

EPICS QT Framework

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Contents

1	QE framework - EPICS aware Qt Widgets and data access classes	1
1.1	Documentation	1
1.2	License	2
1.3	Platforms	2
1.4	Screenshots	2
1.5	Downloads	2
1.6	Installation	2
1.7	Support	3
1.8	Related Projects	3
1.9	Credits:	3
2	GNU General Public License	5
3	ASgui screen shots	7
4	other applications using epicsqt widgets	13
5	Qt Designer	15
6	Qt Creator	17
7	Class Index	19
7.1	Class Hierarchy	19
8	Class Index	23
8.1	Class List	23
9	Class Documentation	27
9.1	_Field Class Reference	27

9.2	_Item Class Reference	28
9.3	_QDialogItem Class Reference	28
9.4	_QDialogLogin Class Reference	28
9.5	_QPushButtonGroup Class Reference	29
9.6	_QTableWidgetFileBrowser Class Reference	29
9.7	_QTableWidgetLog Class Reference	30
9.8	_QTableWidgetScript Class Reference	30
9.9	QEAnalogIndicator::Band Struct Reference	30
9.10	QEAnalogIndicator::BandList Class Reference	31
9.11	ChartState Class Reference	31
9.12	qcastatemachine::ConnectionQCaStateMachine Class Reference	31
9.13	ContainerProfile Class Reference	32
9.14	contextMenu Class Reference	34
9.15	contextMenuObject Class Reference	36
9.16	QEPeriodic::elementInfoStruct Struct Reference	36
9.17	flipRotateMenu Class Reference	37
9.18	imageContextMenu Class Reference	37
9.19	imageInfo Class Reference	38
9.20	imageMarkup Class Reference	39
9.21	managePixmap Class Reference	40
9.22	markupBeam Class Reference	41
9.23	markupHLine Class Reference	42
9.23.1	Member Function Documentation	42
9.23.1.1	drawMarkup	42
9.24	markupItem Class Reference	43
9.25	markupLine Class Reference	45
9.26	markupRegion Class Reference	45
9.27	markupTarget Class Reference	46
9.28	markupText Class Reference	47
9.29	markupVLine Class Reference	48
9.29.1	Member Function Documentation	48
9.29.1.1	drawMarkup	48
9.30	message_types Class Reference	49
9.31	QEStripChartToolBar::OwnWidgets Class Reference	49

9.32 QEPvProperties::OwnWidgets Class Reference	49
9.33 PeriodicDialog Class Reference	50
9.34 PeriodicElementSetupForm Class Reference	51
9.35 PeriodicSetupDialog Class Reference	51
9.36 PersistenceManager Class Reference	51
9.37 PMContext Class Reference	52
9.38 PMElement Class Reference	52
9.39 PMElementList Class Reference	52
9.39.1 Member Function Documentation	53
9.39.1.1 getElement	53
9.40 QEStripChart::PrivateData Class Reference	53
9.41 QEStripChartItem::PrivateData Class Reference	54
9.42 profilePlot Class Reference	54
9.43 PublishedProfile Class Reference	54
9.44 QPushButtonSpecifications Struct Reference	55
9.45 QBitStatus Class Reference	55
9.46 QCaAlarmInfo Class Reference	57
9.47 QCaConnectionInfo Class Reference	58
9.48 QCaDataPoint Struct Reference	58
9.49 QCaDataPointList Class Reference	58
9.50 QCaDateTime Class Reference	58
9.50.1 Member Function Documentation	59
9.50.1.1 floating	59
9.51 QCaEventFilter Class Reference	59
9.52 QCaEventItem Class Reference	59
9.53 QCaEventUpdate Class Reference	59
9.54 QCaInstalledFiltersListItem Class Reference	60
9.55 qcaobject::QCaObject Class Reference	60
9.56 qcastatemachine::QCaStateMachine Class Reference	62
9.57 QCaVariableNamePropertyManager Class Reference	63
9.58 QEAnalogIndicator Class Reference	63
9.58.1 Detailed Description	66
9.58.2 Member Enumeration Documentation	66
9.58.2.1 Modes	66

9.58.2.2	Orientations	66
9.58.3	Property Documentation	67
9.58.3.1	backgroundColour	67
9.58.3.2	borderColour	67
9.58.3.3	centreAngle	67
9.58.3.4	fontColour	67
9.58.3.5	foregroundColour	67
9.58.3.6	logScale	67
9.58.3.7	logScaleInterval	67
9.58.3.8	majorInterval	67
9.58.3.9	maximum	67
9.58.3.10	minimum	68
9.58.3.11	minorInterval	68
9.58.3.12	mode	68
9.58.3.13	orientation	68
9.58.3.14	showScale	68
9.58.3.15	showText	68
9.58.3.16	spanAngle	68
9.58.3.17	value	68
9.59	QEAAnalogProgressBar Class Reference	68
9.59.1	Member Enumeration Documentation	71
9.59.1.1	ArrayActions	71
9.59.1.2	Formats	72
9.59.1.3	Notations	72
9.59.1.4	UserLevels	72
9.59.2	Constructor & Destructor Documentation	73
9.59.2.1	QEAAnalogProgressBar	73
9.59.2.2	QEAAnalogProgressBar	73
9.59.3	Member Function Documentation	73
9.59.3.1	dbValueChanged	73
9.59.3.2	requestEnabled	73
9.59.4	Property Documentation	73
9.59.4.1	addUnits	73
9.59.4.2	alarmSeverityDisplayMode	73

9.59.4.3	allowDrop	73
9.59.4.4	arrayAction	74
9.59.4.5	displayAlarmState	74
9.59.4.6	enabled	74
9.59.4.7	format	74
9.59.4.8	int	74
9.59.4.9	leadingZero	75
9.59.4.10	localEnumeration	75
9.59.4.11	notation	75
9.59.4.12	precision	76
9.59.4.13	trailingZeros	76
9.59.4.14	useDbDisplayLimits	76
9.59.4.15	useDbPrecision	76
9.59.4.16	userLevelEnabled	76
9.59.4.17	userLevelEngineerStyle	76
9.59.4.18	userLevelScientistStyle	76
9.59.4.19	userLevelUserStyle	77
9.59.4.20	userLevelVisibility	77
9.59.4.21	variable	77
9.59.4.22	variableAsToolTip	77
9.59.4.23	variableSubstitutions	77
9.59.4.24	visible	77
9.60	QEBitStatus Class Reference	78
9.60.1	Member Enumeration Documentation	79
9.60.1.1	UserLevels	79
9.60.2	Member Function Documentation	80
9.60.2.1	dbValueChanged	80
9.60.2.2	requestEnabled	80
9.60.2.3	setVariableNameAndSubstitutions	80
9.60.3	Property Documentation	80
9.60.3.1	allowDrop	80
9.60.3.2	displayAlarmState	80
9.60.3.3	enabled	80
9.60.3.4	int	81

9.60.3.5	userLevelEnabled	81
9.60.3.6	userLevelEngineerStyle	81
9.60.3.7	userLevelScientistStyle	81
9.60.3.8	userLevelUserStyle	81
9.60.3.9	userLevelVisibility	82
9.60.3.10	variable	82
9.60.3.11	variableAsToolTip	82
9.60.3.12	variableSubstitutions	82
9.60.3.13	visible	82
9.61	QEByteArray Class Reference	82
9.62	QEChartStateLists Class Reference	83
9.63	QECheckBox Class Reference	83
9.63.1	Member Enumeration Documentation	87
9.63.1.1	ArrayActions	87
9.63.1.2	CreationOptionNames	87
9.63.1.3	Formats	87
9.63.1.4	Notations	88
9.63.1.5	UpdateOptions	88
9.63.1.6	UserLevels	88
9.63.2	Constructor & Destructor Documentation	88
9.63.2.1	QECheckBox	88
9.63.2.2	QECheckBox	88
9.63.3	Member Function Documentation	89
9.63.3.1	clicked	89
9.63.3.2	dbValueChanged	89
9.63.3.3	launchGui	89
9.63.3.4	pressed	89
9.63.3.5	released	89
9.63.3.6	requestEnabled	89
9.63.4	Property Documentation	90
9.63.4.1	addUnits	90
9.63.4.2	alignment	90
9.63.4.3	allowDrop	90
9.63.4.4	arguments	90

9.63.4.5	arrayAction	90
9.63.4.6	clickCheckedText	90
9.63.4.7	clickText	91
9.63.4.8	confirmAction	91
9.63.4.9	creationOption	91
9.63.4.10	displayAlarmState	91
9.63.4.11	enabled	91
9.63.4.12	format	92
9.63.4.13	guiFile	92
9.63.4.14	int	92
9.63.4.15	labelText	92
9.63.4.16	leadingZero	92
9.63.4.17	localEnumeration	92
9.63.4.18	notation	93
9.63.4.19	password	93
9.63.4.20	pixmap0	93
9.63.4.21	pixmap1	93
9.63.4.22	pixmap2	94
9.63.4.23	pixmap3	94
9.63.4.24	pixmap4	94
9.63.4.25	pixmap5	94
9.63.4.26	pixmap6	94
9.63.4.27	pixmap7	94
9.63.4.28	precision	94
9.63.4.29	pressText	94
9.63.4.30	prioritySubstitutions	95
9.63.4.31	program	95
9.63.4.32	releaseText	95
9.63.4.33	subscribe	95
9.63.4.34	trailingZeros	95
9.63.4.35	updateOption	95
9.63.4.36	useDbPrecision	95
9.63.4.37	userLevelEnabled	96
9.63.4.38	userLevelEngineerStyle	96

9.63.4.39	userLevelScientistStyle	96
9.63.4.40	userLevelUserStyle	96
9.63.4.41	userLevelVisibility	96
9.63.4.42	variable	97
9.63.4.43	variableAsToolTip	97
9.63.4.44	variableSubstitutions	97
9.63.4.45	visible	97
9.63.4.46	writeOnClick	97
9.63.4.47	writeOnPress	97
9.63.4.48	writeOnRelease	97
9.64	QECheckBoxManager Class Reference	98
9.65	QEComboBox Class Reference	98
9.65.1	Member Enumeration Documentation	100
9.65.1.1	UserLevels	100
9.65.2	Member Function Documentation	100
9.65.2.1	dbValueChanged	100
9.65.2.2	requestEnabled	101
9.65.3	Member Data Documentation	101
9.65.3.1	useDbEnumerations	101
9.65.3.2	writeOnChange	101
9.65.4	Property Documentation	101
9.65.4.1	allowDrop	101
9.65.4.2	displayAlarmState	101
9.65.4.3	enabled	101
9.65.4.4	int	102
9.65.4.5	localEnumeration	102
9.65.4.6	subscribe	102
9.65.4.7	userLevelEnabled	102
9.65.4.8	userLevelEngineerStyle	102
9.65.4.9	userLevelScientistStyle	102
9.65.4.10	userLevelUserStyle	103
9.65.4.11	userLevelVisibility	103
9.65.4.12	variable	103
9.65.4.13	variableAsToolTip	103

9.65.4.14	variableSubstitutions	103
9.65.4.15	visible	103
9.66	QEConfiguredLayout Class Reference	104
9.67	QEConfiguredLayoutManager Class Reference	105
9.68	QEDragDrop Class Reference	106
9.69	QEFileBrowser Class Reference	107
9.70	QEFloating Class Reference	109
9.71	QEFloatingFormatting Class Reference	109
9.72	QForm Class Reference	110
9.72.1	Member Function Documentation	112
9.72.1.1	setVariableNameAndSubstitutions	112
9.73	QFrame Class Reference	112
9.73.1	Member Enumeration Documentation	113
9.73.1.1	UserLevels	113
9.73.2	Member Function Documentation	113
9.73.2.1	requestEnabled	113
9.73.3	Property Documentation	114
9.73.3.1	allowDrop	114
9.73.3.2	displayAlarmState	114
9.73.3.3	enabled	114
9.73.3.4	int	114
9.73.3.5	userLevelEnabled	114
9.73.3.6	userLevelEngineerStyle	114
9.73.3.7	userLevelScientistStyle	115
9.73.3.8	userLevelUserStyle	115
9.73.3.9	userLevelVisibility	115
9.73.3.10	variableAsToolTip	115
9.73.3.11	visible	115
9.74	QEGenericButton Class Reference	116
9.75	QEGenericEdit Class Reference	117
9.75.1	Member Enumeration Documentation	120
9.75.1.1	UserLevels	120
9.75.2	Constructor & Destructor Documentation	120
9.75.2.1	QEGenericEdit	120

9.75.2.2	QEGenericEdit	120
9.75.3	Member Function Documentation	120
9.75.3.1	getConfirmWrite	120
9.75.3.2	getSubscribe	120
9.75.3.3	getWriteOnEnter	120
9.75.3.4	getWriteOnFinish	121
9.75.3.5	getWriteOnLoseFocus	121
9.75.3.6	requestEnabled	121
9.75.3.7	setConfirmWrite	121
9.75.3.8	setSubscribe	121
9.75.3.9	setWriteOnEnter	121
9.75.3.10	setWriteOnFinish	121
9.75.3.11	setWriteOnLoseFocus	121
9.75.4	Property Documentation	122
9.75.4.1	allowDrop	122
9.75.4.2	confirmWrite	122
9.75.4.3	displayAlarmState	122
9.75.4.4	enabled	122
9.75.4.5	int	122
9.75.4.6	subscribe	122
9.75.4.7	userLevelEnabled	123
9.75.4.8	userLevelEngineerStyle	123
9.75.4.9	userLevelScientistStyle	123
9.75.4.10	userLevelUserStyle	123
9.75.4.11	userLevelVisibility	123
9.75.4.12	variable	124
9.75.4.13	variableAsToolTip	124
9.75.4.14	variableSubstitutions	124
9.75.4.15	visible	124
9.75.4.16	writeOnEnter	124
9.75.4.17	writeOnFinish	124
9.75.4.18	writeOnLoseFocus	124
9.76	QEGroupBox Class Reference	125
9.76.1	Member Enumeration Documentation	126

9.76.1.1	UserLevels	126
9.76.2	Member Function Documentation	126
9.76.2.1	requestEnabled	126
9.76.3	Property Documentation	126
9.76.3.1	allowDrop	126
9.76.3.2	displayAlarmState	127
9.76.3.3	enabled	127
9.76.3.4	int	127
9.76.3.5	userLevelEnabled	127
9.76.3.6	userLevelEngineerStyle	127
9.76.3.7	userLevelScientistStyle	128
9.76.3.8	userLevelUserStyle	128
9.76.3.9	userLevelVisibility	128
9.76.3.10	variableAsToolTip	128
9.76.3.11	visible	128
9.77	QEImage Class Reference	129
9.77.1	Member Enumeration Documentation	137
9.77.1.1	formatOptions	137
9.77.1.2	FormatOptions	137
9.77.1.3	ResizeOptions	137
9.77.1.4	resizeOptions	137
9.77.1.5	rotationOptions	138
9.77.1.6	RotationOptions	138
9.77.1.7	selectOptions	138
9.77.1.8	UserLevels	138
9.77.2	Constructor & Destructor Documentation	139
9.77.2.1	QEImage	139
9.77.2.2	QEImage	139
9.77.3	Member Function Documentation	139
9.77.3.1	dbValueChanged	139
9.77.3.2	requestEnabled	139
9.77.4	Member Data Documentation	139
9.77.4.1	autoBrightnessContrast	139
9.77.4.2	displayButtonBar	140

9.77.4.3	enableBrightnessContrast	140
9.77.4.4	initialVertScrollPos	140
9.77.5	Property Documentation	140
9.77.5.1	allowDrop	140
9.77.5.2	areaColor	140
9.77.5.3	beamColor	140
9.77.5.4	beamXVariable	140
9.77.5.5	beamYVariable	140
9.77.5.6	clippingHighVariable	141
9.77.5.7	clippingLowVariable	141
9.77.5.8	clippingOnOffVariable	141
9.77.5.9	displayAlarmState	141
9.77.5.10	enabled	141
9.77.5.11	enableHozSliceSelection	141
9.77.5.12	enableVertSliceSelection	141
9.77.5.13	formatOption	142
9.77.5.14	heightVariable	142
9.77.5.15	horizontalFlip	142
9.77.5.16	hozSliceColor	142
9.77.5.17	imageVariable	142
9.77.5.18	initialHosScrollPos	142
9.77.5.19	int	142
9.77.5.20	profileColor	142
9.77.5.21	regionOfInterest1HVariable	142
9.77.5.22	regionOfInterest1WVariable	143
9.77.5.23	regionOfInterest1XVariable	143
9.77.5.24	regionOfInterest1YVariable	143
9.77.5.25	regionOfInterest2HVariable	143
9.77.5.26	regionOfInterest2WVariable	143
9.77.5.27	regionOfInterest2XVariable	143
9.77.5.28	regionOfInterest2YVariable	143
9.77.5.29	regionOfInterest3HVariable	143
9.77.5.30	regionOfInterest3WVariable	143
9.77.5.31	regionOfInterest3XVariable	144

9.77.5.32 regionOfInterest3YVariable	144
9.77.5.33 regionOfInterest4HVariable	144
9.77.5.34 regionOfInterest4WVariable	144
9.77.5.35 regionOfInterest4XVariable	144
9.77.5.36 regionOfInterest4YVariable	144
9.77.5.37 resizeMode	144
9.77.5.38 rotation	144
9.77.5.39 showTime	144
9.77.5.40 targetColor	145
9.77.5.41 targetTriggerVariable	145
9.77.5.42 targetXVariable	145
9.77.5.43 targetYVariable	145
9.77.5.44 timeColor	145
9.77.5.45 userLevelEnabled	145
9.77.5.46 userLevelEngineerStyle	145
9.77.5.47 userLevelScientistStyle	146
9.77.5.48 userLevelUserStyle	146
9.77.5.49 userLevelVisibility	146
9.77.5.50 variableAsToolTip	146
9.77.5.51 variableSubstitutions	146
9.77.5.52 verticalFlip	146
9.77.5.53 vertSliceColor	147
9.77.5.54 visible	147
9.77.5.55 widthVariable	147
9.78 QEInteger Class Reference	147
9.79 QEIntegerFormatting Class Reference	148
9.79.1 Detailed Description	148
9.79.2 Member Function Documentation	149
9.79.2.1 formatInteger	149
9.79.2.2 formatIntegerArray	149
9.79.2.3 formatValue	149
9.80 QELabel Class Reference	149
9.80.1 Detailed Description	153
9.80.2 Member Enumeration Documentation	153

9.80.2.1	ArrayActions	153
9.80.2.2	Formats	153
9.80.2.3	Notations	153
9.80.2.4	UpdateOptions	154
9.80.2.5	updateOptions	154
9.80.2.6	UserLevels	154
9.80.3	Constructor & Destructor Documentation	154
9.80.3.1	QELabel	154
9.80.3.2	QELabel	154
9.80.4	Member Function Documentation	155
9.80.4.1	dbValueChanged	155
9.80.4.2	requestEnabled	155
9.80.5	Property Documentation	155
9.80.5.1	addUnits	155
9.80.5.2	allowDrop	155
9.80.5.3	arrayAction	155
9.80.5.4	displayAlarmState	155
9.80.5.5	enabled	156
9.80.5.6	format	156
9.80.5.7	int	156
9.80.5.8	leadingZero	156
9.80.5.9	localEnumeration	156
9.80.5.10	notation	157
9.80.5.11	pixmap0	157
9.80.5.12	pixmap1	157
9.80.5.13	pixmap2	157
9.80.5.14	pixmap3	157
9.80.5.15	pixmap4	158
9.80.5.16	pixmap5	158
9.80.5.17	pixmap6	158
9.80.5.18	pixmap7	158
9.80.5.19	precision	158
9.80.5.20	trailingZeros	158
9.80.5.21	updateOption	158

9.80.5.22	useDbPrecision	158
9.80.5.23	userLevelEnabled	159
9.80.5.24	userLevelEngineerStyle	159
9.80.5.25	userLevelScientistStyle	159
9.80.5.26	userLevelUserStyle	159
9.80.5.27	userLevelVisibility	159
9.80.5.28	variable	160
9.80.5.29	variableAsToolTip	160
9.80.5.30	variableSubstitutions	160
9.80.5.31	visible	160
9.81	QELineEdit Class Reference	160
9.81.1	Member Enumeration Documentation	162
9.81.1.1	ArrayActions	162
9.81.1.2	Formats	162
9.81.1.3	Notations	162
9.81.2	Constructor & Destructor Documentation	163
9.81.2.1	QELineEdit	163
9.81.2.2	QELineEdit	163
9.81.3	Member Function Documentation	163
9.81.3.1	dbValueChanged	163
9.81.4	Property Documentation	163
9.81.4.1	addUnits	163
9.81.4.2	arrayAction	163
9.81.4.3	format	164
9.81.4.4	int	164
9.81.4.5	leadingZero	164
9.81.4.6	localEnumeration	164
9.81.4.7	notation	165
9.81.4.8	precision	165
9.81.4.9	trailingZeros	165
9.81.4.10	useDbPrecision	165
9.82	QELineEditManager Class Reference	165
9.83	QELink Class Reference	166
9.84	QELocalEnumeration Class Reference	167

9.84.1 Detailed Description	168
9.84.2 Constructor & Destructor Documentation	168
9.84.2.1 QELocalEnumeration	168
9.84.2.2 QELocalEnumeration	168
9.84.3 Member Function Documentation	168
9.84.3.1 getLocalEnumeration	168
9.84.3.2 isDefined	168
9.84.3.3 setLocalEnumeration	169
9.84.3.4 textToDouble	169
9.84.3.5 textToInt	169
9.84.3.6 textToValue	169
9.84.3.7 valueToText	170
9.85 QELog Class Reference	170
9.86 QELogin Class Reference	172
9.87 QENumericEdit Class Reference	174
9.87.1 Detailed Description	176
9.87.2 Constructor & Destructor Documentation	176
9.87.2.1 QENumericEdit	176
9.87.2.2 QENumericEdit	176
9.87.3 Member Function Documentation	176
9.87.3.1 dbValueChanged	176
9.87.4 Property Documentation	176
9.87.4.1 addUnits	176
9.87.4.2 autoScale	176
9.87.4.3 leadingZeros	177
9.87.4.4 maximum	177
9.87.4.5 minimum	177
9.87.4.6 precision	177
9.88 QENumericEditManager Class Reference	177
9.89 QEPeriodic Class Reference	178
9.89.1 Member Enumeration Documentation	181
9.89.1.1 UserLevels	181
9.89.2 Member Function Documentation	181
9.89.2.1 dbElementChanged	181

9.89.2.2	dbValueChanged	181
9.89.2.3	requestEnabled	181
9.89.3	Member Data Documentation	182
9.89.3.1	allowDrop	182
9.89.4	Property Documentation	182
9.89.4.1	displayAlarmState	182
9.89.4.2	enabled	182
9.89.4.3	int	182
9.89.4.4	readbackLabelVariable1	182
9.89.4.5	readbackLabelVariable2	182
9.89.4.6	subscribe	183
9.89.4.7	userLevelEnabled	183
9.89.4.8	userLevelEngineerStyle	183
9.89.4.9	userLevelScientistStyle	183
9.89.4.10	userLevelUserStyle	183
9.89.4.11	userLevelVisibility	184
9.89.4.12	variableAsToolTip	184
9.89.4.13	variableSubstitutions	184
9.89.4.14	visible	184
9.89.4.15	writeButtonVariable1	184
9.89.4.16	writeButtonVariable2	184
9.90	QEPeiodicComponentData Class Reference	184
9.91	QEPeiodicTaskMenu Class Reference	185
9.92	QEPeiodicTaskMenuFactory Class Reference	185
9.93	QEpicsPV Class Reference	186
9.94	QEPlot Class Reference	187
9.94.1	Member Enumeration Documentation	190
9.94.1.1	UserLevels	190
9.94.2	Member Function Documentation	191
9.94.2.1	dbValueChanged	191
9.94.2.2	dbValueChanged	191
9.94.2.3	requestEnabled	191
9.94.3	Member Data Documentation	191
9.94.3.1	allowDrop	191

9.94.4	Property Documentation	191
9.94.4.1	displayAlarmState	191
9.94.4.2	enabled	191
9.94.4.3	int	192
9.94.4.4	userLevelEnabled	192
9.94.4.5	userLevelEngineerStyle	192
9.94.4.6	userLevelScientistStyle	192
9.94.4.7	userLevelUserStyle	192
9.94.4.8	userLevelVisibility	193
9.94.4.9	variable1	193
9.94.4.10	variable2	193
9.94.4.11	variable3	193
9.94.4.12	variable4	193
9.94.4.13	variableAsToolTip	193
9.94.4.14	variableSubstitutions	193
9.94.4.15	visible	194
9.95	QEPushButton Class Reference	194
9.95.1	Member Enumeration Documentation	197
9.95.1.1	ArrayActions	197
9.95.1.2	CreationOptionNames	197
9.95.1.3	Formats	197
9.95.1.4	Notations	198
9.95.1.5	UpdateOptions	198
9.95.1.6	UserLevels	198
9.95.2	Constructor & Destructor Documentation	198
9.95.2.1	QEPushButton	198
9.95.2.2	QEPushButton	199
9.95.3	Member Function Documentation	199
9.95.3.1	clicked	199
9.95.3.2	dbValueChanged	199
9.95.3.3	launchGui	199
9.95.3.4	pressed	199
9.95.3.5	released	199
9.95.3.6	requestEnabled	200

9.95.4	Property Documentation	200
9.95.4.1	addUnits	200
9.95.4.2	alignment	200
9.95.4.3	allowDrop	200
9.95.4.4	altReadbackVariable	200
9.95.4.5	arguments	200
9.95.4.6	arrayAction	200
9.95.4.7	clickCheckedText	201
9.95.4.8	clickText	201
9.95.4.9	confirmAction	201
9.95.4.10	creationOption	201
9.95.4.11	displayAlarmState	201
9.95.4.12	enabled	202
9.95.4.13	format	202
9.95.4.14	guiFile	202
9.95.4.15	int	202
9.95.4.16	labelText	202
9.95.4.17	leadingZero	203
9.95.4.18	localEnumeration	203
9.95.4.19	notation	203
9.95.4.20	password	203
9.95.4.21	pixmap0	204
9.95.4.22	pixmap1	204
9.95.4.23	pixmap2	204
9.95.4.24	pixmap3	204
9.95.4.25	pixmap4	204
9.95.4.26	pixmap5	204
9.95.4.27	pixmap6	204
9.95.4.28	pixmap7	204
9.95.4.29	precision	205
9.95.4.30	pressText	205
9.95.4.31	prioritySubstitutions	205
9.95.4.32	program	205
9.95.4.33	releaseText	205

9.95.4.34	subscribe	205
9.95.4.35	trailingZeros	205
9.95.4.36	updateOption	206
9.95.4.37	useDbPrecision	206
9.95.4.38	userLevelEnabled	206
9.95.4.39	userLevelEngineerStyle	206
9.95.4.40	userLevelScientistStyle	206
9.95.4.41	userLevelUserStyle	206
9.95.4.42	userLevelVisibility	207
9.95.4.43	variable	207
9.95.4.44	variableAsToolTip	207
9.95.4.45	variableSubstitutions	207
9.95.4.46	visible	207
9.95.4.47	writeOnClick	207
9.95.4.48	writeOnPress	208
9.95.4.49	writeOnRelease	208
9.96	QEPVNameLists Class Reference	208
9.97	QEPvProperties Class Reference	208
9.97.1	Member Enumeration Documentation	210
9.97.1.1	UserLevels	210
9.97.2	Member Function Documentation	210
9.97.2.1	requestEnabled	210
9.97.2.2	restoreConfiguration	211
9.97.2.3	saveConfiguration	211
9.97.2.4	scaleBy	211
9.97.3	Property Documentation	211
9.97.3.1	allowDrop	211
9.97.3.2	displayAlarmState	211
9.97.3.3	enabled	212
9.97.3.4	int	212
9.97.3.5	userLevelEnabled	212
9.97.3.6	userLevelEngineerStyle	212
9.97.3.7	userLevelScientistStyle	212
9.97.3.8	userLevelUserStyle	213

9.97.3.9	userLevelVisibility	213
9.97.3.10	variable	213
9.97.3.11	variableAsToolTip	213
9.97.3.12	variableSubstitutions	213
9.97.3.13	visible	213
9.98	QEPvPropertiesManager Class Reference	214
9.99	QERadioButton Class Reference	214
9.99.1	Member Enumeration Documentation	217
9.99.1.1	ArrayActions	217
9.99.1.2	CreationOptionNames	218
9.99.1.3	Formats	218
9.99.1.4	Notations	218
9.99.1.5	UpdateOptions	218
9.99.1.6	UserLevels	219
9.99.2	Constructor & Destructor Documentation	219
9.99.2.1	QERadioButton	219
9.99.2.2	QERadioButton	219
9.99.3	Member Function Documentation	219
9.99.3.1	clicked	219
9.99.3.2	dbValueChanged	219
9.99.3.3	launchGui	219
9.99.3.4	pressed	220
9.99.3.5	released	220
9.99.3.6	requestEnabled	220
9.99.4	Property Documentation	220
9.99.4.1	addUnits	220
9.99.4.2	alignment	220
9.99.4.3	allowDrop	220
9.99.4.4	arguments	221
9.99.4.5	arrayAction	221
9.99.4.6	clickCheckedText	221
9.99.4.7	clickText	221
9.99.4.8	confirmAction	221
9.99.4.9	creationOption	222

9.99.4.10 displayAlarmState	222
9.99.4.11 enabled	222
9.99.4.12 format	222
9.99.4.13 guiFile	222
9.99.4.14 int	222
9.99.4.15 labelText	223
9.99.4.16 leadingZero	223
9.99.4.17 localEnumeration	223
9.99.4.18 notation	224
9.99.4.19 password	224
9.99.4.20 pixmap0	224
9.99.4.21 pixmap1	224
9.99.4.22 pixmap2	224
9.99.4.23 pixmap3	224
9.99.4.24 pixmap4	224
9.99.4.25 pixmap5	224
9.99.4.26 pixmap6	225
9.99.4.27 pixmap7	225
9.99.4.28 precision	225
9.99.4.29 pressText	225
9.99.4.30 prioritySubstitutions	225
9.99.4.31 program	225
9.99.4.32 releaseText	225
9.99.4.33 subscribe	226
9.99.4.34 trailingZeros	226
9.99.4.35 updateOption	226
9.99.4.36 useDbPrecision	226
9.99.4.37 userLevelEnabled	226
9.99.4.38 userLevelEngineerStyle	226
9.99.4.39 userLevelScientistStyle	226
9.99.4.40 userLevelUserStyle	227
9.99.4.41 userLevelVisibility	227
9.99.4.42 variable	227
9.99.4.43 variableAsToolTip	227

9.99.4.44 variableSubstitutions	227
9.99.4.45 visible	227
9.99.4.46 writeOnClick	228
9.99.4.47 writeOnPress	228
9.99.4.48 writeOnRelease	228
9.100QERecipe Class Reference	228
9.101QERecordFieldName Class Reference	230
9.102QERecordSpec Class Reference	231
9.103QERecordSpecList Class Reference	231
9.104QEScript Class Reference	231
9.105QEShape Class Reference	233
9.105.1 Detailed Description	237
9.105.2 Member Enumeration Documentation	237
9.105.2.1 animationOptions	237
9.105.2.2 shapeOptions	237
9.105.2.3 UserLevels	238
9.105.3 Constructor & Destructor Documentation	238
9.105.3.1 QEShape	238
9.105.3.2 QEShape	238
9.105.4 Member Function Documentation	238
9.105.4.1 dbValueChanged1	238
9.105.4.2 dbValueChanged2	238
9.105.4.3 dbValueChanged3	238
9.105.4.4 dbValueChanged4	239
9.105.4.5 dbValueChanged5	239
9.105.4.6 dbValueChanged6	239
9.105.4.7 requestEnabled	239
9.105.5 Property Documentation	239
9.105.5.1 allowDrop	239
9.105.5.2 animation1	239
9.105.5.3 animation2	239
9.105.5.4 animation3	240
9.105.5.5 animation4	240
9.105.5.6 animation5	240

9.105.5.7 animation6	240
9.105.5.8 color1	240
9.105.5.9 color10	240
9.105.5.10color2	240
9.105.5.11color3	240
9.105.5.12color4	240
9.105.5.13color5	241
9.105.5.14color6	241
9.105.5.15color7	241
9.105.5.16color8	241
9.105.5.17color9	241
9.105.5.18displayAlarmState	241
9.105.5.19enabled	241
9.105.5.20nt	242
9.105.5.21offset1	242
9.105.5.22offset2	242
9.105.5.23offset3	242
9.105.5.24offset4	242
9.105.5.25offset5	242
9.105.5.26offset6	242
9.105.5.27point1	242
9.105.5.28point10	243
9.105.5.29point2	243
9.105.5.30point3	243
9.105.5.31point4	243
9.105.5.32point5	243
9.105.5.33point6	243
9.105.5.34point7	243
9.105.5.35point8	243
9.105.5.36point9	243
9.105.5.37scale2	244
9.105.5.38scale3	244
9.105.5.39scale4	244
9.105.5.40scale5	244

9.105.5.41scale6	244
9.105.5.42userLevelEnabled	244
9.105.5.43userLevelEngineerStyle	244
9.105.5.44userLevelScientistStyle	245
9.105.5.45userLevelUserStyle	245
9.105.5.46userLevelVisibility	245
9.105.5.47variable1	245
9.105.5.48variable2	245
9.105.5.49variable3	245
9.105.5.50variable4	246
9.105.5.51variable5	246
9.105.5.52variable6	246
9.105.5.53variableAsToolTip	246
9.105.5.54variableSubstitutions	246
9.105.5.55visible	246
9.106QESlider Class Reference	246
9.106.1 Member Enumeration Documentation	248
9.106.1.1 UserLevels	248
9.106.2 Member Function Documentation	249
9.106.2.1 dbValueChanged	249
9.106.2.2 requestEnabled	249
9.106.3 Member Data Documentation	249
9.106.3.1 writeOnChange	249
9.106.4 Property Documentation	249
9.106.4.1 allowDrop	249
9.106.4.2 displayAlarmState	249
9.106.4.3 enabled	250
9.106.4.4 int	250
9.106.4.5 subscribe	250
9.106.4.6 userLevelEnabled	250
9.106.4.7 userLevelEngineerStyle	250
9.106.4.8 userLevelScientistStyle	250
9.106.4.9 userLevelUserStyle	251
9.106.4.10userLevelVisibility	251

9.106.4.11variable	251
9.106.4.12variableAsToolTip	251
9.106.4.13variableSubstitutions	251
9.106.4.14visible	251
9.107QESpinBox Class Reference	252
9.107.1 Member Enumeration Documentation	254
9.107.1.1 UserLevels	254
9.107.2 Member Function Documentation	254
9.107.2.1 dbValueChanged	254
9.107.2.2 requestEnabled	254
9.107.3 Property Documentation	254
9.107.3.1 allowDrop	254
9.107.3.2 displayAlarmState	255
9.107.3.3 enabled	255
9.107.3.4 int	255
9.107.3.5 subscribe	255
9.107.3.6 userLevelEnabled	255
9.107.3.7 userLevelEngineerStyle	255
9.107.3.8 userLevelScientistStyle	256
9.107.3.9 userLevelUserStyle	256
9.107.3.10userLevelVisibility	256
9.107.3.11variable	256
9.107.3.12variableAsToolTip	256
9.107.3.13variableSubstitutions	256
9.107.3.14visible	257
9.108QString Class Reference	257
9.109QStringFormatting Class Reference	258
9.109.1 Member Enumeration Documentation	259
9.109.1.1 arrayActions	259
9.109.1.2 formats	259
9.109.1.3 notations	259
9.110QStringFormattingMethods Class Reference	260
9.111QEStripChart Class Reference	261
9.111.1 Member Function Documentation	262

9.111.1.1 restoreConfiguration	262
9.111.1.2 saveConfiguration	263
9.111.2 Property Documentation	263
9.111.2.1 variableSubstitutions	263
9.112QESTripChartAdjustPVDialo Class Reference	263
9.113QESTripChartContextMenu Class Reference	263
9.113.1 Constructor & Destructor Documentation	264
9.113.1.1 QESTripChartContextMenu	264
9.114QESTripChartItem Class Reference	265
9.115QESTripChartItemDialog Class Reference	266
9.116QESTripChartNames Class Reference	266
9.117QESTripChartRangeDialog Class Reference	267
9.118QESTripChartTimeDialog Class Reference	267
9.119QESTripChartToolBar Class Reference	267
9.119.1 Detailed Description	268
9.120QESubstitutedLabel Class Reference	268
9.120.1 Member Data Documentation	269
9.120.1.1 labelText	269
9.120.2 Property Documentation	269
9.120.2.1 textSubstitutions	269
9.121QEToolTip Class Reference	269
9.122QEWidget Class Reference	271
9.122.1 Detailed Description	272
9.122.2 Member Function Documentation	274
9.122.2.1 activate	274
9.122.2.2 deactivate	274
9.122.2.3 defaultFileLocation	274
9.122.2.4 findQEFile	274
9.122.2.5 getColor	274
9.122.2.6 getFrameworkVersion	274
9.122.2.7 getMessageSourceId	274
9.122.2.8 getQcaltem	274
9.122.2.9 openQEFile	275
9.122.2.10processAlarmInfo	275

9.122.2.1	readNow	275
9.122.2.12	restoreConfiguration	275
9.122.2.13	saveConfiguration	275
9.122.2.14	scaleBy	275
9.122.2.15	setMessageSourceId	276
9.122.2.16	setupContextMenu	276
9.122.2.17	setVariableNameAndSubstitutions	276
9.122.2.18	writeNow	276
9.123	QEWidgets Class Reference	276
9.124	QLabelList Class Reference	277
9.125	qcastatemachine::ReadQCaStateMachine Class Reference	277
9.126	ROInfo Class Reference	277
9.127	SaveRestoreSignal Class Reference	278
9.127.1	Member Function Documentation	278
9.127.1.1	restore	278
9.127.1.2	save	278
9.128	saveRestoreSlot Class Reference	278
9.129	selectMenu Class Reference	279
9.130	standardProperties Class Reference	279
9.131	StateMachineTemplate Class Reference	281
9.132	qcastatemachine::SubscriptionQCaStateMachine Class Reference	281
9.133	trace Class Reference	282
9.134	TrackRange Class Reference	282
9.135	userInfoStruct Class Reference	283
9.136	QEPeriodic::userInfoStructArray Struct Reference	283
9.137	userLevelSignal Class Reference	283
9.138	userLevelSlot Class Reference	284
9.139	userLevelTypes Class Reference	284
9.139.1	Member Enumeration Documentation	284
9.139.1.1	userLevels	284
9.140	UserMessage Class Reference	284
9.140.1	Detailed Description	286
9.141	UserMessageSignal Class Reference	287
9.141.1	Detailed Description	288

9.142UserMessageSlot Class Reference	288
9.142.1 Detailed Description	288
9.143ValueScaling Class Reference	289
9.144VideoWidget Class Reference	289
9.145WidgetRef Class Reference	290
9.146qcastatemachine::WriteQCaStateMachine Class Reference	290
9.147zoomMenu Class Reference	291

Chapter 1

QE framework - EPICS aware Qt Widgets and data access classes

- QE is a layered software framework for accessing EPICS data using Channel Access on a range of platforms.
- The QE framework provides object oriented C++ access to control systems using EPICS (Experimental Physics and Industrial Control System). It is based on Qt, a widely used cross-platform application development framework.
- GUI or console based applications can be written that use QE at several levels. QE includes Qt plugin libraries, EPICS aware widgets, data formatting classes, and classes for accessing raw EPICS data in a Qt friendly way.
- QE also includes an application - QEgui - for displaying forms produced by the Qt development tool 'Designer'. Using this application a complete EPICS GUI system can be generated without writing any code. A GUI system produced in this way can interact with existing EPICS display tools such as EDM.
- QE handles much of the complexities of Channel Access including initiating and managing a channel. Applications using QE can interact with Channel Access using Qt based classes and data types. Channel Access updates are delivered using Qt's signals and slots mechanism.

