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***Rocky Enterprise Linux 9.2 Manual Pages on command 'ctanh.3'***

**\$ man ctanh.3**

CTANH(3)                      Linux Programmer's Manual                      CTANH(3)

**NAME**

ctanh, ctanhf, ctanhl - complex hyperbolic tangent

**SYNOPSIS**

```
#include <complex.h>

double complex ctanh(double complex z);

float complex ctanhf(float complex z);

long double complex ctanhl(long double complex z);

Link with -lm.
```

**DESCRIPTION**

These functions calculate the complex hyperbolic tangent of z.

The complex hyperbolic tangent function is defined mathematically as:

$$\text{ctanh}(z) = \text{csinh}(z) / \text{ccosh}(z)$$

**VERSIONS**

These functions first appeared in glibc in version 2.1.

**ATTRIBUTES**

For an explanation of the terms used in this section, see attributes(7).

??

?Interface                      ? Attribute      ? Value      ?

??

?ctanh(), ctanhf(), ctanhl() ? Thread safety ? MT-Safe ?

??

**CONFORMING TO**

C99, POSIX.1-2001, POSIX.1-2008.

#### SEE ALSO

cabs(3), catanh(3), ccosh(3), csinh(3), complex(7)

#### COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.

2017-09-15

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