

**mathieeesingtrans**

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	<i>TITLE :</i> mathieeesingtrans		
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## Chapter 1

# mathieeesingtrans

### 1.1 mathieeesingtrans.doc

IEEEESPacos()	IEEEESPExp()	IEEEESPsin()	IEEEESPTanh()
IEEEESPasin()	IEEEESPFieee()	IEEEESPincos()	IEEEESPTieee()
IEEEESPatan()	IEEEESPLog()	IEEEESPsinh()	
IEEEESPCos()	IEEEESPLog10()	IEEEESPSqrt()	
IEEEESPCosh()	IEEEESPpow()	IEEEESPTan()	

### 1.2 mathieeesingtrans.library/IEEEESPacos

#### NAME

IEEEESPacos -- compute the arc cosine of a number

#### SYNOPSIS

```
x = IEEEESPacos( 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

IEEEESPCos(), IEEEESPatan(), IEEEESPasin()

### 1.3 mathieeesingtrans.library/IEEEESPasin

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## NAME

IEEEESPasin -- compute the arcsine of a number

## SYNOPSIS

```
x    = IEEEESPasin( 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    = IEEEESPCos( 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

IEEEESPAcos(), IEEEESPSin(), IEEEESPTan()

## 1.6 mathieeesingtrans.library/IEEEESPCosh

## NAME

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

## SYNOPSIS

```
x    = IEEEESPCosh( 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

IEEEESPSinh(), IEEEESPTanh()

## 1.7 mathieeesingtrans.library/IEEEESPExp

## NAME

IEEEESPExp -- 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/IEEESPLog

## NAME

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

## SYNOPSIS

```
x = IEEEESLog( 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

IEEEESPExp()

## 1.10 mathieeesingtrans.library/IEEEESLog10

## NAME

IEEEESLog10 -- compute logarithm base 10 of a number

## SYNOPSIS

```
x = IEEEESLog10( 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



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
```

```
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()