

mathieeesingtrans

COLLABORATORS

	<i>TITLE :</i> mathieeesingtrans		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		July 19, 2024	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	mathieeesingtrans	1
1.1	mathieeesingtrans.doc	1
1.2	mathieeesingtrans.library/IEEESPAcos	1
1.3	mathieeesingtrans.library/IEEESPAasin	2
1.4	mathieeesingtrans.library/IEEESPAatan	2
1.5	mathieeesingtrans.library/IEEESPCos	3
1.6	mathieeesingtrans.library/IEEESPCosh	3
1.7	mathieeesingtrans.library/IEEESPExp	4
1.8	mathieeesingtrans.library/IEEESPFieee	4
1.9	mathieeesingtrans.library/IEEESPLog	5
1.10	mathieeesingtrans.library/IEEESPLog10	5
1.11	mathieeesingtrans.library/IEEESPPow	6
1.12	mathieeesingtrans.library/IEEESPSin	6
1.13	mathieeesingtrans.library/IEEESPSincos	7
1.14	mathieeesingtrans.library/IEEESPSinh	7
1.15	mathieeesingtrans.library/IEEESPSqrt	8
1.16	mathieeesingtrans.library/IEEESPTan	8
1.17	mathieeesingtrans.library/IEEESPTanh	9
1.18	mathieeesingtrans.library/IEEESPTieee	9

Chapter 1

mathieeesingtrans

1.1 mathieeesingtrans.doc

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

1.2 mathieeesingtrans.library/IEEESPAcos

NAME
IEEESPAcos -- compute the arc cosine of a number

SYNOPSIS
x = IEEESPAcos(y);
d0 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 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 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    = IEEESPCos( y );  
d0    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

IEEESPAcos(), IEEESPSin(), IEEESPTan()

1.6 mathieeesingtrans.library/IEEESPCosh

NAME

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

SYNOPSIS

```
x    = IEEESPCosh( y );  
d0    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
IEEESPSinh(), IEEESPTanh()

1.7 mathieeesingtrans.library/IEEESPExp

NAME
IEEESPExp -- compute the exponential of e

SYNOPSIS
x = IEEESPExp(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
IEEESPLog()

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/IEEESPLog

NAME

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

SYNOPSIS

```
x    = IEEESPLog( y );
d0          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          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

IEEEESPLog()

1.11 mathieeesingtrans.library/IEEEESPow

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(), IEEEESPTan(), IEEESPCos()

1.13 mathieeesingtrans.library/IEEESPSincos

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

SYNOPSIS
x = IEEESPSincos(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
IEEESPSin(), IEEESPCos()

1.14 mathieeesingtrans.library/IEEESPSinh

NAME
IEEESPSinh -- compute the hyperbolic sine of a floating point number

SYNOPSIS
x = IEEESPSinh(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
IEEESPCosh, IEEEESPTanh

1.15 mathieeesingtrans.library/IEEESPSqrt

NAME
IEEESPSqrt -- compute the square root of a number

SYNOPSIS
x = IEEESPSqrt(y);
d0 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 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
IEEESPAtan(), IEEESPSin(), IEEESPCos()

1.17 mathieeesingtrans.library/IEEESPTanh

NAME

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

SYNOPSIS

```
x      = IEEESPTanh( y );
d0      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

IEEESPSinh(), IEEESPCosh()

1.18 mathieeesingtrans.library/IEEESPTieee

NAME

IEEESPTieee -- convert IEEE single to IEEE single

SYNOPSIS

```
x      = IEEESPTieee( 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

IEEESPFieee()