

QVirtualPad

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

QWidget	
QVirtualPad	5

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

QVirtualPad	
Implements an interactive virtual pad/joystick	5

Chapter 3

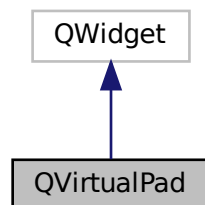
Class Documentation

3.1 QVirtualPad Class Reference

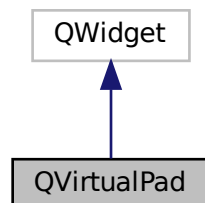
implements an interactive virtual pad/joystick.

```
#include <qvirtualpad.h>
```

Inheritance diagram for QVirtualPad:



Collaboration diagram for QVirtualPad:



Public Types

- enum [Axis](#) { [Axis::Both](#) = 0, [Axis::X](#), [Axis::Y](#) }
Allowed axis movements.
- enum [Marks](#) { [Marks::None](#) = 0, [Marks::NSWE](#), [Marks::Full](#) }
Direction markings.

Signals

- void [positionUpdate](#) (QPointF point)
signal an update of pad position.
- void [backgroundColorChanged](#) ()
signal an update in background color.
- void [backgroundFocalColorChanged](#) ()
signal an update in background focal point color.
- void [padColorChanged](#) ()
signal an update in pad color.
- void [padFocalColorChanged](#) ()
signal an update in pad focal point color.
- void [borderColorChanged](#) ()
signal an update in border color.
- void [borderWidthChanged](#) ()
signal an update in border width.
- void [momentaryChanged](#) ()
signal an update in momentary property.
- void [axisChanged](#) ()
signal an update in axis property.
- void [opacityChanged](#) ()
signal an update in opacity property.
- void [padSizeRatioChanged](#) ()
signal an update in padSizeRatio property.
- void [externalDeadZoneChanged](#) ()
signal an update in externalDeadZone property.
- void [deadZoneChanged](#) ()
signal an update in deadZone property.
- void [marksChanged](#) ()
signal an update in marks property.

Public Member Functions

- [QVirtualPad](#) (QWidget *parent=nullptr)
Construct a new [QVirtualPad](#) object.
- QColor [backgroundColor](#) () const
backgroundColor property getter.
- void [setBackgroundColor](#) (const QColor &backgroundColor)
backgroundColor property setter.
- QColor [backgroundFocusColor](#) () const
backgroundFocusColor property getter.
- void [setBackgroundFocusColor](#) (const QColor &backgroundFocusColor)

- backgroundFocusColor* property setter.
- QColor [padColor](#) () const
padColor property getter.
- void [setPadColor](#) (const QColor &padColor)
padColor property setter.
- QColor [padFocalColor](#) () const
padFocalColor property getter.
- void [setPadFocalColor](#) (const QColor &padFocalColor)
padFocalColor property setter.
- QColor [borderColor](#) () const
borderColor property getter.
- void [setBorderColor](#) (const QColor &borderColor)
borderColor property setter.
- int [borderWidth](#) () const
borderWidth property getter.
- void [setBorderWidth](#) (int borderWidth)
borderWidth property setter.
- bool [momentary](#) () const
momentary property getter.
- void [setMomentary](#) (bool momentary)
momentary property setter.
- Axis [axis](#) () const
axis property getter.
- void [setAxis](#) (Axis axis)
axis property setter.
- float [opacity](#) () const
opacity property getter.
- void [setOpacity](#) (float opacity)
opacity property setter.
- float [padSizeRatio](#) () const
padSizeRatio property getter.
- void [setPadSizeRatio](#) (float padSizeRatio)
padSizeRatio property setter.
- bool [externalDeadZone](#) () const
externalDeadZone property getter.
- void [setExternalDeadZone](#) (bool externalDeadZone)
externalDeadZone property setter.
- float [deadZone](#) () const
deadZone property getter.
- void [setDeadZone](#) (float deadZone)
deadZone property setter.
- Marks [marks](#) () const
marks property getter.
- void [setMarks](#) (Marks marks)
marks property setter.
- double [x](#) ()
X axis normalized value [-1...1].
- double [y](#) ()
Y axis normalized value [-1...1].

Static Public Member Functions

- static QString [AxisToString](#) ([Axis](#) axis)
Convert argument into a readable string.
- static [Axis](#) [StringToAxis](#) (QString axis)
Convert argument string in an Axis value.
- static QString [MarksToString](#) ([Marks](#) axis)
Convert argument into a readable string.
- static [Marks](#) [StringToMarks](#) (QString marks)
Convert argument string in a Marks value.