1.1 Documentation

Support documents can be found in the [documentation](#) section of the epicsqt sourceforge project. The framework download (available on the epicsqt sourceforge [homepage](#)) also includes this documentation as well as full Doxygen generated documentation of all the epicsqt classes and widgets.

1.2 License

epicsqt is distributed under the terms of the [GNU General Public License](#).

1.3 Platforms

epicsqt might be usable in all environments where you find [Qt](#). It is compatible with Qt ≥ 4.4 .

1.4 Screenshots

- [ASgui screen shots](#)
- [other applications using epicsqt widgets](#)
- [Qt Designer](#)
- [Qt Creator](#)

Screenshots are only available in the HTML docs.

1.5 Downloads

Stable releases and development snapshots are available at the epicsqt [project page](#).

For getting a development snapshot from the SVN repository:

```
svn svn co https://epicsqt.svn.sourceforge.net/svnroot/epicsqt epicsqt
```

Alternatively, get a packaged file (epicsqt.tar.gz) from the [epicsqt repository site](#).

1.6 Installation

Read [QE_GettingStarted.pdf](#) in the documentation for setting up an environment for building or using the epicsqt framework.

To build the framework, open epicsqt.pro in QtCreator, ensure shadow build is turned off, and hit build.

The resultant library libQEPlugin.so will need to be installed or referenced up according to how it is to be used - see [QE_GettingStarted.pdf](#) for details.

Any Qt specific queries? start at [the Qt Project](#)

1.7 Support

Visit the sourceforge epicsqt [support page](#) for assistance.

1.8 Related Projects

[Qwt](#), The core of a Channel Access aware plotting widget.

1.9 Credits:

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Project admin:

Andrew Rhyder <andrew.rhyder@synchrotron.org.au>

Chapter 2

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Chapter 3

ASgui screen shots

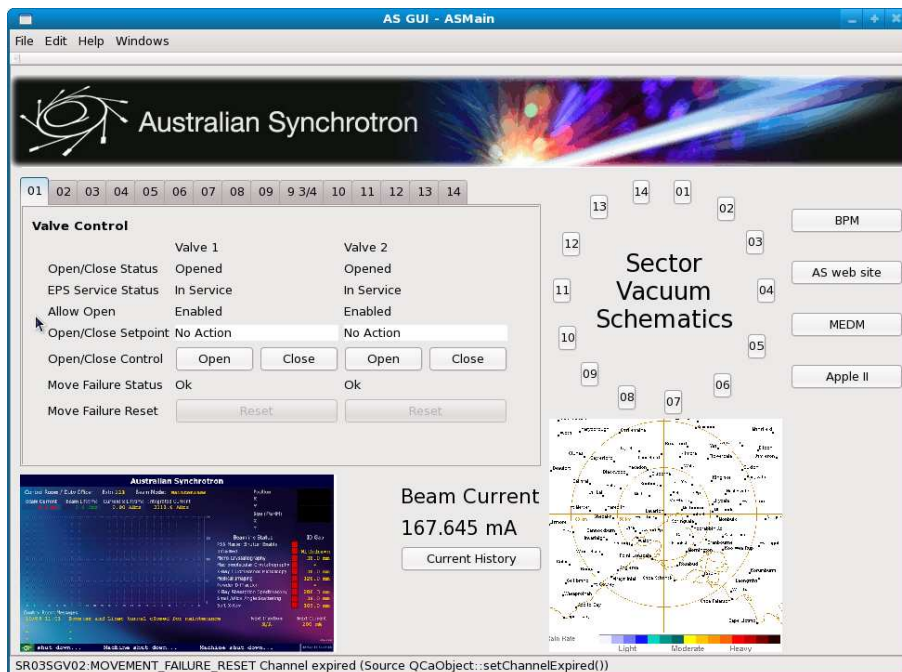


Figure 3.1: Australian Synchrotron mock up

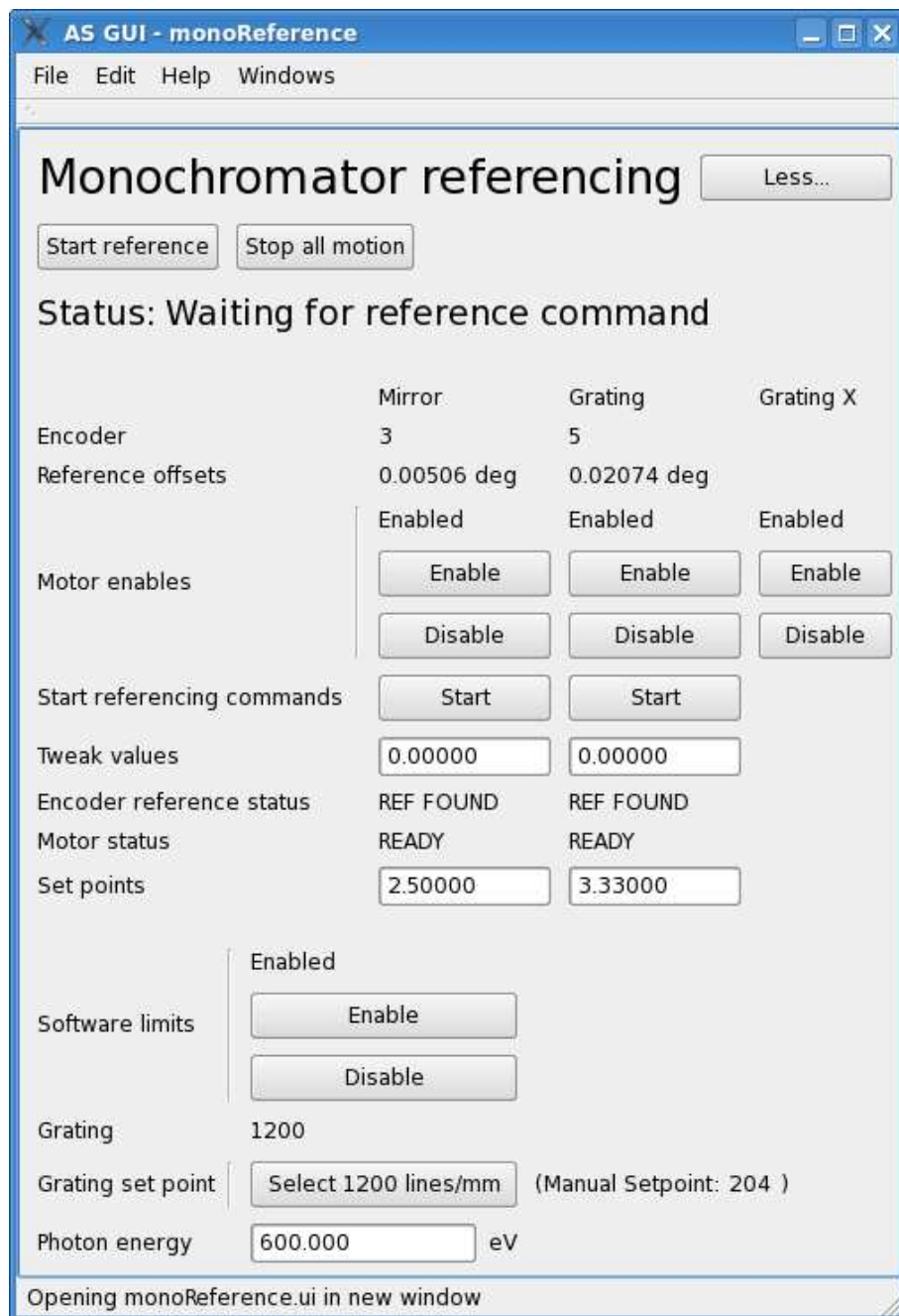


Figure 3.2: Monochromator referencing

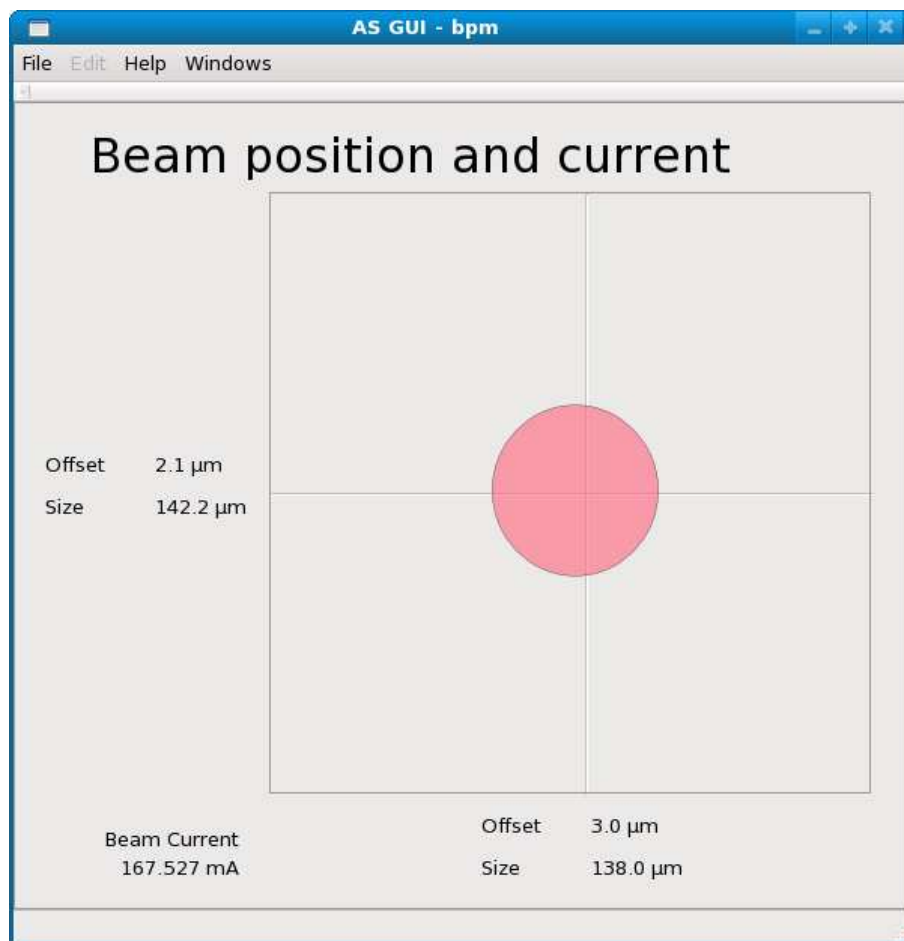


Figure 3.3: Beam position monitor

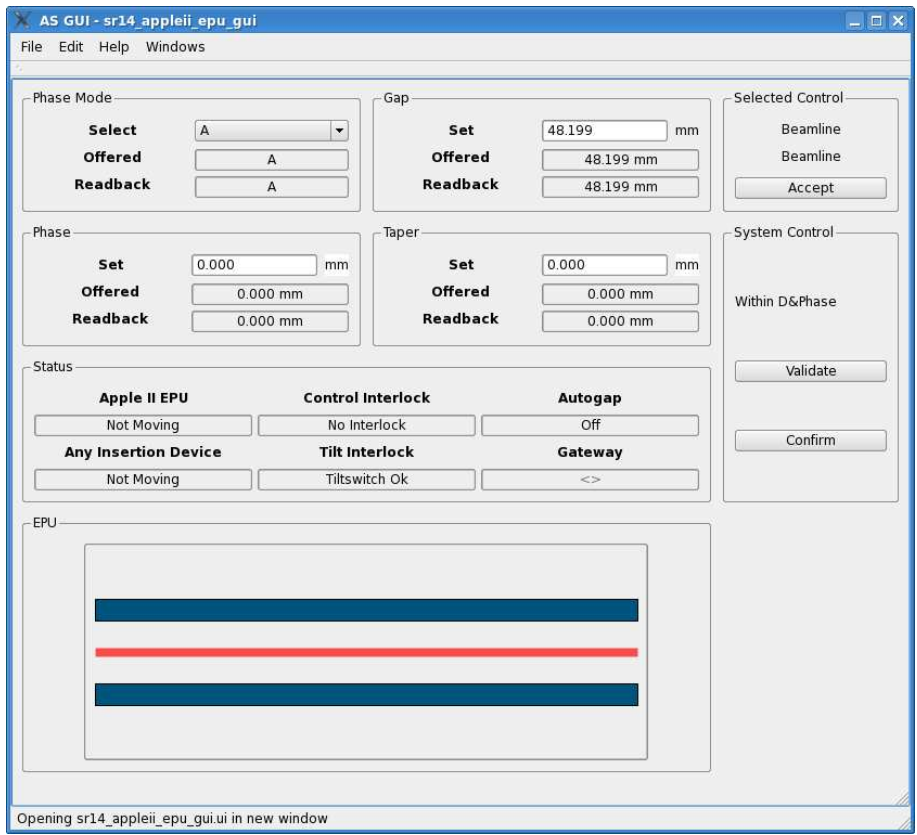


Figure 3.4: Insertion device

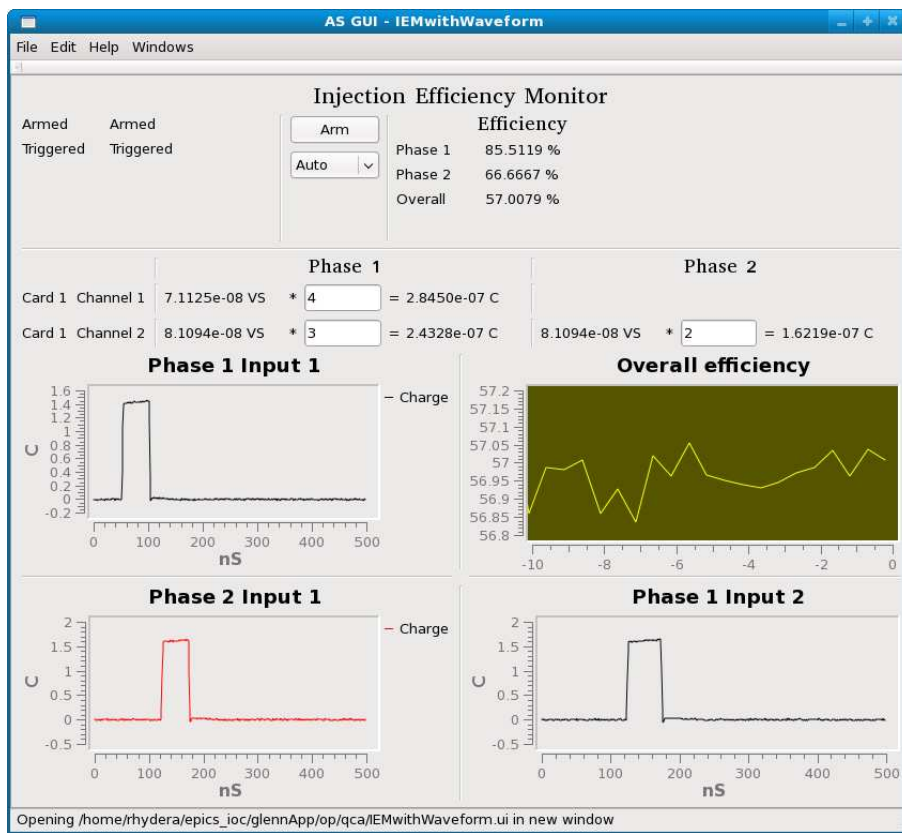


Figure 3.5: Injection efficiency monitor

Chapter 4

other applications using epicsqt widgets

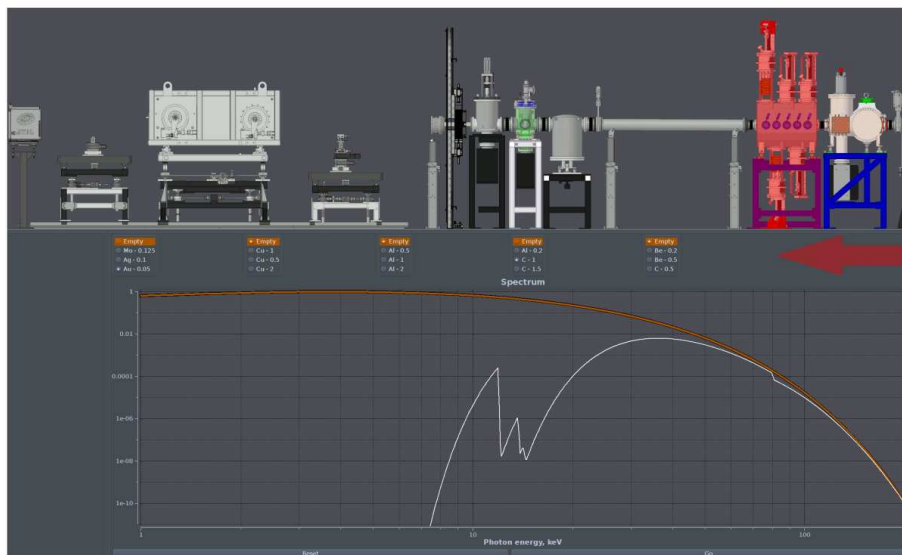


Figure 4.1: Medical Imaging beamline

2B SampleTable Z <@SR08ID01OPI01>

PV name: SR08ID01:MTR32B View mode: Macro

Description: 2B SampleTable Z

Precision: 5 Units: mm

Message: Connection established. clean

User: 6mm Move absolutely Raw: -80932

JOG< UNDO >JOG

LIMIT< Move relatively >LIMIT

< 1mm >

step/10 step/2 step*2 step*10

User: 6mm = Hi limit

Resolution: 0.0001mm/step * 42271.2068mm

Raw: -80932 + Lo Limit

Offset: -2.0932mm -42275.3932mm

Speed Acceleration

Maximum: 1.2mm/s

Normal: 0.8mm/s 1s

Backlash: 0mm/s 1s

log: 1mm/s 10s

Backlash: 0mm

Figure 4.2: Motor controller

MotorMx <@SR08ID01OPI01>

- ▲ ▼	DEI Theta Mono	109.5mm	<	0.1	>	UNDO
- ▲ ▼	DEI Mono Z	-0.3mm	<	0.1	>	UNDO
- ▲ ▼	2B Sample Table Y	0mm	<	1	>	UNDO
- ▲ ▼	2B SampleTable Z	6mm	<	1	>	UNDO
- ▲ ▼	2B Detector Table Z	42mm	<	5	>	UNDO
- ▲ ▼	2B Sample Rotate	-1deg	<	1	>	UNDO
- ▲ ▼	2B Detector Table Y	13.9025mm	<	1	>	UNDO
- ▲ ▼	SETUP	0	<	relative	>	STOP
- ▲ ▼	SLW01:LEFT	9.99975mm	<	3456	>	UNDO

Add motor

Figure 4.3: Motor controller

Chapter 5

Qt Designer

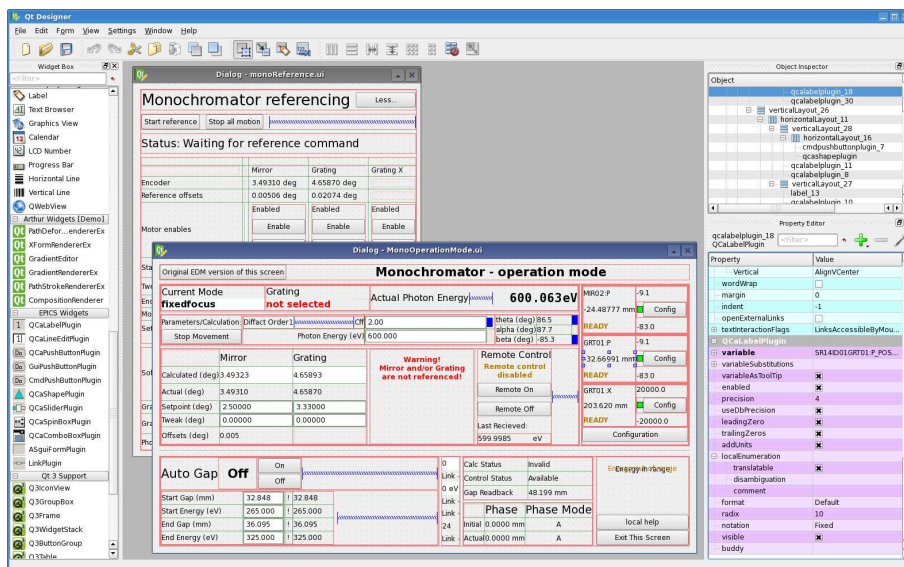


Figure 5.1: Editing multiple GUIs

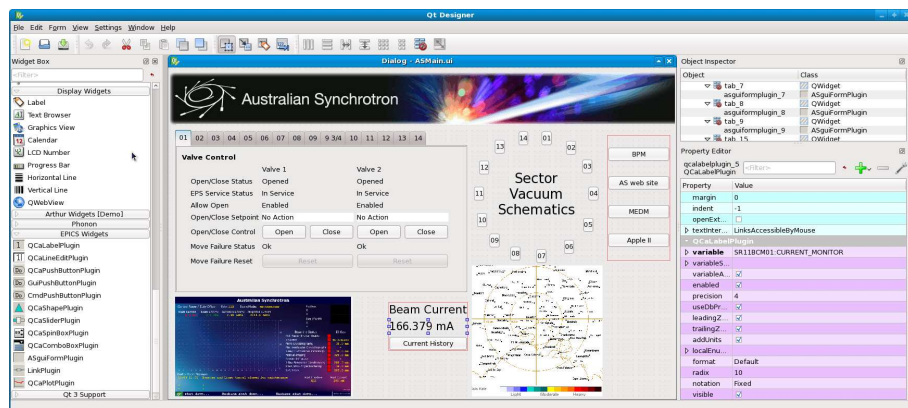


Figure 5.2: Editing a GUI

Chapter 6

Qt Creator

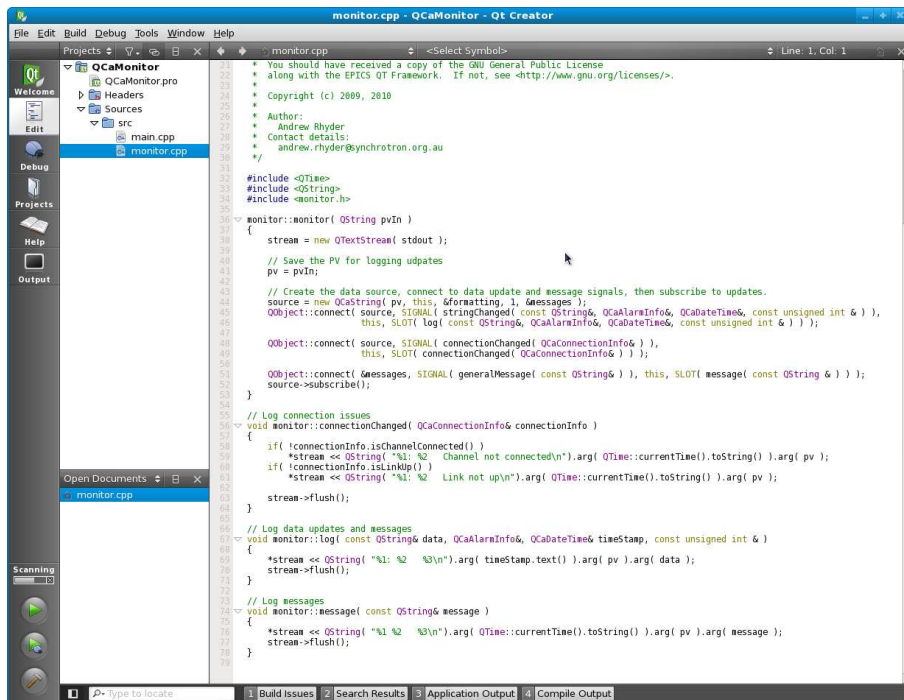


Figure 6.1: Application using epicsqt data source classes

Chapter 7

Class Index

7.1 Class Hierarchy

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

_Field	27
_Item	28
_QDialogItem	28
_QDialogLogin	28
_QPushButtonGroup	29
_QTableWidgetFileBrowser	29
_QTableWidgetLog	30
_QTableWidgetScript	30
QEAAnalogIndicator::Band	30
QEAAnalogIndicator::BandList	31
ChartState	31
ContainerProfile	32
QEWidget	271
QEAAnalogProgressBar	68
QEBitStatus	78
QEComboBox	98
QEConfiguredLayout	104
QEFileBrowser	107
QEForm	110
QEFrame	112
QEGenericButton	116
QECheckBox	83
QEPushButton	194
QERadioButton	214
QEGenericEdit	117
QELineEdit	160
QENumericEdit	174
QEGroupBox	125
QEImage	129

QELabel	149
QELink	166
QELog	170
QELogin	172
QEPeiodic	178
QEPlot	187
QEPvProperties	208
QERecipe	228
QEScript	231
QEShape	233
QESlider	246
QESpinBox	252
QEStripChart	261
QESubstitutedLabel	268
contextMenu	34
QEWidget	271
contextMenuObject	36
QEPeiodic::elementInfoStruct	36
flipRotateMenu	37
imageContextMenu	37
imageInfo	38
QEImage	129
imageMarkup	39
VideoWidget	289
managePixmaps	40
QEGenericButton	116
QELabel	149
markupItem	43
markupBeam	41
markupHLine	42
markupLine	45
markupRegion	45
markupTarget	46
markupText	47
markupVLine	48
message_types	49
QEStripChartToolBar::OwnWidgets	49
QEPvProperties::OwnWidgets	49
PeriodicDialog	50
PeriodicElementSetupForm	51
PeriodicSetupDialog	51
PersistanceManager	51
PMContext	52
PMElement	52
PMElementList	52
QEStripChart::PrivateData	53
QEStripChartItem::PrivateData	54
profilePlot	54

PublishedProfile	54
PushButtonSpecifications	55
QBitStatus	55
QEBitStatus	78
QCaAlarmInfo	57
QCaConnectionInfo	58
QCaDataPoint	58
QCaDataPointList	58
QCaDateTime	58
QCaEventFilter	59
QCaEventItem	59
QCaEventUpdate	59
QCaInstalledFiltersListItem	60
qcaobject::QCaObject	60
QEByteArray	82
QEFloating	109
QEInteger	147
QEString	257
QCaVariableNamePropertyManager	63
QEAnalogIndicator	63
QEAnalogProgressBar	68
QEChartStateLists	83
QECheckBoxManager	98
QEConfiguredLayoutManager	105
QEDragDrop	106
QEWidget	271
QEFloatingFormatting	109
QEIntegerFormatting	148
QELineEditManager	165
QELocalEnumeration	167
QENumericEditManager	177
QEPeriodicComponentData	184
QEPeriodicTaskMenu	185
QEPeriodicTaskMenuFactory	185
QEpicsPV	186
QEPVNameLists	208
QEPvPropertiesManager	214
QERecordFieldName	230
QERecordSpec	231
QERecordSpecList	231
QEStringFormatting	258
QEStringFormattingMethods	260
QEAnalogProgressBar	68
QEGenericButton	116
QELabel	149
QELineEdit	160
QEStripChartAdjustPVDialo	263
QEStripChartContextMenu	263

QEStripChartItem	265
QEStripChartItemDialog	266
QEStripChartNames	266
QEStripChartRangeDialog	267
QEStripChartTimeDialog	267
QEStripChartToolBar	267
QEToolTip	269
QEWidget	271
QEWidgets	276
QLabelList	277
ROInfo	277
SaveRestoreSignal	278
saveRestoreSlot	278
selectMenu	279
standardProperties	279
QEWidget	271
StateMachineTemplate	281
qcastatemachine::QCaStateMachine	62
qcastatemachine::ConnectionQCaStateMachine	31
qcastatemachine::ReadQCaStateMachine	277
qcastatemachine::SubscriptionQCaStateMachine	281
qcastatemachine::WriteQCaStateMachine	290
trace	282
TrackRange	282
userInfoStruct	283
QEPeiodic::userInfoStructArray	283
userLevelSignal	283
userLevelSlot	284
userLevelTypes	284
UserMessage	284
QEWidget	271
UserMessageSignal	287
UserMessageSlot	288
ValueScaling	289
WidgetRef	290
zoomMenu	291

Chapter 8

Class Index

8.1 Class List

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

_Field	27
_Item	28
_QDialogItem	28
_QDialogLogin	28
_QPushButtonGroup	29
_QTableWidgetFileBrowser	29
_QTableWidgetLog	30
_QTableWidgetScript	30
QEAnalogIndicator::Band	30
QEAnalogIndicator::BandList	31
ChartState	31
qcastatemachine::ConnectionQCaStateMachine	31
ContainerProfile	32
contextMenu	34
contextMenuObject	36
QEPeriodic::elementInfoStruct	36
flipRotateMenu	37
imageContextMenu	37
imageInfo	38
imageMarkup	39
managePixmaps	40
markupBeam	41
markupHLine	42
markupItem	43
markupLine	45
markupRegion	45
markupTarget	46
markupText	47
markupVLine	48

message_types	49
QEStripChartToolBar::OwnWidgets	49
QEPvProperties::OwnWidgets	49
PeriodicDialog	50
PeriodicElementSetupForm	51
PeriodicSetupDialog	51
PersistenceManager	51
PMContext	52
PMElement	52
PMElementList	52
QEStripChart::PrivateData	53
QEStripChartItem::PrivateData	54
profilePlot	54
PublishedProfile	54
PushButtonSpecifications	55
QBitStatus	55
QCaAlarmInfo	57
QCaConnectionInfo	58
QCaDataPoint	58
QCaDataPointList	58
QCaDateTime	58
QCaEventFilter	59
QCaEventItem	59
QCaEventUpdate	59
QCaInstalledFiltersListItem	60
qcaobject::QCaObject	60
qcastatemachine::QCaStateMachine	62
QCaVariableNamePropertyManager	63
QEAAnalogIndicator	63
QEAAnalogProgressBar	68
QEBitStatus	78
QEByteArray	82
QEChartStateLists	83
QECheckBox	83
QECheckBoxManager	98
QEComboBox	98
QEConfiguredLayout	104
QEConfiguredLayoutManager	105
QEDragDrop	106
QEFileBrowser	107
QEFloating	109
QEFloatingFormatting	109
QEForm	110
QEFrame	112
QEGenericButton	116
QEGenericEdit	117
QEGroupBox	125
QEImage	129
QEInteger	147
QEIntegerFormatting	148

QELabel	149
QELineEdit	160
QELineEditManager	165
QELink	166
QELocalEnumeration	167
QELog	170
QELogin	172
QENumericEdit (The QENumericEdit class This class is similar to QELineEdit (both of which are derived from QLineEdit). However this class is tailored specifically for editing numerical values)	174
QENumericEditManager	177
QEPeriodic	178
QEPeriodicComponentData	184
QEPeriodicTaskMenu	185
QEPeriodicTaskMenuFactory	185
QEpicsPV	186
QEPlot	187
QEPushButton	194
QEPVNameLists	208
QEPvProperties	208
QEPvPropertiesManager	214
QERadioButton	214
QERecipe	228
QERecordFieldName	230
QERecordSpec	231
QERecordSpecList	231
QEScript	231
QEShape	233
QESlider	246
QESpinBox	252
QEString	257
QEStringFormatting	258
QEStringFormattingMethods	260
QEStripChart	261
QEStripChartAdjustPVDialo	263
QEStripChartContextMenu	263
QEStripChartItem	265
QEStripChartItemDialog	266
QEStripChartNames	266
QEStripChartRangeDialog	267
QEStripChartTimeDialog	267
QEStripChartToolBar (This class holds all the StripChart tool bar widgets)	267
QESubstitutedLabel	268
QEToolTip	269
QEWidg	271
QEWidg	276
QLabelList	277
qcastatemachine::ReadQCaStateMachine	277
ROInfo	277
SaveRestoreSignal	278

saveRestoreSlot	278
selectMenu	279
standardProperties	279
StateMachineTemplate	281
qcastatemachine::SubscriptionQCaStateMachine	281
trace	282
TrackRange	282
userInfoStruct	283
QEPeiodic::userInfoStructArray	283
userLevelSignal	283
userLevelSlot	284
userLevelTypes	284
UserMessage	284
UserMessageSignal	287
UserMessageSlot	288
ValueScaling	289
VideoWidget	289
WidgetRef	290
qcastatemachine::WriteQCaStateMachine	290
zoomMenu	291

Chapter 9

Class Documentation

9.1 _Field Class Reference

Public Member Functions

- [QEWidget](#) * **getWidget** ()
- void **setWidget** (QString *pValue)
- QString **getName** ()
- void **setName** (QString pValue)
- QString **getProcessVariable** ()
- void **setProcessVariable** (QString pValue)
- void **setJoin** (bool pValue)
- bool **getJoin** ()
- int **getType** ()
- void **setType** (int pValue)
- QString **getGroup** ()
- void **setGroup** (QString pValue)
- QString **getVisible** ()
- void **setVisible** (QString pValue)
- QString **getEditable** ()
- void **setEditable** (QString pValue)
- bool **getVisibility** ()
- void **setVisibility** (bool pValue)

Public Attributes

- [QEWidget](#) * **qCaWidget**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.cpp

9.2 _Item Class Reference

Public Member Functions

- void **setName** (QString pValue)
- QString **getName** ()
- void **setSubstitution** (QString pValue)
- QString **getSubstitution** ()
- void **setVisible** (QString pValue)
- QString **getVisible** ()

Public Attributes

- QList< [_Field](#) * > **fieldList**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.cpp

9.3 _QDialogItem Class Reference

Public Member Functions

- **_QDialogItem** (QWidget *pParent=0, QString pItemName="", QString pGroupName="", QList< [_Field](#) * > *pCurrentFieldList=0, Qt::WindowFlags pF=0)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.cpp

9.4 _QDialogLogin Class Reference

Public Member Functions

- **_QDialogLogin** (QWidget *pParent=0, int pUserType=-1, Qt::WindowFlags pF=0)
- void **setCurrentUserType** (int pValue)
- void **setPassword** (QString pValue)

Protected Attributes

- `QGridLayout` * **qGridLayout**
- `QVBoxLayout` * **qVBoxLayout**
- `QGroupBox` * **qGroupBox**
- `QRadioButton` * **qRadioButtonUser**
- `QRadioButton` * **qRadioButtonScientist**
- `QRadioButton` * **qRadioButtonEngineer**
- `QLabel` * **qLabelType**
- `QLineEdit` * **qLineEditPassword**
- `QPushButton` * **qPushButtonOk**
- `QPushButton` * **qPushButtonCancel**
- `int` **userType**

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/QELogin/QELogin.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/QELogin/QELogin.cpp`

