

NAME

mode2 - Show kernel output available for LIRC drivers

SYNOPSIS

mode2 --driver <driver> [--device <device>] [other options]

mode2 --raw --device <device> [other options]

mode2 --driver <driver> --list-devices

DESCRIPTION

The original purpose of this program has been to check operation of home-brew LIRC receiver hardware and to see the IR waveform of the remote controller without an expensive oscilloscope. Over time, **mode2** has evolved to a generic tool to check what kind of output the kernel makes available for lirc.

mode2 will simply print pulse and space lengths to stdout for drivers supporting LIRC_MODE_MODE2. For drivers supporting LIRC_MODE_LIRCCODE such as TV-cards and the irman driver writes the decoded, integer values.

From version 0.9.4, **mode2** can also list the devices available for a given driver. This requires enumeration support which is available in most but not all drivers.

When given the correct driver mode2 should always work. Without a driver, the --raw option should always work for /dev/lirc* devices. At the time of writing, usb devices also works in most cases. However, since it is tricky to get the path to the usb device, such ones are normally best accessed using a driver.

Not all drivers requires a device.

OPTIONS

-d --device=device

Read from given device.

-H --driver=driver

Use given driver.

-m --mode

Write pulse/space data as raw config files. Does not affect LIRCCODE drivers.

-s --scope=time

Enable 'scope like display with time us per char. Does not affect lircode drivers.

-k --keep-root

Don't drop root privileges after opening device. See RUNNING AS ROOT.

-l --list-devices

List all available devices for given driver. Requires support not present in all drivers.

-g --gap=time

Treat spaces longer than time as the gap. Time is in microseconds.

-r --raw

Access device directly. This is primarily intended to be used with kernel rc drivers i .e., when accessing /dev/lirc* devices. Using other devices might work, but is in general undefined.

-A --driver-options=key:value[|key:value...]

Set driver-specific option named key to given value.

-U --plugindir=directory

Load drivers from directory. See DRIVER LOADING.

-O, --options-file <path>

File containing default values for all options. A relative path is interpreted from current directory. See [FILES] below.

-D --loglevel=level

Determine the amount of logging information. [level] can be a symbolic syslog level: 'error', 'warning', 'info', 'notice' or 'debug'. lirc also defines three additional levels 'trace', 'trace1' and 'trace2' which gives even more messages ('trace2' bringing the most). However, in the log these messages are marked as 'debug'. The level can also be an integer in the range 3 (almost no messages) to 10.

-h --help

Display usage summary.

-v --version

Display version.

RUNNING AS ROOT

In many cases mode2 needs to run as root to access devices not available to regular users. On the other hand, running as root creates problems such as log files owned by root, security concerns etc.

In order to cope with this, mode2 by default drops root privileges after opening the input device. This support is based on that root permissions are acquired using sudo(1) e. g., using

```
$ sudo mode2 --raw /dev/lirc0
```

If not using sudo, the same behaviour could be accomplished using the SUDO_USER environment variable e. g.,

```
# SUDO_USER=$LOGNAME mode2 --raw /dev/lirc0
```

The --keep-root option will make mode2 to keep root privileges for the complete run.

EXAMPLES

Invoked with a MODE2 type driver with **mode2** prints space/mark timings:

```
al@snorken $ ./mode2 --driver default --device /dev/lirc0
```

```
Using driver default on device /dev/lirc0
```

```
Trying device: /dev/lirc0
```

```
Using device: /dev/lirc0
```

```
pulse 2750
```

```
space 800
```

```
pulse 500
```

```
space 350
```

```
pulse 550
```

```
space 350
```

```
pulse 550
```

Invoked with a LIRCCODE type driver **mode2** prints decoded values:

```
$ ./mode2 --driver atilibusb
```

```
Using driver atilibusb on device /dev/lirc0
```

```
Trying device: /dev/bus/usb/001/007
```

```
Using device: /dev/bus/usb/001/007
```

```
code: 0x14709b0000
```

```
code: 0x14709b0000
```

```
code: 0x14709b0000
```

```
code: 0x14709b0000
```

```
code: 0x14709b0000
```

```
code: 0x14709b0000
```

Invoked using **mode2 --list-devices** for the devinput driver with a single X10 RF usb device plugged in:

```
$ ./mode2 --list-devices --driver devinput
```

```
/dev/input/event12 [0bc7:0006] X10 WTI RF receiver vers: 1.10 serial: ?
```

```
/dev/input/by-id/usb-X10_WTI_RF_receiver-event-if00 -> ../event12
```

```
/dev/input/by-path/pci-0000:0b:00.0-usb-0:1:1.0-event -> ../event12
```

DRIVER LOADING

Drivers are loaded dynamically. The search path used for this is determined by (falling priority):

- The `--plugindir` option.
- The 'plugindir' entry in the [lircd] section of the `lirc_options.conf` file.
- The environment variable `LIRC_PLUGINDIR`.
- A hardcoded default (`/usr/lib/arm-linux-gnueabi/hf/lirc/plugins`).

ENVIRONMENT

LIRC_LOGLEVEL

Used as fallback when there is no `--loglevel` option present. Syntax is the same as for `--loglevel`, see `OPTIONS`.

FILES

`/etc/lirc/lirc_options.conf`

The options file holding default values for command line options in the [mode2] section. For some values including `debug`, `plugindir`, `driver` and `device` mode2 falls back to the [lircd] section if not found in [mode2].

The location of this file can be changed using the `-O/--options-file` command-line option or using the environment variable `LIRC_OPTIONS_PATH`.

`~/.cache/mode2.log`

Debug log. Setting the `XDG_CACHE_HOME` environment variable relocates this file to `$XDG_CACHE_HOME/mode2.log`. The amount of logging respects the `LIRC_LOGLEVEL` environment variable, defaulting to the `debug` value in `lirc_options.conf`.

SEE ALSO

[xmode2\(1\)](#)

[lirc\(4\)](#)

The documentation for **lirc** is maintained as html pages. They are located under `html/` in the documentation directory.