Static Public Attributes

- constexpr static const float [DEF_PAD_SIZE_RATIO](#) = 0.5f
Pad size ratio against full widget frame.
- constexpr static const float [MAX_PAD_SIZE_RATIO](#) = 0.66f
Max pad size ratio.
- constexpr static const float [MIN_PAD_SIZE_RATIO](#) = 0.1f
Min pad size ratio.
- constexpr static const float [DEF_FOCAL_POS_RATIO](#) = 0.5f
Focal point pos ratio against focal size.
- constexpr static const float [DEF_MARKS_OFF_RATIO](#) = 0.9f
Direction marks offset ratio against widget frame size.
- constexpr static const float [MARKS_SIZE_RATIO](#) = 0.0286f
Size ratio of direction markings againsta widget frame size.

Protected Member Functions

- void [resizeEvent](#) (QResizeEvent *event)
override of base class [resizeEvent](#)
- void [paintEvent](#) (QPaintEvent *event)
override of base class [paintEvent](#).
- void [mousePressEvent](#) (QMouseEvent *event)
override of base class [mousePressEvent](#)
- void [mouseReleaseEvent](#) (QMouseEvent *event)
override of base class [mouseReleaseEvent](#)
- void [mouseMoveEvent](#) (QMouseEvent *event)
override of base class [mouseMoveEvent](#)
- void [resize](#) ()
Resize handler.
- void [center](#) ()
Set pad position to center.
- QRectF [getFrame](#) ()
Evaluate internal widget frame.
- void [updatePosition](#) (double x, double y)
Set pad position.
- QPainterPath * [createMarks](#) ()
Create direction marks sets (depending on marks property).
- QPainterPath * [createMark](#) (double angle, QPointF offset)

Create a direction mark.

- void [drawMarks](#) (QPainter &painter)

Draw direction mark.

- void [drawPad](#) (QPainter &painter)

Draw pad in current position.

- void [drawBackground](#) (QPainter &painter)

draw bakground elements.

Properties

- QColor **backgroundColor**
- QColor **backgroundFocusColor**
- QColor **padColor**
- QColor **padFocusColor**
- QColor **borderColor**
- int **borderWidth**
- bool **momentary**
- [Axis](#) **axis**
- float **opacity**
- float **padSizeRatio**
- bool **externalDeadZone**
- float **deadZone**
- [Marks](#) **marks**

3.1.1 Detailed Description

implements an interactive virtual pad/joystick.

3.1.2 Member Enumeration Documentation

3.1.2.1 Axis

```
enum QVirtualPad::Axis [strong]
```

Allowed axis movements.

Enumerator

Both	Both axis allowed
X	Only X allowed
Y	Only Y allowed

3.1.2.2 Marks

```
enum QVirtualPad::Marks [strong]
```

Direction markings.

See also

[Marks](#)

Enumerator

None	No marks
NSWE	4 marks
Full	8 marks

3.1.3 Constructor & Destructor Documentation

3.1.3.1 QVirtualPad()

```
QVirtualPad::QVirtualPad (  
    QWidget * parent = nullptr ) [explicit]
```

Construct a new [QVirtualPad](#) object.

Parameters

<i>parent</i>	
---------------	--

3.1.4 Member Function Documentation

3.1.4.1 axis()

```
Axis QVirtualPad::axis ( ) const
```

axis property getter.

Returns

Axis axis value

See also

[Axis](#), [mAxis](#)

3.1.4.2 axisChanged

```
void QVirtualPad::axisChanged ( ) [signal]
```

signal an update in axis property.

3.1.4.3 AxisToString()

```
QString QVirtualPad::AxisToString (
    Axis axis ) [static]
```

Convert argument into a readable string.

Parameters

<i>axis</i>	
-------------	--

Returns

QString

See also

[Axis](#)

3.1.4.4 backgroundColor()

```
QColor QVirtualPad::backgroundColor ( ) const
```

backgroundColor property getter.

Returns

QColor backgroundColor value

See also

mBackgroundColor

3.1.4.5 backgroundColorChanged

```
void QVirtualPad::backgroundColorChanged ( ) [signal]
```

signal an update in background color.

3.1.4.6 backgroundFocalColorChanged

```
void QVirtualPad::backgroundFocalColorChanged ( ) [signal]
```

signal an update in background focal point color.

3.1.4.7 backgroundFocusColor()

```
QColor QVirtualPad::backgroundFocusColor ( ) const
```

backgroundFocusColor property getter.