9.5 `_QPushButtonGroup` Class Reference

Public Slots

- `void` **buttonGroupClicked** ()

Public Member Functions

- **`_QPushButtonGroup`** (`QWidget` *pParent=0, `QString` pItemName="", `QString` pGroupName="", `QList`< `_Field` * > *pCurrentFieldList=0)
- `void` **mouseReleaseEvent** (`QMouseEvent` *qMouseEvent)
- `void` **keyPressEvent** (`QKeyEvent` *pKeyEvent)
- `void` **showDialogGroup** ()

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.cpp`

9.6 `_QTableWidgetFileBrowser` Class Reference

Public Member Functions

- **`_QTableWidgetFileBrowser`** (`QWidget` *pParent=0)

- void **refreshSize** ()
- void **resizeEvent** (QResizeEvent *)
- void **resize** (int w, int h)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEFileBrowser/QEFileBrowser.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEFileBrowser/QEFileBrowser.cpp

9.7 _QTableWidgetLog Class Reference

Public Member Functions

- **_QTableWidgetLog** (QWidget *pParent=0)
- void **refreshSize** ()
- void **resizeEvent** (QResizeEvent *)
- void **resize** (int w, int h)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELog/QELog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELog/QELog.cpp

9.8 _QTableWidgetScript Class Reference

Public Member Functions

- **_QTableWidgetScript** (QWidget *pParent=0)
- void **refreshSize** ()
- void **resizeEvent** (QResizeEvent *)
- void **resize** (int w, int h)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEScript/QEScript.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEScript/QEScript.cpp

9.9 QEAnalogIndicator::Band Struct Reference

Public Attributes

- double **lower**

- double **upper**
- QColor **colour**

The documentation for this struct was generated from the following file:

- /home/rhydera/epicsqt/trunk/framework/widgets/QEAnalogIndicator/QEAnalogIndicator.h

9.10 QEAnalogIndicator::BandList Class Reference

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEAnalogIndicator/QEAnalogIndicator.h

9.11 ChartState Class Reference

Public Member Functions

- void **saveConfiguration** ([PMElement](#) &parentElement)
- void **restoreConfiguration** ([PMElement](#) &parentElement)

Public Attributes

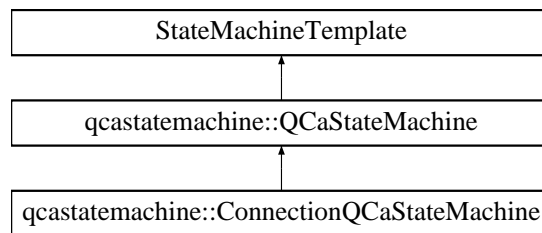
- bool **isNormalVideo**
- QEStripChartNames::ChartTimeModes **chartTimeMode**
- QEStripChartNames::YScaleModes **yScaleMode**
- QEStripChartNames::ChartYRanges **chartYScale**
- double **yMinimum**
- double **yMaximum**
- int **duration**
- Qt::TimeSpec **timeZoneSpec**
- QDateTime **endDateTime**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChart.cpp

9.12 qcastatemachine::ConnectionQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::ConnectionQCaStateMachine:



Public Member Functions

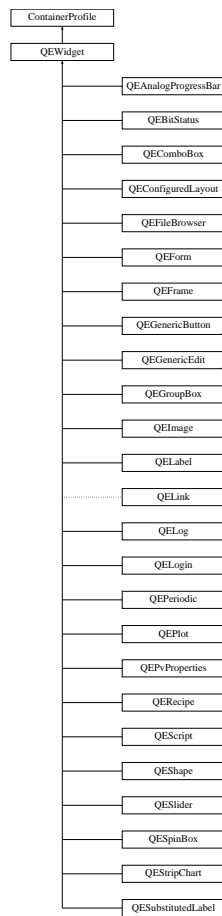
- **ConnectionQCaStateMachine** (void *parent)
- bool **process** (int requestedState)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaStateMachine.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaStateMachine.cpp

9.13 ContainerProfile Class Reference

Inheritance diagram for ContainerProfile:



Public Member Functions

- void **takeLocalCopy** ()
- void **setupProfile** (QObject *guiLaunchConsumerIn, QStringList pathListIn, QString parentPathIn, QString macroSubstitutionsIn)
- void **setupLocalProfile** (QObject *guiLaunchConsumerIn, QStringList pathListIn, QString parentPathIn, QString macroSubstitutionsIn)
- void **updateConsumers** (QObject *guiLaunchConsumerIn)
- QObject * **replaceGuiLaunchConsumer** (QObject *newGuiLaunchConsumerIn)
- void **addMacroSubstitutions** (QString macroSubstitutionsIn)
- void **removeMacroSubstitutions** ()
- void **addPriorityMacroSubstitutions** (QString macroSubstitutionsIn)
- void **removePriorityMacroSubstitutions** ()
- QObject * **getGuiLaunchConsumer** ()
- QString **getPath** ()
- QStringList **getPathList** ()
- QString **getParentPath** ()

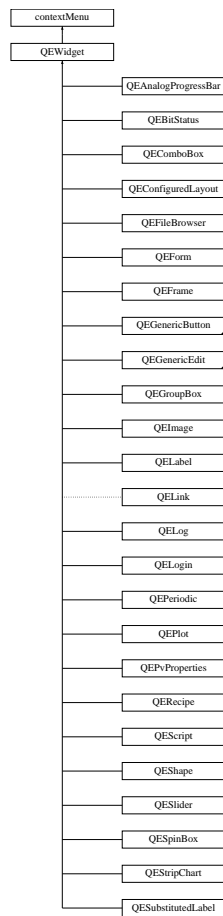
- void **setPublishedParentPath** (QString publishedParentPathIn)
- QString **getMacroSubstitutions** ()
- bool **isProfileDefined** ()
- bool **areUserLevelPasswordsSet** ()
- QStringList **getEnvPathList** ()
- QString **getUserLevelPassword** (userLevelTypes::userLevels level)
- void **setUserLevelPassword** (userLevelTypes::userLevels level, QString passwordIn)
- void **addContainedWidget** (QWidget *containedWidget)
- QWidget * **getNextContainedWidget** ()
- void **removeContainedWidget** (QWidget *containedWidget)
- unsigned int **getMessageFormId** ()
- unsigned int **getPublishedMessageFormId** ()
- void **setPublishedMessageFormId** (unsigned int publishedMessageFormIdIn)
- bool **setDontActivateYet** (bool dontActivateIn)
- bool **getDontActivateYet** ()
- void **releaseProfile** ()
- void **publishOwnProfile** ()
- void **setUserLevel** (userLevelTypes::userLevels level)
- userLevelTypes::userLevels **getUserLevel** ()
- virtual void **userLevelChanged** (userLevelTypes::userLevels)
- PersistenceManager * **getPersistenceManager** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/ContainerProfile.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/ContainerProfile.cpp

9.14 contextMenu Class Reference

Inheritance diagram for contextMenu:



Public Types

- enum **contextMenuOptions** {
CM_NONE, **CM_COPY_VARIABLE**, **CM_COPY_DATA**, **CM_PASTE**,
CM_DRAG_VARIABLE, **CM_DRAG_DATA**, **CM_SPECIFIC_WIDGETS_START_**-
HERE }

Public Member Functions

- void **addContextMenuToWidget** (QWidget *w)
- bool **isDraggingVariable** ()
- QMenu * **getContextMenu** ()
- virtual QString **copyVariable** ()
- virtual QVariant **copyData** ()
- virtual void **paste** (QVariant)

Friends

- class [contextMenuObject](#)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/contextMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/contextMenu.cpp

9.15 contextMenuObject Class Reference

Public Slots

- void **contextMenuTriggered** (QAction *selectedItem)
- void **showContextMenu** (const QPoint &pos)
- void **setChecked** ()

Public Member Functions

- void **addContextMenuToWidget** (QWidget *w)
- void **manageChecked** (bool draggingVariable)
- void **setMenu** ([contextMenu](#) *menuIn)
- bool **isDraggingVariable** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/contextMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/contextMenu.cpp

9.16 QEPeriodic::elementInfoStruct Struct Reference

Public Attributes

- unsigned int **number**
- double **atomicWeight**
- QString **name**
- QString **symbol**
- double **meltingPoint**
- double **boilingPoint**
- double **density**
- unsigned int **group**
- double **ionizationEnergy**
- unsigned int **tableRow**

- unsigned int **tableCol**

The documentation for this struct was generated from the following file:

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodic.h

9.17 flipRotateMenu Class Reference

Public Member Functions

- **flipRotateMenu** (QWidget *parent=0)
- imageContextMenu::imageContextMenuOptions **getFlipRotate** (const QPoint &pos)
- void **setChecked** (const int rotation, const bool flipH, const bool flipV)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/flipRotateMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/flipRotateMenu.cpp

9.18 imageContextMenu Class Reference

Public Types

- enum **imageContextMenuOptions** {
ICM_NONE = contextMenu::CM_SPECIFIC_WIDGETS_START_HERE, **ICM_SAVE**,
ICM_PAUSE, **ICM_ENABLE_TIME**,
ICM_ENABLE_CURSOR_PIXEL, **ICM_ENABLE_CONTRAST_REVERSAL**, **ICM_**-
ENABLE_VERT, **ICM_ENABLE_HOZ**,
ICM_ENABLE_AREA, **ICM_ENABLE_LINE**, **ICM_ENABLE_TARGET**, **ICM_DISPLAY_**-
BUTTON_BAR,
ICM_DISPLAY_BRIGHTNESS_CONTRAST, **ICM_ZOOM_SELECTED**, **ICM_ZOOM_**-
FIT, **ICM_ZOOM_10**,
ICM_ZOOM_25, **ICM_ZOOM_50**, **ICM_ZOOM_75**, **ICM_ZOOM_100**,
ICM_ZOOM_150, **ICM_ZOOM_200**, **ICM_ZOOM_300**, **ICM_ZOOM_400**,
ICM_ROTATE_NONE, **ICM_ROTATE_RIGHT**, **ICM_ROTATE_LEFT**, **ICM_ROTATE_**-
180,
ICM_FLIP_HORIZONTAL, **ICM_FLIP_VERTICAL**, **ICM_SELECT_PAN**, **ICM_**-
SELECT_HSLICE,
ICM_SELECT_VSLICE, **ICM_SELECT_AREA1**, **ICM_SELECT_AREA2**, **ICM_**-
SELECT_AREA3,

```

ICM_SELECT_AREA4, ICM_SELECT_PROFILE, ICM_SELECT_TARGET, ICM_
SELECT_BEAM,
ICM_CLEAR_MARKUP, ICM_THICKNESS_ONE_MARKUP, ICM_THICKNESS_
SELECT_MARKUP, ICM_COPY_PLOT_DATA }

```

Public Member Functions

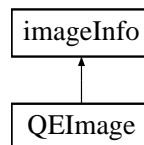
- **imageContextMenu** (QWidget *parent=0)
- void **getContextMenuOption** (const QPoint &, imageContextMenuOptions *option, bool *checked)
- void **addMenuItem** (const QString &title, const bool checkable, const bool checked, const imageContextMenuOptions option)
- void **addOptionMenuItem** (const QString &title, const bool checkable, const bool checked, const imageContextMenuOptions option)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageContextMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageContextMenu.cpp

9.19 imageInfo Class Reference

Inheritance diagram for imageInfo:



Public Member Functions

- void **showInfo** (bool show)
- QLayout * **getInfoWidget** ()
- void **infoShow** (const bool show)
- void **infoUpdateTarget** ()
- void **infoUpdateTarget** (const int x, const int y)
- void **infoUpdateBeam** ()
- void **infoUpdateBeam** (const int x, const int y)
- void **infoUpdateVertProfile** ()
- void **infoUpdateVertProfile** (const int x, const unsigned int thickness)
- void **infoUpdateHozProfile** ()
- void **infoUpdateHozProfile** (const int y, const unsigned int thickness)
- void **infoUpdateProfile** ()

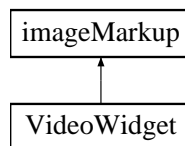
- void **infoUpdateProfile** (const QPoint start, const QPoint end, const unsigned int thickness)
- void **infoUpdateRegion** (const unsigned int region)
- void **infoUpdateRegion** (const unsigned int region, const int x1, const int y1, const int x2, const int y2)
- void **infoUpdatePixel** ()
- void **infoUpdatePixel** (const QPoint pos, int value)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageInfo.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageInfo.cpp

9.20 imageMarkup Class Reference

Inheritance diagram for imageMarkup:



Public Types

- enum **markupIds** {
MARKUP_ID_REGION1, **MARKUP_ID_REGION2**, **MARKUP_ID_REGION3**, **MARKUP_ID_REGION4**,
MARKUP_ID_H_SLICE, **MARKUP_ID_V_SLICE**, **MARKUP_ID_LINE**, **MARKUP_ID_TARGET**,
MARKUP_ID_BEAM, **MARKUP_ID_TIMESTAMP**, **MARKUP_ID_COUNT**, **MARKUP_ID_NONE** }

Public Member Functions

- void **setShowTime** (bool visibleIn)
- bool **getShowTime** ()
- markupIds **getMode** ()
- void **setMode** (markupIds modeIn)
- void **setMarkupColor** (markupIds mode, QColor markupColorIn)
- QColor **getMarkupColor** (markupIds mode)
- bool **showMarkupMenu** (const QPoint &pos, const QPoint &globalPos)
- void **markupRegionValueChange** (int areaIndex, QRect area)

- QCursor **getCircleCursor** ()
- QCursor **getTargetCursor** ()
- QCursor **getVLineCursor** ()
- QCursor **getHLineCursor** ()
- QCursor **getLineCursor** ()
- QCursor **getRegionCursor** ()
- virtual void **markupSetCursor** (QCursor cursor)=0

Public Attributes

- QImage * **markupImage**
- QVector< [markupItem](#) * > **items**
- QPoint **grabOffset**
- bool **markupAreasStale**
- QFont **legendFont**
- QFontMetrics * **legendFontMetrics**

Protected Member Functions

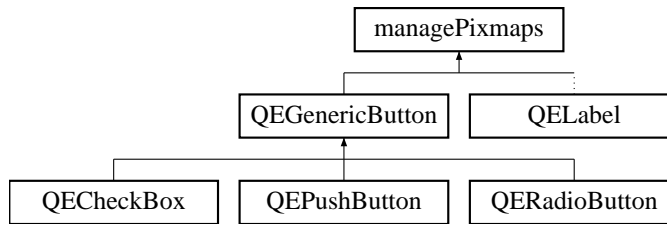
- bool **anyVisibleMarkups** ()
- QVector< QRect > & **getMarkupAreas** ()
- QCursor **getDefaultMarkupCursor** ()
- void **setMarkupTime** ([QCaDateTime](#) &time)
- bool **markupMousePressEvent** (QMouseEvent *event, bool panning)
- bool **markupMouseReleaseEvent** (QMouseEvent *event, bool panning)
- bool **markupMouseMoveEvent** (QMouseEvent *event, bool panning)
- void **markupResize** (QSize newSize, double scale)
- virtual void **markupChange** (QImage &markups, QVector< QRect > &changedAreas)=0
- virtual void **markupAction** (markupIds mode, bool complete, bool clearing, QPoint point1, QPoint point2, unsigned int thickness)=0

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.21 managePixmap Class Reference

Inheritance diagram for managePixmap:



Public Member Functions

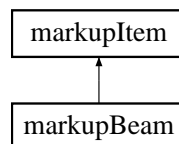
- void **setDataPixmap** (const QPixmap &Pixmap, const unsigned int index)
- QPixmap **getDataPixmap** (const unsigned int index)
- QPixmap **getDataPixmap** (const QString value)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/managePixmap.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/managePixmap.cpp

9.22 markupBeam Class Reference

Inheritance diagram for markupBeam:



Public Member Functions

- **markupBeam** ([imageMarkup](#) *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void **drawMarkup** (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()

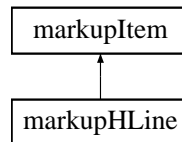
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.23 markupHLine Class Reference

Inheritance diagram for markupHLine:



Public Member Functions

- **markupHLine** (imageMarkup *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void **drawMarkup** (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)

9.23.1 Member Function Documentation

9.23.1.1 void markupHLine::drawMarkup (QPainter & p) [virtual]

!! draw the handle in the middle of the existing view, not the entire image

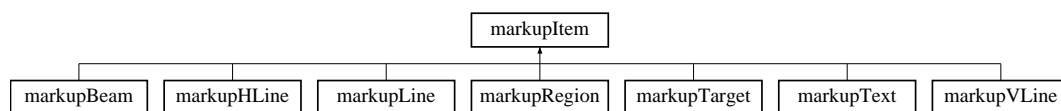
Implements [markupItem](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.24 markupItem Class Reference

Inheritance diagram for markupItem:



Public Types

- enum **markupHandles** {
MARKUP_HANDLE_NONE, **MARKUP_HANDLE_START**, **MARKUP_HANDLE_-**
END, **MARKUP_HANDLE_CENTER**,
MARKUP_HANDLE_TL, **MARKUP_HANDLE_TR**, **MARKUP_HANDLE_BL**, **MARKUP_-**
HANDLE_BR,
MARKUP_HANDLE_T, **MARKUP_HANDLE_B**, **MARKUP_HANDLE_L**, **MARKUP_-**
HANDLE_R }

Public Member Functions

- void **erase** ()
- void **drawMarkupIn** ()
- void **drawMarkupOut** ()
- void **setColor** (QColor colorIn)
- void **scale** (const double xScale, const double yScale, const double zoomScale)
- virtual QPoint **origin** ()=0
- virtual void **moveTo** (const QPoint pos)=0
- virtual void **startDrawing** (const QPoint pos)=0
- virtual bool **isOver** (const QPoint point, QCursor *cursor)=0
- virtual QCursor **cursorForHandle** (const markupItem::markupHandles handle)=0
- virtual QPoint **getPoint1** ()=0
- virtual QPoint **getPoint2** ()=0
- virtual unsigned int **getThickness** ()=0
- virtual void **setThickness** (const unsigned int thicknessIn)=0
- virtual QCursor **defaultCursor** ()=0
- virtual void **nonInteractiveUpdate** (QRect)

Public Attributes

- QRect **area**
- bool **visible**
- bool **interactive**
- bool **reportOnMove**
- QColor **color**

Protected Types

- enum **isOverOptions** { OVER_LINE, OVER_BORDER, OVER_AREA }
- enum **legendJustification** { ABOVE_RIGHT, BELOW_LEFT, BELOW_RIGHT }

Protected Member Functions

- **markupItem** (imageMarkup *ownerIn, const isOverOptions over, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- virtual void **setArea** ()=0
- virtual void **drawMarkup** (QPainter &p)=0
- bool **pointIsNear** (QPoint p1, QPoint p)
- QColor **getColor** ()
- const QString **getLegend** ()
- const QSize **getLegendSize** ()
- void **addLegendArea** ()
- const QPoint **setLegendPos** (QPoint pos, legendJustification just)
- const QPoint **getLegendPos** ()
- void **drawLegend** (QPainter &p, QPoint pos, legendJustification just)
- QPoint **limitPointToImage** (const QPoint pos)

Protected Attributes

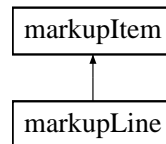
- markupHandles **activeHandle**
- isOverOptions **isOverType**
- bool **highlighted**
- int **highlightMargin**
- imageMarkup * **owner**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.25 markupLine Class Reference

Inheritance diagram for markupLine:



Public Member Functions

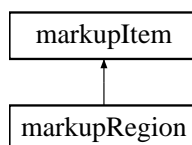
- **markupLine** ([imageMarkup](#) *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void **drawMarkup** (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.26 markupRegion Class Reference

Inheritance diagram for markupRegion:



Public Member Functions

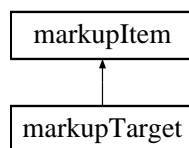
- **markupRegion** ([imageMarkup](#) *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void **drawMarkup** (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)
- void **nonInteractiveUpdate** (QRect)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.27 markupTarget Class Reference

Inheritance diagram for markupTarget:



Public Member Functions

- **markupTarget** ([imageMarkup](#) *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void **drawMarkup** (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()

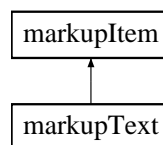
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.28 markupText Class Reference

Inheritance diagram for markupText:



Public Member Functions

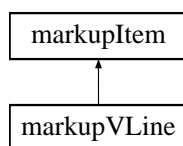
- **markupText** ([imageMarkup](#) *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **setText** (QString textIn, bool draw)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void **drawMarkup** (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.29 markupVLine Class Reference

Inheritance diagram for markupVLine:



Public Member Functions

- **markupVLine** ([imageMarkup](#) *ownerIn, const bool interactiveIn, const bool reportOnMoveIn, const QString legendIn)
- void **startDrawing** (const QPoint pos)
- void **setArea** ()
- void [drawMarkup](#) (QPainter &p)
- void **moveTo** (const QPoint pos)
- bool **isOver** (const QPoint point, QCursor *cursor)
- QPoint **origin** ()
- QCursor **cursorForHandle** (const markupItem::markupHandles handle)
- QPoint **getPoint1** ()
- QPoint **getPoint2** ()
- unsigned int **getThickness** ()
- void **setThickness** (const unsigned int thicknessIn)
- QCursor **defaultCursor** ()
- void **scaleSpecific** (const double xScale, const double yScale, const double zoomScale)

9.29.1 Member Function Documentation

9.29.1.1 void markupVLine::drawMarkup (QPainter & p) [virtual]

!! draw the handle in the middle of the existing view, not the entire image

Implements [markupItem](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/imageMarkup.cpp

9.30 message_types Class Reference

Public Member Functions

- **message_types** (message_severities severityIn, message_kind_sets kind_setIn=MESSAGE_KIND_STANDARD)
- QString [getSeverityName](#) ()

Function to provide string name for each message type severity.

Public Attributes

- message_severities **severity**
- message_kind_sets **kind_set**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/UserMessage.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/UserMessage.cpp

9.31 QEStripChartToolBar::OwnWidgets Class Reference

Public Member Functions

- **OwnWidgets** ([QEStripChartToolBar](#) *parent)

Public Attributes

- QPushButton * **pushButtons** [NUMBER_OF_BUTTONS]
- QLabel * **timeStatus**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartToolBar.cpp

9.32 QEPvProperties::OwnWidgets Class Reference

Public Member Functions

- **OwnWidgets** ([QEPvProperties](#) *parent)

Public Attributes

- QFrame * **topFrame**
- QLabel * **label1**
- QLabel * **label2**
- QLabel * **label3**
- QLabel * **label4**
- QLabel * **label5**
- QLabel * **label6**
- QComboBox * **box**
- [QELabel](#) * **valueLabel**
- QLabel * **hostName**
- QLabel * **fieldType**
- QLabel * **timeStamp**
- QLabel * **indexInfo**
- QVBoxLayout * **topFrameVlayout**
- QHBoxLayout * **hlayouts** [6]
- QWidget * **table**
- QMenu * **tableContextMenu**
- QFrame * **enumerationFrame**
- [QLabelList](#) **enumerationLabelList**
- QScrollArea * **enumerationScroll**
- QResizableFrame * **enumerationResize**
- QVBoxLayout * **vlayout**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvProperties.cpp

9.33 PeriodicDialog Class Reference

Public Member Functions

- **PeriodicDialog** (QWidget *parent=0)
- QString **getElement** ()
- void **setElement** (QString elementIn, QList< bool > &enabledList, QList< QString > &elementList)

Protected Member Functions

- void **changeEvent** (QEvent *e)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/PeriodicDialog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/PeriodicDialog.cpp

9.34 PeriodicElementSetupForm Class Reference

Public Member Functions

- **PeriodicElementSetupForm** (QWidget *parent=0)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/PeriodicElementSetupForm.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/PeriodicElementSetupForm.cpp

9.35 PeriodicSetupDialog Class Reference

Public Member Functions

- **PeriodicSetupDialog** (QWidget *parent=0)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/PeriodicSetupDialog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/PeriodicSetupDialog.cpp

9.36 PersistenceManager Class Reference

Public Member Functions

- QObject * **getSaveRestoreObject** ()
- void **save** (const QString fileName, const QString rootName, const QString configName)
- void **restore** (const QString fileName, const QString rootName, const QString configName)
- [PMElement](#) **addNamedConfiguration** (QString name)
- [PMElement](#) **getNamedConfiguration** (QString name)
- QStringList **getConfigNames** (QString fileName, QString rootName)
- void **deleteConfigs** (QString fileName, QString rootName, QStringList names)

Friends

- class [PMElement](#)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/persistenceManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/persistenceManager.cpp

9.37 PMContext Class Reference

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/persistenceManager.h

9.38 PMLElement Class Reference

Public Member Functions

- **PMElement** ([PersistenceManager](#) *ownerIn, QDomElement elementIn)
- **PMElement** **addElement** (QString name)
- void **addValue** (QString name, bool value)
- void **addValue** (QString name, int value)
- void **addValue** (QString name, double value)
- void **addValue** (QString name, QString value)
- void **addAttribute** (QString name, bool value)
- void **addAttribute** (QString name, int value)
- void **addAttribute** (QString name, double value)
- void **addAttribute** (QString name, QString value)
- **PMElement** **getElement** (QString name)
- **PMElement** **getElement** (QString name, int i)
- **PMElement** **getElement** (QString name, QString attrName, QString attrValue)
- **PMElementList** **getElementList** (QString name)
- bool **getValue** (QString name, bool &val)
- bool **getValue** (QString name, int &val)
- bool **getValue** (QString name, double &val)
- bool **getValue** (QString name, QString &val)
- bool **getAttribute** (QString name, bool &val)
- bool **getAttribute** (QString name, int &val)
- bool **getAttribute** (QString name, double &val)
- bool **getAttribute** (QString name, QString &val)
- bool **isNull** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/persistenceManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/persistenceManager.cpp

9.39 PMLElementList Class Reference

Public Member Functions

- **PMElementList** ([PersistenceManager](#) *ownerIn, QDomNodeList elementListIn)
- **PMElement** **getElement** (int i)
- int **count** ()

9.39.1 Member Function Documentation

9.39.1.1 PMSegment PMSegmentList::getElement (int i)

!! check range of i

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/persistenceManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/persistenceManager.cpp

9.40 QEStripChart::PrivateData Class Reference

Public Member Functions

- **PrivateData** ([QEStripChart](#) *chartIn)
- [QEStripChartItem](#) * **getItem** (unsigned int slot)
- [QwtPlotCurve](#) * **allocateCurve** ()
- void **calcDisplayMinMax** ()
- void **plotData** ()
- void **setReadOut** (const QString &text)
- void **setNormalBackground** (bool state)
- void **customContextMenuRequested** (const unsigned int slot, const QPoint &pos)
- void **contextMenuSelected** (const unsigned int, const QEStripChartContextMenu::Options option)
- void **pushState** ()
- void **prevState** ()
- void **nextState** ()
- void **captureState** ([ChartState](#) &chartState)
- void **applyState** (const [ChartState](#) &chartState)

Public Attributes

- [QEStripChartNames::ChartYRanges](#) **chartYScale**
- [QEStripChartNames::YScaleModes](#) **yScaleMode**
- [QEStripChartNames::ChartTimeModes](#) **chartTimeMode**
- double **timeScale**
- QString **timeUnits**

Protected Member Functions

- bool **eventFilter** (QObject *obj, QEvent *event)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChart.cpp

9.41 QEStripChartItem::PrivateData Class Reference

Public Attributes

- [QEStripChart](#) * **chart**
- QLabel * **pvName**
- [QELabel](#) * **caLabel**
- QColorDialog * **colourDialog**
- [qcaobject::QCaObject](#) * **previousQcaltem**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartItem.cpp

9.42 profilePlot Class Reference

Public Types

- enum **plotDirections** { **PROFILEPLOT_LR**, **PROFILEPLOT_RL**, **PROFILEPLOT_TB**, **PROFILEPLOT_BT** }

Public Member Functions

- **profilePlot** (plotDirections plotDirectionIn)
- void **setProfile** (QVector< QPointF > *profile, double minX, double maxX, double minY, double maxY, QString title, QPoint start, QPoint end, unsigned int thicknessIn)
- void **clearProfile** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/profilePlot.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/profilePlot.cpp

9.43 PublishedProfile Class Reference

Public Attributes

- QObject * **guiLaunchConsumer**
- QStringList **pathList**
- QString **parentPath**
- QList< QString > **macroSubstitutions**
- unsigned int **messageFormId**

- QList< [WidgetRef](#) > **containedWidgets**
- [userLevelSignal](#) **userSignal**
- QString **userLevelPassword**
- QString **scientistLevelPassword**
- QString **engineerLevelPassword**
- bool **profileDefined**
- [PersistenceManager](#) **persistenceManager**
- bool **dontActivateYet**
- bool **userLevelPasswordsSet**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/ContainerProfile.h

9.44 PushButtonSpecifications Struct Reference

Public Attributes

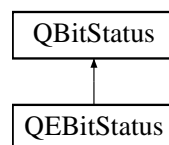
- int **gap**
- int **width**
- bool **isIcon**
- const QString **captionOrIcon**
- const QString **toolTip**
- const char * **member**

The documentation for this struct was generated from the following file:

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartToolBar.cpp

9.45 QBitStatus Class Reference

Inheritance diagram for QBitStatus:



Public Types

- enum **Orientations** { **LSB_On_Right**, **LSB_On_Bottom**, **LSB_On_Left**, **LSB_On_Top** }
- enum **Shapes** { **Rectangle**, **Circle** }

Public Slots

- void **setValue** (const int value)

Public Member Functions

- **QBitStatus** (QWidget *parent=0)
- virtual QSize **sizeHint** () const
- void **setBorderColour** (const QColor value)
- QColor **getBorderColour** ()
- void **setOnColour** (const QColor value)
- QColor **getOnColour** ()
- void **setOffColour** (const QColor value)
- QColor **getOffColour** ()
- void **setInvalidColour** (const QColor value)
- QColor **getInvalidColour** ()
- void **setClearColour** (const QColor value)
- QColor **getClearColour** ()
- void **setDrawBorder** (const bool value)
- bool **getDrawBorder** ()
- void **setNumberOfBits** (const int value)
- int **getNumberOfBits** ()
- void **setGap** (const int value)
- int **getGap** ()
- void **setShift** (const int value)
- int **getShift** ()
- void **setOnClearMask** (const QString value)
- QString **getOnClearMask** ()
- void **setOffClearMask** (const QString value)
- QString **getOffClearMask** ()
- void **setReversePolarityMask** (const QString value)
- QString **getReversePolarityMask** ()
- void **setIsValid** (const bool value)
- bool **getIsValid** ()
- void **setOrientation** (const enum Orientations value)
- enum Orientations **getOrientation** ()
- void **setShape** (const enum Shapes value)
- enum Shapes **getShape** ()
- int **getValue** ()

Properties

- int **value**
- int **numberOfBits**
- int **shift**
- Orientations **Orientation**
- Shapes **shape**
- int **gap**
- QString **reversePolarityMask**
- QString **onClearMask**
- QString **offClearMask**
- QColor **boarderColour**
- QColor **invalidColour**
- QColor **onColour**
- QColor **offColour**
- QColor **clearColour**
- bool **drawBorder**
- bool **isValid**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEBitStatus/QBitStatus.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEBitStatus/QBitStatus.cpp

9.46 QCaAlarmInfo Class Reference

Public Member Functions

- **QCaAlarmInfo** (unsigned short statusIn, unsigned short severityIn)
- QString **statusName** ()
- QString **severityName** ()
- bool **isInAlarm** ()
- bool **isMinor** ()
- bool **isMajor** ()
- bool **isInvalid** ()
- QString **style** ()
- QString **getColorName** ()
- QCAALARMINFO_SEVERITY **getSeverity** ()

Static Public Member Functions

- static QCAALARMINFO_SEVERITY **getInvalidSeverity** ()

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaAlarmInfo.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaAlarmInfo.cpp

9.47 QCaConnectionInfo Class Reference

Public Member Functions

- **QCaConnectionInfo** (unsigned short channelStateIn, unsigned short linkStateIn)
- bool **isChannelConnected** ()
- bool **isLinkUp** ()

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaConnectionInfo.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaConnectionInfo.cpp

9.48 QCaDataPoint Struct Reference

Public Attributes

- double **value**
- [QCaDateTime](#) **datetime**
- [QCaAlarmInfo](#) **alarm**

The documentation for this struct was generated from the following file:

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaDataPoint.h

9.49 QCaDataPointList Class Reference

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaDataPoint.h

9.50 QCaDateTime Class Reference

Public Member Functions

- **QCaDateTime** (QDateTime dt)
- [QCaDateTime](#) & **operator=** (const [QCaDateTime](#) &other)
- **QCaDateTime** (unsigned long seconds, unsigned long nanoseconds)
- QString **text** ()
- double [floating](#) (const QDateTime &base) const
- unsigned long [getSeconds](#) () const
- *Recover original EPICS time constructor parameters.*
- unsigned long **getNanoSeconds** () const

9.50.1 Member Function Documentation

9.50.1.1 `double QCaDateTime::floating (const QDateTime & base) const`

Duration in seconds from base time to this time. Note: this is the opposite sense to the parent QDateTime daysTo, secsTo and msecsTo functions.

