

GPU

QuEST_internal.h

QuESTAssert
exitWithError
findProbabilityOfZero
measureInZero
phaseGate

hashString
validateAlphaBeta
validateMatrixIsUnitary
validateUnitVector

* Aren't GPU specific **AND**
* Aren't used by QuEST.cpp

QuEST_env_localGPU.cu

calcTotalProbability
closeQuESTEnv
collapseToOutcome
compactUnitary
controlledCompactUnitary
controlledNot
controlledPhaseGate
controlledUnitary
createMultiQubit
destroyMultiQubit
findProbabilityOfOutcome
getEnvironmentString
getImagAmpEl
getRealAmpEl
hadamard
initClassicalState
initQuESTEnv
initStatePlus
initStateZero
measure
measureWithStats
multiControlledPhaseGate
multiControlledUnitary
reportQuESTEnv
reportStateToScreen
sigmaX
sigmaY
syncQuESTEnv
syncQuESTSuccess
unitary

QuESTAssert
exitWithError
findProbabilityOfZero
measureInZero
phaseGate

compareStates
initStateDebug
initStateOfSingleQubit
initializeStateFromSingleFile

extractBit

GPUExists
collapseToOutcomeKernel
compactUnitaryKernel
controlledCompactUnitaryKernel
controlledNotKernel
controlledPhaseGateKernel
controlledUnitaryKernel
copySharedReduceBlock
copyStateFromGPU
copyStateToGPU
findProbabilityOfZeroKernel
getNumReductionLevels
hadamardKernel
initClassicalStateKernel
initStateDebugKernel
initStateOfSingleQubitKernel
initStatePlusKernel
initStateZeroKernel
log2Int
measureInZeroKernel
multiControlledPhaseGateKernel
multiControlledUnitaryKernel
phaseGateKernel
reduceBlock
sigmaXKernel
sigmaYKernel
swapDouble
unitaryKernel

API

QuEST.h

calcTotalProbability
closeQuESTEnv
collapseToOutcome
compactUnitary
controlledCompactUnitary
controlledNot
controlledPhaseGate
controlledRotateAroundAxis
controlledRotateX
controlledRotateY
controlledRotateZ
getNumAmps
getNumQubits
getProbEl
reportMultiQubitParams
reportState
rotateAroundAxis
rotateX
rotateY
rotateZ
sGate
seedQuEST
seedQuESTDefault
sigmaZ
tGate

hashString
validateAlphaBeta
validateMatrixIsUnitary
validateUnitVector

* Aren't used by QuEST_env_localGPU.cu

QuEST_debug.h

compareStates
initStateDebug
initStateOfSingleQubit
initializeStateFromSingleFile
reportNodeList

CPU & MPI

QuEST_env_local.c

calcTotalProbability
closeQuESTEnv
collapseToOutcome
compactUnitary
controlledCompactUnitary
controlledNot
controlledUnitary
findProbabilityOfOutcome
getImagAmpEl
getRealAmpEl
hadamard
initQuESTEnv
measure
measureWithStats
multiControlledUnitary
reportQuESTEnv
sigmaX
sigmaY
syncQuESTEnv
syncQuESTSuccess
Unitary

QuESTAssert
exitWithError
phaseGate

reportNodeList

QuEST.c

controlledPhaseGate
controlledRotateAroundAxis
controlledRotateX
controlledRotateY
controlledRotateZ
createMultiQubit
destroyMultiQubit
getEnvironmentString
getNumAmps
getNumQubits
getProbEl
initClassicalState
initStatePlus
initStateZero
multiControlledPhaseGate
reportMultiQubitParams
reportState
reportStateToScreen
rotateAroundAxis
rotateX
rotateY
rotateZ
sGate
seedQuEST
seedQuESTDefault
sigmaZ
tGate

collapseToOutcomeDistributedRenorm
collapseToOutcomeDistributedSetZero
collapseToOutcomeLocal
compactUnitaryDistributed
compactUnitaryLocal
controlledCompactUnitaryDistributed
controlledCompactUnitaryLocal
controlledNotDistributed
controlledNotLocal
controlledUnitaryDistributed
controlledUnitaryLocal
findProbabilityOfZeroDistributed
findProbabilityOfZeroLocal
hadamardDistributed
hadamardLocal
hashString
multiControlledUnitaryDistributed
multiControlledUnitaryLocal
phaseGateDistributed
phaseGateLocal
sigmaXDistributed
sigmaXLocal
sigmaYDistributed
sigmaYLocal
unitaryDistributed
unitaryLocal
validateAlphaBeta
validateMatrixIsUnitary
validateUnitVector

compareStates
initStateDebug
initStateOfSingleQubit
initializeStateFromSingleFile

extractBit

Prototyped:

extractBit

QuEST_env_mpi.c

calcTotalProbability
closeQuESTEnv
collapseToOutcome
compactUnitary
controlledCompactUnitary
controlledNot
controlledUnitary
findProbabilityOfOutcome
getImagAmpEl
getRealAmpEl
hadamard
initQuESTEnv
measure
measureWithStats
multiControlledUnitary
reportQuESTEnv
sigmaX
sigmaY
syncQuESTEnv
syncQuESTSuccess
Unitary

QuESTAssert
exitWithError
phaseGate

reportNodeList

chunksIsUpper
getChunkIdFromIndex
getChunkPairId
getRotAngle
halfMatrixBlockFitsInChunk
isChunkToSkipInFindPZero

exchangeStateVectors
getRotAngleFromUnitaryMatrix

Prototyped:

chunksIsUpper
getChunkIdFromIndex
getChunkPairId
getRotAngle
halfMatrixBlockFitsInChunk
isChunkToSkipInFindPZero

QuEST_internal.h

collapseToOutcomeDistributedRenorm
collapseToOutcomeDistributedSetZero
collapseToOutcomeLocal
compactUnitaryDistributed
compactUnitaryLocal
controlledCompactUnitaryDistributed
controlledCompactUnitaryLocal
controlledNotDistributed
controlledNotLocal
controlledUnitaryDistributed
controlledUnitaryLocal
findProbabilityOfZeroDistributed
findProbabilityOfZeroLocal
hadamardDistributed
hadamardLocal
hashString
multiControlledUnitaryDistributed
multiControlledUnitaryLocal
phaseGateDistributed
phaseGateLocal
sigmaXDistributed
sigmaXLocal
sigmaYDistributed
sigmaYLocal
unitaryDistributed
unitaryLocal
validateAlphaBeta
validateMatrixIsUnitary
validateUnitVector

QuESTAssert
exitWithError
phaseGate