Returns

QColor backgroundFocusColor value

See also

mBackgroundFocusColor

3.1.4.8 borderColor()

```
QColor QVirtualPad::borderColor ( ) const
```

borderColor property getter.

Returns

QColor borderColor value

See also

mBorderColor

3.1.4.9 borderColorChanged

```
void QVirtualPad::borderColorChanged ( ) [signal]
```

signal an update in border color.

3.1.4.10 borderWidth()

```
int QVirtualPad::borderWidth ( ) const
```

borderWidth property getter.

Returns

int borderWidth value

See also

mBorderWidth

3.1.4.11 borderWidthChanged

```
void QVirtualPad::borderWidthChanged ( ) [signal]
```

signal an update in border width.

3.1.4.12 center()

```
void QVirtualPad::center ( ) [protected]
```

Set pad position to center.

See also

[updatePosition](#)

3.1.4.13 createMark()

```
QPainterPath * QVirtualPad::createMark (
    double angle,
    QPointF offset ) [protected]
```

Create a direction mark.

Parameters

<i>angle</i>	mark/arrow direction
<i>offset</i>	location of mark

Returns

QPainterPath* path describing mark

See also

[createMarks](#), [drawMarks](#), [drawMark](#)

3.1.4.14 createMarks()

```
QPainterPath * QVirtualPad::createMarks ( ) [protected]
```

Create direction marks sets (depending on marks property).

Returns

QPainterPath* path describing marks

See also

[createMark](#), [drawMarks](#), [drawMark](#)

3.1.4.15 deadZone()

```
float QVirtualPad::deadZone ( ) const
```

deadZone property getter.

Returns

float deadZone value

See also

[mDeadZone](#)

3.1.4.16 deadZoneChanged

```
void QVirtualPad::deadZoneChanged ( ) [signal]
```

signal an update in deadZone property.

3.1.4.17 drawBackground()

```
void QVirtualPad::drawBackground (
    QPainter & painter ) [protected]
```

draw bakground elements.

Parameters

<i>painter</i>	
----------------	--

3.1.4.18 drawMarks()

```
void QVirtualPad::drawMarks (
    QPainter & painter ) [protected]
```

Draw direction mark.

Parameters

<i>painter</i>	
----------------	--

See also

[createMarks](#), [drawMarks](#), [createMark](#)

3.1.4.19 drawPad()

```
void QVirtualPad::drawPad (
    QPainter & painter ) [protected]
```

Draw pad in current position.

Parameters

<i>painter</i>	
----------------	--

See also

[updatePosition](#)

3.1.4.20 externalDeadZone()

```
bool QVirtualPad::externalDeadZone ( ) const
```

externalDeadZone property getter.

Returns

true movements of pad are limited inside a circular area of radius = 1
false movements of pad are allowed to a square area with edges length = 2

See also

mExternalDeadZone

3.1.4.21 externalDeadZoneChanged

```
void QVirtualPad::externalDeadZoneChanged ( ) [signal]
```

signal an update in externalDeadZone property.

3.1.4.22 getFrame()

```
QRectF QVirtualPad::getFrame ( ) [protected]
```

Evaluate internal widget frame.

Returns

QRectF

3.1.4.23 marks()

```
Marks QVirtualPad::marks ( ) const
```

marks property getter.

Returns

Marks marks value

See also

[Marks](#), mMarks

3.1.4.24 marksChanged

```
void QVirtualPad::marksChanged ( ) [signal]
```

signal an update in marks property.

3.1.4.25 MarksToString()

```
QString QVirtualPad::MarksToString (
    Marks axis ) [static]
```

Convert argument into a readable string.

Parameters

<i>axis</i>	
-------------	--

Returns

QString

See also

[Marks](#)

3.1.4.26 momentary()

```
bool QVirtualPad::momentary ( ) const
```

momentary property getter.

Returns

true the pad position is momentary (returns to center when left)

false the pad position is sticky (stay in the last position reached when left)

See also

mMomentary

3.1.4.27 momentaryChanged

```
void QVirtualPad::momentaryChanged ( ) [signal]
```

signal an update in momentary property.

3.1.4.28 mouseMoveEvent()

```
void QVirtualPad::mouseMoveEvent (
    QMouseEvent * event ) [protected]
```

override of base class mouseMoveEvent

Invoked when user moves inside the widget area. Movement are tracked only if a mousePressEvent has been received. Tracking of user mouse pointer movements are reflected in update of pad position.