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

- `/home/rhydera/epicsqt/trunk/framework/data/include/QCaDateTime.h`
- `/home/rhydera/epicsqt/trunk/framework/data/src/QCaDateTime.cpp`

9.51 QCaEventFilter Class Reference

Public Member Functions

- void **addFilter** (QObject *objectIn)
- void **deleteFilter** (QObject *objectIn)
- bool **eventFilter** (QObject *watched, QEvent *e)

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

- `/home/rhydera/epicsqt/trunk/framework/data/include/QCaEventFilter.h`
- `/home/rhydera/epicsqt/trunk/framework/data/src/QCaEventFilter.cpp`

9.52 QCaEventItem Class Reference

Public Member Functions

- **QCaEventItem** ([QCaEventUpdate](#) *newEvent)

Public Attributes

- [QCaEventUpdate](#) * **event**

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

- `/home/rhydera/epicsqt/trunk/framework/data/include/QCaEventUpdate.h`

9.53 QCaEventUpdate Class Reference

Public Member Functions

- **QCaEventUpdate** ([qcaobject::QCaObject](#) *emitterObjectIn, long newReason, void *newDataPtr)

Public Attributes

- bool **acceptThisEvent**
- [qcaobject::QCaObject](#) * **emitterObject**
- long **reason**
- void * **dataPtr**

Static Public Attributes

- static QEvent::Type **EVENT_UPDATE_TYPE** = QEvent::User

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaEventUpdate.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaEventUpdate.cpp

9.54 QCalInstalledFiltersListItem Class Reference

Public Member Functions

- **QCalInstalledFiltersListItem** (QObject *eventObjectIn)

Public Attributes

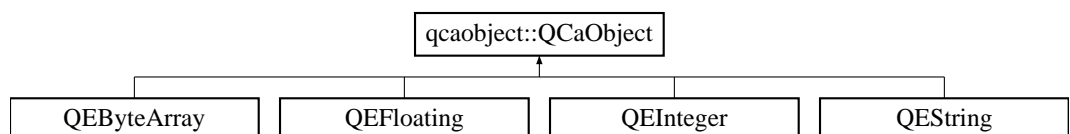
- QObject * **eventObject**
- long **referenceCount**

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaEventFilter.h

9.55 qcaobject::QCaObject Class Reference

Inheritance diagram for qcaobject::QCaObject:



Public Slots

- bool **writeData** (const QVariant &value)
- void **resendLastData** ()

Signals

- void **dataChanged** (const QVariant &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp)
- void **dataChanged** (const QByteArray &value, unsigned long dataSize, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp)
- void **connectionChanged** ([QCaConnectionInfo](#) &connectionInfo)

Public Member Functions

- **QCaObject** (const QString &recordName, QObject *eventObject, unsigned char signalsToSendIn=SIG_VARIANT)
- **QCaObject** (const QString &recordName, QObject *eventObject, [UserMessage](#) *userMessageIn, unsigned char signalsToSendIn=SIG_VARIANT)
- bool **subscribe** ()
- bool **singleShotRead** ()
- bool **dataTypeKnown** ()
- bool **createChannel** ()
- void **deleteChannel** ()
- bool **createSubscription** ()
- bool **getChannel** ()
- bool **putChannel** ()
- bool **isChannelConnected** ()
- void **startConnectionTimer** ()
- void **stopConnectionTimer** ()
- void **setUserMessage** ([UserMessage](#) *userMessageIn)
- void **enableWriteCallbacks** (bool enable)
- bool **isWriteCallbacksEnabled** ()
- QString **getRecordName** ()
- QString **getEgu** ()
- QStringList **getEnumerations** ()
- unsigned int **getPrecision** ()
- [QCaAlarmInfo](#) **getAlarmInfo** ()
- [QCaDateTime](#) **getDateTime** ()
- double **getDisplayLimitUpper** ()
- double **getDisplayLimitLower** ()
- double **getAlarmLimitUpper** ()
- double **getAlarmLimitLower** ()
- double **getWarningLimitUpper** ()
- double **getWarningLimitLower** ()
- double **getControlLimitUpper** ()

- double **getControlLimitLower** ()
- generic::generic_types **getDataType** ()
- QString **getHostName** ()
- QString **getFieldType** ()
- unsigned long **getElementCount** ()
- void **getLastData** (bool &isDefined, QVariant &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp)

Static Public Member Functions

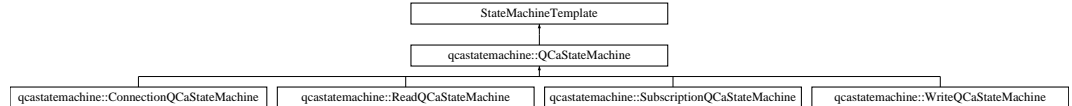
- static void **processEventStatic** ([QCaEventUpdate](#) *dataUpdateEvent)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaObject.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaObject.cpp

9.56 qcastatemachine::QCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::QCaStateMachine:



Public Member Functions

- **QCaStateMachine** (void *parent)
- virtual bool **process** (int requestedState)=0

Public Attributes

- QMutex **lock**
- bool **pending**
- bool **active**
- bool **expired**
- void * **myWorker**

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaStateMachine.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaStateMachine.cpp

9.57 QCaVariableNamePropertyManager Class Reference

Signals

- void **newVariableNameProperty** (QString variable, QString Substitutions, unsigned int variableIndex)

Public Member Functions

- QString **getVariableNameProperty** ()
- void **setVariableNameProperty** (QString variableNamePropertyIn)
- QString **getSubstitutionsProperty** ()
- void **setSubstitutionsProperty** (QString substitutionsPropertyIn)
- void **setVariableIndex** (unsigned int variableIndexIn)

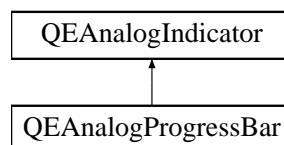
The documentation for this class was generated from the following files:

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaVariableNamePropertyManager.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaVariableNamePropertyManager.cpp

9.58 QEAnalogIndicator Class Reference

```
#include <QEAnalogIndicator.h>
```

Inheritance diagram for QEAnalogIndicator:



Classes

- struct [Band](#)
- class [BandList](#)

Public Types

- enum [Orientations](#) { [Left_To_Right](#), [Top_To_Bottom](#), [Right_To_Left](#), [Bottom_To_Top](#) }
- enum [Modes](#) { [Bar](#), [Scale](#), [Meter](#) }

Public Slots

- void **setRange** (const double MinimumIn, const double MaximumIn)
- void **setValue** (const double ValueIn)

Public Member Functions

- [QEAnalogIndicator](#) (QWidget *parent=0)
Constructor.
- virtual [~QEAnalogIndicator](#) ()
Destructor.
- virtual QSize [sizeHint](#) () const
Size hint.
- double [getValue](#) ()
Access function for [value](#) property - refer to [value](#) property for details.
- void [setMinimum](#) (const double value)
Access function for [minimum](#) - refer to [minimum](#) property for details.
- double [getMinimum](#) ()
Access function for [minimum](#) - refer to [minimum](#) property for details.
- void [setMaximum](#) (const double value)
Access function for [maximum](#) - refer to [maximum](#) property for details.
- double [getMaximum](#) ()
Access function for [maximum](#) - refer to [maximum](#) property for details.
- void [setOrientation](#) (const enum [Orientations](#) value)
Access function for [orientation](#) - refer to [orientation](#) property for details.
- enum [Orientations](#) [getOrientation](#) ()
Access function for [orientation](#) - refer to [orientation](#) property for details.
- void [setMode](#) (const enum [Modes](#) value)
Access function for [mode](#) - refer to [mode](#) property for details.
- enum [Modes](#) [getMode](#) ()
Access function for [mode](#) - refer to [mode](#) property for details.
- void [setCentreAngle](#) (const int value)
Access function for [centreAngle](#) - refer to [centreAngle](#) property for details.
- int [getCentreAngle](#) ()
Access function for [centreAngle](#) - refer to [centreAngle](#) property for details.
- void [setSpanAngle](#) (const int value)
Access function for [spanAngle](#) - refer to [spanAngle](#) property for details.
- int [getSpanAngle](#) ()
Access function for [spanAngle](#) - refer to [spanAngle](#) property for details.
- void [setMinorInterval](#) (const double value)
Access function for [minorInterval](#) - refer to [minorInterval](#) property for details.
- double [getMinorInterval](#) ()
Access function for [minorInterval](#) - refer to [minorInterval](#) property for details.

- void [setMajorInterval](#) (const double value)
Access function for [majorInterval](#) - refer to [majorInterval](#) property for details.
- double [getMajorInterval](#) ()
Access function for [majorInterval](#) - refer to [majorInterval](#) property for details.
- void [setLogScaleInterval](#) (const int value)
Access function for [logScaleInterval](#) - refer to [logScaleInterval](#) property for details.
- int [getLogScaleInterval](#) ()
Access function for [logScaleInterval](#) - refer to [logScaleInterval](#) property for details.
- void [setBorderColour](#) (const QColor value)
Access function for [borderColour](#) - refer to [borderColour](#) property for details.
- QColor [getBorderColour](#) ()
Access function for [borderColour](#) - refer to [borderColour](#) property for details.
- void [setForegroundColour](#) (const QColor value)
Access function for [foregroundColour](#) - refer to [foregroundColour](#) property for details.
- QColor [getForegroundColour](#) ()
Access function for [foregroundColour](#) - refer to [foregroundColour](#) property for details.
- void [setBackgroundColour](#) (const QColor value)
Access function for [backgroundColour](#) - refer to [backgroundColour](#) property for details.
- QColor [getBackgroundColour](#) ()
Access function for [backgroundColour](#) - refer to [backgroundColour](#) property for details.
- void [setFontColour](#) (const QColor value)
Access function for [fontColour](#) - refer to [fontColour](#) property for details.
- QColor [getFontColour](#) ()
Access function for [fontColour](#) - refer to [fontColour](#) property for details.
- void [setShowText](#) (const bool value)
Access function for [showText](#) - refer to [showText](#) property for details.
- bool [getShowText](#) ()
Access function for [showText](#) - refer to [showText](#) property for details.
- void [setShowScale](#) (const bool value)
Access function for [showScale](#) - refer to [showScale](#) property for details.
- bool [getShowScale](#) ()
Access function for [showScale](#) - refer to [showScale](#) property for details.
- void [setLogScale](#) (const bool value)
Access function for [logScale](#) - refer to [logScale](#) property for details.
- bool [getLogScale](#) ()
Access function for [logScale](#) - refer to [logScale](#) property for details.

Protected Member Functions

- virtual QString [getTextImage](#) ()
- virtual [BandList](#) [getBandList](#) ()

Properties

- double [value](#)
- double [minimum](#)
- double [maximum](#)
- double [minorInterval](#)
- double [majorInterval](#)
- int [logScaleInterval](#)
- bool [showText](#)
- bool [showScale](#)
- bool [logScale](#)
- [Modes](#) [mode](#)
- [Orientations](#) [orientation](#)
- int [centreAngle](#)
- int [spanAngle](#)
- QColor [borderColour](#)
- QColor [backgroundColour](#)
- QColor [foregroundColour](#)
- QColor [fontColour](#)

9.58.1 Detailed Description

This class provides a non CA aware graphical analog indicator base class. It supports a number of display modes including Bar, Scale and Meter.

When in Bar mode, it mimics QProgressBar and provides an analog progress bar widget.

9.58.2 Member Enumeration Documentation

9.58.2.1 enum [QEAnalogIndicator::Modes](#)

The type of analog indicator used to represent the value

Enumerator:

- Bar*** Bar (solid bar from minimum up to current value)
- Scale*** Scale (diamond marker tracks current value)
- Meter*** Meter (Needle moving across an arc scale)

9.58.2.2 enum [QEAnalogIndicator::Orientations](#)

The orientation of Bar and Scale indicators

Enumerator:

- Left_To_Right*** Left to right.

Top_To_Bottom Top to bottom.

Right_To_Left Right to left.

Bottom_To_Top Bottom to top.

9.58.3 Property Documentation

9.58.3.1 QColor QEAnalogIndicator::backgroundColour [read, write]

Background colour

9.58.3.2 QColor QEAnalogIndicator::borderColour [read, write]

Border colour

9.58.3.3 int QEAnalogIndicator::centreAngle [read, write]

The angle in degree of the line that Meter indicators are centered around. Zero represents a vertical centerline and angles increment clockwise.

9.58.3.4 QColor QEAnalogIndicator::fontColour [read, write]

Font colour

9.58.3.5 QColor QEAnalogIndicator::foregroundColour [read, write]

Foreground colour

9.58.3.6 bool QEAnalogIndicator::logScale [read, write]

If set, use a logarithmic scale. If clear, use a linear scale

9.58.3.7 int QEAnalogIndicator::logScaleInterval [read, write]

Log scale interval.

9.58.3.8 double QEAnalogIndicator::majorInterval [read, write]

Minor scale interval. Only applies for linear scale (not log scale)

9.58.3.9 double QEAnalogIndicator::maximum [read, write]

Maximum indicated value.

9.58.3.10 `double QEAnalogIndicator::minimum` [read, write]

Minimum indicated value.

9.58.3.11 `double QEAnalogIndicator::minorInterval` [read, write]

Minor scale interval. Only applies for linear scale (not log scale)

9.58.3.12 **Modes** `QEAnalogIndicator::mode` [read, write]

Selects what type of indicator is used (refer to Modes)

9.58.3.13 **Orientations** `QEAnalogIndicator::orientation` [read, write]

The orientation of Bar and Scale indicators (refer to Orientations)

9.58.3.14 `bool QEAnalogIndicator::showScale` [read, write]

If set, show the scale

9.58.3.15 `bool QEAnalogIndicator::showText` [read, write]

If set, show textual representation of value on the indicator

9.58.3.16 `int QEAnalogIndicator::spanAngle` [read, write]

The span of the Meter scale arc in degrees Typical meters are 180 deg and 270 deg

9.58.3.17 `double QEAnalogIndicator::value` [read, write]

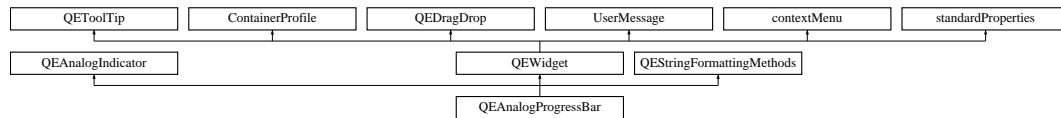
Current indicated value.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEAnalogIndicator/QEAnalogIndicator.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEAnalogIndicator/QEAnalogIndicator.cpp

9.59 QEAnalogProgressBar Class Reference

Inheritance diagram for QEAnalogProgressBar:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }
- enum **AlarmSeverityDisplayModes** { **foreground**, **background** }
- enum **Formats** {
Default = QStringFormatting::FORMAT_DEFAULT, **Floating** = QStringFormatting::FORMAT_FLOATING, **Integer** = QStringFormatting::FORMAT_INTEGER, **UnsignedInteger** = QStringFormatting::FORMAT_UNSIGNEDINTEGER,
Time = QStringFormatting::FORMAT_TIME, **LocalEnumeration** = QStringFormatting::FORMAT_LOCAL_ENUMERATE }
- enum **Notations** { **Fixed** = QStringFormatting::NOTATION_FIXED, **Scientific** = QStringFormatting::NOTATION_SCIENTIFIC, **Automatic** = QStringFormatting::NOTATION_AUTOMATIC }
- enum **ArrayActions** { **Append** = QStringFormatting::APPEND, **Ascii** = QStringFormatting::ASCII, **Index** = QStringFormatting::INDEX }

Public Slots

- void **requestEnabled** (const bool &state)

Signals

- void **dbValueChanged** (const double &out)
- void **requestResend** ()

Internal use only. Used when changing a property value to force a re-display to reflect the new property value.

Public Member Functions

- bool **isEnabled** () const
*Access function for **enabled** property - refer to **enabled** property for details.*
- void **setEnabled** (bool state)
*Access function for **enabled** property - refer to **enabled** property for details.*
- UserLevels** **getUserLevelVisibilityProperty** ()
*Access function for **userLevelVisibility** property - refer to **userLevelVisibility** property for details.*
- void **setUserLevelVisibilityProperty** (**UserLevels** level)

Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setFormatProperty](#) ([Formats](#) format)
Access function for [format](#) property - refer to [format](#) property for details.
- [Formats](#) [getFormatProperty](#) ()
Access function for [format](#) property - refer to [format](#) property for details.
- void [setNotationProperty](#) ([Notations](#) notation)
Access function for [notation](#) property - refer to [notation](#) property for details.
- [Notations](#) [getNotationProperty](#) ()
Access function for [notation](#) property - refer to [notation](#) property for details.
- void [setArrayActionProperty](#) ([ArrayActions](#) arrayAction)
Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.
- [ArrayActions](#) [getArrayActionProperty](#) ()
Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.
- [QEAnalogProgressBar](#) (QWidget *parent=0)
- [QEAnalogProgressBar](#) (const QString &variableName, QWidget *parent=0)
- virtual [~QEAnalogProgressBar](#) ()
Destruction.
- void [setUseDbDisplayLimits](#) (bool useDbDisplayLimitsIn)
Access function for [useDbDisplayLimits](#) property - refer to [useDbDisplayLimits](#) property for details.
- bool [getUseDbDisplayLimits](#) ()
Access function for [useDbDisplayLimits](#) property - refer to [useDbDisplayLimits](#) property for details.
- void [setAlarmSeverityDisplayMode](#) ([AlarmSeverityDisplayModes](#) value)
Access function for [#AlarmSeverityDisplayModes](#) property - refer to [#AlarmSeverityDisplayModes](#) property for details.
- [AlarmSeverityDisplayModes](#) [getAlarmSeverityDisplayMode](#) ()
Access function for [#AlarmSeverityDisplayModes](#) property - refer to [#AlarmSeverityDisplayModes](#) property for details.

Protected Member Functions

- QString [getTextImage](#) ()
- [BandList](#) [getBandList](#) ()
- void [establishConnection](#) (unsigned int variableIndex)
- void [stringFormattingChange](#) ()
- void [dragEnterEvent](#) (QDragEnterEvent *event)
- void [dropEvent](#) (QDropEvent *event)

- void **mousePressEvent** (QMouseEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()
- QString **copyVariable** ()
- QVariant **copyData** ()

Protected Attributes

- [QEFloatingFormatting](#) **floatingFormatting**

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- AlarmSeverityDisplayModes [alarmSeverityDisplayMode](#)
- bool [useDbDisplayLimits](#)
- int [precision](#)
- bool [useDbPrecision](#)
- bool [leadingZero](#)
- bool [trailingZeros](#)
- bool [addUnits](#)
- QString [localEnumeration](#)
- [Formats](#) [format](#)
- [Notations](#) [notation](#)
- [ArrayActions](#) [arrayAction](#)

9.59.1 Member Enumeration Documentation

9.59.1.1 enum QEAnalogProgressBar::ArrayActions

User friendly enumerations for arrayAction property - refer to [QQStringFormatting::arrayActions](#) for details.

Enumerator:

Append Refer to [QStringFormatting::APPEND](#) for details.

Ascii Refer to [QStringFormatting::ASCII](#) for details.

Index Refer to [QStringFormatting::INDEX](#) for details.

9.59.1.2 enum QAnalogProgressBar::Formats

User friendly enumerations for format property - refer to [QStringFormatting::formats](#) for details.

Enumerator:

Default Format as best appropriate for the data type.

Floating Format as a floating point number.

Integer Format as an integer.

UnsignedInteger Format as an unsigned integer.

Time Format as a time.

LocalEnumeration Format as a selection from the [localEnumeration](#) property.

9.59.1.3 enum QAnalogProgressBar::Notations

User friendly enumerations for notation property - refer to [QStringFormatting::notations](#) for details.

Enumerator:

Fixed Refer to [QStringFormatting::NOTATION_FIXED](#) for details.

Scientific Refer to [QStringFormatting::NOTATION_SCIENTIFIC](#) for details.

Automatic Refer to [QStringFormatting::NOTATION_AUTOMATIC](#) for details.

9.59.1.4 enum QAnalogProgressBar::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to [USERLEVEL_USER](#) for details.

Scientist Refer to [USERLEVEL_SCIENTIST](#) for details.

Engineer Refer to [USERLEVEL_ENGINEER](#) for details.

9.59.2 Constructor & Destructor Documentation

9.59.2.1 QEAnalogProgressBar::QEAnalogProgressBar (QWidget * *parent* = 0)

Create without a variable. Use `setVariableNameProperty()` and `setSubstitutionsProperty()` to define a variable and, optionally, macro substitutions later.

9.59.2.2 QEAnalogProgressBar::QEAnalogProgressBar (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.59.3 Member Function Documentation

9.59.3.1 void QEAnalogProgressBar::dbValueChanged (const double & *out*) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.59.3.2 void QEAnalogProgressBar::requestEnabled (const bool & *state*) [inline, slot]

Similar to standard `setEnabled` slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.59.4 Property Documentation

9.59.4.1 bool QEAnalogProgressBar::addUnits [read, write]

If true (default), add engineering units supplied with the data.

9.59.4.2 AlarmSeverityDisplayModes QEAnalogProgressBar::alarmSeverityDisplayMode [read, write]

Visualise the EPICS alarm severity

9.59.4.3 bool QEAnalogProgressBar::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.59.4.4 **ArrayActions** `QEAAnalogProgressBar::arrayAction` [read, write]

Text formatting option for array data. Default is ASCII. Options are:

- ASCII - treat array as a single text string. For example an array of three characters 'a' 'b' 'c' will be formatted as 'abc'.
- APPEND - treat array as an array of numbers and format a string containing them all with a space between each. For example, an array of three numbers 10, 11 and 12 will be formatted as '10 11 12'.
- INDEX - Extract a single item from the array. The item is then formatted as any other non array data would be. The item selected is determined by the `arrayIndex` property. For example, if `arrayIndex` property is 1, an array of three numbers 10, 11 and 12 will be formatted as '11'.

9.59.4.5 **bool** `QEAAnalogProgressBar::displayAlarmState` [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.59.4.6 **bool** `QEAAnalogProgressBar::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.59.4.7 **Formats** `QEAAnalogProgressBar::format` [read, write]

Format to apply to data. Default is 'Default' in which case the data type supplied with the data determines how the data is formatted. For all other options, an attempt is made to format the data as requested (whatever its native form).

9.59.4.8 **unsigned** `QEAAnalogProgressBar::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For

example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

Base used for when formatting integers. Default is 10 (duh!)

Index used to select a single item of data for formatting from an array of data. Default is 0. Only used when the `arrayAction` property is INDEX. Refer to the `arrayAction` property for more details.

9.59.4.9 bool QEAnalogProgressBar::leadingZero [read, write]

If true (default), always add a leading zero when formatting numbers.

9.59.4.10 QString QEAnalogProgressBar::localEnumeration [read, write]

An enumeration list used to data values. Used only when the formatting option is 'local enumeration'. Value is converted to an integer and used to select a string from this list.

Format is:

```
[[<|<=|!=|>|=|>]value1|*]: string1 , [[<|<=|!=|>|=|>]value2|*]: string2 , [[<|<=|!=|>|=|>]value3|*]: string3 , ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
>= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"", 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *:"" "Pump Off": "OH NO!, the pump is OFF!", "Pump On": "It's OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10:'''

A range of numbers can be covered by a pair of values as in the following example:
>=4:"Between 4 and 8", <=8:"Between 4 and 8"

9.59.4.11 Notations QEAnalogProgressBar::notation [read, write]

Notation used for numerical formatting. Default is fixed.

9.59.4.12 `int QEAnalogProgressBar::precision` [read, write]

Precision used when formatting floating point numbers. The default is 4. This is only used if `useDbPrecision` is false.

9.59.4.13 `bool QEAnalogProgressBar::trailingZeros` [read, write]

If true (default), always remove any trailing zeros when formatting numbers.

9.59.4.14 `bool QEAnalogProgressBar::useDbDisplayLimits` [read, write]

Use the EPICS database display limits

9.59.4.15 `bool QEAnalogProgressBar::useDbPrecision` [read, write]

If true (default), format floating point numbers using the precision supplied with the data. If false, the precision property is used.

9.59.4.16 `UserLevels QEAnalogProgressBar::userLevelEnabled` [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()`. Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.59.4.17 `QString QEAnalogProgressBar::userLevelEngineerStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.59.4.18 `QString QEAnalogProgressBar::userLevelScientistStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.59.4.19 QString QEAnalogProgressBar::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.59.4.20 UserLevels QEAnalogProgressBar::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel(). Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.59.4.21 QString QEAnalogProgressBar::variable [read, write]

EPICS variable name (CA PV)

9.59.4.22 bool QEAnalogProgressBar::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.59.4.23 QString QEAnalogProgressBar::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.59.4.24 bool QEAnalogProgressBar::visible [read, write]

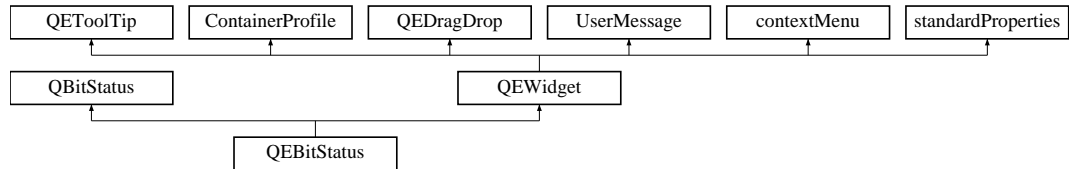
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEAnalogProgressBar/QEAnalogProgressBar.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEAnalogProgressBar/QEAnalogProgressBar.cpp

9.60 QBitStatus Class Reference

Inheritance diagram for QBitStatus:



Public Types

- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const long &out)

Public Member Functions

- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- QBitStatus** (QWidget *parent=0)
- QBitStatus** (const QString &variableName, QWidget *parent=0)

- void [setVariableNameAndSubstitutions](#) (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)

Protected Member Functions

- void **establishConnection** (unsigned int variableIndex)
- void **dragEnterEvent** (QDragEnterEvent *event)
- void **dropEvent** (QDropEvent *event)
- void **mousePressEvent** (QMouseEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()
- QString **copyVariable** ()
- QVariant **copyData** ()

Protected Attributes

- [QEIntegerFormatting](#) **integerFormatting**

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)

9.60.1 Member Enumeration Documentation

9.60.1.1 enum QEBitStatus::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and userLevel enumeration for details.

Enumerator:

- User** Refer to USERLEVEL_USER for details.
- Scientist** Refer to USERLEVEL_SCIENTIST for details.
- Engineer** Refer to USERLEVEL_ENGINEER for details.

9.60.2 Member Function Documentation

9.60.2.1 void QEBitStatus::dbValueChanged (const long & *out*) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.60.2.2 void QEBitStatus::requestEnabled (const bool & *state*) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.60.2.3 void QEBitStatus::setVariableNameAndSubstitutions (QString *variableNameIn*, QString *variableNameSubstitutionsIn*, unsigned int *variableIndex*) [virtual]

Virtual function that may be implimented by users of [QEWidget](#) to update variable names and macro substitutions. A default is provided that is suitable in most cases.

Reimplemented from [QEWidget](#).

9.60.3 Property Documentation

9.60.3.1 bool QEBitStatus::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.60.3.2 bool QEBitStatus::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.60.3.3 bool QEBitStatus::enabled [read, write]

Set the prefered 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.60.3.4 unsigned QEBitStatus::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.60.3.5 UserLevels QEBitStatus::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()`. Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.60.3.6 QString QEBitStatus::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.60.3.7 QString QEBitStatus::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.60.3.8 QString QEBitStatus::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.60.3.9 UserLevels QEBitStatus::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programmatically through `setUserLevel()`. Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.60.3.10 QString QEBitStatus::variable [read, write]

EPICS variable name (CA PV)

9.60.3.11 bool QEBitStatus::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.60.3.12 QString QEBitStatus::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2...]. Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.60.3.13 bool QEBitStatus::visible [read, write]

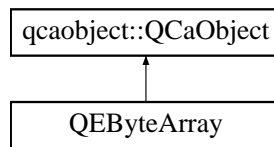
Display the widget. Default is true. Setting this property false is useful if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEBitStatus/QEBitStatus.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEBitStatus/QEBitStatus.cpp

9.61 QByteArray Class Reference

Inheritance diagram for QByteArray:



Public Slots

- void **writeByteArray** (const QByteArray &data)

Signals

- void **byteArrayConnectionChanged** ([QCaConnectionInfo](#) &connectionInfo, const unsigned int &variableIndex)
- void **byteArrayChanged** (const QByteArray &value, unsigned long dataSize, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)

Public Member Functions

- **QByteArray** (QString recordName, QObject *eventObject, unsigned int variableIndexIn)
- **QByteArray** (QString recordName, QObject *eventObject, unsigned int variableIndexIn, [UserMessage](#) *userMessageIn)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QByteArray.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QByteArray.cpp

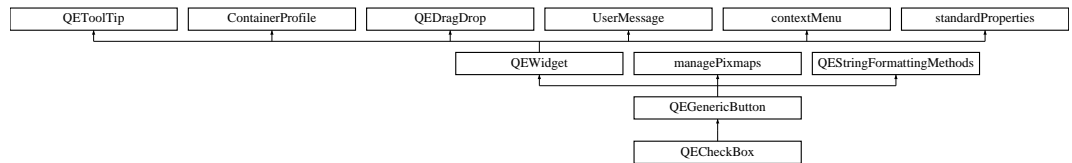
9.62 QChartStateLists Class Reference

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QStripChart/QStripChart.cpp

9.63 QECheckBox Class Reference

Inheritance diagram for QECheckBox:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }
 - enum **Formats** {
Default = QQStringFormatting::FORMAT_DEFAULT, **Floating** = QQStringFormatting::FORMAT_FLOATING, **Integer** = QQStringFormatting::FORMAT_INTEGER, **UnsignedInteger** = QQStringFormatting::FORMAT_UNSIGNEDINTEGER,
Time = QQStringFormatting::FORMAT_TIME, **LocalEnumeration** = QQStringFormatting::FORMAT_LOCAL_ENUMERATE }
 - enum **Notations** { **Fixed** = QQStringFormatting::NOTATION_FIXED, **Scientific** = QQStringFormatting::NOTATION_SCIENTIFIC, **Automatic** = QQStringFormatting::NOTATION_AUTOMATIC }
 - enum **ArrayActions** { **Append** = QQStringFormatting::APPEND, **Ascii** = QQStringFormatting::ASCII, **Index** = QQStringFormatting::INDEX }
 - enum **UpdateOptions** { **Text** = QEGenericButton::UPDATE_TEXT, **Icon** = QEGenericButton::UPDATE_ICON, **TextAndIcon** = QEGenericButton::UPDATE_TEXT_AND_ICON, **State** = QEGenericButton::UPDATE_STATE }
- User friendly enumerations for updateOption property - refer to QEGenericButton::updateOptions for details.*
- enum **CreationOptionNames** { **Open** = QEGForm::CREATION_OPTION_OPEN, **NewTab** = QEGForm::CREATION_OPTION_NEW_TAB, **NewWindow** = QEGForm::CREATION_OPTION_NEW_WINDOW }
- Creation options. Used to indicate how to present a GUI when requesting a new GUI be created. Open a new window, open a new tab, or replace the current window.*

Public Slots

- void **launchGui** (QString guiName, QForm::creationOptions creationOption)
- void **requestEnabled** (const bool &state)

Signals

- void **dbValueChanged** (const QString &out)
- void **requestResend** ()
Internal use only. Used when changing a property value to force a re-display to reflect the new property value.
- void **newGui** (QString guiName, QForm::creationOptions creationOption)

Internal use only. Request a new GUI is created. Typically, this is caught by the QEGui application.

- void [pressed](#) (int value)
- void [released](#) (int value)
- void [clicked](#) (int value)

Public Member Functions

- [QECheckBox](#) (QWidget *parent=0)
- [QECheckBox](#) (const QString &variableName, QWidget *parent=0)
- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setFormatProperty](#) ([Formats](#) format)
Access function for [format](#) property - refer to [format](#) property for details.
- [Formats](#) [getFormatProperty](#) ()
Access function for [format](#) property - refer to [format](#) property for details.
- void [setNotationProperty](#) ([Notations](#) notation)
Access function for [notation](#) property - refer to [notation](#) property for details.
- [Notations](#) [getNotationProperty](#) ()
Access function for [notation](#) property - refer to [notation](#) property for details.
- void [setArrayActionProperty](#) ([ArrayActions](#) arrayAction)
Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.
- [ArrayActions](#) [getArrayActionProperty](#) ()
Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- int [precision](#)
- bool [useDbPrecision](#)
- bool [leadingZero](#)
- bool [trailingZeros](#)
- bool [addUnits](#)
- QString [localEnumeration](#)
- [Formats](#) [format](#)
- [Notations](#) [notation](#)
- [ArrayActions](#) [arrayAction](#)
- Qt::Alignment [alignment](#)
- [UpdateOptions](#) [updateOption](#)
- QPixmap [pixmap0](#)
- QPixmap [pixmap1](#)
- QPixmap [pixmap2](#)
- QPixmap [pixmap3](#)
- QPixmap [pixmap4](#)
- QPixmap [pixmap5](#)
- QPixmap [pixmap6](#)
- QPixmap [pixmap7](#)
- QString [password](#)
- bool [confirmAction](#)
- bool [writeOnPress](#)
- bool [writeOnRelease](#)
- bool [writeOnClick](#)
- QString [pressText](#)
- QString [releaseText](#)
- QString [clickText](#)
- QString [clickCheckedText](#)
- QString [labelText](#)
- QString [program](#)
- QStringList [arguments](#)

- QString [guiFile](#)
- [CreationOptionNames](#) [creationOption](#)
- QString [prioritySubstitutions](#)

9.63.1 Member Enumeration Documentation

9.63.1.1 enum [QCheckBox::ArrayActions](#)

User friendly enumerations for [arrayAction](#) property - refer to [QStringFormatting::arrayActions](#) for details.

Enumerator:

Append Refer to [QStringFormatting::APPEND](#) for details.

Ascii Refer to [QStringFormatting::ASCII](#) for details.

Index Refer to [QStringFormatting::INDEX](#) for details.

9.63.1.2 enum [QCheckBox::CreationOptionNames](#)

Creation options. Used to indicate how to present a GUI when requesting a new GUI be created. Open a new window, open a new tab, or replace the current window.

Enumerator:

Open Replace the current GUI with the new GUI.

NewTab Open new GUI in a new tab.

NewWindow Open new GUI in a new window.

9.63.1.3 enum [QCheckBox::Formats](#)

User friendly enumerations for [format](#) property - refer to [QStringFormatting::formats](#) for details.

Enumerator:

Default Format as best appropriate for the data type.

Floating Format as a floating point number.

Integer Format as an integer.

UnsignedInteger Format as an unsigned integer.

Time Format as a time.

LocalEnumeration Format as a selection from the [localEnumeration](#) property.

9.63.1.4 enum QCheckBox::Notations

User friendly enumerations for notation property - refer to [QStringFormatting::notations](#) for details.

Enumerator:

Fixed Refer to [QStringFormatting::NOTATION_FIXED](#) for details.

Scientific Refer to [QStringFormatting::NOTATION_SCIENTIFIC](#) for details.

Automatic Refer to [QStringFormatting::NOTATION_AUTOMATIC](#) for details.

9.63.1.5 enum QCheckBox::UpdateOptions

User friendly enumerations for updateOption property - refer to [QGenericButton::updateOptions](#) for details.

Enumerator:

Text Data updates will update the button text.

Icon Data updates will update the button icon.

TextAndIcon Data updates will update the button text and icon.

State Data updates will update the button state (checked or unchecked)

9.63.1.6 enum QCheckBox::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to [USERLEVEL_USER](#) for details.

Scientist Refer to [USERLEVEL_SCIENTIST](#) for details.

Engineer Refer to [USERLEVEL_ENGINEER](#) for details.

9.63.2 Constructor & Destructor Documentation

9.63.2.1 QCheckBox::QCheckBox (QWidget * parent = 0)

Create without a variable. Use [setVariableNameProperty\(\)](#) and [setSubstitutionsProperty\(\)](#) to define a variable and, optionally, macro substitutions later.

9.63.2.2 QCheckBox::QCheckBox (const QString & variableName, QWidget * parent = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.63.3 Member Function Documentation

9.63.3.1 void QECheckBox::clicked (int *value*) [signal]

Button has been Clicked. The value emitted is the integer interpretation of the clickText property (or the clickCheckedText property if the button was checked)

9.63.3.2 void QECheckBox::dbValueChanged (const QString & *out*) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.63.3.3 void QECheckBox::launchGui (QString *guiName*, QEForm::creationOptions *creationOption*) [inline, slot]

Default slot used to create a new GUI if there is no slot indicated in the [ContainerProfile](#) class. This slot is typically used when the button is pressed within the Designer preview window to allow the operation of the button to be tested. If an application does not specify a slot to use for creating new windows (through the [ContainerProfile](#) class) a window will still be created through this slot, but it will not respect the window creation options or any other window related application constraints. For example, the QEGui application does provide a slot for creating new GUIs in the [ContainerProfile](#) class which respects the creation options, knows how to add tabs in the application, and extend the application's window menu in the menu bar.

Reimplemented from [QEGenericButton](#).

9.63.3.4 void QECheckBox::pressed (int *value*) [signal]

Button has been Pressed. The value emitted is the integer interpretation of the press-Text property

9.63.3.5 void QECheckBox::released (int *value*) [signal]

Button has been Released The value emitted is the integer interpretation of the release-Text property

9.63.3.6 void QECheckBox::requestEnabled (const bool & *state*) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.63.4 Property Documentation

9.63.4.1 `bool QCheckBox::addUnits` [read, write]

If true (default), add engineering units supplied with the data.

9.63.4.2 `Qt::Alignment QCheckBox::alignment` [read, write]

Set the buttons text alignment. Left justification is particularly useful when displaying quickly changing numeric data updates.

9.63.4.3 `bool QCheckBox::allowDrop` [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.63.4.4 `QStringList QCheckBox::arguments` [read, write]

Arguments for program specified in the 'program' property.

Reimplemented from [QEGenericButton](#).

9.63.4.5 `ArrayActions QCheckBox::arrayAction` [read, write]

Text formatting option for array data. Default is ASCII. Options are:

- ASCII - treat array as a single text string. For example an array of three characters 'a' 'b' 'c' will be formatted as 'abc'.
- APPEND - treat array as an array of numbers and format a string containing them all with a space between each. For example, an array of three numbers 10, 11 and 12 will be formatted as '10 11 12'.
- INDEX - Extract a single item from the array. The item is then formatted as any other non array data would be. The item selected is determined by the `arrayIndex` property. For example, if `arrayIndex` property is 1, an array of three numbers 10, 11 and 12 will be formatted as '11'.

9.63.4.6 `QString QCheckBox::clickCheckedText` [read, write]

Text used to compare with text written or read to determine if push button should be marked as checked. Note, must be an exact match following formatting of data updates. When writing values, the 'pressText', 'ReleaseText', or 'clickedtext' must match this property to cause the button to be checked when the write occurs.

Good example: formatting set to display a data value of '1' as 'On', clickCheckedText is 'On', clickText is 'On'. In this example, the push button will be checked when a data update occurs with a value of 1 or when the button is clicked.

Bad example: formatting set to display a data value of '1' as 'On', clickCheckedText is 'On', clickText is '1'. In this example, the push button will be checked when a data update occurs with a value of 1 but, although a valid value will be written when clicked, the button will not be checked when clicked as '1' is not the same as 'On'.

Reimplemented from [QGenericButton](#).

9.63.4.7 QString QCheckBox::clickText [read, write]

Value written when user clicks button if 'writeOnClick' property is true

Reimplemented from [QGenericButton](#).

9.63.4.8 bool QCheckBox::confirmAction [read, write]

If true, a dialog will be presented asking the user to confirm if the button action should be carried out

9.63.4.9 CreationOptionNames QCheckBox::creationOption [read, write]

Creation options when opening a new GUI. Open a new window, open a new tab, or replace the current window. the creation option is supplied when the button generates a newGui signal. Application code connected to this signal should honour this request if possible. When used within the QEGui application, the QEGui application creates a new window, new tab, or replaces the current window as appropriate.

Reimplemented from [QGenericButton](#).

9.63.4.10 bool QCheckBox::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.63.4.11 bool QCheckBox::enabled [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.63.4.12 **Formats** `QCheckBox::format` [read, write]

Format to apply to data. Default is 'Default' in which case the data type supplied with the data determines how the data is formatted. For all other options, an attempt is made to format the data as requested (whatever its native form).

9.63.4.13 **QString** `QCheckBox::guiFile` [read, write]

File name of GUI to be presented on button click. File name can be absolute, relative to the path of the QForm in which the [QEPushButton](#) is located, relative to the any path in the path list published in the [ContainerProfile](#) class, or relative to the current path. See [QEWidget::openQEFile\(\)](#) in QEWidget.cpp for details.

9.63.4.14 **unsigned** `QCheckBox::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

Base used for when formatting integers. Default is 10 (duh!)

Index used to select a single item of data for formatting from an array of data. Default is 0. Only used when the arrayAction property is INDEX. Refer to the arrayAction property for more details.

9.63.4.15 **QString** `QCheckBox::labelText` [read, write]

Button label text (prior to substitution). Macro substitutions will be applied to this text and the result will be set as the button text. Used when data updates are not being represented in the button text. IF NOT LEFT EMPTY, THIS TEXT WILL TAKE PRIORITY OVER THE PUSH BUTTON 'text' PROPERTY! For example, a button in a sub form may have a 'labelText' property of 'Turn Pump On'. When the sub form is used twice in a main form with substitutions PUMPNUM=1 and PUMPNUM=2 respectively, the two identical buttons in the sub forms will have the labels 'Turn Pump 1 On' and 'Turn Pump 2 On' respectively.

Reimplemented from [QEGenericButton](#).

9.63.4.16 **bool** `QCheckBox::leadingZero` [read, write]

If true (default), always add a leading zero when formatting numbers.

9.63.4.17 **QString** `QCheckBox::localEnumeration` [read, write]

An enumeration list used to data values. Used only when the formatting option is 'local enumeration'. Value is converted to an integer and used to select a string from this list.

Format is:

```
[[<|<=|!=|>|=|>]value1|*] : string1 , [[<|<=|!=|>|=|>]value2|*] : string2 , [[<|<=|!=|>|=|>]value3|*] : string3 , ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
>= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"", 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *:"" "Pump Off": "OH NO!, the pump is OFF!","Pump On": "It's OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10:'''

A range of numbers can be covered by a pair of values as in the following example:
>=4:"Between 4 and 8",<=8:"Between 4 and 8"

9.63.4.18 Notations QECheckBox::notation [read, write]

Notation used for numerical formatting. Default is fixed.

