

# Digital TV Common functions

## Math functions

Provide some commonly-used math functions, usually required in order to estimate signal strength and signal to noise measurements in dB.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\media\[linux-master] [Documentation] [driver-api] [media]dtv-common.rst, line 12)**

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```
.. kernel-doc:: include/media/dvb_math.h
```

## DVB devices

Those functions are responsible for handling the DVB device nodes.

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```
.. kernel-doc:: include/media/dvbdev.h
```

## Digital TV Ring buffer

Those routines implement ring buffers used to handle digital TV data and copy it from/to userspace.

### Note

1. For performance reasons read and write routines don't check buffer sizes and/or number of bytes free/available. This has to be done before these routines are called. For example:

```
/* write @buflen: bytes */
free = dvb_ringbuffer_free(rbuf);
if (free >= buflen)
    count = dvb_ringbuffer_write(rbuf, buffer, buflen);
else
    /* do something */

/* read min. 1000, max. @bufsize: bytes */
avail = dvb_ringbuffer_avail(rbuf);
if (avail >= 1000)
    count = dvb_ringbuffer_read(rbuf, buffer, min(avail, bufsize));
else
    /* do something */
```
2. If there is exactly one reader and one writer, there is no need to lock read or write operations. Two or more readers must be locked against each other. Flushing the buffer counts as a read operation. Resetting the buffer counts as a read and write operation. Two or more writers must be locked against each other.

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```
.. kernel-doc:: include/media/dvb_ringbuffer.h
```

## Digital TV VB2 handler

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```
.. kernel-doc:: include/media/dvb_vb2.h
```