Parameters

<i>event</i>	event descriptor
--------------	------------------

3.1.4.29 mousePressEvent()

```
void QVirtualPad::mousePressEvent (
    QMouseEvent * event ) [protected]
```

override of base class mousePressEvent

Invoked when user press mouse button/touch inside widget area. This action enables pad movement.

Parameters

<i>event</i>	Event descriptor
--------------	------------------

3.1.4.30 mouseReleaseEvent()

```
void QVirtualPad::mouseReleaseEvent (
    QMouseEvent * event ) [protected]
```

override of base class mouseReleaseEvent

Invoked when the user release mouse button/touch inside widget area. This action disable pad movement. Pad stay/return in last/center position depending on the momentary property value.

Parameters

<i>event</i>	event descriptor
--------------	------------------

3.1.4.31 opacity()

```
float QVirtualPad::opacity ( ) const
```

opacity property getter.

Returns

float opacity value

See also

mOpacity

3.1.4.32 opacityChanged

```
void QVirtualPad::opacityChanged ( ) [signal]
```

signal an update in opacity property.

3.1.4.33 padColor()

```
QColor QVirtualPad::padColor ( ) const
```

padColor property getter.

Returns

QColor padColor value

See also

mPadColor

3.1.4.34 padColorChanged

```
void QVirtualPad::padColorChanged ( ) [signal]
```

signal an update in pad color.

3.1.4.35 padFocalColor()

```
QColor QVirtualPad::padFocalColor ( ) const
```

padFocalColor property getter.

Returns

QColor padFocalColor value

See also

mPadFocalColor

3.1.4.36 padFocalColorChanged

```
void QVirtualPad::padFocalColorChanged ( ) [signal]
```

signal an update in pad focal point color.

3.1.4.37 padSizeRatio()

```
float QVirtualPad::padSizeRatio ( ) const
```

padSizeRatio property getter.

Returns

float padSizeRatio value

See also

mPadSizeRatio

3.1.4.38 padSizeRatioChanged

```
void QVirtualPad::padSizeRatioChanged ( ) [signal]
```

signal an update in padSizeRatio property.

3.1.4.39 paintEvent()

```
void QVirtualPad::paintEvent (
    QPaintEvent * event ) [protected]
```

override of base class paintEvent.

Invoked when widget area need to be repainted. Forced by repaint() method calls. Will depict widget current status.

Parameters

<i>event</i>	Event descriptor
--------------	------------------

3.1.4.40 positionUpdate

```
void QVirtualPad::positionUpdate (
    QPointF point ) [signal]
```

signal an update of pad position.

Parameters

<i>point</i>	updated normalized position [-1...1]
--------------	--------------------------------------

3.1.4.41 resize()

```
void QVirtualPad::resize ( ) [protected]
```

Resize handler.

Handles widget resize related actions.

See also

[resizeEvent](#)

3.1.4.42 resizeEvent()

```
void QVirtualPad::resizeEvent (
    QResizeEvent * event ) [protected]
```

override of base class `resizeEvent`

Invoked when widget area is resized. Will update internal sub-areas size accordingly with defined ratios.

Parameters

<i>event</i>	Event descriptor
--------------	------------------

See also

[resize](#)

3.1.4.43 setAxis()

```
void QVirtualPad::setAxis (
    QVirtualPad::Axis axis )
```

axis property setter.

Parameters

<i>axis</i>	new value
-------------	-----------

See also

[Axis](#), `mAxis`

3.1.4.44 `setBackgroundColor()`

```
void QVirtualPad::setBackgroundColor (
    const QColor & backgroundColor )
```

`backgroundColor` property setter.

Parameters

<i>backgroundColor</i>	new value
------------------------	-----------

See also

`mBackgroundColor`

3.1.4.45 `setBackgroundFocusColor()`

```
void QVirtualPad::setBackgroundFocusColor (
    const QColor & backgroundFocusColor )
```

`backgroundFocusColor` property setter.

Parameters

<i>backgroundFocusColor</i>	new value
-----------------------------	-----------

See also

`mBackgroundFocusColor`

3.1.4.46 setBorderColor()

```
void QVirtualPad::setBorderColor (
    const QColor & borderColor )
```

borderColor property setter.

Parameters

<i>borderColor</i>	new value
--------------------	-----------

See also

`mBorderColor`

3.1.4.47 setBorderWidth()

```
void QVirtualPad::setBorderWidth (
    int borderWidth )
```

borderWidth property setter.

