ioctl VIDIOC_ENUM_FREQ_BANDS

> **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-enum-freq-bands.rst, line 2`)**
>
> Unknown directive type "c:namespace".
>
> ```
>     .. c:namespace:: V4L
> ```

Name

VIDIOC_ENUM_FREQ_BANDS - Enumerate supported frequency bands

Synopsis

> **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-enum-freq-bands.rst, line 18`)**
>
> Unknown directive type "c:macro".
>
> ```
>     .. c:macro:: VIDIOC_ENUM_FREQ_BANDS
> ```

```
int ioctl(int fd, VIDIOC_ENUM_FREQ_BANDS, struct v4l2_frequency_band *argp)
```

Arguments

fd

   File descriptor returned by :c:func:`open()`.

   > **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-enum-freq-bands.rst, line 26`); *backlink***
   >
   > Unknown interpreted text role "c:func".

argp

   Pointer to struct :c:type:`v4l2_frequency_band`.

   > **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-enum-freq-bands.rst, line 29`); *backlink***
   >
   > Unknown interpreted text role "c:type".

Description

Enumerates the frequency bands that a tuner or modulator supports. To do this applications initialize the `tuner`, `type` and `index` fields, and zero out the `reserved` array of a struct :c:type:`v4l2_frequency_band` and call the :ref:`VIDIOC_ENUM_FREQ_BANDS` ioctl with a pointer to this structure.

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>
> Unknown interpreted text role "c:type".

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This ioctl is supported if the `V4L2_TUNER_CAP_FREQ_BANDS` capability of the corresponding tuner/modulator is set.

```
.. tabularcolumns:: |p{2.9cm}|p{2.9cm}|p{5.8cm}|p{2.9cm}|p{2.4cm}|
```

```
.. c:type:: v4l2_frequency_band
```

```
.. flat-table:: struct v4l2_frequency_band
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2 1 1

    * - __u32
      - ``tuner``
      - The tuner or modulator index number. This is the same value as in
        the struct :c:type:`v4l2_input` ``tuner`` field and
        the struct :c:type:`v4l2_tuner` ``index`` field, or
        the struct :c:type:`v4l2_output` ``modulator`` field
        and the struct :c:type:`v4l2_modulator` ``index``
        field.
    * - __u32
      - ``type``
      - The tuner type. This is the same value as in the struct
        :c:type:`v4l2_tuner` ``type`` field. The type must be
        set to ``V4L2_TUNER_RADIO`` for ``/dev/radioX`` device nodes, and
        to ``V4L2_TUNER_ANALOG_TV`` for all others. Set this field to
        ``V4L2_TUNER_RADIO`` for modulators (currently only radio
        modulators are supported). See :c:type:`v4l2_tuner_type`
    * - __u32
      - ``index``
      - Identifies the frequency band, set by the application.
    * - __u32
      - ``capability``
      - :cspan:`2` The tuner/modulator capability flags for this
        frequency band, see :ref:`tuner-capability`. The
        ``V4L2_TUNER_CAP_LOW`` or ``V4L2_TUNER_CAP_1HZ`` capability must
        be the same for all frequency bands of the selected
        tuner/modulator. So either all bands have that capability set, or
        none of them have that capability.
    * - __u32
      - ``rangelow``
      - :cspan:`2` The lowest tunable frequency in units of 62.5 kHz, or
        if the ``capability`` flag ``V4L2_TUNER_CAP_LOW`` is set, in units
        of 62.5 Hz, for this frequency band. A 1 Hz unit is used when the
        ``capability`` flag ``V4L2_TUNER_CAP_1HZ`` is set.
    * - __u32
      - ``rangehigh``
      - :cspan:`2` The highest tunable frequency in units of 62.5 kHz,
        or if the ``capability`` flag ``V4L2_TUNER_CAP_LOW`` is set, in
        units of 62.5 Hz, for this frequency band. A 1 Hz unit is used
        when the ``capability`` flag ``V4L2_TUNER_CAP_1HZ`` is set.
    * - __u32
      - ``modulation``
```

```
              - :cspan:`2` The supported modulation systems of this frequency
                band. See :ref:`band-modulation`.

                .. note::

                    Currently only one modulation system per frequency band
                    is supported. More work will need to be done if multiple
                    modulation systems are possible. Contact the linux-media
                    mailing list
                    (`https://linuxtv.org/lists.php <https://linuxtv.org/lists.php>`__)
                    if you need such functionality.
      * - __u32
        - ``reserved``\ [9]
        - Reserved for future extensions.

          Applications and drivers must set the array to zero.
```

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Unknown directive type "tabularcolumns".

```
    .. tabularcolumns:: |p{6.6cm}|p{2.2cm}|p{8.5cm}|
```

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Unknown directive type "flat-table".

```
    .. flat-table:: Band Modulation Systems
        :header-rows:  0
        :stub-columns: 0
        :widths:       3 1 4

        * - ``V4L2_BAND_MODULATION_VSB``
          - 0x02
          - Vestigial Sideband modulation, used for analog TV.
        * - ``V4L2_BAND_MODULATION_FM``
          - 0x04
          - Frequency Modulation, commonly used for analog radio.
        * - ``V4L2_BAND_MODULATION_AM``
          - 0x08
          - Amplitude Modulation, commonly used for analog radio.
```

Return Value

On success 0 is returned, on error -1 and the `errno` variable is set appropriately. The generic error codes are described at the :ref:`Generic Error Codes <gen-errors>` chapter.

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Unknown interpreted text role "ref".

EINVAL
    The `tuner` or `index` is out of bounds or the `type` field is wrong.