mathieeedoubbas

COLLABORATORS			
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Chapter 1

mathieeedoubbas

1.1 mathieeedoubbas.doc

```
   IEEEDPAbs()
   IEEEDPAdd()
   IEEEDPCeil()
   IEEEDPCmp()
   IEEEDPDiv()
   IEEEDPFix()
   IEEEDPFloor()
   IEEEDPFlt()
   IEEEDPMul()
   IEEEDPNeg()
   IEEEDPSub()
   IEEEDPTst()
```

1.2 mathieeedoubbas.library/IEEEDPAbs

```
 NAME
IEEEDPAbs -- compute absolute value of IEEE double precision argument

 SYNOPSIS
  x   = IEEEDPAbs(  y  );
d0/d1     d0/d1

double  x,y;

 FUNCTION
Take the absolute value of argument y and return it to caller.

 INPUTS
y -- IEEE double precision floating point value

 RESULT
x -- IEEE double precision floating point value

 BUGS
```

```
 SEE ALSO
```

1.3 mathieeedoubbas.library/IEEEDPAdd

```
 NAME
IEEEDPAdd -- add one double precision IEEE number to another

 SYNOPSIS
  x   = IEEEDPAdd(  y  ,  z  );
d0/d1     d0/d1 d2/d3

double  x,y,z;

 FUNCTION
Compute x = y + z in IEEE double precision.

 INPUTS
y -- IEEE double precision floating point value
z -- IEEE double precision floating point value

 RESULT
x -- IEEE double precision floating point value

 BUGS

 SEE ALSO
IEEEDPSub()
```

1.4 mathieeedoubbas.library/IEEEDPCeil

```
 NAME
IEEEDPCeil -- compute Ceil function of IEEE double precision number

 SYNOPSIS
  x   = IEEEDPCeil(  y  );
d0/d1      d0/d1

double  x,y;

 FUNCTION
Calculate the least integer greater than or equal to x and return it.
This value may have more than 32 bits of significance.
This identity is true.  Ceil(x) = -Floor(-x).

 INPUTS
y -- IEEE double precision floating point value

 RESULT
x -- IEEE double precision floating point value

 BUGS
```

```
 SEE ALSO
IEEEDPFloor()
```

1.5 mathieeedoubbas.library/IEEEDPCmp

```
 NAME
IEEEDPCmp -- compare two double precision floating point numbers

 SYNOPSIS
  c   = IEEEDPCmp(  y  ,  z  );
  d0      d0/d1 d2/d3

double  y,z;
long  c;

 FUNCTION
Compare y with z. Set the condition codes for less, greater, or
equal. Set return value c to -1 if y<z, or +1 if y>z, or 0 if
y == z.

 INPUTS
y -- IEEE double precision floating point value
z -- IEEE double precision floating point value

 RESULT
     c = 1   cc = gt         for (y > z)
     c = 0   cc = eq         for (y == z)
     c = -1  cc = lt         for (y < z)

 BUGS

 SEE ALSO
```

1.6 mathieeedoubbas.library/IEEEDPDiv

```
 NAME
IEEEDPDiv -- divide one double precision IEEE by another

 SYNOPSIS
  x   = IEEEDPDiv(  y  ,  z  );
d0/d1     d0/d1 d2/d3

double  x,y,z;

 FUNCTION
Compute x = y / z in IEEE double precision.

 INPUTS
y -- IEEE double precision floating point value
z -- IEEE double precision floating point value

 RESULT
```

```
x -- IEEE double precision floating point value

 BUGS

 SEE ALSO
IEEEDPMul()
```

1.7 mathieeedoubbas.library/IEEEDPFix

```
 NAME
IEEEDPFix -- convert IEEE double float to integer

 SYNOPSIS
x   = IEEEDPFix(  y  );
d0    d0/d1

long  x;
double  y;

 FUNCTION
Convert IEEE double precision argument to a 32 bit signed integer
and return result.

 INPUTS
y -- IEEE double precision floating point value

 RESULT
if no overflow occured then return
  x -- 32 bit signed integer
if overflow return largest +- integer
  For round to zero

 BUGS

 SEE ALSO
IEEEDPFlt()
```

1.8 mathieeedoubbas.library/IEEEDPFloor

```
 NAME
IEEEDPFloor -- compute Floor function of IEEE double precision number

 SYNOPSIS
  x   = IEEEDPFloor(  y  );
d0/d1       d0/d1

double  x,y;

 FUNCTION
Calculate the largest integer less than or equal to x and return it.
This value may have more than 32 bits of significance.
```

```
 INPUTS
y -- IEEE double precision floating point value

 RESULT
x -- IEEE double precision floating point value

 BUGS

 SEE ALSO
IEEEDPCeil()
```

1.9 mathieeedoubbas.library/IEEEDPFlt

```
 NAME
IEEEDPFlt -- convert integer to IEEE double precision number

 SYNOPSIS
  x   = IEEEDPFlt(  y  );
d0/d1      d0

double  x;
long  y;

 FUNCTION
Convert a signed 32 bit value to a double precision IEEE value
and return it in d0/d1. No exceptions can occur with this
function.

 INPUTS
y -- 32 bit integer in d0

 RESULT
x is a 64 bit double precision IEEE value

 BUGS

 SEE ALSO
IEEEDPFix()
```

1.10 mathieeedoubbas.library/IEEEDPMul

```
 NAME
IEEEDPMul -- multiply one double precision IEEE number by another

 SYNOPSIS
  x   = IEEEDPMul(  y  ,  z  );
d0/d1     d0/d1 d2/d3

double  x,y,z;

 FUNCTION
Compute x = y * z in IEEE double precision.
```

```
 INPUTS
y -- IEEE double precision floating point value
z -- IEEE double precision floating point value

 RESULT
x -- IEEE double precision floating point value

 BUGS

 SEE ALSO
IEEEDPDiv()
```

1.11 mathieeedoubbas.library/IEEEDPNeg

```
 NAME
IEEEDPNeg -- compute negative value of IEEE double precision number

 SYNOPSIS
  x   = IEEEDPNeg(  y  );
d0/d1     d0/d1

double  x,y;

 FUNCTION
Invert the sign of argument y and return it to caller.

 INPUTS
y - IEEE double precision floating point value

 RESULT
x - IEEE double precision floating point value

 BUGS

 SEE ALSO
```

1.12 mathieeedoubbas.library/IEEEDPSub

```
 NAME
IEEEDPSub -- subtract one double precision IEEE number from another

 SYNOPSIS
  x   = IEEEDPSub(  y  ,  z  );
d0/d1     d0/d1 d2/d3

double  x,y,z;

 FUNCTION
Compute x = y - z in IEEE double precision.

 INPUTS
```

```
y -- IEEE double precision floating point value
z -- IEEE double precision floating point value

 RESULT
x -- IEEE double precision floating point value

 BUGS

 SEE ALSO
IEEEDPAdd()
```

1.13 mathieeedoubbas.library/IEEEDPTst

```
 NAME
IEEEDPTst -- compare IEEE double precision value to 0.0

 SYNOPSIS
  c   = IEEEDPTst(  y  );
  d0      d0/d1

double  y;
long  c;

 FUNCTION
Compare y to 0.0, set the condition codes for less than, greater
than, or equal to 0.0.  Set the return value c to -1 if less than,
to +1 if greater than, or 0 if equal to 0.0.

 INPUTS
y -- IEEE double precision floating point value

 RESULT
c = 1 cc = gt   for (y > 0.0)
c = 0 cc = eq   for (y == 0.0)
c = -1  cc = lt   for (y < 0.0)

 BUGS

 SEE ALSO
```