9.63.4.19 QString QECheckBox::password [read, write]

Password user will need to enter before any action is taken

Reimplemented from [QEGenericButton](#).

9.63.4.20 QPixmap QECheckBox::pixmap0 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 0

9.63.4.21 QPixmap QECheckBox::pixmap1 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 1

9.63.4.22 QPixmap QECheckBox::pixmap2 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 2

9.63.4.23 QPixmap QECheckBox::pixmap3 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 3

9.63.4.24 QPixmap QECheckBox::pixmap4 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 4

9.63.4.25 QPixmap QECheckBox::pixmap5 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 5

9.63.4.26 QPixmap QECheckBox::pixmap6 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 6

9.63.4.27 QPixmap QECheckBox::pixmap7 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 7

9.63.4.28 int QECheckBox::precision [read, write]

Precision used when formatting floating point numbers. The default is 4. This is only used if useDbPrecision is false.

9.63.4.29 QString QECheckBox::pressText [read, write]

Value written when user presses button if 'writeOnPress' property is true

Reimplemented from [QEGenericButton](#).

9.63.4.30 `QString QCheckBox::prioritySubstitutions` [read, write]

Overriding macro substitutions. These macro substitutions take precedence over any existing macro substitutions defined by the `variableSubstitutions` property, any parent forms, or the application containing the button. These macro substitutions are particularly useful when the button's function is to reload the same form but with different macro substitutions. The `variableSubstitutions` property cannot be used for this since, although they are added to the list of macro substitutions applied to the new form, they are appended to the list and the existing macro substitutions take precedence.

Reimplemented from [QGenericButton](#).

9.63.4.31 `QString QCheckBox::program` [read, write]

Program to run when the button is clicked. No attempt to run a program is made if this property is empty. Example: `firefox`

Reimplemented from [QGenericButton](#).

9.63.4.32 `QString QCheckBox::releaseText` [read, write]

Value written when user releases button if 'writeOnRelease' property is true

Reimplemented from [QGenericButton](#).

9.63.4.33 `bool QCheckBox::subscribe` [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QWidget](#).

9.63.4.34 `bool QCheckBox::trailingZeros` [read, write]

If true (default), always remove any trailing zeros when formatting numbers.

9.63.4.35 `UpdateOptions QCheckBox::updateOption` [read, write]

Update options (text, pixmap, both, or state (checked or unchecked))

Reimplemented from [QGenericButton](#).

9.63.4.36 `bool QCheckBox::useDbPrecision` [read, write]

If true (default), format floating point numbers using the precision supplied with the data. If false, the `precision` property is used.

9.63.4.37 UserLevels QCheckBox::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.63.4.38 QString QCheckBox::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.63.4.39 QString QCheckBox::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.63.4.40 QString QCheckBox::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.63.4.41 UserLevels QCheckBox::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.63.4.42 `QString QCheckBox::variable` [read, write]

EPICS variable name (CA PV)

9.63.4.43 `bool QCheckBox::variableAsToolTip` [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.63.4.44 `QString QCheckBox::variableSubstitutions` [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.63.4.45 `bool QCheckBox::visible` [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

9.63.4.46 `bool QCheckBox::writeOnClick` [read, write]

If true, the 'clickText' property is written when the button is clicked. Default is true

Reimplemented from [QEGenericButton](#).

9.63.4.47 `bool QCheckBox::writeOnPress` [read, write]

If true, the 'pressText' property is written when the button is pressed. Default is false

Reimplemented from [QEGenericButton](#).

9.63.4.48 `bool QCheckBox::writeOnRelease` [read, write]

If true, the 'releaseText' property is written when the button is released. Default is false

Reimplemented from [QEGenericButton](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QCheckBox.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QCheckBox.cpp

9.64 QECheckBoxManager Class Reference

Public Member Functions

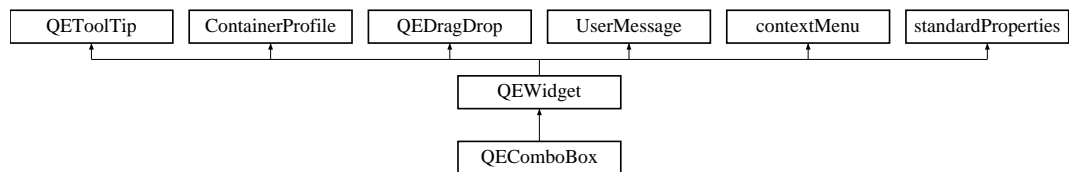
- **QECheckBoxManager** (QObject *parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget * **createWidget** (QWidget *parent)
- void **initialize** (QDesignerFormEditorInterface *core)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QECheckBoxManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QECheckBoxManager.cpp

9.65 QEComboBox Class Reference

Inheritance diagram for QEComboBox:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void **requestEnabled** (const bool &state)

Signals

- void **dbValueChanged** (const qlonglong &out)
- void **userChange** (const QString &oldValue, const QString &newValue, const QString &lastValue)

Internal use only. Used by [QEConfiguredLayout](#) to be notified when one of its widgets has written something.

Public Member Functions

- **QEComboBox** (QWidget *parent=0)
- **QEComboBox** (const QString &variableName, QWidget *parent=0)
- void **setWriteOnChange** (bool writeOnChangeIn)
- bool **getWriteOnChange** ()
- void **setSubscribe** (bool subscribe)
- bool **getSubscribe** ()
- void **setUseDbEnumerations** (bool [useDbEnumerations](#))
- bool **getUseDbEnumerations** ()
- void **setLocalEnumerations** (const QString &localEnumerations)
- QString **getLocalEnumerations** ()
- bool **isEnabled** () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void **setEnabled** (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) **getUserLevelVisibilityProperty** ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void **setUserLevelVisibilityProperty** ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) **getUserLevelEnabledProperty** ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void **setUserLevelEnabledProperty** ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

Protected Member Functions

- void **establishConnection** (unsigned int variableIndex)
- void **dragEnterEvent** (QDragEnterEvent *event)
- void **dropEvent** (QDropEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()

Protected Attributes

- [QEIntegerFormatting](#) **integerFormatting**
- [QELocalEnumeration](#) **localEnumerations**
- bool [useDbEnumerations](#)
- bool [writeOnChange](#)

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- QString [localEnumeration](#)

9.65.1 Member Enumeration Documentation

9.65.1.1 enum [QEComboBox::UserLevels](#)

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to `USERLEVEL_USER` for details.

Scientist Refer to `USERLEVEL_SCIENTIST` for details.

Engineer Refer to `USERLEVEL_ENGINEER` for details.

9.65.2 Member Function Documentation

9.65.2.1 void [QEComboBox::dbValueChanged](#) (const [qlonglong](#) & *out*) [[signal](#)]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.65.2.2 `void QComboBox::requestEnabled (const bool & state) [inline, slot]`

Similar to standard `setEnabled` slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.65.3 Member Data Documentation

9.65.3.1 `bool QComboBox::useDbEnumerations [read, write, protected]`

Use database enumerations - defaults to true

9.65.3.2 `bool QComboBox::writeOnChange [read, write, protected]`

Sets if this widget writes any changes as the user selects values (the `QComboBox` 'activated' signal is emitted). Default is 'true' (writes any changes when the `QComboBox` 'activated' signal is emitted).

9.65.4 Property Documentation

9.65.4.1 `bool QComboBox::allowDrop [read, write]`

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.65.4.2 `bool QComboBox::displayAlarmState [read, write]`

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.65.4.3 `bool QComboBox::enabled [read, write]`

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.65.4.4 `unsigned QComboBox::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.65.4.5 `QString QComboBox::localEnumeration` [read, write]

Enumerations values used when `useDbEnumerations` is false.

9.65.4.6 `bool QComboBox::subscribe` [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEWidget](#).

9.65.4.7 `UserLevels QComboBox::userLevelEnabled` [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.65.4.8 `QString QComboBox::userLevelEngineerStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.65.4.9 `QString QComboBox::userLevelScientistStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.65.4.10 QString QComboBox::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.65.4.11 UserLevels QComboBox::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel() Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.65.4.12 QString QComboBox::variable [read, write]

EPICS variable name (CA PV)

9.65.4.13 bool QComboBox::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.65.4.14 QString QComboBox::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.65.4.15 bool QComboBox::visible [read, write]

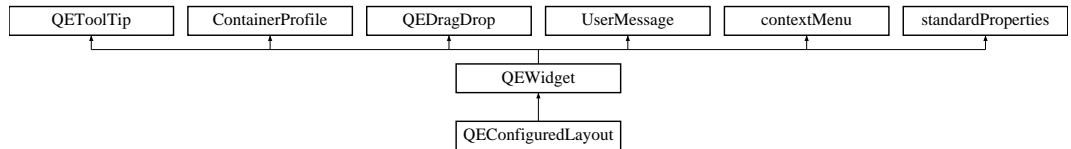
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QComboBox/QComboBox.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QComboBox/QComboBox.cpp

9.66 QEConfiguredLayout Class Reference

Inheritance diagram for QEConfiguredLayout:



Public Types

- enum **configurationTypesProperty** { **File** = FROM_FILE, **Text** = FROM_TEXT }
- enum **detailsLayoutProperty** { **Top** = TOP, **Bottom** = BOTTOM, **Left** = LEFT, **Right** = RIGHT }
- enum **userTypesProperty** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }

Public Member Functions

- **QEConfiguredLayout** (QWidget *pParent=0, bool pSubscription=true)
- void **setItemDescription** (QString pValue)
- QString **getItemDescription** ()
- void **setShowItemList** (bool pValue)
- bool **getShowItemList** ()
- void **setConfigurationType** (int pValue)
- int **getConfigurationType** ()
- void **setConfigurationFile** (QString pValue)
- QString **getConfigurationFile** ()
- void **setConfigurationText** (QString pValue)
- QString **getConfigurationText** ()
- void **setDetailsLayout** (int pValue)
- int **getDetailsLayout** ()
- void **setCurrentUserType** (int pValue)
- int **getCurrentUserType** ()
- void **refreshFields** ()
- void **userLevelChanged** (userLevelTypes::userLevels pValue)
- void **setConfigurationTypeProperty** (configurationTypesProperty pConfigurationType)
- configurationTypesProperty **getConfigurationTypeProperty** ()
- void **setDetailsLayoutProperty** (detailsLayoutProperty pDetailsLayout)
- detailsLayoutProperty **getDetailsLayoutProperty** ()
- void **setCurrentUserTypeProperty** (userTypesProperty pUserType)
- userTypesProperty **getCurrentUserTypeProperty** ()

Public Attributes

- QList< [_Item](#) * > **itemList**
- QList< [_Field](#) * > **currentFieldList**

Protected Attributes

- QLabel * **qLabelItemDescription**
- QComboBox * **qComboBoxItemList**
- QVBoxLayout * **qVBoxLayoutFields**
- QScrollArea * **qScrollArea**
- QString **configurationFile**
- QString **configurationText**
- int **configurationType**
- int **detailsLayout**
- int **currentUserType**
- bool **subscription**

Properties

- QString **itemDescription**
- bool **showItemList**
- configurationTypesProperty **configurationType**
- detailsLayoutProperty **detailsLayout**
- userTypesProperty **currentUserType**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayout.cpp

9.67 QEConfiguredLayoutManager Class Reference

Public Member Functions

- **QEConfiguredLayoutManager** (QObject *pParent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const

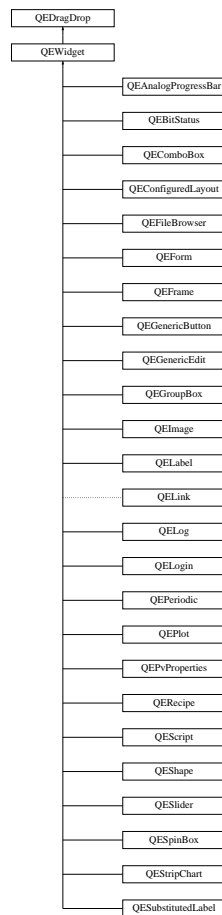
- QWidget * **createWidget** (QWidget *pParent)
- void **initialize** (QDesignerFormEditorInterface *pCore)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayoutManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEConfiguredLayout/QEConfiguredLayoutManager.cpp

9.68 QEDragDrop Class Reference

Inheritance diagram for QEDragDrop:



Public Member Functions

- **QEDragDrop** (QWidget *ownerIn)

Protected Member Functions

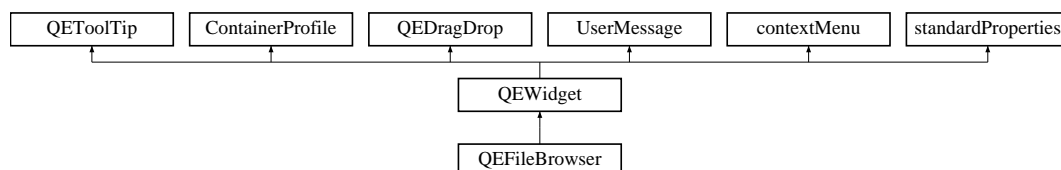
- void **qcaDragEnterEvent** (QDragEnterEvent *event)
- void **qcaDropEvent** (QDropEvent *event)
- void **qcaMousePressEvent** (QMouseEvent *event)
- virtual void **setDrop** (QVariant)
- virtual QVariant **getDrop** ()
- void **setAllowDrop** (bool allowDropIn)
- bool **getAllowDrop** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/QEDragDrop.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/QEDragDrop.cpp

9.69 QFileBrowser Class Reference

Inheritance diagram for QFileBrowser:



Public Types

- enum **detailsLayoutProperty** { **Top** = TOP, **Bottom** = BOTTOM, **Left** = LEFT, **Right** = RIGHT }

Signals

- void **selected** (QString pFilename)

Public Member Functions

- **QFileBrowser** (QWidget *pParent=0)
- void **setDirectoryPath** (QString pValue)
- QString **getDirectoryPath** ()
- void **setShowDirectoryPath** (bool pValue)
- bool **getShowDirectoryPath** ()
- void **setShowDirectoryBrowser** (bool pValue)
- bool **getShowDirectoryBrowser** ()

- void **setShowRefresh** (bool pValue)
- bool **getShowRefresh** ()
- void **setShowColumnTime** (bool pValue)
- bool **getShowColumnTime** ()
- void **setShowColumnSize** (bool pValue)
- bool **getShowColumnSize** ()
- void **setShowColumnFilename** (bool pValue)
- bool **getShowColumnFilename** ()
- void **setShowFileExtension** (bool pValue)
- bool **getShowFileExtension** ()
- void **setFileFilter** (QString pValue)
- QString **getFileFilter** ()
- void **setDetailsLayout** (int pValue)
- int **getDetailsLayout** ()
- void **updateTable** ()
- void **setDetailsLayoutProperty** (detailsLayoutProperty pDetailsLayout)
- detailsLayoutProperty **getDetailsLayoutProperty** ()

Protected Attributes

- QLineEdit * **qlineEditDirectoryPath**
- QPushButton * **qPushButtonDirectoryBrowser**
- QPushButton * **qPushButtonRefresh**
- [_QTableWidgetFileBrowser](#) * **qTableWidgetFileBrowser**
- QString **fileFilter**
- bool **showFileExtension**
- int **detailsLayout**

Properties

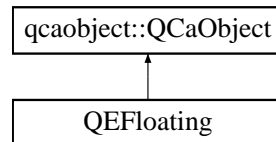
- QString **directoryPath**
- bool **showDirectoryPath**
- bool **showDirectoryBrowser**
- bool **showRefresh**
- bool **showColumnTime**
- bool **showColumnSize**
- bool **showColumnFilename**
- detailsLayoutProperty **detailsLayout**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QFileBrowser/QFileBrowser.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QFileBrowser/QFileBrowser.cpp

9.70 QEFloating Class Reference

Inheritance diagram for QEFloating:



Public Slots

- void **writeFloating** (const double &data)

Signals

- void **floatingConnectionChanged** ([QCaConnectionInfo](#) &connectionInfo, const unsigned int &variableIndex)
- void **floatingChanged** (const double &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)
- void **floatingArrayChanged** (const QVector< double > &values, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)

Public Member Functions

- **QEFloating** (QString recordName, QObject *eventObject, [QEFloatingFormatting](#) *floatingFormattingIn, unsigned int variableIndexIn)
- **QEFloating** (QString recordName, QObject *eventObject, [QEFloatingFormatting](#) *floatingFormattingIn, unsigned int variableIndexIn, [UserMessage](#) *userMessageIn)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QEFloating.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QEFloating.cpp

9.71 QEFloatingFormatting Class Reference

Public Types

- enum **formats** {
FORMAT_e = 'e', **FORMAT_E** = 'E', **FORMAT_f** = 'f', **FORMAT_g** = 'g',
FORMAT_G = 'G' }

Public Member Functions

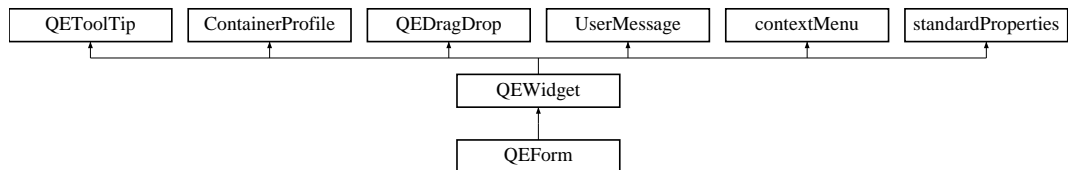
- double **formatFloating** (const QVariant &value)
- QVector< double > **formatFloatingArray** (const QVariant &value)
- QVariant **formatValue** (const double &floatingValue, generic::generic_types valueType)
- void **setPrecision** (unsigned int precision)
- void **setFormat** (formats format)
- unsigned int **getPrecision** ()
- int **getFormat** ()

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QEFloatingFormatting.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QEFloatingFormatting.cpp

9.72 QEForm Class Reference

Inheritance diagram for QEForm:



Public Types

- enum **creationOptions** { **CREATION_OPTION_OPEN**, **CREATION_OPTION_NEW_TAB**, **CREATION_OPTION_NEW_WINDOW** }
- enum **MessageFilterOptions** { **Match** = UserMessage::MESSAGE_FILTER_MATCH, **None** = UserMessage::MESSAGE_FILTER_NONE }

Public Slots

- bool **readUiFile** ()
- void **launchGui** (QString guiName, QEForm::creationOptions createOption)

Public Member Functions

- **QEForm** (QWidget *parent=0)
- **QEForm** (const QString &uifileNameIn, QWidget *parent=0)
- void **commonInit** (const bool alertIfUINoFoundIn)

- QString **getQEGuiTitle** ()
- QString **getFullFileName** ()
- void **setVariableNameAndSubstitutions** (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)
- void **setUiFileName** (QString uiFile)
- QString **getUiFileName** ()
- void **setHandleGuiLaunchRequests** (bool handleGuiLaunchRequests)
- bool **getHandleGuiLaunchRequests** ()
- void **setResizeContents** (bool resizeContentsIn)
- bool **getResizeContents** ()
- QString **getContainedFrameworkVersion** ()
- QString **getUniqueIdentifier** ()
- void **setUniqueIdentifier** (QString name)
- void **setVariableNameSubstitutionsProperty** (QString variableNameSubstitutions)
- QString **getVariableNameSubstitutionsProperty** ()
- MessageFilterOptions **getMessageFormFilter** ()
- void **setMessageFormFilter** (MessageFilterOptions messageFormFilter)
- MessageFilterOptions **getMessageSourceFilter** ()
- void **setMessageSourceFilter** (MessageFilterOptions messageSourceFilter)

Protected Member Functions

- void **setVariableNameSubstitutions** (QString variableNameSubstitutionsIn)

Protected Attributes

- QString **uiFileName**
- QString **fullUiFileName**
- bool **handleGuiLaunchRequests**
- bool **resizeContents**

Properties

- QString **uiFile**
- QString **variableSubstitutions**
- unsigned int
- MessageFilterOptions **messageFormFilter**
- MessageFilterOptions **messageSourceFilter**

9.72.1 Member Function Documentation

9.72.1.1 void QForm::setVariableNameAndSubstitutions (QString *variableNameIn*, QString *variableNameSubstitutionsIn*, unsigned int *variableIndex*) [virtual]

Virtual function that may be implemented by users of [QEWidget](#) to update variable names and macro substitutions. A default is provided that is suitable in most cases.

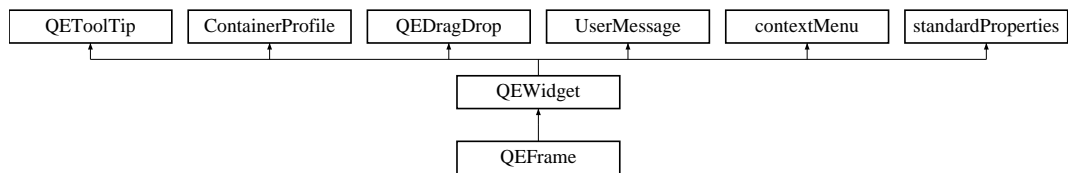
Reimplemented from [QEWidget](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QForm/QForm.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QForm/QForm.cpp

9.73 QEFrame Class Reference

Inheritance diagram for QEFrame:



Public Types

- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void [requestEnabled](#) (const bool &state)

Public Member Functions

- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)

Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- [UserLevels](#) [getUserLevelEnabledProperty](#) ()

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- **QEFrame** (QWidget *parent=0)
- QSize **sizeHint** () const

Properties

- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned [int](#)
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)

9.73.1 Member Enumeration Documentation

9.73.1.1 enum QEFrame::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to `USERLEVEL_USER` for details.

Scientist Refer to `USERLEVEL_SCIENTIST` for details.

Engineer Refer to `USERLEVEL_ENGINEER` for details.

9.73.2 Member Function Documentation

9.73.2.1 void QEFrame::requestEnabled (const bool & state) [inline, slot]

Similar to standard `setEnabled` slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.73.3 Property Documentation

9.73.3.1 `bool QFrame::allowDrop` [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.73.3.2 `bool QFrame::displayAlarmState` [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.73.3.3 `bool QFrame::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.73.3.4 `unsigned QFrame::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.73.3.5 `UserLevels QFrame::userLevelEnabled` [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()`. Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.73.3.6 `QString QFrame::userLevelEngineerStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example,

'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.73.3.7 QString QEFrame::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.73.3.8 QString QEFrame::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.73.3.9 UserLevels QEFrame::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.73.3.10 bool QEFrame::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.73.3.11 bool QEFrame::visible [read, write]

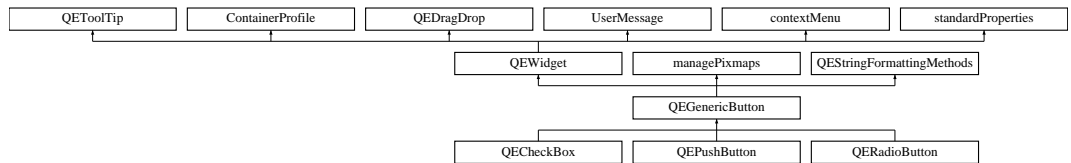
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEFrame/QEFrame.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEFrame/QEFrame.cpp

9.74 QEGenericButton Class Reference

Inheritance diagram for QEGenericButton:



Public Types

- enum **updateOptions** { **UPDATE_TEXT**, **UPDATE_ICON**, **UPDATE_TEXT_AND_ICON**, **UPDATE_STATE** }

Public Member Functions

- **QEGenericButton** (QWidget *owner)
- void **setSubscribe** (bool subscribe)
- bool **getSubscribe** ()
- void **setUpdateOption** (updateOptions updateOptionIn)
- updateOptions **getUpdateOption** ()
- void **setTextAlignment** (Qt::Alignment alignment)
- Qt::Alignment **getTextAlignment** ()
- void **setPassword** (QString password)
- QString **getPassword** ()
- void **setConfirmAction** (bool confirmRequiredIn)
- bool **getConfirmAction** ()
- void **setWriteOnPress** (bool writeOnPress)
- bool **getWriteOnPress** ()
- void **setWriteOnRelease** (bool writeOnRelease)
- bool **getWriteOnRelease** ()
- void **setWriteOnClick** (bool writeOnClick)
- bool **getWriteOnClick** ()
- void **setPressText** (QString pressText)
- QString **getPressText** ()
- void **setReleaseText** (QString releaseTextIn)
- QString **getReleaseText** ()
- void **setClickText** (QString clickTextIn)
- QString **getClickText** ()

- void **setClickCheckedText** (QString clickCheckedTextIn)
- QString **getClickCheckedText** ()
- void **setProgram** (QString program)
- QString **getProgram** ()
- void **setArguments** (QStringList arguments)
- QStringList **getArguments** ()
- void **setGuiName** (QString guiName)
- QString **getGuiName** ()
- void **setPrioritySubstitutions** (QString prioritySubstitutionsIn)
- QString **getPrioritySubstitutions** ()
- void **setCreationOption** (QForm::creationOptions creationOption)
- QForm::creationOptions **getCreationOption** ()
- void **setLabelTextProperty** (QString labelTextIn)
- QString **getLabelTextProperty** ()

Protected Member Functions

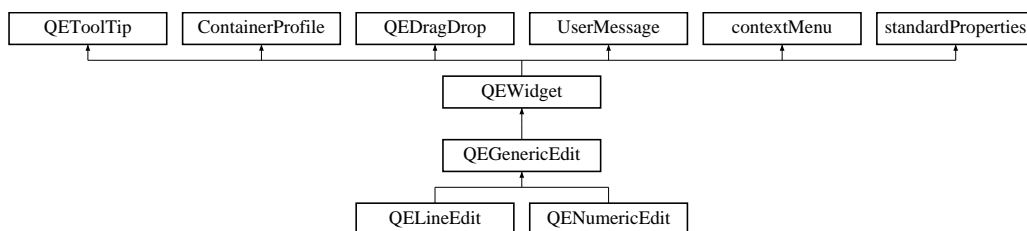
- void **connectionChanged** (QCaConnectionInfo &connectionInfo)
- void **setGenericButtonText** (const QString &text, QCaAlarmInfo &alarmInfo, QCa-DateTime &, const unsigned int &variableIndex)
- void **userPressed** ()
- void **userReleased** ()
- void **userClicked** (bool checked)
- void **launchGui** (QString guiName, QForm::creationOptions creationOption)
- virtual updateOptions **getDefaultUpdateOption** ()=0
- void **setup** ()
- void **establishConnection** (unsigned int variableIndex)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QEGenericButton.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QEGenericButton.cpp

9.75 QEGenericEdit Class Reference

Inheritance diagram for QEGenericEdit:



Public Types

- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void [requestEnabled](#) (const bool &state)

Signals

- void [userChange](#) (const QVariant &oldValue, const QVariant &newValue, const QVariant &lastValue)

Internal use only. Used by [QEConfiguredLayout](#) to be notified when one of its widgets has written something.

- void [requestResend](#) ()

Internal use only. Used when changing a property value to force a re-display to reflect the new property value.

Public Member Functions

- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- [QEGenericEdit](#) (QWidget *parent=0)
- [QEGenericEdit](#) (const QString &variableName, QWidget *parent=0)
- void [setWriteOnLoseFocus](#) (bool writeOnLoseFocus)
- bool [getWriteOnLoseFocus](#) ()
- void [setWriteOnEnter](#) (bool writeOnEnter)
- bool [getWriteOnEnter](#) ()
- void [setWriteOnFinish](#) (bool writeOnFinish)
- bool [getWriteOnFinish](#) ()

- void [setConfirmWrite](#) (bool confirmWrite)
- bool [getConfirmWrite](#) ()
- void [setSubscribe](#) (bool subscribe)
- bool [getSubscribe](#) ()
- void **writeValue** ([qcaobject::QCaObject](#) *qca, QVariant newValue)

Protected Member Functions

- void **setDataIfNoFocus** (const QVariant &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &dateTime)
- bool **getIsConnected** ()
- bool **testAndClearIsFirstUpdate** ()
- virtual void **setValue** (const QVariant &value)=0
- virtual QVariant **getValue** ()=0
- virtual bool **writeData** (const QVariant &value, QString &message)=0
- void [writeNow](#) ()

Write the value now.

Protected Attributes

- QVariant **lastValue**
- QVariant **lastUserValue**
- bool **messageDialogPresent**
- bool **writeFailMessageDialogPresent**
- bool **isConnected**

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [writeOnLoseFocus](#)
- bool [writeOnEnter](#)
- bool [writeOnFinish](#)
- bool [confirmWrite](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)

9.75.1 Member Enumeration Documentation

9.75.1.1 enum QEGenericEdit::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and userLevel enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.75.2 Constructor & Destructor Documentation

9.75.2.1 QEGenericEdit::QEGenericEdit (QWidget * *parent* = 0)

Create without a variable. Use `setVariableNameProperty()` and `setSubstitutionsProperty()` to define a variable and, optionally, macro substitutions later.

9.75.2.2 QEGenericEdit::QEGenericEdit (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.75.3 Member Function Documentation

9.75.3.1 bool QEGenericEdit::getConfirmWrite ()

Returns 'true' if this widget will ask for confirmation (using a dialog box) prior to writing data.

9.75.3.2 bool QEGenericEdit::getSubscribe ()

Returns 'true' if this widget subscribes for data updates and displays current data.

9.75.3.3 bool QEGenericEdit::getWriteOnEnter ()

Returns 'true' if this widget writes any changes when the user presses 'enter'.

9.75.3.4 `bool QEGenericEdit::getWriteOnFinish ()`

Returns 'true' if this widget writes any changes when the user finished editing (the QLineEdit 'editingFinished' signal is emitted).

9.75.3.5 `bool QEGenericEdit::getWriteOnLoseFocus ()`

Returns 'true' if this widget automatically writes any changes when it loses focus.

9.75.3.6 `void QEGenericEdit::requestEnabled (const bool & state) [inline, slot]`

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.75.3.7 `void QEGenericEdit::setConfirmWrite (bool confirmWrite)`

Sets if this widget will ask for confirmation (using a dialog box) prior to writing data. Default is 'false' (will not ask for confirmation (using a dialog box) prior to writing data).

9.75.3.8 `void QEGenericEdit::setSubscribe (bool subscribe)`

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

9.75.3.9 `void QEGenericEdit::setWriteOnEnter (bool writeOnEnter)`

Sets if this widget writes any changes when the user presses 'enter'. Note, the current value will be written even if the user has not changed it. Default is 'true' (writes any changes when the user presses 'enter').

9.75.3.10 `void QEGenericEdit::setWriteOnFinish (bool writeOnFinish)`

Sets if this widget writes any changes when the user finished editing (the QLineEdit 'editingFinished' signal is emitted). No writing occurs if no changes were made. Default is 'true' (writes any changes when the QLineEdit 'editingFinished' signal is emitted).

9.75.3.11 `void QEGenericEdit::setWriteOnLoseFocus (bool writeOnLoseFocus)`

Sets if this widget automatically writes any changes when it loses focus. Default is 'false' (does not write any changes when it loses focus).

9.75.4 Property Documentation

9.75.4.1 `bool QEGenericEdit::allowDrop` [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.75.4.2 `bool QEGenericEdit::confirmWrite` [read, write]

Sets if this widget will ask for confirmation (using a dialog box) prior to writing data. Default is 'false' (will not ask for confirmation (using a dialog box) prior to writing data).

9.75.4.3 `bool QEGenericEdit::displayAlarmState` [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.75.4.4 `bool QEGenericEdit::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.75.4.5 `unsigned QEGenericEdit::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

Reimplemented in [QELineEdit](#).

9.75.4.6 `bool QEGenericEdit::subscribe` [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEWidget](#).

9.75.4.7 UserLevels QEGenericEdit::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.75.4.8 QString QEGenericEdit::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.75.4.9 QString QEGenericEdit::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.75.4.10 QString QEGenericEdit::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.75.4.11 UserLevels QEGenericEdit::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.75.4.12 QString QEGenericEdit::variable [read, write]

EPICS variable name (CA PV)

9.75.4.13 bool QEGenericEdit::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.75.4.14 QString QEGenericEdit::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.75.4.15 bool QEGenericEdit::visible [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

9.75.4.16 bool QEGenericEdit::writeOnEnter [read, write]

Sets if this widget writes any changes when the user presses 'enter'. Note, the current value will be written even if the user has not changed it. Default is 'true' (writes any changes when the user presses 'enter').

9.75.4.17 bool QEGenericEdit::writeOnFinish [read, write]

Sets if this widget writes any changes when the user finished editing (the QLineEdit 'editingFinished' signal is emitted). No writing occurs if no changes were made. Default is 'true' (writes any changes when the QLineEdit 'editingFinished' signal is emitted).

9.75.4.18 bool QEGenericEdit::writeOnLoseFocus [read, write]

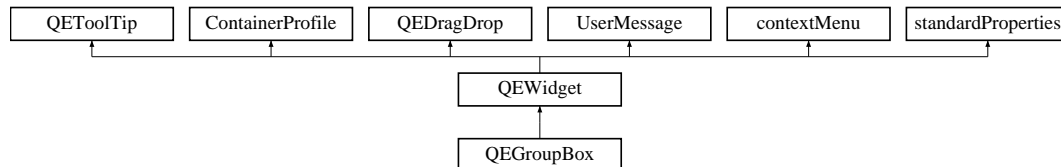
Sets if this widget automatically writes any changes when it loses focus. Default is 'false' (does not write any changes when it loses focus).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELineEdit/QEGenericEdit.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELineEdit/QEGenericEdit.cpp

9.76 QEGroupBox Class Reference

Inheritance diagram for QEGroupBox:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void **requestEnabled** (const bool &state)

Public Member Functions

- bool **isEnabled** () const
Access function for *enabled* property - refer to *enabled* property for details.
- void **setEnabled** (bool state)
Access function for *enabled* property - refer to *enabled* property for details.
- UserLevels** **getUserLevelVisibilityProperty** ()
Access function for *userLevelVisibility* property - refer to *userLevelVisibility* property for details.
- void **setUserLevelVisibilityProperty** (UserLevels level)
Access function for *userLevelVisibility* property - refer to *userLevelVisibility* property for details.
- UserLevels** **getUserLevelEnabledProperty** ()
Access function for *userLevelEnabled* property - refer to *userLevelEnabled* property for details.
- void **setUserLevelEnabledProperty** (UserLevels level)
Access function for *userLevelEnabled* property - refer to *userLevelEnabled* property for details.
- QEGroupBox** (QWidget *parent=0)
- QSize **sizeHint** () const

Properties

- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)

9.76.1 Member Enumeration Documentation

9.76.1.1 enum `QEGroupBox::UserLevels`

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and `userLevel` enumeration for details.

Enumerator:

User Refer to `USERLEVEL_USER` for details.

Scientist Refer to `USERLEVEL_SCIENTIST` for details.

Engineer Refer to `USERLEVEL_ENGINEER` for details.

