .
                                              .



                     .


           .




                                              work              .
```

"Linux-isms"   .

.

.

```
         /proc/cpuinfo                          .

                                                          .

                           FreeBSD

              .
```

.

KFUG   ,   .
                              .

7.4.2.1 MPlayer

MPlayer   . **MPlayer**

                                                                        .

                                                                        .

[: **MPlayer**   ]

---

1. MPlayer

 MPlayer   multimedia/mplayer   . **MPlayer**

                                                                        .

                                                        .

        make   .

cd /usr/ports/multimedia/mplayer

make

You can enable additional compilation optimizations

by defining WITH_OPTIMIZED_CFLAGS

You can enable GTK GUI by defining WITH_GUI.

You can enable DVD support by defining WITH_DVD.

You can enable SVGALIB support by defining WITH_SVGALIB.

You can enable VORBIS sound support by defining WITH_VORBIS.

You can enable XAnim DLL support by defining WITH_XANIM.

x11-toolkits/gtk12   GUI   .

            . **MPlayer**   DVD   (CSS   )   DVD

      .   :

make WITH_DVD=yes WITH_SVGALIB=yes

                    MPlayer   HTML   mplayer

            .   mencoder   . Makefile

KFUG   ,   .

이용할 수 있다.

MPlayer HTML   .

                            MPlayer   .

                                        MPlayer

       .

2.   MPlayer

MPlayer   .mplayer   .

                                    :

% **cd /usr/ports/multimedia/mplayer**

% **make install-user**

mplayer   HTML   .

                                    .

[7-9.bmp]

testfile.avi   *-vo*   :

% **mplayer -vo xv testfile.avi**

% **mplayer -vo sdl testfile.avi**

% **mplayer -vo x11 testfile.avi**

mplayer -vo dga testfile.avi

mplayer -vo 'sdl:dga' testfile.avi

          .

DVD testfile.avi *-dvd N DEVICE* . *N*

DEVICE DVD-ROM . /dev/dvd 3

:

mplayer -vo dga -dvd 2 /dev/dvd

, mplayer –h .

-framedrop -

fs -zoom .

mplayer .mplayer/conf

:

vo=xv
fs=yes
zoom=yes

mplayer DVD .vob . DVD

:

mplayer -dumpstream -dumpfile out.vob -dvd 2 /dev/dvd

out.vob MPEG .

7.4.2.1.3 mencoder

mencoder .

mencoder HTML .

HTML . ,

. . :

% **mencoder input.avi -oac copy -ovc copy -o output.avi**

mplayer .

mplayer *-dumpfile* .

KFUG

input.avi MPEG4 MPEG3 (audio/lame

.):

% **mencoder input.avi -oac mp3lame -lameopts br=192 **

-ovc lavc -lavcopts vcodec=mpeg4:vhq -o output.avi

mplayer xine .

input.avi *-dvd 1 /dev/dvd* DVD root .

.

[ ]

7.4.2.2 xine

xine

.

multimedia/xine .

Xine . **xine**
CPU XVideo . GUI
.

DVD CSS **xine**
. FreeBSD

MPlayer **xine**
. **xine** XVideo
.

xine .
:

% **xine**

    GUI   .

% **xine -g -p mymovie.avi**

7.4.2.3 transcode

transcode   .avi   .mpg
    . **transcode**   stdin/stdout
                  .

MPlayer   **transcode**   multimedia/transcode
        . make   :

make WITH_LIBMPEG2=yes

multimedia/avifile   *WITH_AVIFILE*   make
        :

make WITH_AVIFILE=yes WITH_LIBMPEG2=yes

    transcode   .
        openDIVX AVI   MPEG
        .

% **transcode -i input.vob -x vob -V -Z 320x240 **
-y opendivx -N 0x55 -o output.avi

% **transcode -i input.vob -x vob -V -Z 320x240 **
-y mpeg -N 0x55 -o output.tmp
% **tcmplex -o output.mpg -i output.tmp.m1v -p output.tmp.mpa -m 1**

transcode   tc*   (tcmplex   )
        . *–h*   .

transcode   mencoder

.   transcode   MPEG   Apple

QuickTime   .

7.4.3

FreeBSD   .

.   FreeBSD   A/V

FAQ

.

.

Mplayer   (http://www.mplayerhq.hu/DOCS/)   .

. **MPlayer**

.

xine   (http://dvd.sourceforge.net/xine-howto/en_GB/html/howto.html)

.

:

- multimedia/avifile   **Avifile**(http://avifile.sourceforge.net/)
- multimedia/ogle   **Ogle**(http://www.dtek.chalmers.se/groups/dvd/)
- **Xtheater**(http://xtheater.sourceforge.net/)

7.5 TV

7.5.1

KFUG   ,   .
.

TV   TV   .   RCA   S-
       FM   .

FreeBSD   bktr(4)   Brooktree Bt848/849/878/879   Conexant CN-878/Fusion 878a
                 PCI   TV   .
            bktr(4)   .

7.5.2

         /boot/loader.conf   bktr(4)
     :

bktr_load="YES"

       TV
     :

device   bktr
device   iicbus
device   iicbb
device   smbus

      12C   .
      .

                 .   TV
     :

```
bktr0: <BrookTree 848A> mem 0xd7000000-0xd7000fff irq 10 at device 10.0 on pci0
iicbb0: <I2C bit-banging driver> on bti2c0
iicbus0: <Philips I2C bus> on iicbb0 master-only
iicbus1: <Philips I2C bus> on iicbb0 master-only
smbus0: <System Management Bus> on bti2c0
bktr0: Pinnacle/Miro TV, Philips SECAM tuner.
```

       KFUG   ,   .

.

. sysctl(8) MIB

. Philips SECAM

:

options OVERRIDE_TUNER=6

sysctl(8)   :

 # sysctl hw.bt848.tuner=6

bktr(4)   /usr/src/sys/conf/NOTES
. (FreeBSD 4.X   /usr/src/sys/conf/NOTES   /usr/src/sys/i386/conf/LINT
)

7.5.3

TV   .

- <u>multimedia/fxtv</u>   TV   /   /   .
- <u>multimedia/xawtv</u>   **fxtv**   TV   .
- <u>misc/alevt</u>   Videotext/Teletext   .
- <u>audio/xmradio</u>   TV   FM
  .
- <u>audio/wmtune</u>   .

FreeBSD   .

7.5.4

TV   bktr(4)
. TV
freebsd-multimedia   (<u>http://lists.freebsd.org/mailman/listinfo/freebsd-multimedia</u>)
.

KFUG   ,   .
.