Parameters

<i>borderWidth</i>	new value
--------------------	-----------

See also

`mBorderWidth`

3.1.4.48 setDeadZone()

```
void QVirtualPad::setDeadZone (
    float deadZone )
```

deadZone property setter.

Parameters

<i>deadZone</i>	new value
-----------------	-----------

See also

`mDeadZone`

3.1.4.49 setExternalDeadZone()

```
void QVirtualPad::setExternalDeadZone (
    bool externalDeadZone )
```

externalDeadZone property setter.

Parameters

<i>externalDeadZone</i>	new value
-------------------------	-----------

See also

mExternalDeadZone

3.1.4.50 setMarks()

```
void QVirtualPad::setMarks (
    QVirtualPad::Marks marks )
```

marks property setter.

Parameters

<i>marks</i>	new value
--------------	-----------

See also

[Marks](#), mMarks

3.1.4.51 setMomentary()

```
void QVirtualPad::setMomentary (
    bool momentary )
```

momentarey property setter.

Parameters

<i>momentary</i>	
------------------	--

See also

mMomentary

3.1.4.52 setOpacity()

```
void QVirtualPad::setOpacity (
    float opacity )
```

opacity property setter.

Parameters

<i>opacity</i>	new value
----------------	-----------

See also

mOpacity

3.1.4.53 setPadColor()

```
void QVirtualPad::setPadColor (
    const QColor & padColor )
```

padColor property setter.

Parameters

<i>padColor</i>	new value
-----------------	-----------

See also

mPadColor

3.1.4.54 setPadFocalColor()

```
void QVirtualPad::setPadFocalColor (
    const QColor & padFocalColor )
```

padFocalColor property setter.

Parameters

<i>padFocalColor</i>	new value
----------------------	-----------

See also

mPadFocalColor

3.1.4.55 setPadSizeRatio()

```
void QVirtualPad::setPadSizeRatio (
    float padSizeRatio )
```

padSizeRatio property setter.

Parameters

<i>padSizeRatio</i>	new value
---------------------	-----------

See also

mPadSizeRatio

3.1.4.56 StringToAxis()

```
QVirtualPad::Axis QVirtualPad::StringToAxis (
    QString axis ) [static]
```

Convert argument string in an Axis value.

Parameters

<i>axis</i>	
-------------	--

Returns

Axis

See also

[Axis](#)

3.1.4.57 StringToMarks()

```
QVirtualPad::Marks QVirtualPad::StringToMarks (
    QString marks )    [static]
```

Convert argument string in a Marks value.

Parameters

<i>marks</i>	
--------------	--

Returns

Marks

3.1.4.58 updatePosition()

```
void QVirtualPad::updatePosition (
    double x,
    double y )    [protected]
```

Set pad position.

Parameters

<i>x</i>	
<i>y</i>	

See also

mPadPosition

3.1.4.59 x()

```
double QVirtualPad::x ( )
```

X axis normalized value [-1...1].

Returns

double

See also

mValueAxis

3.1.4.60 y()

```
double QVirtualPad::y ( )
```

Y axis normalized value [-1...1].

Returns

double

See also

mValueAxis

3.1.5 Member Data Documentation

3.1.5.1 DEF_FOCAL_POS_RATIO

```
constexpr static const float QVirtualPad::DEF_FOCAL_POS_RATIO = 0.5f [static], [constexpr]
```

Focal point pos ratio against focal size.

3.1.5.2 DEF_MARKS_OFF_RATIO

```
constexpr static const float QVirtualPad::DEF_MARKS_OFF_RATIO = 0.9f [static], [constexpr]
```

Direction marks offset ratio against widget frame size.

3.1.5.3 DEF_PAD_SIZE_RATIO

```
constexpr static const float QVirtualPad::DEF_PAD_SIZE_RATIO = 0.5f [static], [constexpr]
```

Pad size ratio against full widget frame.

3.1.5.4 MARKS_SIZE_RATIO

```
constexpr static const float QVirtualPad::MARKS_SIZE_RATIO = 0.0286f [static], [constexpr]
```

Size ratio of direction markings againsta widget frame size.

3.1.5.5 MAX_PAD_SIZE_RATIO

```
constexpr static const float QVirtualPad::MAX_PAD_SIZE_RATIO = 0.66f [static], [constexpr]
```

Max pad size ratio.

3.1.5.6 MIN_PAD_SIZE_RATIO

```
constexpr static const float QVirtualPad::MIN_PAD_SIZE_RATIO = 0.1f [static], [constexpr]
```

Min pad size ratio.

The documentation for this class was generated from the following files:

- qvirtualpad.h
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