9.76.2 Member Function Documentation

9.76.2.1 void `QEGroupBox::requestEnabled (const bool & state)` [`inline`, `slot`]

Similar to standard `setEnabled` slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.76.3 Property Documentation

9.76.3.1 bool `QEGroupBox::allowDrop` [`read`, `write`]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.76.3.2 bool QEGroupBox::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.76.3.3 bool QEGroupBox::enabled [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.76.3.4 unsigned QEGroupBox::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.76.3.5 UserLevels QEGroupBox::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programmatically through `setUserLevel()`. Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.76.3.6 QString QEGroupBox::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red'. This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.76.3.7 QString QEGroupBox::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.76.3.8 QString QEGroupBox::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.76.3.9 UserLevels QEGroupBox::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel() Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.76.3.10 bool QEGroupBox::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.76.3.11 bool QEGroupBox::visible [read, write]

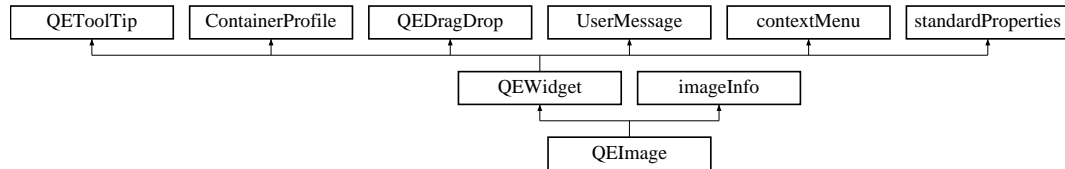
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEGroupBox/QEGroupBox.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEGroupBox/QEGroupBox.cpp

9.77 QImage Class Reference

Inheritance diagram for QImage:



Classes

- struct **rgbPixel**

Public Types

- enum **selectOptions** {
[SO_NONE](#), [SO_PANNING](#), [SO_VSLICE](#), [SO_HSLICE](#),
SO_AREA1, **SO_AREA2**, **SO_AREA3**, [SO_AREA4](#),
[SO_PROFILE](#), [SO_TARGET](#), [SO_BEAM](#) }
- enum **formatOptions** { [GREY8](#), [GREY12](#), [GREY16](#), [RGB_888](#) }
- enum **resizeOptions** { [RESIZE_OPTION_ZOOM](#), [RESIZE_OPTION_FIT](#) }
- enum **rotationOptions** { [ROTATION_0](#), [ROTATION_90_RIGHT](#), [ROTATION_90_LEFT](#), [ROTATION_180](#) }
- enum **UserLevels** { [User](#) = [userLevelTypes::USERLEVEL_USER](#), [Scientist](#) = [userLevelTypes::USERLEVEL_SCIENTIST](#), [Engineer](#) = [userLevelTypes::USERLEVEL_ENGINEER](#) }
- enum **FormatOptions** { [Grey_8](#) = [QImage::GREY8](#), [Grey_12](#) = [QImage::GREY12](#),
[Grey_16](#) = [QImage::GREY16](#), **RGB** = [QImage::RGB_888](#) }
- enum **ResizeOptions** { [Zoom](#) = [QImage::RESIZE_OPTION_ZOOM](#), [Fit](#) = [QImage::RESIZE_OPTION_FIT](#) }
- enum **RotationOptions** { [NoRotation](#) = [QImage::ROTATION_0](#), [Rotate90Right](#) = [QImage::ROTATION_90_RIGHT](#), [Rotate90Left](#) = [QImage::ROTATION_90_LEFT](#), [Rotate180](#) = [QImage::ROTATION_180](#) }

Public Slots

- void [setSelectPanMode](#) ()
Framework use only. Slot to allow external setting of selection menu options.
- void [setSelectVSliceMode](#) ()
Framework use only. Slot to allow external setting of selection menu options.
- void [setSelectHSliceMode](#) ()
Framework use only. Slot to allow external setting of selection menu options.
- void [setSelectArea1Mode](#) ()

- Framework use only. Slot to allow external setting of selection menu options.*

 - void [setSelectArea2Mode](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [setSelectArea3Mode](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [setSelectArea4Mode](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [setSelectProfileMode](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [setSelectTargetMode](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [setSelectBeamMode](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [pauseClicked](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [saveClicked](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [roi1Changed](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [roi2Changed](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [roi3Changed](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [roi4Changed](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [targetClicked](#) ()
- Framework use only. Slot to allow external setting of selection menu options.*

 - void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const QString &out)
 - void [requestResend](#) ()
- Internal use only. Used when changing a property value to force a re-display to reflect the new property value.*

Public Member Functions

- [QEImage](#) (QWidget *parent=0)
 - [QEImage](#) (const QString &variableName, QWidget *parent=0)
 - [~QEImage](#) ()
- Destructor.*
- [selectOptions](#) [getSelectionOption](#) ()

- void [setFormatOption](#) ([formatOptions](#) formatOption)
Access function for [#formatOption](#) property - refer to [#formatOption](#) property for details.
- [formatOptions](#) [getFormatOption](#) ()
Access function for [#formatOption](#) property - refer to [#formatOption](#) property for details.
- void [setResizeOption](#) ([resizeOptions](#) resizeOptionIn)
Access function for [#resizeOption](#) property - refer to [#resizeOption](#) property for details.
- [resizeOptions](#) [getResizeOption](#) ()
Access function for [#resizeOption](#) property - refer to [#resizeOption](#) property for details.
- void [setZoom](#) (int zoomIn)
Access function for [zoom](#) property - refer to [zoom](#) property for details.
- int [getZoom](#) ()
Access function for [zoom](#) property - refer to [zoom](#) property for details.
- void [setRotation](#) ([rotationOptions](#) rotationIn)
Access function for [#rotation](#) property - refer to [#rotation](#) property for details.
- [rotationOptions](#) [getRotation](#) ()
Access function for [#rotation](#) property - refer to [#rotation](#) property for details.
- void [setHorizontalFlip](#) (bool flipHozIn)
Access function for [horizontalFlip](#) property - refer to [horizontalFlip](#) property for details.
- bool [getHorizontalFlip](#) ()
Access function for [horizontalFlip](#) property - refer to [horizontalFlip](#) property for details.
- void [setVerticalFlip](#) (bool flipVertIn)
Access function for [verticalFlip](#) property - refer to [verticalFlip](#) property for details.
- bool [getVerticalFlip](#) ()
Access function for [verticalFlip](#) property - refer to [verticalFlip](#) property for details.
- void [setInitialHozScrollPos](#) (int initialHosScrollPosIn)
Access function for [initialHosScrollPos](#) property - refer to [initialHosScrollPos](#) property for details.
- int [getInitialHozScrollPos](#) ()
Access function for [initialHosScrollPos](#) property - refer to [initialHosScrollPos](#) property for details.
- void [setInitialVertScrollPos](#) (int initialVertScrollPosIn)
Access function for [initialVertScrollPos](#) property - refer to [initialVertScrollPos](#) property for details.
- int [getInitialVertScrollPos](#) ()
Access function for [initialVertScrollPos](#) property - refer to [initialVertScrollPos](#) property for details.
- void [setDisplayButtonBar](#) (bool displayButtonBarIn)
Access function for [displayButtonBar](#) property - refer to [displayButtonBar](#) property for details.
- bool [getDisplayButtonBar](#) ()
Access function for [displayButtonBar](#) property - refer to [displayButtonBar](#) property for details.
- void [setShowTime](#) (bool pValue)

- Access function for [showTime](#) property - refer to [showTime](#) property for details.*

 - bool [getShowTime](#) ()
- Access function for [showTime](#) property - refer to [showTime](#) property for details.*

 - void [setVertSliceMarkupColor](#) (QColor pValue)
- Access function for [vertSliceColor](#) property - refer to [vertSliceColor](#) property for details.*

 - QColor [getVertSliceMarkupColor](#) ()
- Access function for [vertSliceColor](#) property - refer to [vertSliceColor](#) property for details.*

 - void [setHozSliceMarkupColor](#) (QColor pValue)
- Access function for [hozSliceColor](#) property - refer to [hozSliceColor](#) property for details.*

 - QColor [getHozSliceMarkupColor](#) ()
- Access function for [hozSliceColor](#) property - refer to [hozSliceColor](#) property for details.*

 - void [setProfileMarkupColor](#) (QColor pValue)
- Access function for [profileColor](#) property - refer to [profileColor](#) property for details.*

 - QColor [getProfileMarkupColor](#) ()
- Access function for [profileColor](#) property - refer to [profileColor](#) property for details.*

 - void [setAreaMarkupColor](#) (QColor pValue)
- Access function for [areaColor](#) property - refer to [areaColor](#) property for details.*

 - QColor [getAreaMarkupColor](#) ()
- Access function for [areaColor](#) property - refer to [areaColor](#) property for details.*

 - void [setTargetMarkupColor](#) (QColor pValue)
- Access function for [targetColor](#) property - refer to [targetColor](#) property for details.*

 - QColor [getTargetMarkupColor](#) ()
- Access function for [targetColor](#) property - refer to [targetColor](#) property for details.*

 - void [setBeamMarkupColor](#) (QColor pValue)
- Access function for [beamColor](#) property - refer to [beamColor](#) property for details.*

 - QColor [getBeamMarkupColor](#) ()
- Access function for [beamColor](#) property - refer to [beamColor](#) property for details.*

 - void [setTimeMarkupColor](#) (QColor pValue)
- Access function for [timeColor](#) property - refer to [timeColor](#) property for details.*

 - QColor [getTimeMarkupColor](#) ()
- Access function for [timeColor](#) property - refer to [timeColor](#) property for details.*

 - void [setDisplayCursorPixelInfo](#) (bool displayCursorPixelInfoIn)
- Access function for [#displayCursorPixelInfo](#) property - refer to [#displayCursorPixelInfo](#) property for details.*

 - bool [getDisplayCursorPixelInfo](#) ()
- Access function for [#displayCursorPixelInfo](#) property - refer to [#displayCursorPixelInfo](#) property for details.*

 - void [setContrastReversal](#) (bool contrastReversalIn)
- Access function for [#contrastReversal](#) property - refer to [#contrastReversal](#) property for details.*

 - bool [getContrastReversal](#) ()
- Access function for [#contrastReversal](#) property - refer to [#contrastReversal](#) property for details.*

 - void [setEnableVertSliceSelection](#) (bool enableVSliceSelectionIn)

- Access function for [enableVertSliceSelection](#) property - refer to [enableVertSliceSelection](#) property for details.
- bool [getEnableVertSliceSelection](#) ()

Access function for [enableVertSliceSelection](#) property - refer to [enableVertSliceSelection](#) property for details.
- void [setEnableHozSliceSelection](#) (bool enableHSliceSelectionIn)

Access function for [enableHozSliceSelection](#) property - refer to [enableHozSliceSelection](#) property for details.
- bool [getEnableHozSliceSelection](#) ()

Access function for [enableHozSliceSelection](#) property - refer to [enableHozSliceSelection](#) property for details.
- void [setEnableAreaSelection](#) (bool enableAreaSelectionIn)

Access function for [enableAreaSelection](#) property - refer to [enableAreaSelection](#) property for details.
- bool [getEnableAreaSelection](#) ()

Access function for [enableAreaSelection](#) property - refer to [enableAreaSelection](#) property for details.
- void [setEnableProfileSelection](#) (bool enableProfileSelectionIn)

Access function for [enableProfileSelection](#) property - refer to [enableProfileSelection](#) property for details.
- bool [getEnableProfileSelection](#) ()

Access function for [enableProfileSelection](#) property - refer to [enableProfileSelection](#) property for details.
- void [setEnableTargetSelection](#) (bool enableTargetSelectionIn)

Access function for [enableTargetSelection](#) property - refer to [enableTargetSelection](#) property for details.
- bool [getEnableTargetSelection](#) ()

Access function for [enableTargetSelection](#) property - refer to [enableTargetSelection](#) property for details.
- void [setEnableBrightnessContrast](#) (bool enableBrightnessContrastIn)

Access function for [enableBrightnessContrast](#) property - refer to [enableBrightnessContrast](#) property for details.
- bool [getEnableBrightnessContrast](#) ()

Access function for [enableBrightnessContrast](#) property - refer to [enableBrightnessContrast](#) property for details.
- void [setAutoBrightnessContrast](#) (bool autoBrightnessContrastIn)

Access function for [autoBrightnessContrast](#) property - refer to [autoBrightnessContrast](#) property for details.
- bool [getAutoBrightnessContrast](#) ()

Access function for [autoBrightnessContrast](#) property - refer to [autoBrightnessContrast](#) property for details.
- bool [isEnabled](#) () const

Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)

Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()

Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)

Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- [UserLevels](#) [getUserLevelEnabledProperty](#) ()

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setFormatOptionProperty](#) ([FormatOptions](#) formatOption)

Access function for [#formatOption](#) property - refer to [#formatOption](#) property for details.

- [FormatOptions](#) [getFormatOptionProperty](#) ()

Access function for [#formatOption](#) property - refer to [#formatOption](#) property for details.

- void [setResizeOptionProperty](#) ([ResizeOptions](#) resizeOption)

Access function for [#resizeOption](#) property - refer to [#resizeOption](#) property for details.

- [ResizeOptions](#) [getResizeOptionProperty](#) ()

Access function for [#resizeOption](#) property - refer to [#resizeOption](#) property for details.

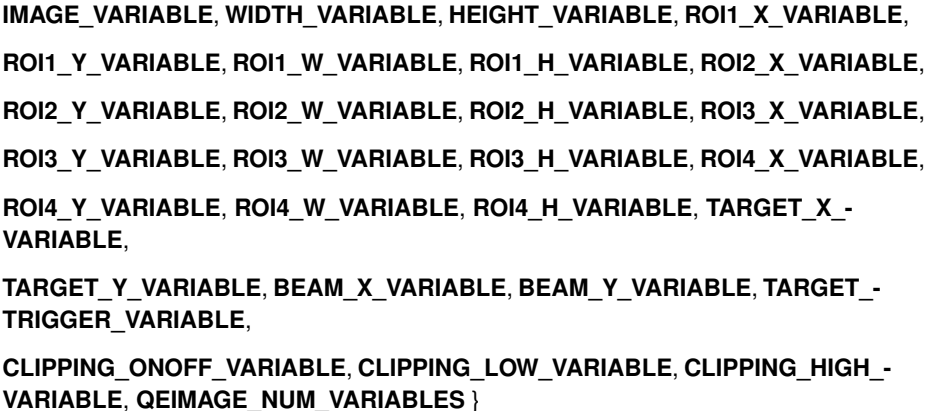
- void [setRotationProperty](#) ([RotationOptions](#) rotation)

Access function for [#rotation](#) property - refer to [#rotation](#) property for details.

- [RotationOptions](#) [getRotationProperty](#) ()

Access function for [#rotation](#) property - refer to [#rotation](#) property for details.

Protected Types

- enum **variableIndexes** {


IMAGE_VARIABLE, WIDTH_VARIABLE, HEIGHT_VARIABLE, ROI1_X_VARIABLE, ROI1_Y_VARIABLE, ROI1_W_VARIABLE, ROI1_H_VARIABLE, ROI2_X_VARIABLE, ROI2_Y_VARIABLE, ROI2_W_VARIABLE, ROI2_H_VARIABLE, ROI3_X_VARIABLE, ROI3_Y_VARIABLE, ROI3_W_VARIABLE, ROI3_H_VARIABLE, ROI4_X_VARIABLE, ROI4_Y_VARIABLE, ROI4_W_VARIABLE, ROI4_H_VARIABLE, TARGET_X_VARIABLE, TARGET_Y_VARIABLE, BEAM_X_VARIABLE, BEAM_Y_VARIABLE, TARGET_TRIGGER_VARIABLE, CLIPPING_ONOFF_VARIABLE, CLIPPING_LOW_VARIABLE, CLIPPING_HIGH_VARIABLE, QEIMAGE_NUM_VARIABLES }

Protected Member Functions

- void **establishConnection** (unsigned int variableIndex)
- void **dragEnterEvent** (QDragEnterEvent *event)
- void **dropEvent** (QDropEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()
- QString **copyVariable** ()
- QVariant **copyData** ()
- void **paste** (QVariant v)
- void **resizeEvent** (QResizeEvent *)

Protected Attributes

- [QEIntegerFormatting](#) **integerFormatting**
- [resizeOptions](#) **resizeOption**
- int [zoom](#)
Zoom percentage. Used when #resizeOption is [Zoom](#).
- [rotationOptions](#) **rotation**
- bool **flipVert**
- bool **flipHoz**
- int **initialHozScrollPos**
- int **initialVertScrollPos**
- bool [displayButtonBar](#)
- bool [enableBrightnessContrast](#)
- bool [autoBrightnessContrast](#)

Properties

- QString [imageVariable](#)
- QString [widthVariable](#)
- QString [heightVariable](#)
- QString [regionOfInterest1XVariable](#)
- QString [regionOfInterest1YVariable](#)
- QString [regionOfInterest1WVariable](#)
- QString [regionOfInterest1HVariable](#)
- QString [regionOfInterest2XVariable](#)
- QString [regionOfInterest2YVariable](#)
- QString [regionOfInterest2WVariable](#)
- QString [regionOfInterest2HVariable](#)
- QString [regionOfInterest3XVariable](#)
- QString [regionOfInterest3YVariable](#)
- QString [regionOfInterest3WVariable](#)
- QString [regionOfInterest3HVariable](#)
- QString [regionOfInterest4XVariable](#)

- QString [regionOfInterest4YVariable](#)
- QString [regionOfInterest4WVariable](#)
- QString [regionOfInterest4HVariable](#)
- QString [targetXVariable](#)
- QString [targetYVariable](#)
- QString [beamXVariable](#)
- QString [beamYVariable](#)
- QString [targetTriggerVariable](#)
- QString [clippingOnOffVariable](#)
- QString [clippingLowVariable](#)
- QString [clippingHighVariable](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned [int](#)
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- [FormatOptions](#) [formatOption](#)
- bool [enableVertSliceSelection](#)
- bool [enableHozSliceSelection](#)
- bool [showTime](#)
- QColor [vertSliceColor](#)
- QColor [hozSliceColor](#)
- QColor [profileColor](#)
- QColor [areaColor](#)
- QColor [beamColor](#)
- QColor [targetColor](#)
- QColor [timeColor](#)
- [ResizeOptions](#) [resizeOption](#)
- [RotationOptions](#) [rotation](#)
- bool [verticalFlip](#)
- bool [horizontalFlip](#)
- int [initialHosScrollPos](#)

9.77.1 Member Enumeration Documentation

9.77.1.1 enum QImage::formatOptions

Video format options

Enumerator:

- GREY8** 8 bit grey scale
- GREY12** 12 bit grey scale
- GREY16** 16 bit grey scale
- RGB_888** 24 bit RGB

9.77.1.2 enum QImage::FormatOptions

User friendly enumerations for #formatOption property - refer to #formatOption property and [formatOptions](#) enumeration for details.

Enumerator:

- Grey_8** 8 bit grey scale
- Grey_12** 12 bit grey scale
- Grey_16** 16 bit grey scale

9.77.1.3 enum QImage::ResizeOptions

User friendly enumerations for #resizeOption property

Enumerator:

- Zoom** Zoom to selected percentage.
- Fit** Zoom to fit the current window size.

9.77.1.4 enum QImage::resizeOptions

Image resize options

Enumerator:

- RESIZE_OPTION_ZOOM** Zoom to selected percentage.
- RESIZE_OPTION_FIT** Zoom to fit the current window size.

9.77.1.5 enum QImage::rotationOptions

Image rotation options

Enumerator:

- ROTATION_0** No image rotation.
- ROTATION_90_RIGHT** Rotate image 90 degrees clockwise.
- ROTATION_90_LEFT** Rotate image 90 degrees anticlockwise.
- ROTATION_180** Rotate image 180 degrees.

9.77.1.6 enum QImage::RotationOptions

User friendly enumerations for #rotation property

Enumerator:

- NoRotation** No image rotation.
- Rotate90Right** Rotate image 90 degrees clockwise.
- Rotate90Left** Rotate image 90 degrees anticlockwise.
- Rotate180** Rotate image 180 degrees.

9.77.1.7 enum QImage::selectOptions

Internal use only. Selection options. What will happen when the user interacts with the image area

Enumerator:

- SO_NONE** Do nothing.
- SO_PANNING** User is panning.
- SO_VSLICE** Select the vertical slice point.
- SO_HSLICE** Select the horizontal slice point.
- SO_AREA4** User is selecting an area (for region of interest)
- SO_PROFILE** Select an arbitrary line across the image (to determine a profile)
- SO_TARGET** Mark the target point.
- SO_BEAM** Mark the current beam location.

9.77.1.8 enum QImage::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.77.2 Constructor & Destructor Documentation**9.77.2.1 QImage::QImage (QWidget * *parent* = 0)**

Create without a variable. Use setVariableName'n'Property() - where 'n' is a number from 0 to 26 - and setSubstitutionsProperty() to define variables and, optionally, macro substitutions later. Note, each variable property is named by function (such as imageVariable and widthVariable) but given a numeric get and set property access function such as setVariableName22Property(). Refer to the property definitions to determine what 'set' and 'get' function is used for each variable, or use Qt library functions to set or get the variable names by name.

9.77.2.2 QImage::QImage (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. The variable is set up as the first variable. This is consistent with other widgets, but will not result in an updating image as the width and height variables are required as a minimum.

9.77.3 Member Function Documentation**9.77.3.1 void QImage::dbValueChanged (const QString & *out*) [signal]**

Sent when the widget is updated following a data change. Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.77.3.2 void QImage::requestEnabled (const bool & *state*) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.77.4 Member Data Documentation**9.77.4.1 bool QImage::autoBrightnessContrast [read, write, protected]**

If true, local brightness and contrast controls are displayed. The brightness and contrast is set to use the full range of pixels in the selected area.

9.77.4.2 `bool QEImage::displayButtonBar` [read, write, protected]

If true, a button bar will be displayed above the image. If not displayed, all buttons in the button bar are still available in the right click menu.

9.77.4.3 `bool QEImage::enableBrightnessContrast` [read, write, protected]

If true, auto set local brightness and contrast when any area is selected. The brightness and contrast is set to use the full range of pixels in the selected area.

9.77.4.4 `int QEImage::initialVertScrollPos` [read, write, protected]

Sets the initial position of the vertical scroll bar, if present. Used to set up an initial view when zoomed in.

9.77.5 Property Documentation

9.77.5.1 `bool QEImage::allowDrop` [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.77.5.2 `QColor QEImage::areaColor` [read, write]

Used to select the color of the area selection markups.

9.77.5.3 `QColor QEImage::beamColor` [read, write]

Used to select the color of the beam marker.

9.77.5.4 `QString QEImage::beamXVariable` [read, write]

EPICS variable name (CA PV). This variable is used to write the selected beam X position.

9.77.5.5 `QString QEImage::beamYVariable` [read, write]

EPICS variable name (CA PV). This variable is used to write the selected beam Y position.

9.77.5.6 `QString QImage::clippingHighVariable` `[read, write]`

EPICS variable name (CA PV). This variable is used to write the areadetector clipping high level.

9.77.5.7 `QString QImage::clippingLowVariable` `[read, write]`

EPICS variable name (CA PV). This variable is used to write the areadetector clipping low level.

9.77.5.8 `QString QImage::clippingOnOffVariable` `[read, write]`

EPICS variable name (CA PV). This variable is used to write the areadetector clipping on/off command.

9.77.5.9 `bool QImage::displayAlarmState` `[read, write]`

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.77.5.10 `bool QImage::enabled` `[read, write]`

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.77.5.11 `bool QImage::enableHozSliceSelection` `[read, write]`

If true, the option to select a horizontal slice through the image will be available to the user. This will be used to generate a horizontal pixel profile.

9.77.5.12 `bool QImage::enableVertSliceSelection` `[read, write]`

If true, the option to select a vertical slice through the image will be available to the user. This will be used to generate a vertical pixel profile.

9.77.5.13 FormatOptions QImage::formatOption [read, write]

Video format. EPICS data type size will typically be adequate for the number of bits required (one byte for 8 bits, 2 bytes for 12 and 16 bits), but can be larger (4 bytes for 24 bits.)

9.77.5.14 QString QImage::heightVariable [read, write]

EPICS variable name (CA PV). This variable is used to read the height of the image.

9.77.5.15 bool QImage::horizontalFlip [read, write]

If true, flip image horizontally.

9.77.5.16 QColor QImage::hozSliceColor [read, write]

Used to select the color of the horizontal slice markup.

9.77.5.17 QString QImage::imageVariable [read, write]

EPICS variable name (CA PV). This variable is used as the source the image waveform.

9.77.5.18 int QImage::initialHosScrollPos [read, write]

Sets the initial position of the horizontal scroll bar, if present. Used to set up an initial view when zoomed in.

9.77.5.19 unsigned QImage::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.77.5.20 QColor QImage::profileColor [read, write]

Used to select the color of the arbitrary profile line markup.

9.77.5.21 QString QImage::regionOfInterest1HVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the first region of interest height.

9.77.5.22 QString QImage::regionOfInterest1WVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the first region of interest width.

9.77.5.23 QString QImage::regionOfInterest1XVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the first region of interest X position.

9.77.5.24 QString QImage::regionOfInterest1YVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the first region of interest Y position.

9.77.5.25 QString QImage::regionOfInterest2HVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the second region of interest height.

9.77.5.26 QString QImage::regionOfInterest2WVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the second region of interest width.

9.77.5.27 QString QImage::regionOfInterest2XVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the second region of interest X position.

9.77.5.28 QString QImage::regionOfInterest2YVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the second region of interest Y position.

9.77.5.29 QString QImage::regionOfInterest3HVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the third region of interest height.

9.77.5.30 QString QImage::regionOfInterest3WVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the third region of interest width.

9.77.5.31 QString QEImage::regionOfInterest3XVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the third region of interest X position.

9.77.5.32 QString QEImage::regionOfInterest3YVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the third region of interest Y position.

9.77.5.33 QString QEImage::regionOfInterest4HVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the fourth region of interest height.

9.77.5.34 QString QEImage::regionOfInterest4WVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the fourth region of interest width.

9.77.5.35 QString QEImage::regionOfInterest4XVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the fourth region of interest X position.

9.77.5.36 QString QEImage::regionOfInterest4YVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the fourth region of interest Y position.

9.77.5.37 ResizeOptions QEImage::resizeOption [read, write]

Resize option. Zoom to zoom to the percentage given by the [zoom](#) property, or fit to the window size.

9.77.5.38 RotationOptions QEImage::rotation [read, write]

Image rotation option.

9.77.5.39 bool QEImage::showTime [read, write]

If true, the image timestamp will be written in the top left of the image.

9.77.5.40 QColor QEImage::targetColor [read, write]

Used to select the color of the target marker.

9.77.5.41 QString QEImage::targetTriggerVariable [read, write]

EPICS variable name (CA PV). This variable is used to write a 'trigger' to initiate movement of the target into the beam as defined by the target and beam X and Y positions.

9.77.5.42 QString QEImage::targetXVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the selected target X position.

9.77.5.43 QString QEImage::targetYVariable [read, write]

EPICS variable name (CA PV). This variable is used to write the selected target Y position.

9.77.5.44 QColor QEImage::timeColor [read, write]

Used to select the color of the timestamp.

9.77.5.45 UserLevels QEImage::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.77.5.46 QString QEImage::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.77.5.47 `QString QEImage::userLevelScientistStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.77.5.48 `QString QEImage::userLevelUserStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.77.5.49 `UserLevels QEImage::userLevelVisibility` [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel() Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.77.5.50 `bool QEImage::variableAsToolTip` [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.77.5.51 `QString QEImage::variableSubstitutions` [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'CAM=1, NAME = "Image 1"' These substitutions are applied to all the variable names.

9.77.5.52 `bool QEImage::verticalFlip` [read, write]

If true, flip image vertically.

9.77.5.53 QColor QEImage::vertSliceColor [read, write]

Used to select the color of the vertical slice markup.

9.77.5.54 bool QEImage::visible [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

9.77.5.55 QString QEImage::widthVariable [read, write]

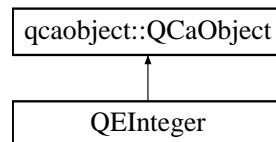
EPICS variable name (CA PV). This variable is used to read the width of the image.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/QEImage.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/QEImage.cpp

9.78 QEInteger Class Reference

Inheritance diagram for QEInteger:



Public Slots

- void **writeInteger** (const long &data)

Signals

- void **integerConnectionChanged** ([QCaConnectionInfo](#) &connectionInfo, const unsigned int &variableIndex)
- void **integerChanged** (const long &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)
- void **integerArrayChanged** (const QVector< long > &values, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)

Public Member Functions

- **QEInteger** (QString recordName, QObject *eventObject, [QEIntegerFormatting](#) *integerFormattingIn, unsigned int variableIndexIn)
- **QEInteger** (QString recordName, QObject *eventObject, [QEIntegerFormatting](#) *integerFormattingIn, unsigned int variableIndexIn, [UserMessage](#) *userMessageIn)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QEInteger.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QEInteger.cpp

9.79 QEIntegerFormatting Class Reference

```
#include <QEIntegerFormatting.h>
```

Public Member Functions

- [QEIntegerFormatting](#) ()
Constructor.
- long [formatInteger](#) (const QVariant &value)
- QVector< long > [formatIntegerArray](#) (const QVariant &value)
- QVariant [formatValue](#) (const long &integerValue, generic::generic_types value-Type)
- void [setRadix](#) (unsigned int radix)
Set the radix used for all conversions. Default is 10.
- unsigned int [getPrecision](#) ()
Get the precision used for all conversions.
- unsigned int [getRadix](#) ()
Get the radix used for all conversions.

9.79.1 Detailed Description

This class holds formatting instructions and uses them to convert between an integer and a QVariant of any type. It is generally set up with it's formatting instructions and then passed to a [QEInteger](#) class that will sink and source integer data to widgets or other code. It is used to convert data to and from a QCaObject (which sources and sinks data in the form of a QVariant where the QVariant reflects the underlying variable data type) and the [QEInteger](#) class. An example of a requirement for integer data is a combo box which must determine an integer index to select a menu option.

9.79.2 Member Function Documentation

9.79.2.1 `long QEIntegerFormatting::formatInteger (const QVariant & value)`

Given a data value of any type, format it as an integer according to the formatting instructions held by the class. This is used to convert the QVariant value received from a QCaObject, which is still based on the data variable type, to an integer.

9.79.2.2 `QVector< long > QEIntegerFormatting::formatIntegerArray (const QVariant & value)`

Given a data value of any type, format it as an array of integers according to the formatting instructions held by the class. This is used to convert the QVariant value received from a QCaObject, which is still based on the data variable type, to an integer array. Typically used where the input QVariant value is an array of data values, but will work for any QVariant type.

9.79.2.3 `QVariant QEIntegerFormatting::formatValue (const long & integerValue, generic::generic_types valueType)`

Given an integer value, format it as a data value of the specified type, according to the formatting instructions held by the class. This is used when writing integer data to a QCaObject.

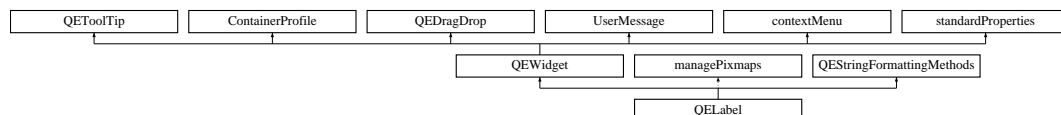
The documentation for this class was generated from the following files:

- /home/rhydera/epicsqt/trunk/framework/data/include/QEIntegerFormatting.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QEIntegerFormatting.cpp

9.80 QELabel Class Reference

```
#include <QELabel.h>
```

Inheritance diagram for QELabel:



Public Types

- enum `updateOptions` { `UPDATE_TEXT`, `UPDATE_PIXMAP` }
- enum `UserLevels` { `User` = `userLevelTypes::USERLEVEL_USER`, `Scientist` = `userLevelTypes::USERLEVEL_SCIENTIST`, `Engineer` = `userLevelTypes::USERLEVEL_ENGINEER` }

- enum [Formats](#) {
[Default](#) = QQStringFormatting::FORMAT_DEFAULT, [Floating](#) = QQStringFormatting::FORMAT_FLOATING, [Integer](#) = QQStringFormatting::FORMAT_INTEGER, [UnsignedInteger](#) = QQStringFormatting::FORMAT_UNSIGNEDINTEGER,
[Time](#) = QQStringFormatting::FORMAT_TIME, [LocalEnumeration](#) = QQStringFormatting::FORMAT_LOCAL_ENUMERATE }
- enum [Notations](#) { [Fixed](#) = QQStringFormatting::NOTATION_FIXED, [Scientific](#) = QQStringFormatting::NOTATION_SCIENTIFIC, [Automatic](#) = QQStringFormatting::NOTATION_AUTOMATIC }
- enum [ArrayActions](#) { [Append](#) = QQStringFormatting::APPEND, [Ascii](#) = QQStringFormatting::ASCII, [Index](#) = QQStringFormatting::INDEX }
- enum [UpdateOptions](#) { [Text](#) = QELabel::UPDATE_TEXT, [Picture](#) = QELabel::UPDATE_PIXMAP }

User friendly enumerations for updateOption property - refer to [QELabel::updateOptions](#) for details.

Public Slots

- void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const QString &out)
- void [requestResend](#) ()

Internal use only. Used when changing a property value to force a re-display to reflect the new property value.

Public Member Functions

- [QELabel](#) (QWidget *parent=0)
- [QELabel](#) (const QString &variableName, QWidget *parent=0)
- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setFormatProperty](#) ([Formats](#) format)

Access function for [format](#) property - refer to [format](#) property for details.
- [Formats](#) [getFormatProperty](#) ()

Access function for [format](#) property - refer to [format](#) property for details.
- void [setNotationProperty](#) ([Notations](#) notation)

Access function for [notation](#) property - refer to [notation](#) property for details.
- [Notations](#) [getNotationProperty](#) ()

Access function for [notation](#) property - refer to [notation](#) property for details.
- void [setArrayActionProperty](#) ([ArrayActions](#) arrayAction)

Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.
- [ArrayActions](#) [getArrayActionProperty](#) ()

Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.
- void [setUpdateOptionProperty](#) ([UpdateOptions](#) updateOption)

Access function for [#updateOption](#) property - refer to [#updateOption](#) property for details.
- [UpdateOptions](#) [getUpdateOptionProperty](#) ()

Access function for [#updateOption](#) property - refer to [#updateOption](#) property for details.
- void [setPixmap0Property](#) (QPixmap pixmap)

'Set' access function for [pixmap0](#) properties. Refer to [pixmap0](#) property for details
- void [setPixmap1Property](#) (QPixmap pixmap)

'Set' access function for [pixmap1](#) properties. Refer to [pixmap1](#) property for details
- void [setPixmap2Property](#) (QPixmap pixmap)

'Set' access function for [pixmap2](#) properties. Refer to [pixmap2](#) property for details
- void [setPixmap3Property](#) (QPixmap pixmap)

'Set' access function for [pixmap3](#) properties. Refer to [pixmap3](#) property for details
- void [setPixmap4Property](#) (QPixmap pixmap)

'Set' access function for [pixmap4](#) properties. Refer to [pixmap4](#) property for details
- void [setPixmap5Property](#) (QPixmap pixmap)

'Set' access function for [pixmap5](#) properties. Refer to [pixmap5](#) property for details
- void [setPixmap6Property](#) (QPixmap pixmap)

'Set' access function for [pixmap6](#) properties. Refer to [pixmap6](#) property for details
- void [setPixmap7Property](#) (QPixmap pixmap)

'Set' access function for [pixmap7](#) properties. Refer to [pixmap7](#) property for details
- QPixmap [getPixmap0Property](#) ()

'Get' access function for [pixmap0](#) properties. Refer to [pixmap0](#) property for details
- QPixmap [getPixmap1Property](#) ()

'Get' access function for [pixmap1](#) properties. Refer to [pixmap1](#) property for details
- QPixmap [getPixmap2Property](#) ()

'Get' access function for [pixmap2](#) properties. Refer to [pixmap2](#) property for details
- QPixmap [getPixmap3Property](#) ()

'Get' access function for [pixmap3](#) properties. Refer to [pixmap3](#) property for details

- QPixmap [getPixmap4Property](#) ()

'Get' access function for [pixmap4](#) properties. Refer to [pixmap4](#) property for details

- QPixmap [getPixmap5Property](#) ()

'Get' access function for [pixmap5](#) properties. Refer to [pixmap5](#) property for details

- QPixmap [getPixmap6Property](#) ()

'Get' access function for [pixmap6](#) properties. Refer to [pixmap6](#) property for details

- QPixmap [getPixmap7Property](#) ()

'Get' access function for [pixmap7](#) properties. Refer to [pixmap7](#) property for details

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- int [precision](#)
- bool [useDbPrecision](#)
- bool [leadingZero](#)
- bool [trailingZeros](#)
- bool [addUnits](#)
- QString [localEnumeration](#)
- [Formats](#) [format](#)
- [Notations](#) [notation](#)
- [ArrayActions](#) [arrayAction](#)
- [UpdateOptions](#) [updateOption](#)
- QPixmap [pixmap0](#)
- QPixmap [pixmap1](#)
- QPixmap [pixmap2](#)
- QPixmap [pixmap3](#)
- QPixmap [pixmap4](#)
- QPixmap [pixmap5](#)
- QPixmap [pixmap6](#)
- QPixmap [pixmap7](#)

9.80.1 Detailed Description

This class is a EPICS aware label widget based on the Qt label widget. When a variable is defined, the label text (or optionally the background pixmap) will be updated. The label will be disabled if the variable is invalid. It is tightly integrated with the base class [QEWidget](#) which provides generic support such as macro substitutions, drag/drop, and standard properties.

9.80.2 Member Enumeration Documentation

9.80.2.1 enum QELabel::ArrayActions

User friendly enumerations for arrayAction property - refer to [QEStringFormatting::arrayActions](#) for details.

Enumerator:

Append Refer to [QEStringFormatting::APPEND](#) for details.

