

mathieeesingtrans

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Chapter 1

mathieeesingtrans

1.1 mathieeesingtrans.doc

IEEESPAcos()	IEEESPExp()	IEEESPSin()	IEEESPTanh()
IEEESPAsin()	IEEESPFieee()	IEEESPSincos()	IEEESPTieee()
IEEESPAtan()	IEEESPLog()	IEEESPSinh()	
IEEESPCos()	IEEESPLog10()	IEEESPSqrt()	
IEEESPCosh()	IEEESPpow()	IEEESPTan()	

1.2 mathieeesingtrans.library/IEEESPAcos

NAME

IEEESPAcos -- compute the arc cosine of a number

SYNOPSIS

```
x = IEEESPAcos( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute arc cosine of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEESPCos(), IEEESPAtan(), IEEESPAsin()

1.3 mathieeesingtrans.library/IEEESPAsin

NAME

IEEESPAsin -- compute the arcsine of a number

SYNOPSIS

```
x = IEEESPAsin( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute the arc sine of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEESPSin(), IEEESPAtan(), IEEESPAcos()

1.4 mathieeesingtrans.library/IEEESPAtan

NAME

IEEESPAtan -- compute the arc tangent of number

SYNOPSIS

```
x = IEEESPAtan( y );  
d0
```

```
single x,y;
```

FUNCTION

Compute arctangent of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

1.5 mathieeesingtrans.library/IEEESPCos

NAME

IEEESPCos -- compute the cosine of a floating point number

SYNOPSIS

```
x = IEEEPCos( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute cosine of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEPCos(), IEEEPSin(), IEEEPTan()

1.6 mathieeesingtrans.library/IEEEPCosh

NAME

IEEEPCosh -- compute the hyperbolic cosine of a floating point number

SYNOPSIS

```
x = IEEEPCosh( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute hyperbolic cosine of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEPSinh(), IEEEPTanh()

1.7 mathieeesingtrans.library/IEEEPExp

NAME

IEEEPExp -- compute the exponential of e

SYNOPSIS

```

    x    = IEEEESPExp( y );
d0
    d0

```

```
float    x,y;
```

FUNCTION

Compute e^y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEESPLog()

1.8 mathieeesingtrans.library/IEEESPFieee

NAME

IEEESPFieee -- convert IEEE single to IEEE single

SYNOPSIS

```

    x    = IEEESPFieee( y );
d0
    d0

```

```
float    y;
float    x;
```

FUNCTION

Convert IEEE single precision number to IEEE single precision. These are included for completeness although they just return the input parameter. A good way to remember how these functions work is: They convert to and from the local format to Single Precision IEEE. The local format for this library happens to also be Single Precision IEEE.

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEESPTieee()

1.9 mathieeesingtrans.library/IEEEESPLog

NAME

IEEESPLog -- compute the natural logarithm of a floating point number

SYNOPSIS

```
x = IEEESPLog( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute $\ln(y)$ in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEESPExp()

1.10 mathieeesingtrans.library/IEEESPLog10

NAME

IEEESPLog10 -- compute logarithm base 10 of a number

SYNOPSIS

```
x = IEEESPLog10( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute the logarithm base 10 of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEESPLog()

1.11 mathieeesingtrans.library/IEEESPPow

NAME

IEEEESPow -- raise a number to another number power

SYNOPSIS

```
z = IEEEESPow( x , y );  
d0          d1 d0
```

```
float x,y,z;
```

FUNCTION

Compute y^x in IEEE single precision

INPUTS

x - IEEE single precision floating point value
y - IEEE single precision floating point value

RESULT

z - IEEE single precision floating point value

BUGS

SEE ALSO

1.12 mathieeesingtrans.library/IEEESPSin

NAME

IEEESPSin -- compute the sine of a floating point number

SYNOPSIS

```
x = IEEESPSin( y );  
d0          d0
```

```
float x,y;
```

FUNCTION

Compute sine of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEESPAsin(), IEEESPTan(), IEEESPCos()

1.13 mathieeesingtrans.library/IEEESPSincos

NAME

IEEESPSincos -- compute the arc tangent of a floating point number

SYNOPSIS

```
x = IEEEESPSincos( z , y );  
d0          a0 d0
```

```
float x,y,*z;
```

FUNCTION

Compute sin and cosine of y in IEEE single precision.
Store the cosine in *z. Return the sine of y.

INPUTS

y - IEEE single precision floating point value
z - pointer to IEEE single precision floating point number

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEESPSin(), IEEEESPCos()

1.14 mathieeesingtrans.library/IEEEESPSinh

NAME

IEEEESPSinh -- compute the hyperbolic sine of a floating point number

SYNOPSIS

```
x = IEEEESPSinh( y );  
d0          d0
```

```
float x,y;
```

FUNCTION

Compute hyperbolic sine of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEESPCosh, IEEEESPTanh

1.15 mathieeesingtrans.library/IEEEESPSqrt

NAME

IEEEESPSqrt -- compute the square root of a number

SYNOPSIS

```
x = IEEEESPSqrt( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute square root of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

1.16 mathieeesingtrans.library/IEEEESPTan

NAME

IEEEESPTan -- compute the tangent of a floating point number

SYNOPSIS

```
x = IEEEESPTan( y );  
d0
```

```
float x,y;
```

FUNCTION

Compute tangent of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS

SEE ALSO

IEEEESPTan(), IEEEESPSin(), IEEEESPCos()

1.17 mathieeesingtrans.library/IEEEESPTanh

NAME

IEEEESPTanh -- compute the hyperbolic tangent of a floating point number

SYNOPSIS

```
x = IEEEESPTanh( y );  
d0
```

```
float    x,y;
```

FUNCTION

Compute hyperbolic tangent of y in IEEE single precision

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS**SEE ALSO**

IEEEESPSinh(), IEEEESPCosh()

1.18 mathieeesingtrans.library/IEEEESPTieee

NAME

IEEEESPTieee -- convert IEEE single to IEEE single

SYNOPSIS

```
    x    = IEEEESPTieee( y );  
    d0           d0
```

```
float    y;  
float    x;
```

FUNCTION

Convert IEEE single precision number to IEEE single precision. These are included for completeness although they just return the input parameter. A good way to remember how these functions work is: They convert to and from the local format to Single Precision IEEE. The local format for this library happens to also be Single Precision IEEE.

INPUTS

y - IEEE single precision floating point value

RESULT

x - IEEE single precision floating point value

BUGS**SEE ALSO**

IEEEESPFieee()
