

libfpv Overview

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1 Library Overview

Features

libfpu is a library of mathematical functions with single-precision floating point accuracy using an FPU.

Files

The following file is required in order to use libfpu.

Filename	Description
libfpu.h	Header file
libSceFpu.a	Library file

Sample Programs

The following program is provided as a sample libfpu program for reference purposes.

samples/sample_code/system/api_libfpu/

This sample shows the basic procedure for using FPU functions.

2 Usage Procedure

Basic Usage Procedure

Like for mathematical functions included in general libm, no particular initialization, etc., is required.

The functions can simply be called as required.

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3 Operation Explanation

Installation and precision

Basically calculations are done through polynomial expansion by using an FPU.

Differences with libm

There are the following differences with the mathematical functions (libm) included in standard C functions.

- Fast and compact, do not use TLS (Thread Local Storage)
- Support only single-precision operations
- The operation result is not guaranteed to be strictly correct up to the LSB
- No error notification through errno is made (When libm notifies an error through errno, the error will be expressed by returning NaN or INF as a return value as much as possible)
- The results differ for NaN and infinity
- The precision is not guaranteed for unnormalized numbers

4 Cautions

Non-installed functions

A double-precision version is planned, but has not been installed at this time.

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