Ascii Refer to [QEStringFormatting::ASCII](#) for details.

Index Refer to [QEStringFormatting::INDEX](#) for details.

9.80.2.2 enum QELabel::Formats

User friendly enumerations for format property - refer to [QEStringFormatting::formats](#) for details.

Enumerator:

Default Format as best appropriate for the data type.

Floating Format as a floating point number.

Integer Format as an integer.

UnsignedInteger Format as an unsigned integer.

Time Format as a time.

LocalEnumeration Format as a selection from the [localEnumeration](#) property.

9.80.2.3 enum QELabel::Notations

User friendly enumerations for notation property - refer to [QEStringFormatting::notations](#) for details.

Enumerator:

Fixed Refer to [QEStringFormatting::NOTATION_FIXED](#) for details.

Scientific Refer to [QEStringFormatting::NOTATION_SCIENTIFIC](#) for details.

Automatic Refer to [QEStringFormatting::NOTATION_AUTOMATIC](#) for details.

9.80.2.4 enum QELabel::UpdateOptions

User friendly enumerations for updateOption property - refer to [QELabel::updateOptions](#) for details.

Enumerator:

Text Data updates will update the label text.

Picture Data updates will update the label icon.

9.80.2.5 enum QELabel::updateOptions

Options for updating the label. The formatted text is used to update the label text, or select a background pixmap.

Enumerator:

UPDATE_TEXT Update the label text.

UPDATE_PIXMAP Update the label background pixmap.

9.80.2.6 enum QELabel::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and userLevel enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.80.3 Constructor & Destructor Documentation

9.80.3.1 QELabel::QELabel (QWidget * *parent* = 0)

Create without a variable. Use `setVariableNameProperty()` and `setSubstitutionsProperty()` to define a variable and, optionally, macro substitutions later.

9.80.3.2 QELabel::QELabel (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.80.4 Member Function Documentation

9.80.4.1 `void QELabel::dbValueChanged (const QString & out) [signal]`

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.80.4.2 `void QELabel::requestEnabled (const bool & state) [inline, slot]`

Similar to standard `setEnabled` slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.80.5 Property Documentation

9.80.5.1 `bool QELabel::addUnits [read, write]`

If true (default), add engineering units supplied with the data.

9.80.5.2 `bool QELabel::allowDrop [read, write]`

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.80.5.3 `ArrayActions QELabel::arrayAction [read, write]`

Text formatting option for array data. Default is ASCII. Options are:

- ASCII - treat array as a single text string. For example an array of three characters 'a' 'b' 'c' will be formatted as 'abc'.
- APPEND - treat array as an array of numbers and format a string containing them all with a space between each. For example, an array of three numbers 10, 11 and 12 will be formatted as '10 11 12'.
- INDEX - Extract a single item from the array. The item is then formatted as any other non array data would be. The item selected is determined by the `arrayIndex` property. For example, if `arrayIndex` property is 1, an array of three numbers 10, 11 and 12 will be formatted as '11'.

9.80.5.4 `bool QELabel::displayAlarmState [read, write]`

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is

included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.80.5.5 `bool QELabel::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.80.5.6 `Formats QELabel::format` [read, write]

Format to apply to data. Default is 'Default' in which case the data type supplied with the data determines how the data is formatted. For all other options, an attempt is made to format the data as requested (whatever its native form).

9.80.5.7 `unsigned QELabel::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

Base used for when formatting integers. Default is 10 (duh!)

Index used to select a single item of data for formatting from an array of data. Default is 0. Only used when the `arrayAction` property is `INDEX`. Refer to the `arrayAction` property for more details.

9.80.5.8 `bool QELabel::leadingZero` [read, write]

If true (default), always add a leading zero when formatting numbers.

9.80.5.9 `QString QELabel::localEnumeration` [read, write]

An enumeration list used to data values. Used only when the formatting option is 'local enumeration'. Value is converted to an integer and used to select a string from this list.

Format is:

```
[[<|<=|!=|>|=|>]value1|*]: string1 , [[<|<=|!=|>|=|>]value2|*]: string2 , [[<|<=|!=|>|=|>]value3|*]: string3 , ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
 >= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"", 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *:"" "Pump Off": "OH NO!, the pump is OFF!","Pump On": "It's
OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10:'''

A range of numbers can be covered by a pair of values as in the following example:
>=4:"Between 4 and 8",<=8:"Between 4 and 8"

9.80.5.10 Notations QELabel::notation [read, write]

Notation used for numerical formatting. Default is fixed.

9.80.5.11 QPixmap QELabel::pixmap0 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 0.

9.80.5.12 QPixmap QELabel::pixmap1 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 1.

9.80.5.13 QPixmap QELabel::pixmap2 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 2.

9.80.5.14 QPixmap QELabel::pixmap3 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 3.

9.80.5.15 QPixmap QELabel::pixmap4 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 4.

9.80.5.16 QPixmap QELabel::pixmap5 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 5.

9.80.5.17 QPixmap QELabel::pixmap6 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 6.

9.80.5.18 QPixmap QELabel::pixmap7 [read, write]

Pixmap displayed when updateOption property is 'Picture' and data is interpreted as 7.

9.80.5.19 int QELabel::precision [read, write]

Precision used when formatting floating point numbers. The default is 4. This is only used if useDbPrecision is false.

9.80.5.20 bool QELabel::trailingZeros [read, write]

If true (default), always remove any trailing zeros when formatting numbers.

9.80.5.21 UpdateOptions QELabel::updateOption [read, write]

Determines if data updates the label text, or the label pixmap. For both options all normal string formatting is applied. If Text, the formatted text is simply presented as the label text. If Picture, the FORMATTED text is then interpreted as an integer and used to select one of the pixmaps specified by properties pixmap0 through to pixmap7.

9.80.5.22 bool QELabel::useDbPrecision [read, write]

If true (default), format floating point numbers using the precision supplied with the data. If false, the precision property is used.

9.80.5.23 UserLevels QELabel::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.80.5.24 QString QELabel::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.80.5.25 QString QELabel::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.80.5.26 QString QELabel::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.80.5.27 UserLevels QELabel::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.80.5.28 QString QELabel::variable [read, write]

EPICS variable name (CA PV)

9.80.5.29 bool QELabel::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.80.5.30 QString QELabel::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.80.5.31 bool QELabel::visible [read, write]

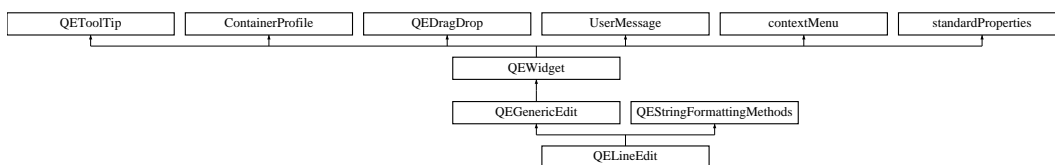
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELabel/QELabel.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELabel/QELabel.cpp

9.81 QELineEdit Class Reference

Inheritance diagram for QELineEdit:



Public Types

- enum [Formats](#) {
[Default](#) = QEStrngFormatting::FORMAT_DEFAULT, [Floating](#) = QEStrngFormatting::FORMAT_FLOATING, [Integer](#) = QEStrngFormatting::FORMAT_INTEGER, [UnsignedInteger](#) = QEStrngFormatting::FORMAT_UNSIGNEDINTEGER,

- `Time` = QQStringFormatting::FORMAT_TIME, `LocalEnumeration` = QQStringFormatting::FORMAT_LOCAL_ENUMERATE }
- enum `Notations` { `Fixed` = QQStringFormatting::NOTATION_FIXED, `Scientific` = QQStringFormatting::NOTATION_SCIENTIFIC, `Automatic` = QQStringFormatting::NOTATION_AUTOMATIC }
- enum `ArrayActions` { `Append` = QQStringFormatting::APPEND, `Ascii` = QQStringFormatting::ASCII, `Index` = QQStringFormatting::INDEX }

Signals

- void `dbValueChanged` (const QString &out)
- void `userChange` (const QString &oldValue, const QString &newValue, const QString &lastValue)

Internal use only. Used by `QEConfiguredLayout` to be notified when one of its widgets has written something.
- void `requestResend` ()

Internal use only. Used when changing a property value to force a re-display to reflect the new property value.

Public Member Functions

- void `setFormatProperty` (Formats format)

Access function for `format` property - refer to `format` property for details.
- Formats `getFormatProperty` ()

Access function for `format` property - refer to `format` property for details.
- void `setNotationProperty` (Notations notation)

Access function for `notation` property - refer to `notation` property for details.
- Notations `getNotationProperty` ()

Access function for `notation` property - refer to `notation` property for details.
- void `setArrayActionProperty` (ArrayActions arrayAction)

Access function for `arrayAction` property - refer to `arrayAction` property for details.
- ArrayActions `getArrayActionProperty` ()

Access function for `arrayAction` property - refer to `arrayAction` property for details.
- QLElineEdit (QWidget *parent=0)
- QLElineEdit (const QString &variableName, QWidget *parent=0)

Properties

- int `precision`
- bool `useDbPrecision`
- bool `leadingZero`
- bool `trailingZeros`
- bool `addUnits`
- QString `localEnumeration`

- [Formats](#) `format`
- unsigned `int`
- [Notations](#) `notation`
- [ArrayActions](#) `arrayAction`

9.81.1 Member Enumeration Documentation

9.81.1.1 enum `QLineEdit::ArrayActions`

User friendly enumerations for `arrayAction` property - refer to [QCStringFormatting::arrayActions](#) for details.

Enumerator:

Append Refer to [QCStringFormatting::APPEND](#) for details.

Ascii Refer to [QCStringFormatting::ASCII](#) for details.

Index Refer to [QCStringFormatting::INDEX](#) for details.

9.81.1.2 enum `QLineEdit::Formats`

User friendly enumerations for `format` property - refer to [QCStringFormatting::formats](#) for details.

Enumerator:

Default Format as best appropriate for the data type.

Floating Format as a floating point number.

Integer Format as an integer.

UnsignedInteger Format as an unsigned integer.

Time Format as a time.

LocalEnumeration Format as a selection from the [localEnumeration](#) property.

9.81.1.3 enum `QLineEdit::Notations`

User friendly enumerations for `notation` property - refer to [QCStringFormatting::notations](#) for details.

Enumerator:

Fixed Refer to [QCStringFormatting::NOTATION_FIXED](#) for details.

Scientific Refer to [QCStringFormatting::NOTATION_SCIENTIFIC](#) for details.

Automatic Refer to [QCStringFormatting::NOTATION_AUTOMATIC](#) for details.

9.81.2 Constructor & Destructor Documentation

9.81.2.1 QLEdit::QLEdit (QWidget * *parent* = 0)

Create without a variable. Use `setVariableNameProperty()` and `setSubstitutionsProperty()` to define a variable and, optionally, macro substitutions later.

9.81.2.2 QLEdit::QLEdit (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.81.3 Member Function Documentation

9.81.3.1 void QLEdit::dbValueChanged (const QString & *out*) [signal]

Sent when the widget is updated following a data change. Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.81.4 Property Documentation

9.81.4.1 bool QLEdit::addUnits [read, write]

If true (default), add engineering units supplied with the data.

9.81.4.2 ArrayActions QLEdit::arrayAction [read, write]

Text formatting option for array data. Default is ASCII. Options are:

- ASCII - treat array as a single text string. For example an array of three characters 'a' 'b' 'c' will be formatted as 'abc'.
- APPEND - treat array as an array of numbers and format a string containing them all with a space between each. For example, an array of three numbers 10, 11 and 12 will be formatted as '10 11 12'.
- INDEX - Extract a single item from the array. The item is then formatted as any other non array data would be. The item selected is determined by the `arrayIndex` property. For example, if `arrayIndex` property is 1, an array of three numbers 10, 11 and 12 will be formatted as '11'.

9.81.4.3 Formats `QLineEdit::format` [read, write]

Format to apply to data. Default is 'Default' in which case the data type supplied with the data determines how the data is formatted. For all other options, an attempt is made to format the data as requested (whatever its native form).

9.81.4.4 unsigned `QLineEdit::int` [read, write]

Base used for when formatting integers. Default is 10 (duh!)

Index used to select a single item of data for formatting from an array of data. Default is 0. Only used when the `arrayAction` property is `INDEX`. Refer to the `arrayAction` property for more details.

Reimplemented from [QEGenericEdit](#).

9.81.4.5 bool `QLineEdit::leadingZero` [read, write]

If true (default), always add a leading zero when formatting numbers.

9.81.4.6 `QString QLineEdit::localEnumeration` [read, write]

An enumeration list used to data values. Used only when the formatting option is 'local enumeration'. Value is converted to an integer and used to select a string from this list.

Format is:

```
[[<|<=|=|!=|>|=|>]value1|*]: string1, [[<|<=|=|!=|>|=|>]value2|*]: string2, [[<|<=|=|!=|>|=|>]value3|*]: string3, ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
>= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"", 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *: "" "Pump Off": "OH NO!, the pump is OFF!", "Pump On": "It's OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10: ""'

A range of numbers can be covered by a pair of values as in the following example:
`>=4:"Between 4 and 8",<=8:"Between 4 and 8"`

9.81.4.7 Notations QLEdit::notation [read, write]

Notation used for numerical formatting. Default is fixed.

9.81.4.8 int QLEdit::precision [read, write]

Precision used when formatting floating point numbers. The default is 4. This is only used if useDbPrecision is false.

9.81.4.9 bool QLEdit::trailingZeros [read, write]

If true (default), always remove any trailing zeros when formatting numbers.

9.81.4.10 bool QLEdit::useDbPrecision [read, write]

If true (default), format floating point numbers using the precision supplied with the data. If false, the precision property is used.

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/QLEdit/QLEdit.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/QLEdit/QLEdit.cpp`

9.82 QLEditManager Class Reference

Public Member Functions

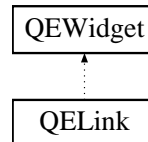
- **QLEditManager** (QObject *parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget * **createWidget** (QWidget *parent)
- void **initialize** (QDesignerFormEditorInterface *core)

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/QLEdit/QLEditManager.h`

9.83 QELink Class Reference

Inheritance diagram for QELink:



Public Types

- enum **conditions** {
CONDITION_EQ, **CONDITION_NE**, **CONDITION_GT**, **CONDITION_GE**,
CONDITION_LT, **CONDITION_LE** }
- enum **ConditionNames** {
Equal = QELink::CONDITION_EQ, **NotEqual** = QELink::CONDITION_NE, **GreaterThan**
= QELink::CONDITION_GT, **GreaterThanOrEqual** = QELink::CONDITION_GE,
LessThan = QELink::CONDITION_LT, **LessThanOrEqual** = QELink::CONDITION_
LE }

Public Slots

- void **in** (const bool &in)
- void **in** (const qlonglong &in)
- void **in** (const double &in)
- void **in** (const QString &in)
- void **autoFillBackground** (const bool &enable)

Signals

- void **out** (const bool &out)
- void **out** (const qlonglong &out)
- void **out** (const double &out)
- void **out** (const QString &out)

Public Member Functions

- **QELink** (QWidget *parent=0)
- void **setCondition** (conditions conditionIn)
- conditions **getCondition** ()
- void **setComparisonValue** (QString comparisonValue)
- QString **getComparisonValue** ()

- void **setSignalTrue** (bool signalTrue)
- bool **getSignalTrue** ()
- void **setSignalFalse** (bool signalFalse)
- bool **getSignalFalse** ()
- void **setOutTrueValue** (QString outTrueValue)
- QString **getOutTrueValue** ()
- void **setOutFalseValue** (QString outFalseValue)
- QString **getOutFalseValue** ()
- void **setRunVisible** (bool visibleIn)
- bool **getRunVisible** ()
- void **setConditionProperty** (ConditionNames condition)
- ConditionNames **getConditionProperty** ()

Protected Attributes

- conditions **condition**
- QVariant **comparisonValue**
- bool **signalTrue**
- bool **signalFalse**
- QVariant **outTrueValue**
- QVariant **outFalseValue**
- bool **visible**

Properties

- ConditionNames **condition**
- QString **comparisonValue**
- QString **outTrueValue**
- QString **outFalseValue**
- bool **runVisible**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELink/QELink.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELink/QELink.cpp

9.84 QELocalEnumeration Class Reference

```
#include <QELocalEnumeration.h>
```

Classes

- class **localEnumerationItem**

Public Member Functions

- [QELocalEnumeration](#) ()
- [QELocalEnumeration](#) (const QString &localEnumeration)
- void [setLocalEnumeration](#) (const QString &localEnumeration)
- QString [getLocalEnumeration](#) ()
- bool [isDefined](#) ()
- QString [valueToText](#) (const QVariant &value, bool &match)
- QVariant [textToValue](#) (const QString &text, bool &ok)
- int [textToInt](#) (const QString &text, bool &ok)
- double [textToDouble](#) (const QString &text, bool &ok)

9.84.1 Detailed Description

This class allows a user defined two-way value to enumeration map. The map is define using a single string, typically a widget property string. This may then be used to replace the enumeration values provided by EPICS and/or provide an enueration set of more that 16 values. See [setLocalEnumeration\(\)](#) for the use of 'localEnumeration'.

This functionality that this class provided was formerly embedded within [QEStringFormatting](#).

9.84.2 Constructor & Destructor Documentation

9.84.2.1 QELocalEnumeration::QELocalEnumeration ()

Constructors

9.84.2.2 QELocalEnumeration::QELocalEnumeration (const QString & *localEnumeration*)

Constructor with localEnumeration

9.84.3 Member Function Documentation

9.84.3.1 QString QELocalEnumeration::getLocalEnumeration ()

Get the local enumeration strings. See [setLocalEnumeration\(\)](#) for the use of 'localEnumeration'.

9.84.3.2 bool QELocalEnumeration::isDefined ()

Evaluates: `getLocalEnumeration.count() > 0`

9.84.3.3 void QELocalEnumeration::setLocalEnumeration (const QString & localEnumeration)

Parse the local enumeration string.

Format is:

```
[[<|<=|=|=|>|=|>]value1|*] : string1 , [[<|<=|=|=|>|=|>]value2|*] : string2 , [[<|<=|=|=|>|=|>]value3|*] : string3 , ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
>= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"" , 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *:"" "Pump Off":"OH NO!, the pump is OFF!","Pump On":"It's OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10:'''

A range of numbers can be covered by a pair of values as in the following example:
>=4:"Between 4 and 8",<=8:"Between 4 and 8"

Will completely re-initialises the object.

9.84.3.4 double QELocalEnumeration::textToDouble (const QString & text, bool & ok)

Generate a double value given a string, using formatting defined within this class. If the value can be formatted the formatted value is returned and 'ok' is true. If the value can't be formatted then 0.0 is returned and 'ok' is false.

9.84.3.5 int QELocalEnumeration::textToInt (const QString & text, bool & ok)

Generate an integer value given a string, using formatting defined within this class. If the value can be formatted the formatted value is returned and 'ok' is true. If the value can't be formatted then 0 is returned and 'ok' is false.

9.84.3.6 QVariant QELocalEnumeration::textToValue (const QString & text, bool & ok)

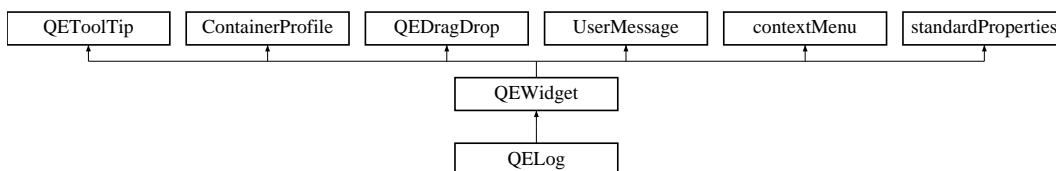
Generate a value given a string, using formatting defined within this class. If the value can be formatted the formatted value is returned and 'ok' is true. If the value can't be

9.84.3.7 QString QELocalEnumeration::valueToText (const QVariant & *value*, bool & *match*)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QELocalEnumeration.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QELocalEnumeration.cpp

Inheritance diagram for QELog:



- enum **detailsLayoutProperty** { **Top** = TOP, **Bottom** = BOTTOM, **Left** = LEFT, **Right** = RIGHT }
- enum **MessageFilterOptions** { **Any** = UserMessage::MESSAGE_FILTER_ANY, **Match** = UserMessage::MESSAGE_FILTER_MATCH, **None** = UserMessage::MESSAGE_FILTER_NONE }

- **QELog** (QWidget *pParent=0)
- void **setShowColumnTime** (bool pValue)
- bool **getShowColumnTime** ()
- void **setShowColumnType** (bool pValue)
- bool **getShowColumnType** ()
- void **setShowColumnMessage** (bool pValue)
- bool **getShowColumnMessage** ()
- void **setShowMessageFilter** (bool pValue)
- bool **getShowMessageFilter** ()
- void **setShowClear** (bool pValue)
- bool **getShowClear** ()

- void **setShowSave** (bool pValue)
- bool **getShowSave** ()
- void **setDetailsLayout** (int pValue)
- int **getDetailsLayout** ()
- void **setScrollToBottom** (bool pValue)
- bool **getScrollToBottom** ()
- void **setInfoColor** (QColor pValue)
- QColor **getInfoColor** ()
- void **setWarningColor** (QColor pValue)
- QColor **getWarningColor** ()
- void **setErrorColor** (QColor pValue)
- QColor **getErrorColor** ()
- void **clearLog** ()
- void **addLog** (int pType, QString pMessage)
- void **refreshLog** ()
- void **setDetailsLayoutProperty** (detailsLayoutProperty pDetailsLayout)
- detailsLayoutProperty **getDetailsLayoutProperty** ()
- MessageFilterOptions **getMessageFormFilter** ()
- void **setMessageFormFilter** (MessageFilterOptions messageFormFilter)
- MessageFilterOptions **getMessageSourceFilter** ()
- void **setMessageSourceFilter** (MessageFilterOptions messageSourceFilter)

Protected Attributes

- [_QTableWidgetLog](#) * **qTableWidgetLog**
- QCheckBox * **qCheckBoxInfoMessage**
- QCheckBox * **qCheckBoxWarningMessage**
- QCheckBox * **qCheckBoxErrorMessage**
- QPushButton * **qPushButtonClear**
- QPushButton * **qPushButtonSave**
- QColor **qColorInfo**
- QColor **qColorWarning**
- QColor **qColorError**
- bool **scrollToBottom**
- int **detailsLayout**

Properties

- bool **showColumnTime**
- bool **showColumnType**
- bool **showColumnMessage**
- bool **showMessageFilter**
- bool **showClear**
- bool **showSave**
- detailsLayoutProperty **detailsLayout**

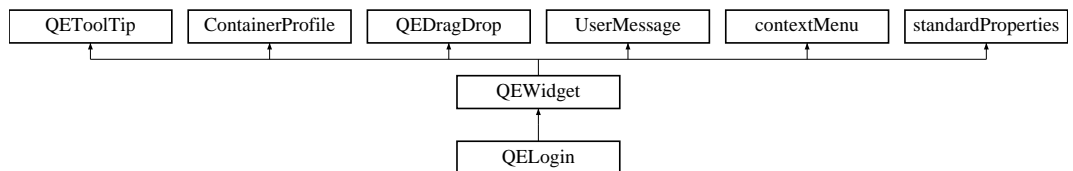
- QColor **infoColor**
- QColor **warningColor**
- QColor **errorColor**
- MessageFilterOptions **messageFormFilter**
- MessageFilterOptions **messageSourceFilter**
- unsigned **int**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELog/QELog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELog/QELog.cpp

9.86 QELogin Class Reference

Inheritance diagram for QELogin:



Public Types

- enum **userTypesProperty** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }
- enum **detailsLayoutProperty** { **Top** = TOP, **Bottom** = BOTTOM, **Left** = LEFT, **Right** = RIGHT }

Public Member Functions

- QString **getPriorityUserPassword** ()
- QString **getPriorityScientistPassword** ()
- QString **getPriorityEngineerPassword** ()
- **QELogin** (QWidget *pParent=0)
- void **setShowUserType** (bool pValue)
- bool **getShowUserType** ()
- void **setShowLogin** (bool pValue)
- bool **getShowButtonLogin** ()
- void **setShowLogout** (bool pValue)
- bool **getShowButtonLogout** ()
- void **setUserPassword** (QString pValue)

- QString **getUserPassword** ()
- void **setScientistPassword** (QString pValue)
- QString **getScientistPassword** ()
- void **setEngineerPassword** (QString pValue)
- QString **getEngineerPassword** ()
- void **setCurrentUserType** (int pValue)
- int **getCurrentUserType** ()
- void **setDetailsLayout** (int pValue)
- int **getDetailsLayout** ()
- QString **getUserTypeName** ([userLevelTypes::userLevels](#) type)
- void **logoutCurrentUserType** ()
- void **setCurrentUserTypeProperty** (userTypesProperty pUserType)
- userTypesProperty **getCurrentUserTypeProperty** ()
- void **setDetailsLayoutProperty** (detailsLayoutProperty pDetailsLayout)
- detailsLayoutProperty **getDetailsLayoutProperty** ()

Protected Attributes

- QStack< int > **loginHistory**
- QPushButton * **qPushButtonLogin**
- QPushButton * **qPushButtonLogout**
- QLabel * **qLabelUserType**
- QString **userPassword**
- QString **scientistPassword**
- QString **engineerPassword**
- int **currentUserType**
- int **detailsLayout**

Properties

- bool **showUserType**
- bool **showLogin**
- bool **showLogout**
- userTypesProperty **currentUserType**
- detailsLayoutProperty **detailsLayout**

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

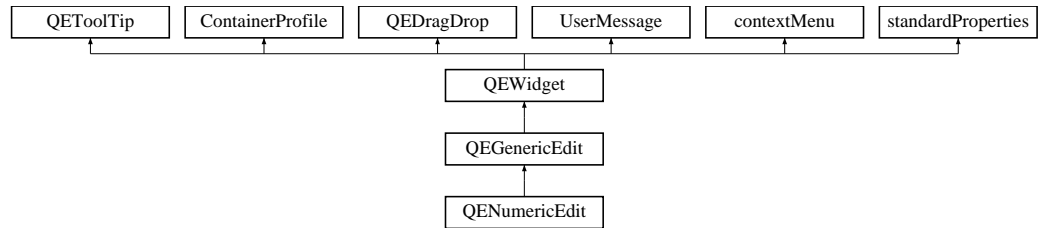
- /home/rhydera/epicsqt/trunk/framework/widgets/QELogin/QELogin.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELogin/QELogin.cpp

9.87 QENumericEdit Class Reference

The [QENumericEdit](#) class This class is similar to [QLineEdit](#) (both of which are derived from [QLineEdit](#)). However this class is tailored specifically for editing numerical values.

