


```
- Cb\ :sub: `0`
- Cr\ :sub: `4`
- Cr\ :sub: `3`
- Cr\ :sub: `2`
- Cr\ :sub: `1`
- Cr\ :sub: `0`

- Y'\ :sub: `4`
- Y'\ :sub: `3`
- Y'\ :sub: `2`
- Y'\ :sub: `1`
- Y'\ :sub: `0`
- Cb\ :sub: `5`
- Cb\ :sub: `4`
- Cb\ :sub: `3`
```

Note

For the YUV444 and YUV555 formats, the value of alpha bits is undefined when reading from the driver, ignored when writing to the driver, except when alpha blending has been negotiated for a [ref: Video Overlay <overlay>](#) or [ref: Video Output Overlay <osd>](#).

System Message: ERROR/3 (b:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master)(Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 150);
[backlink](#)

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System Message: ERROR/3 (b:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master)(Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 150);
[backlink](#)

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The next table lists the packed YUV 4:4:4 formats with 8 bits per component. They are named based on the order of the Y, Cb and Cr components as stored in memory, and on the total number of bits per pixel. For instance, the VUYX32 format stores a pixel with Cr_{7:0} in the first byte, Cb_{7:0} in the second byte and Y_{7:0} in the third byte.

System Message: ERROR/3 (b:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master)(Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 162)

Unknown directive type "flat-table".

```
.. flat-table:: Packed YUV Image Formats (8bpc)
:header-rows: 1
:stub-columns: 0

* - Identifier
  - Code
  - Byte 0
  - Byte 1
  - Byte 2
  - Byte 3

* .. _V4L2-PIX-FMT-YUV32:
  - ``V4L2_PIX_FMT_YUV32``
  - 'YUV4'

  - A\ :sub: `7-0`
  - Y'\ :sub: `7-0`
  - Cb\ :sub: `7-0`
  - Cr\ :sub: `7-0`

* .. _V4L2-PIX-FMT-AYUV32:
  - ``V4L2_PIX_FMT_AYUV32``
  - 'AYUV'

  - A\ :sub: `7-0`
  - Y'\ :sub: `7-0`
  - Cb\ :sub: `7-0`
  - Cr\ :sub: `7-0`

* .. _V4L2-PIX-FMT-XYUV32:
  - ``V4L2_PIX_FMT_XYUV32``
  - 'XYUV'

  - X\ :sub: `7-0`
  - Y'\ :sub: `7-0`
  - Cb\ :sub: `7-0`
  - Cr\ :sub: `7-0`

* .. _V4L2-PIX-FMT-VUYA32:
  - ``V4L2_PIX_FMT_VUYA32``
  - 'VUYA'

  - Cr\ :sub: `7-0`
  - Cb\ :sub: `7-0`
  - Y'\ :sub: `7-0`
  - A\ :sub: `7-0`

* .. _V4L2-PIX-FMT-VUYX32:
  - ``V4L2_PIX_FMT_VUYX32``
  - 'VUYX'

  - Cr\ :sub: `7-0`
  - Cb\ :sub: `7-0`
  - Y'\ :sub: `7-0`
  - X\ :sub: `7-0`

* .. _V4L2-PIX-FMT-YUV24:
  - ``V4L2_PIX_FMT_YUV24``
  - 'YUV3'

  - Y'\ :sub: `7-0`
  - Cb\ :sub: `7-0`
  - Cr\ :sub: `7-0`
  - -\
```

Note

- The alpha component is expected to contain a meaningful value that can be used by drivers and applications.
- The padding bits contain undefined values that must be ignored by all applications and drivers.

4:2:2 Subsampling

These formats, commonly referred to as YUYV or YUY2, subsample the chroma components horizontally by 2, storing 2 pixels in 4 bytes.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master) (Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 251)

Unknown directive type "tabularcholumns".

```
.. tabularcholumns:: |p{3.4cm}|p{1.2cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|p{0.8cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master) (Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 253)

Unknown directive type "flat-table".

