

mathieeesingtrans

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Chapter 1

mathieeesingtrans

1.1 mathieeesingtrans.doc

```
IEEEESPacos ()  
IEEEESPasin ()  
IEEEESPatan ()  
IEEESPCos ()  
IEEESPCosh ()  
IEEESPExp ()  
IEEESPFieee ()  
IEEESPLog ()  
IEEESPLog10 ()  
IEEESPPow ()  
IEEESPSin ()  
IEEESPSincos ()  
IEEESPSinh ()  
IEEESPSqrt ()  
IEEESPTan ()  
IEEESPTanh ()  
IEEESPTieee ()
```

1.2 mathieeesingtrans.library/IEEEESPacos

NAME

IEEEESPacos -- compute the arc cosine of a number

SYNOPSIS

```
    x      = IEEEESPacos( 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(), IEEESPAasin()

1.3 mathieeesingtrans.library/IEEESPAasin

NAME
IEEESPAasin -- compute the arcsine of a number

SYNOPSIS
x = IEEESPAasin(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/IEEESPAatan

NAME
IEEESPAatan -- compute the arc tangent of number

SYNOPSIS
x = IEEESPAatan(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

IEEEESPieee()

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
IEEEESLog()

1.11 mathieeesingtrans.library/IEEEESPPow

NAME

IEEEESPPow -- raise a number to another number power

SYNOPSIS

```
z = IEEEESPPow( 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/IEEEESPSin

NAME

IEEEESPSin -- compute the sine of a floating point number

SYNOPSIS

```
x = IEEEESPSin( 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
IEEEPSasin(), IEEEPTan(), IEEEPCos()

1.13 mathieeesingtrans.library/IEEEPSincos

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

SYNOPSIS
x = IEEEPSincos(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
IEEEPSin(), IEEEPCos()

1.14 mathieeesingtrans.library/IEEEPSinh

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

SYNOPSIS
x = IEEEPSinh(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/IEEEESPSqrt

NAME
IEEEESPSqrt -- compute the square root of a number

SYNOPSIS
x = IEEEESPSqrt(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
IEEEESPTan(), IEEEESPSin(), IEEEESPCos()

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

IEEEFPiee()