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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:

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

#### 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 ?

??

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/>.

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