```
.. flat-table:: Packed YUV 4:2:2 Formats
:header-rows: 1
:stub-columns: 0
```

```
* - Identifier
  - Code
  - Byte 0
  - Byte 1
  - Byte 2
  - Byte 3
  - Byte 4
  - Byte 5
  - Byte 6
  - Byte 7
* .. _V4L2-PIX-FMT-UYYV:
  - ``V4L2_PIX_FMT_UYYV``
  - 'UYYV'

  - Cb\ :sub:`0`
  - Y'\ :sub:`0`
  - Cr\ :sub:`0`
  - Y'\ :sub:`1`
  - Cb\ :sub:`2`
  - Y'\ :sub:`2`
  - Cr\ :sub:`2`
  - Y'\ :sub:`3`
* .. _V4L2-PIX-FMT-VYUY:
  - ``V4L2_PIX_FMT_VYUY``
  - 'VYUY'

  - Cr\ :sub:`0`
  - Y'\ :sub:`0`
  - Cb\ :sub:`0`
  - Y'\ :sub:`1`
  - Cr\ :sub:`2`
  - Y'\ :sub:`2`
  - Cb\ :sub:`3`
  - Y'\ :sub:`3`
* .. _V4L2-PIX-FMT-YUYV:
  - ``V4L2_PIX_FMT_YUYV``
  - 'YUYV'

  - Y'\ :sub:`0`
  - Cb\ :sub:`0`
  - Y'\ :sub:`1`
  - Cr\ :sub:`0`
  - Y'\ :sub:`2`
  - Cb\ :sub:`2`
  - Y'\ :sub:`3`
  - Cr\ :sub:`2`
* .. _V4L2-PIX-FMT-YUYU:
  - ``V4L2_PIX_FMT_YUYU``
  - 'YUYU'

  - Y'\ :sub:`0`
  - Cr\ :sub:`0`
  - Y'\ :sub:`1`
  - Cb\ :sub:`0`
  - Y'\ :sub:`2`
  - Cr\ :sub:`2`
  - Y'\ :sub:`3`
  - Cb\ :sub:`2`
```

Color Sample Location: Chroma samples are `ref` interstitially sited<yuv-chroma-centered> horizontally.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master) (Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 324); [backlink](#)

Unknown interpreted text role "ref".

4:1:1 Subsampling

This format subsamples the chroma components horizontally by 4, storing 8 pixels in 12 bytes.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master) (Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 339)

Unknown directive type "tabularcholumns".

```
.. tabularcholumns:: |p{2.9cm}|p{0.8cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|p{0.5cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\linux-master) (Documentation) (userspace-api) (media) (v4l)pixfmt-packed-yuv.rst, line 341)

Unknown directive type "flat-table".

```
.. flat-table:: Packed YUV 4:1:1 Formats
:header-rows: 1
```

```
:stub-columns: 0

* - Identifier
  - Code
  - Byte 0
  - Byte 1
  - Byte 2
  - Byte 3
  - Byte 4
  - Byte 5
  - Byte 6
  - Byte 7
  - Byte 8
  - Byte 9
  - Byte 10
  - Byte 11
* .. _V4L2-PIX-FMT-Y41P:

- ``V4L2_PIX_FMT_Y41P``
- "Y41P"

- Cb\ :sub: `0`
- Y'\ :sub: `0`
- Cr\ :sub: `0`
- Y'\ :sub: `1`
- Cb\ :sub: `4`
- Y'\ :sub: `2`
- Cr\ :sub: `4`
- Y'\ :sub: `3`
- Y'\ :sub: `4`
- Y'\ :sub: `5`
- Y'\ :sub: `6`
- Y'\ :sub: `7`
```

Note

Do not confuse V4L2_PIX_FMT_Y41P with [ref`V4L2_PIX_FMT_YUV411P`<V4L2-PIX-FMT-YUV411P>](#). Y41P is derived from "YUV 4:1:1 **packed**", while YUV411P stands for "YUV 4:1:1 **planar**".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v41\linux-master)(Documentation)(userspace-api)(media)(v41)pixfmt-packed-yuv.rst, line 383); [backlink](#)

Unknown interpreted text role "ref".

Color Sample Location: Chroma samples are [ref`interstitially sited<yuv-chroma-centered>](#) horizontally.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v41\linux-master)(Documentation)(userspace-api)(media)(v41)pixfmt-packed-yuv.rst, line 387); [backlink](#)

Unknown interpreted text role "ref".