```
#include <QENumericEdit.h>
```

Inheritance diagram for QENumericEdit:



Public Types

- enum [Radices](#) { **Decimal** = 0, **Hexadecimal**, **Octal**, **Binary** }
Specify radix, default is Decimal.
- enum [Separators](#) { **None** = 0, **Comma**, **Underscore**, **Space** }
Specify digit 'thousands' separator character, default is none.

Signals

- void [dbValueChanged](#) (const double &out)

Public Member Functions

- [QENumericEdit](#) (QWidget *parent=0)
- [QENumericEdit](#) (const QString &variableName, QWidget *parent=0)
- virtual [~QENumericEdit](#) ()
Destruction.
- double [getNumericValue](#) ()

Protected Member Functions

- void [setAutoScale](#) (const bool value)
- bool [getAutoScale](#) ()
- void [setPropertyPrecision](#) (const int value)
- int [getPropertyPrecision](#) ()
- void [setPropertyLeadingZeros](#) (const int value)
- int [getPropertyLeadingZeros](#) ()

- void **setPropertyMinimum** (const double value)
- double **getPropertyMinimum** ()
- void **setPropertyMaximum** (const double value)
- double **getPropertyMaximum** ()
- void **setAddUnits** (bool addUnits)
- bool **getAddUnits** ()
- void **setRadix** (const [Radicies](#) value)
- [Radicies](#) **getRadix** ()
- void **setSeparator** (const [Separators](#) value)
- [Separators](#) **getSeparator** ()
- void **keyPressEvent** (QKeyEvent *event)
- void **focusInEvent** (QFocusEvent *event)
- void **mouseReleaseEvent** (QMouseEvent *event)
- void **establishConnection** (unsigned int variableIndex)
- [qcaobject::QCaObject](#) * **createQcalItem** (unsigned int variableIndex)
- int **getPrecision** ()
- int **getLeadingZeros** ()
- double **getMinimum** ()
- double **getMaximum** ()
- int **maximumSignificance** ()
- int **getRadixValue** ()
- void **setValue** (const QVariant &value)
Sets the undelying QLineEdit widget to the given value.
- QVariant **getValue** ()
Gets the undelying value.
- bool **writeData** (const QVariant &value, QString &message)
Write the data to the channel.

Protected Attributes

- [QEFloatingFormatting](#) **floatingFormatting**

Properties

- bool [autoScale](#)
- int [precision](#)
- int [leadingZeros](#)
- double [minimum](#)
- double [maximum](#)
- bool [addUnits](#)
- [Radicies](#) [radix](#)
- [Separators](#) [separator](#)

Friends

- class **NumericValidator**

9.87.1 Detailed Description

The [QNumericEdit](#) class This class is similar to [QLineEdit](#) (both of which are derived from [QLineEdit](#)). However this class is tailored specifically for editing numerical values.

Note: this class based on thumb_wheel_edits.pas by same author.

9.87.2 Constructor & Destructor Documentation

9.87.2.1 QNumericEdit::QNumericEdit (QWidget * *parent* = 0)

Create without a variable. Use `setVariableNameProperty()` and `setSubstitutionsProperty()` to define a variable and, optionally, macro substitutions later.

9.87.2.2 QNumericEdit::QNumericEdit (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.87.3 Member Function Documentation

9.87.3.1 void QNumericEdit::dbValueChanged (const double & *out*) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.87.4 Property Documentation

9.87.4.1 bool QNumericEdit::addUnits [read, write]

If true (default), add engineering units supplied with the data.

9.87.4.2 bool QNumericEdit::autoScale [read, write]

If true (default), display and editing of numbers using the precision, and control limits supplied with the data. If false, the precision, leadingZeros, minimum and maximum properties are used.

9.87.4.3 int QENumericEdit::leadingZeros [read, write]

Specifies the number of leading zeros. This is only used if autoScale is false. Strictly speaking, this should be an unsigned int, but designer properties editor much 'nicer' with integers.

9.87.4.4 double QENumericEdit::maximum [read, write]

Specifies the maximum allowed value. This is only used if autoScale is false.

9.87.4.5 double QENumericEdit::minimum [read, write]

Specifies the minimum allowed value. This is only used if autoScale is false.

9.87.4.6 int QENumericEdit::precision [read, write]

Precision used for the display and editing of numbers. The default is 4. This is only used if autoScale is false. Strictly speaking, this should be an unsigned int, but designer properties editor much 'nicer' with integers.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELineEdit/QENumericEdit.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELineEdit/QENumericEdit.cpp

9.88 QENumericEditManager Class Reference

Public Member Functions

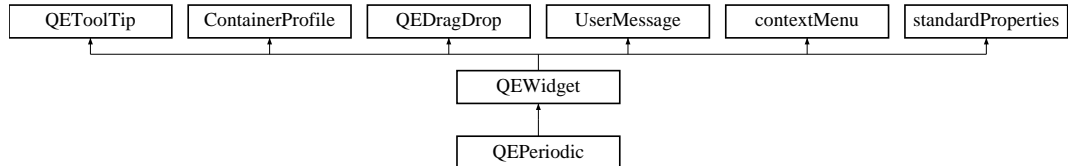
- **QENumericEditManager** (QObject *parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget * **createWidget** (QWidget *parent)
- void **initialize** (QDesignerFormEditorInterface *core)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QELineEdit/QENumericEditManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QELineEdit/QENumericEditManager.cpp

9.89 QEPeiodic Class Reference

Inheritance diagram for QEPeiodic:



Classes

- struct [elementInfoStruct](#)
- struct [userInfoStructArray](#)

Public Types

- enum **variableTypes** {
VARIABLE_TYPE_NUMBER, **VARIABLE_TYPE_ATOMIC_WEIGHT**, **VARIABLE_TYPE_MELTING_POINT**, **VARIABLE_TYPE_BOILING_POINT**,
VARIABLE_TYPE_DENSITY, **VARIABLE_TYPE_GROUP**, **VARIABLE_TYPE_IONIZATION_ENERGY**, **VARIABLE_TYPE_USER_VALUE_1**,
VARIABLE_TYPE_USER_VALUE_2 }
- enum **presentationOptions** { **PRESENTATION_BUTTON_AND_LABEL**, **PRESENTATION_BUTTON_ONLY**, **PRESENTATION_LABEL_ONLY** }
- enum **UserLevels** { **User** = `userLevelTypes::USERLEVEL_USER`, **Scientist** = `userLevelTypes::USERLEVEL_SCIENTIST`, **Engineer** = `userLevelTypes::USERLEVEL_ENGINEER` }
- enum **PresentationOptions** { **buttonAndLabel** = `QEPeiodic::PRESENTATION_BUTTON_AND_LABEL`, **buttonOnly** = `QEPeiodic::PRESENTATION_BUTTON_ONLY`, **labelOnly** = `QEPeiodic::PRESENTATION_LABEL_ONLY` }
- enum **VariableTypes** {
Number = `QEPeiodic::VARIABLE_TYPE_NUMBER`, **atomicWeight** = `QEPeiodic::VARIABLE_TYPE_ATOMIC_WEIGHT`, **meltingPoint** = `QEPeiodic::VARIABLE_TYPE_MELTING_POINT`, **boilingPoint** = `QEPeiodic::VARIABLE_TYPE_BOILING_POINT`,
density = `QEPeiodic::VARIABLE_TYPE_DENSITY`, **group** = `QEPeiodic::VARIABLE_TYPE_GROUP`, **ionizationEnergy** = `QEPeiodic::VARIABLE_TYPE_IONIZATION_ENERGY`, **userValue1** = `QEPeiodic::VARIABLE_TYPE_USER_VALUE_1`,
userValue2 = `QEPeiodic::VARIABLE_TYPE_USER_VALUE_2` }

Public Slots

- void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const double &out)
- void [dbElementChanged](#) (const QString &out)
- void [requestResend](#) ()

Internal use only. Used when changing a property value to force a re-display to reflect the new property value.

Public Member Functions

- **QEPeiodic** (QWidget *parent=0)
 - **QEPeiodic** (const QString &variableName, QWidget *parent=0)
 - void **setSubscribe** (bool subscribe)
 - bool **getSubscribe** ()
 - void **setPresentationOption** (PresentationOptions presentationOptionIn)
 - PresentationOptions **getPresentationOption** ()
 - void **setVariableType1** (VariableTypes variableType1In)
 - VariableTypes **getVariableType1** ()
 - void **setVariableType2** (VariableTypes variableType2In)
 - VariableTypes **getVariableType2** ()
 - void **setVariableTolerance1** (double variableTolerance1In)
 - double **getVariableTolerance1** ()
 - void **setVariableTolerance2** (double variableTolerance2In)
 - double **getVariableTolerance2** ()
 - void **setUserInfo** (QString userInfo)
 - QString **getUserInfo** ()
 - bool **isEnabled** () const
- Access function for [enabled](#) property - refer to [enabled](#) property for details.*
- void **setEnabled** (bool state)
- Access function for [enabled](#) property - refer to [enabled](#) property for details.*
- [UserLevels](#) **getUserLevelVisibilityProperty** ()
- Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.*
- void **setUserLevelVisibilityProperty** ([UserLevels](#) level)
- Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.*
- [UserLevels](#) **getUserLevelEnabledProperty** ()
- Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.*
- void **setUserLevelEnabledProperty** ([UserLevels](#) level)
- Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.*
- void **setPresentationOptionProperty** (PresentationOptions presentationOption)
- PresentationOptions **getPresentationOptionProperty** ()
 - void **setVariableType1Property** (VariableTypes variableType)

- void **setVariableType2Property** (VariableTypes variableType)
- VariableTypes **getVariableType1Property** ()
- VariableTypes **getVariableType2Property** ()

Public Attributes

- [userInfoStruct](#) **userInfo** [NUM_ELEMENTS]

Static Public Attributes

- static [elementInfoStruct](#) **elementInfo** [NUM_ELEMENTS]

Protected Member Functions

- void **establishConnection** (unsigned int variableIndex)
- void **dragEnterEvent** (QDragEnterEvent *event)
- void **dropEvent** (QDropEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()

Protected Attributes

- [QEFloatingFormatting](#) **floatingFormatting**
- bool **localEnabled**
- bool [allowDrop](#)
- variableTypes **variableType1**
- variableTypes **variableType2**
- double **variableTolerance1**
- double **variableTolerance2**

Properties

- QString [writeButtonVariable1](#)
- QString [writeButtonVariable2](#)
- QString [readbackLabelVariable1](#)
- QString [readbackLabelVariable2](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [visible](#)
- unsigned [int](#)
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)

- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- PresentationOptions **presentationOption**
- VariableTypes **variableType1**
- VariableTypes **variableType2**
- QString **userInfo**

9.89.1 Member Enumeration Documentation

9.89.1.1 enum QEPeiodic::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and userLevel enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.89.2 Member Function Documentation

9.89.2.1 void QEPeiodic::dbElementChanged (const QString & out) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.89.2.2 void QEPeiodic::dbValueChanged (const double & out) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.89.2.3 void QEPeiodic::requestEnabled (const bool & state) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.89.3 Member Data Documentation

9.89.3.1 `bool QEPeriodic::allowDrop` [read, write, protected]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.89.4 Property Documentation

9.89.4.1 `bool QEPeriodic::displayAlarmState` [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.89.4.2 `bool QEPeriodic::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.89.4.3 `unsigned QEPeriodic::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.89.4.4 `QString QEPeriodic::readbackLabelVariable1` [read, write]

EPICS variable name (CA PV). This variable is used to read the value to the first of two positioners to determine which (if any) element is currently selected.

9.89.4.5 `QString QEPeriodic::readbackLabelVariable2` [read, write]

EPICS variable name (CA PV). This variable is used to read the value to the second of two positioners to determine which (if any) element is currently selected.

9.89.4.6 bool QEPeiodic::subscribe [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEWidget](#).

9.89.4.7 UserLevels QEPeiodic::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessable should be visible at 'User'. Widgets that are only accessable to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessable to engineers maintaining the facility should be visible at 'Engineer'.

9.89.4.8 QString QEPeiodic::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.89.4.9 QString QEPeiodic::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.89.4.10 QString QEPeiodic::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.89.4.11 UserLevels QEPeiodic::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()`. Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.89.4.12 bool QEPeiodic::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.89.4.13 QString QEPeiodic::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'SAMPLE=SAM1, NAME = "Ref foil"' These substitutions are applied to all the variable names.

9.89.4.14 bool QEPeiodic::visible [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

9.89.4.15 QString QEPeiodic::writeButtonVariable1 [read, write]

EPICS variable name (CA PV). This variable is used to write a value to the first of two positioners that will position the select element.

9.89.4.16 QString QEPeiodic::writeButtonVariable2 [read, write]

EPICS variable name (CA PV). This variable is used to write a value to the second of two positioners that will position the select element.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeiodic/QEPeiodic.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeiodic/QEPeiodic.cpp

9.90 QEPeiodicComponentData Class Reference

Public Attributes

- unsigned int **variableIndex1**
- double **lastData1**
- bool **haveLastData1**
- unsigned int **variableIndex2**
- double **lastData2**
- bool **haveLastData2**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodic.h

9.91 QEPeriodicTaskMenu Class Reference

Public Member Functions

- **QEPeriodicTaskMenu** ([QEPeriodic](#) *periodic, QObject *parent)
- QAction * **preferredEditAction** () const
- QList< QAction * > **taskActions** () const

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodicTaskMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodicTaskMenuExtension.cpp

9.92 QEPeriodicTaskMenuFactory Class Reference

Public Member Functions

- **QEPeriodicTaskMenuFactory** (QExtensionManager *parent=0)

Protected Member Functions

- QObject * **createExtension** (QObject *object, const QString &iid, QObject *parent) const

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodicTaskMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodicTaskMenuExtension.cpp

9.93 QEpicsPV Class Reference

Public Slots

- const QVariant & **set** (QVariant value, int delay=-1)
- void **setPV** (const QString &_pvName="")

Signals

- void **connectionChanged** (bool connected)
- void **connected** ()
- void **disconnected** ()
- void **valueChanged** (const QVariant &value)
- void **valueUpdated** (const QVariant &value)
- void **valueInitd** (const QVariant &value)

Public Member Functions

- **QEpicsPV** (const QString &_pvName, QObject *parent=0)
- **QEpicsPV** (QObject *parent=0)
- const QVariant & **get** () const
- void **needUpdated** () const
- const QVariant & **getUpdated** (int delay=defaultDelay) const
- bool **isConnected** () const
- const QStringList & **getEnum** () const
- const QString & **pv** () const
- const QVariant & **getReady** (int delay=defaultDelay) const

Static Public Member Functions

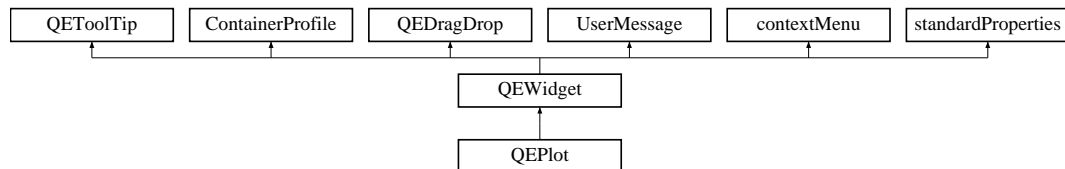
- static void **setDebugLevel** (unsigned level=0)
- static QVariant **get** (const QString &_pvName, int delay=defaultDelay)
- static QVariant **set** (QString &_pvName, const QVariant &value, int delay=-1)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/qepicspv.h
- /home/rhydera/epicsqt/trunk/framework/data/src/qepicspv.cpp

9.94 QEPlot Class Reference

Inheritance diagram for QEPlot:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }
- enum **TraceStyles** { **Lines** = QwtPlotCurve::Lines, **Sticks** = QwtPlotCurve::Sticks, **Steps** = QwtPlotCurve::Steps, **Dots** = QwtPlotCurve::Dots }

Public Slots

- void **requestEnabled** (const bool &state)

Signals

- void **dbValueChanged** (const double &out)
- void **dbValueChanged** (const QVector< double > &out)

Public Member Functions

- **QEPlot** (QWidget *parent=0)
- **QEPlot** (const QString &variableName, QWidget *parent=0)
- void **setYMin** (double yMin)
- double **getYMin** ()
- void **setYMax** (double yMax)
- double **getYMax** ()
- void **setAutoScale** (bool autoScale)
- bool **getAutoScale** ()
- void **setAxisEnableX** (bool axisEnableXIn)
- bool **getAxisEnableX** ()
- void **setAxisEnableY** (bool axisEnableYIn)
- bool **getAxisEnableY** ()
- QString **getTitle** ()
- void **setBackgroundColor** (QColor backgroundColor)
- QColor **getBackgroundColor** ()

- void **setTraceStyle** (QwtPlotCurve::CurveStyle traceStyle, const unsigned int variableIndex)
- QwtPlotCurve::CurveStyle **getTraceStyle** (const unsigned int variableIndex)
- void **setTraceColor** (QColor traceColor, const unsigned int variableIndex)
- void **setTraceColor1** (QColor traceColor)
- void **setTraceColor2** (QColor traceColor)
- void **setTraceColor3** (QColor traceColor)
- void **setTraceColor4** (QColor traceColor)
- QColor **getTraceColor** (const unsigned int variableIndex)
- QColor **getTraceColor1** ()
- QColor **getTraceColor2** ()
- QColor **getTraceColor3** ()
- QColor **getTraceColor4** ()
- void **setTraceLegend1** (QString traceLegend)
- void **setTraceLegend2** (QString traceLegend)
- void **setTraceLegend3** (QString traceLegend)
- void **setTraceLegend4** (QString traceLegend)
- QString **getTraceLegend1** ()
- QString **getTraceLegend2** ()
- QString **getTraceLegend3** ()
- QString **getTraceLegend4** ()
- void **setXUnit** (QString xUnit)
- QString **getXUnit** ()
- void **setYUnit** (QString yUnit)
- QString **getYUnit** ()
- void **setGridEnableMajorX** (bool gridEnableMajorXIn)
- void **setGridEnableMajorY** (bool gridEnableMajorYIn)
- void **setGridEnableMinorX** (bool gridEnableMinorXIn)
- void **setGridEnableMinorY** (bool gridEnableMinorYIn)
- bool **getGridEnableMajorX** ()
- bool **getGridEnableMajorY** ()
- bool **getGridEnableMinorX** ()
- bool **getGridEnableMinorY** ()
- void **setGridMajorColor** (QColor gridMajorColorIn)
- void **setGridMinorColor** (QColor gridMinorColorIn)
- QColor **getGridMajorColor** ()
- QColor **getGridMinorColor** ()
- void **setXStart** (double xStart)
- double **getXStart** ()
- void **setXIncrement** (double xIncrement)
- double **getXIncrement** ()
- void **setTimeSpan** (unsigned int timeSpan)
- unsigned int **getTimeSpan** ()
- void **setTickRate** (unsigned int tickRate)
- unsigned int **getTickRate** ()
- bool **isEnabled** () const

Access function for [enabled](#) property - refer to [enabled](#) property for details.

- void [setEnabled](#) (bool state)

Access function for [enabled](#) property - refer to [enabled](#) property for details.

- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()

Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)

Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- [UserLevels](#) [getUserLevelEnabledProperty](#) ()

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setTraceStyle1](#) (TraceStyles traceStyle)
- void [setTraceStyle2](#) (TraceStyles traceStyle)
- void [setTraceStyle3](#) (TraceStyles traceStyle)
- void [setTraceStyle4](#) (TraceStyles traceStyle)
- TraceStyles [getTraceStyle1](#) ()
- TraceStyles [getTraceStyle2](#) ()
- TraceStyles [getTraceStyle3](#) ()
- TraceStyles [getTraceStyle4](#) ()

Protected Member Functions

- void [establishConnection](#) (unsigned int variableIndex)
- void [dragEnterEvent](#) (QDragEnterEvent *event)
- void [dropEvent](#) (QDropEvent *event)
- void [mousePressEvent](#) (QMouseEvent *event)
- void [setDrop](#) (QVariant drop)
- QVariant [getDrop](#) ()

Protected Attributes

- [QEFloatingFormatting](#) [floatingFormatting](#)
- bool [localEnabled](#)
- bool [allowDrop](#)

Properties

- QString [variable1](#)
- QString [variable2](#)
- QString [variable3](#)
- QString [variable4](#)

- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [visible](#)
- unsigned [int](#)
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- QColor **traceColor1**
- QColor **traceColor2**
- QColor **traceColor3**
- QColor **traceColor4**
- TraceStyles **traceStyle1**
- TraceStyles **traceStyle2**
- TraceStyles **traceStyle3**
- TraceStyles **traceStyle4**
- QString **traceLegend1**
- QString **traceLegend2**
- QString **traceLegend3**
- QString **traceLegend4**
- QString **title**
- QColor **backgroundColor**
- QString **xUnit**
- QString **yUnit**

9.94.1 Member Enumeration Documentation

9.94.1.1 enum `QEPlot::UserLevels`

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and `userLevel` enumeration for details.

Enumerator:

User Refer to `USERLEVEL_USER` for details.

Scientist Refer to `USERLEVEL_SCIENTIST` for details.

Engineer Refer to `USERLEVEL_ENGINEER` for details.

9.94.2 Member Function Documentation

9.94.2.1 `void QEPlot::dbValueChanged (const double & out) [signal]`

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.94.2.2 `void QEPlot::dbValueChanged (const QVector< double > & out) [signal]`

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.94.2.3 `void QEPlot::requestEnabled (const bool & state) [inline, slot]`

Similar to standard `setEnabled` slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.94.3 Member Data Documentation

9.94.3.1 `bool QEPlot::allowDrop [read, write, protected]`

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.94.4 Property Documentation

9.94.4.1 `bool QEPlot::displayAlarmState [read, write]`

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.94.4.2 `bool QEPlot::enabled [read, write]`

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid

data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.94.4.3 unsigned QEPlot::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.94.4.4 UserLevels QEPlot::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.94.4.5 QString QEPlot::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.94.4.6 QString QEPlot::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.94.4.7 QString QEPlot::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.94.4.8 UserLevels QEPlot::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel(). Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.94.4.9 QString QEPlot::variable1 [read, write]

EPICS variable name (CA PV). This variable is used to read updating values or waveforms for plotting in the first trace.

9.94.4.10 QString QEPlot::variable2 [read, write]

EPICS variable name (CA PV). This variable is used to read updating values or waveforms for plotting in the second trace.

9.94.4.11 QString QEPlot::variable3 [read, write]

EPICS variable name (CA PV). This variable is used to read updating values or waveforms for plotting in the third trace.

9.94.4.12 QString QEPlot::variable4 [read, write]

EPICS variable name (CA PV). This variable is used to read updating values or waveforms for plotting in the fourth trace.

9.94.4.13 bool QEPlot::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.94.4.14 QString QEPlot::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'SAMPLE=SAM1, NAME = "Ref foil"' These substitutions are applied to all the variable names.

9.94.4.15 bool QEPlot::visible [read, write]

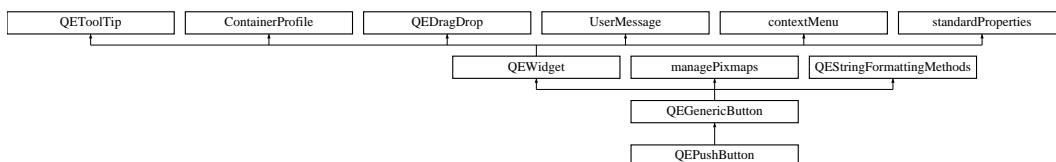
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPlot/QEPlot.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPlot/QEPlot.cpp

9.95 QEPushButton Class Reference

Inheritance diagram for QEPushButton:



Public Types

- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }
- enum [Formats](#) {
[Default](#) = QEStringFormatting::FORMAT_DEFAULT, [Floating](#) = QEStringFormatting::FORMAT_FLOATING, [Integer](#) = QEStringFormatting::FORMAT_INTEGER, [UnsignedInteger](#) = QEStringFormatting::FORMAT_UNSIGNEDINTEGER,
[Time](#) = QEStringFormatting::FORMAT_TIME, [LocalEnumeration](#) = QEStringFormatting::FORMAT_LOCAL_ENUMERATE }
- enum [Notations](#) { [Fixed](#) = QEStringFormatting::NOTATION_FIXED, [Scientific](#) = QEStringFormatting::NOTATION_SCIENTIFIC, [Automatic](#) = QEStringFormatting::NOTATION_AUTOMATIC }
- enum [ArrayActions](#) { [Append](#) = QEStringFormatting::APPEND, [Ascii](#) = QEStringFormatting::ASCII, [Index](#) = QEStringFormatting::INDEX }
- enum [UpdateOptions](#) { [Text](#) = QEGenericButton::UPDATE_TEXT, [Icon](#) = QEGenericButton::UPDATE_ICON, [TextAndIcon](#) = QEGenericButton::UPDATE_TEXT_AND_ICON, [State](#) = QEGenericButton::UPDATE_STATE }
User friendly enumerations for updateOption property - refer to QEGenericButton::updateOptions for details.
- enum [CreationOptionNames](#) { [Open](#) = QForm::CREATION_OPTION_OPEN, [NewTab](#) = QForm::CREATION_OPTION_NEW_TAB, [NewWindow](#) = QForm::CREATION_OPTION_NEW_WINDOW }
Creation options. Used to indicate how to present a GUI when requesting a new GUI be created. Open a new window, open a new tab, or replace the current window.

Public Slots

- void [launchGui](#) (QString guiName, QForm::creationOptions creationOption)
- void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const QString &out)
- void [requestResend](#) ()
Internal use only. Used when changing a property value to force a re-display to reflect the new property value.
- void [newGui](#) (QString guiName, QForm::creationOptions creationOption)
Internal use only. Request a new GUI is created. Typically, this is caught by the QEGui application.
- void [pressed](#) (int value)
- void [released](#) (int value)
- void [clicked](#) (int value)

Public Member Functions

- [QEPushButton](#) (QWidget *parent=0)
- [QEPushButton](#) (const QString &variableName, QWidget *parent=0)
- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setFormatProperty](#) ([Formats](#) format)
Access function for [format](#) property - refer to [format](#) property for details.
- [Formats](#) [getFormatProperty](#) ()
Access function for [format](#) property - refer to [format](#) property for details.
- void [setNotationProperty](#) ([Notations](#) notation)
Access function for [notation](#) property - refer to [notation](#) property for details.
- [Notations](#) [getNotationProperty](#) ()

Access function for [notation](#) property - refer to [notation](#) property for details.

- void [setArrayActionProperty](#) ([ArrayActions](#) arrayAction)

Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.

- [ArrayActions](#) [getArrayActionProperty](#) ()

Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.

Properties

- QString [variable](#)
- QString [altReadbackVariable](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- int [precision](#)
- bool [useDbPrecision](#)
- bool [leadingZero](#)
- bool [trailingZeros](#)
- bool [addUnits](#)
- QString [localEnumeration](#)
- [Formats](#) [format](#)
- [Notations](#) [notation](#)
- [ArrayActions](#) [arrayAction](#)
- Qt::Alignment [alignment](#)
- [UpdateOptions](#) [updateOption](#)
- QPixmap [pixmap0](#)
- QPixmap [pixmap1](#)
- QPixmap [pixmap2](#)
- QPixmap [pixmap3](#)
- QPixmap [pixmap4](#)
- QPixmap [pixmap5](#)
- QPixmap [pixmap6](#)
- QPixmap [pixmap7](#)
- QString [password](#)
- bool [confirmAction](#)
- bool [writeOnPress](#)
- bool [writeOnRelease](#)

- bool [writeOnClick](#)
- QString [pressText](#)
- QString [releaseText](#)
- QString [clickText](#)
- QString [clickCheckedText](#)
- QString [labelText](#)
- QString [program](#)
- QStringList [arguments](#)
- QString [guiFile](#)
- [CreationOptionNames](#) [creationOption](#)
- QString [prioritySubstitutions](#)

9.95.1 Member Enumeration Documentation

9.95.1.1 enum QEPushButton::ArrayActions

User friendly enumerations for arrayAction property - refer to [QCStringFormatting::arrayActions](#) for details.

Enumerator:

Append Refer to [QCStringFormatting::APPEND](#) for details.

Ascii Refer to [QCStringFormatting::ASCII](#) for details.

Index Refer to [QCStringFormatting::INDEX](#) for details.

9.95.1.2 enum QEPushButton::CreationOptionNames

Creation options. Used to indicate how to present a GUI when requesting a new GUI be created. Open a new window, open a new tab, or replace the current window.

Enumerator:

Open Replace the current GUI with the new GUI.

NewTab Open new GUI in a new tab.

NewWindow Open new GUI in a new window.

9.95.1.3 enum QEPushButton::Formats

User friendly enumerations for format property - refer to [QCStringFormatting::formats](#) for details.

Enumerator:

Default Format as best appropriate for the data type.

Floating Format as a floating point number.

Integer Format as an integer.

UnsignedInteger Format as an unsigned integer.

Time Format as a time.

LocalEnumeration Format as a selection from the [localEnumeration](#) property.

9.95.1.4 enum QEPushButton::Notations

User friendly enumerations for notation property - refer to [QStringFormatting::notations](#) for details.

Enumerator:

Fixed Refer to [QStringFormatting::NOTATION_FIXED](#) for details.

Scientific Refer to [QStringFormatting::NOTATION_SCIENTIFIC](#) for details.

Automatic Refer to [QStringFormatting::NOTATION_AUTOMATIC](#) for details.

9.95.1.5 enum QEPushButton::UpdateOptions

User friendly enumerations for updateOption property - refer to [QEGenericButton::updateOptions](#) for details.

Enumerator:

Text Data updates will update the button text.

Icon Data updates will update the button icon.

TextAndIcon Data updates will update the button text and icon.

State Data updates will update the button state (checked or unchecked)

9.95.1.6 enum QEPushButton::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [#userLevel](#) enumeration for details.

Enumerator:

User Refer to [USERLEVEL_USER](#) for details.

Scientist Refer to [USERLEVEL_SCIENTIST](#) for details.

Engineer Refer to [USERLEVEL_ENGINEER](#) for details.

9.95.2 Constructor & Destructor Documentation

9.95.2.1 QEPushButton::QEPushButton (QWidget * *parent* = 0)

Create without a variable. Use [setVariableNameProperty\(\)](#) and [setSubstitutionsProperty\(\)](#) to define a variable and, optionally, macro substitutions later.

9.95.2.2 `QEPushButton::QEPushButton (const QString & variableName, QWidget * parent = 0)`

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.95.3 Member Function Documentation

9.95.3.1 `void QEPushButton::clicked (int value) [signal]`

Button has been Clicked. The value emitted is the integer interpretation of the clickText property (or the clickCheckedText property if the button was checked)

9.95.3.2 `void QEPushButton::dbValueChanged (const QString & out) [signal]`

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.95.3.3 `void QEPushButton::launchGui (QString guiName, QForm::creationOptions creationOption) [inline, slot]`

Default slot used to create a new GUI if there is no slot indicated in the [ContainerProfile](#) class. This slot is typically used when the button is pressed within the Designer preview window to allow the operation of the button to be tested. If an application does not specify a slot to use for creating new windows (through the [ContainerProfile](#) class) a window will still be created through this slot, but it will not respect the window creation options or any other window related application constraints. For example, the QEGui application does provide a slot for creating new GUIs in the [ContainerProfile](#) class which respects the creation options, knows how to add tabs in the application, and extend the application's window menu in the menu bar.

Reimplemented from [QEGenericButton](#).

9.95.3.4 `void QEPushButton::pressed (int value) [signal]`

Button has been Pressed. The value emitted is the integer interpretation of the press-Text property

9.95.3.5 `void QEPushButton::released (int value) [signal]`

Button has been Released The value emitted is the integer interpretation of the release-Text property

9.95.3.6 void QEPushButton::requestEnabled (const bool & state) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.95.4 Property Documentation

9.95.4.1 bool QEPushButton::addUnits [read, write]

If true (default), add engineering units supplied with the data.

9.95.4.2 Qt::Alignment QEPushButton::alignment [read, write]

Set the buttons text alignment. Left justification is particularly useful when displaying quickly changing numeric data updates.

9.95.4.3 bool QEPushButton::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.95.4.4 QString QEPushButton::altReadbackVariable [read, write]

EPICS variable name (CA PV). This variable is used to provide a readback value when different to the variable written to by a button press.

9.95.4.5 QStringList QEPushButton::arguments [read, write]

Arguments for program specified in the 'program' property.

Reimplemented from [QEGenericButton](#).

9.95.4.6 ArrayActions QEPushButton::arrayAction [read, write]

Text formatting option for array data. Default is ASCII. Options are:

- ASCII - treat array as a single text string. For example an array of three characters 'a' 'b' 'c' will be formatted as 'abc'.
- APPEND - treat array as an array of numbers and format a string containing them all with a space between each. For example, an array of three numbers 10, 11 and 12 will be formatted as '10 11 12'.

- INDEX - Extract a single item from the array. The item is then formatted as any other non array data would be. The item selected is determined by the `arrayIndex` property. For example, if `arrayIndex` property is 1, an array of three numbers 10, 11 and 12 will be formatted as '11'.

9.95.4.7 QString QEPushButton::clickCheckedText [read, write]

Text used to compare with text written or read to determine if push button should be marked as checked. Note, must be an exact match following formatting of data updates. When writing values, the 'pressText', 'ReleaseText', or 'clickedtext' must match this property to cause the button to be checked when the write occurs.

Good example: formatting set to display a data value of '1' as 'On', `clickCheckedText` is 'On', `clickText` is 'On'. In this example, the push button will be checked when a data update occurs with a value of 1 or when the button is clicked.

Bad example: formatting set to display a data value of '1' as 'On', `clickCheckedText` is 'On', `clickText` is '1'. In this example, the push button will be checked when a data update occurs with a value of 1 but, although a valid value will be written when clicked, the button will not be checked when clicked as '1' is not the same as 'On'.

Reimplemented from [QEGenericButton](#).

9.95.4.8 QString QEPushButton::clickText [read, write]

Value written when user clicks button if 'writeOnClick' property is true

Reimplemented from [QEGenericButton](#).

9.95.4.9 bool QEPushButton::confirmAction [read, write]

If true, a dialog will be presented asking the user to confirm if the button action should be carried out

9.95.4.10 CreationOptionNames QEPushButton::creationOption [read, write]

Creation options when opening a new GUI. Open a new window, open a new tab, or replace the current window. the creation option is supplied when the button generates a `newGui` signal. Application code connected to this signal should honour this request if possible. When used within the QEGui application, the QEGui application creates a new window, new tab, or replaces the current window as appropriate.

Reimplemented from [QEGenericButton](#).

9.95.4.11 bool QEPushButton::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is

included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.95.4.12 **bool** QEPushButton::enabled [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.95.4.13 **Formats** QEPushButton::format [read, write]

Format to apply to data. Default is 'Default' in which case the data type supplied with the data determines how the data is formatted. For all other options, an attempt is made to format the data as requested (whatever its native form).

9.95.4.14 **QString** QEPushButton::guiFile [read, write]

File name of GUI to be presented on button click. File name can be absolute, relative to the path of the QEform in which the [QEPushButton](#) is located, relative to the any path in the path list published in the [ContainerProfile](#) class, or relative to the current path. See [QEWidget::openQEFile\(\)](#) in [QEWidget.cpp](#) for details.

9.95.4.15 **unsigned** QEPushButton::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

Base used for when formatting integers. Default is 10 (duh!)

Index used to select a single item of data for formatting from an array of data. Default is 0. Only used when the `arrayAction` property is INDEX. Refer to the `arrayAction` property for more details.

9.95.4.16 **QString** QEPushButton::labelText [read, write]

Button label text (prior to substitution). Macro substitutions will be applied to this text and the result will be set as the button text. Used when data updates are not being represented in the button text. IF NOT LEFT EMPTY, THIS TEXT WILL TAKE PRIORITY OVER THE PUSH BUTTON 'text' PROPERTY! For example, a button in a sub form may have a 'labelText' property of 'Turn Pump On'. When the sub form is used twice in a main form with substitutions PUMPNUM=1 and PUMPNUM=2 respectively, the two

identical buttons in the sub forms will have the labels 'Turn Pump 1 On' and 'Turn Pump 2 On' respectively.

Reimplemented from [QEGenericButton](#).

9.95.4.17 bool QEPushButton::leadingZero [read, write]

If true (default), always add a leading zero when formatting numbers.

9.95.4.18 QString QEPushButton::localEnumeration [read, write]

An enumeration list used to data values. Used only when the formatting option is 'local enumeration'. Value is converted to an integer and used to select a string from this list.

Format is:

```
[[<|<=|!=|>|=|>]value1|*]: string1 , [[<|<=|!=|>|=|>]value2|*]: string2 , [[<|<=|!=|>|=|>]value3|*]: string3 , ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
>= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"", 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *:"" "Pump Off": "OH NO!, the pump is OFF!", "Pump On": "It's OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10: ""'

A range of numbers can be covered by a pair of values as in the following example:
>=4:"Between 4 and 8", <=8:"Between 4 and 8"

9.95.4.19 Notations QEPushButton::notation [read, write]

Notation used for numerical formatting. Default is fixed.

9.95.4.20 QString QEPushButton::password [read, write]

Password user will need to enter before any action is taken

Reimplemented from [QEGenericButton](#).

9.95.4.21 QPixmap QEPushButton::pixmap0 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 0

9.95.4.22 QPixmap QEPushButton::pixmap1 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 1

9.95.4.23 QPixmap QEPushButton::pixmap2 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 2

9.95.4.24 QPixmap QEPushButton::pixmap3 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 3

9.95.4.25 QPixmap QEPushButton::pixmap4 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 4

9.95.4.26 QPixmap QEPushButton::pixmap5 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 5

9.95.4.27 QPixmap QEPushButton::pixmap6 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 6

9.95.4.28 QPixmap QEPushButton::pixmap7 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 7

9.95.4.29 `int QEPushButton::precision` `[read, write]`

Precision used when formatting floating point numbers. The default is 4. This is only used if `useDbPrecision` is false.

9.95.4.30 `QString QEPushButton::pressText` `[read, write]`

Value written when user presses button if 'writeOnPress' property is true

Reimplemented from [QEGenericButton](#).

9.95.4.31 `QString QEPushButton::prioritySubstitutions` `[read, write]`

Overriding macro substitutions. These macro substitutions take precedence over any existing macro substitutions defined by the `variableSubstitutions` property, any parent forms, or the application containing the button. These macro substitutions are particularly usefull when the button's function is to reload the same form but with different macro substitutions. The `variableSubstitutions` property cannot be used for this since, although they are added to the list of macro substittions applied to the new form, they are appended to the list and the existing macro substitutions take precedence.

Reimplemented from [QEGenericButton](#).

9.95.4.32 `QString QEPushButton::program` `[read, write]`

Program to run when the button is clicked. No attempt to run a program is made if this property is empty. Example: `firefox`

Reimplemented from [QEGenericButton](#).

9.95.4.33 `QString QEPushButton::releaseText` `[read, write]`

Value written when user releases button if 'writeOnRelease' property is true

Reimplemented from [QEGenericButton](#).

9.95.4.34 `bool QEPushButton::subscribe` `[read, write]`

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEWWidget](#).

9.95.4.35 `bool QEPushButton::trailingZeros` `[read, write]`

If true (default), always remove any trailing zeros when formatting numbers.

9.95.4.36 UpdateOptions QEPushButton::updateOption [read, write]

Update options (text, pixmap, both, or state (checked or unchecked))

Reimplemented from [QEGenericButton](#).

9.95.4.37 bool QEPushButton::useDbPrecision [read, write]

If true (default), format floating point numbers using the precision supplied with the data. If false, the precision property is used.

9.95.4.38 UserLevels QEPushButton::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.95.4.39 QString QEPushButton::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.95.4.40 QString QEPushButton::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.95.4.41 QString QEPushButton::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string

will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.95.4.42 UserLevels QEPushButton::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel(). Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.95.4.43 QString QEPushButton::variable [read, write]

EPICS variable name (CA PV). This variable is used for both writing (on button press), and reading if subscribed and no alternate readback variable is provided.

9.95.4.44 bool QEPushButton::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.95.4.45 QString QEPushButton::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.95.4.46 bool QEPushButton::visible [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

9.95.4.47 bool QEPushButton::writeOnClick [read, write]

If true, the 'clickText' property is written when the button is clicked. Default is true

Reimplemented from [QEGenericButton](#).

9.95.4.48 bool QEPushButton::writeOnPress [read, write]

If true, the 'pressText' property is written when the button is pressed. Default is false

Reimplemented from [QEGenericButton](#).

9.95.4.49 bool QEPushButton::writeOnRelease [read, write]

If true, the 'releaseText' property is written when the button is released. Default is false

Reimplemented from [QEGenericButton](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QEPushButton.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QEPushButton.cpp

9.96 QEPVNameLists Class Reference

Public Member Functions

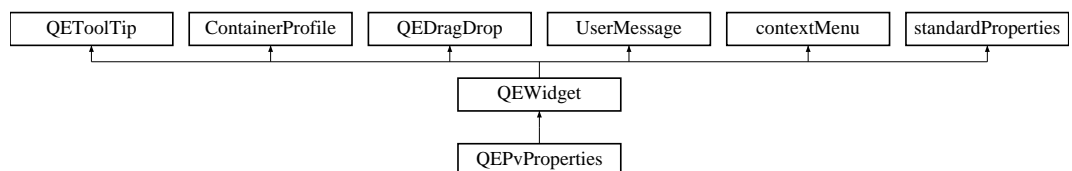
- void **prependOrMoveToFirst** (const QString &item)
- void **saveConfiguration** ([PMElement](#) &parentElement)
- void **restoreConfiguration** ([PMElement](#) &parentElement)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChart.cpp

9.97 QEPvProperties Class Reference

Inheritance diagram for QEPvProperties:



Classes

- class [OwnWidgets](#)

Public Types

- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void [requestEnabled](#) (const bool &state)

Signals

- void [setCurrentBoxIndex](#) (int index)

Public Member Functions

- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- QEPvProperties** (QWidget *parent=0)
- QEPvProperties** (const QString &variableName, QWidget *parent=0)
- QSize [sizeHint](#) () const

Protected Member Functions

- void [resizeEvent](#) (QResizeEvent *event)
- void [establishConnection](#) (unsigned int variableIndex)
- void [scaleBy](#) (const int m, const int d)
- [qcaobject::QCaObject](#) * [createQcaltem](#) (unsigned int variableIndex)
- void [dragEnterEvent](#) (QDragEnterEvent *event)
- void [dropEvent](#) (QDropEvent *event)
- void [mousePressEvent](#) (QMouseEvent *event)

- void [saveConfiguration](#) ([PersistenceManager](#) *pm)
- void [restoreConfiguration](#) ([PersistenceManager](#) *pm, [restorePhases](#) restorePhase)
- QString [copyVariable](#) ()
- QVariant [copyData](#) ()
- void [paste](#) (QVariant s)
- void [setDrop](#) (QVariant drop)
- QVariant [getDrop](#) ()

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned [int](#)
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)

9.97.1 Member Enumeration Documentation

9.97.1.1 enum QEPvProperties::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to [USERLEVEL_USER](#) for details.

Scientist Refer to [USERLEVEL_SCIENTIST](#) for details.

Engineer Refer to [USERLEVEL_ENGINEER](#) for details.

9.97.2 Member Function Documentation

9.97.2.1 void QEPvProperties::requestEnabled (const bool & state) [inline, slot]

Similar to standard [setEnabled](#) slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.97.2.2 void QEPvProperties::restoreConfiguration (PersistenceManager * ,
restorePhases) [protected, virtual]

Service a request to restore the QE widget's configuration. A QE widget recover any configuration details from the [PersistenceManager](#). For example, a [QEStripChart](#) may restore the variables being plotted. Many QE widgets do not have any persistant data requirements and do not implement this method. This is called twice with an incrementing restorePhase. Most widgets will miss the first call as they don't exist yet (they are created as part of the first phase)

Reimplemented from [QEWWidget](#).

9.97.2.3 void QEPvProperties::saveConfiguration (PersistenceManager *)
[protected, virtual]

Service a request to save the QE widget's current configuration. A widget may save any configuration details through the [PersistenceManager](#). For example, a [QEStripChart](#) may save the variables being plotted. Many QE widgets do not have any persistant data requirements and do not implement this method.

Reimplemented from [QEWWidget](#).

9.97.2.4 void QEPvProperties::scaleBy (const int , const int) [protected,
virtual]

Any [QEWWidget](#) that requires additional scaling, i.e. above and beyond the standard scaling applied to size, minimum size, maximum size and font size, may override this function in order to perform any bespoke scaling need by the widget (for example see [QEShape](#)). The scaling is defined using a rational number specified by two integers (m, d). The first (m) parameter is the multiplier and the second (d) parameter is the divisor. For example, if m = 4 and d = 5, then an 80% scaling should be applied. And if m = 5 and d = 4, and a 125% scaling is required.

Reimplemented from [QEWWidget](#).

9.97.3 Property Documentation

9.97.3.1 bool QEPvProperties::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.97.3.2 bool QEPvProperties::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is

included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.97.3.3 `bool QEPvProperties::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.97.3.4 `unsigned QEPvProperties::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.97.3.5 `UserLevels QEPvProperties::userLevelEnabled` [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programmatically through `setUserLevel()`. Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.97.3.6 `QString QEPvProperties::userLevelEngineerStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.97.3.7 `QString QEPvProperties::userLevelScientistStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string

will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.97.3.8 QString QEPvProperties::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.97.3.9 UserLevels QEPvProperties::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel() Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.97.3.10 QString QEPvProperties::variable [read, write]

EPICS variable name (CA PV)

9.97.3.11 bool QEPvProperties::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.97.3.12 QString QEPvProperties::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are are also used for other purposes.

9.97.3.13 bool QEPvProperties::visible [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvProperties.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvProperties.cpp

9.98 QEPvPropertiesManager Class Reference

Public Member Functions

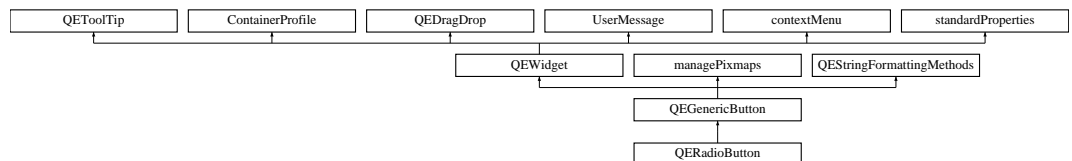
- **QEPvPropertiesManager** (QObject *parent=0)
- bool **isContainer** () const
- bool **isInitialized** () const
- QIcon **icon** () const
- QString **group** () const
- QString **includeFile** () const
- QString **name** () const
- QString **toolTip** () const
- QString **whatsThis** () const
- QWidget * **createWidget** (QWidget *parent)
- void **initialize** (QDesignerFormEditorInterface *core)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesManager.cpp

9.99 QERadioButton Class Reference

Inheritance diagram for QERadioButton:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }
- enum **Formats** {
Default = QEStringFormatting::FORMAT_DEFAULT, **Floating** = QEStringFormatting::FORMAT_FLOATING, **Integer** = QEStringFormatting::FORMAT_INTEGER, **UnsignedInteger** = QEStringFormatting::FORMAT_UNSIGNEDINTEGER,
Time = QEStringFormatting::FORMAT_TIME, **LocalEnumeration** = QEStringFormatting::FORMAT_LOCAL_ENUMERATE }

- enum [Notations](#) { [Fixed](#) = QQStringFormatting::NOTATION_FIXED, [Scientific](#) = QQStringFormatting::NOTATION_SCIENTIFIC, [Automatic](#) = QQStringFormatting::NOTATION_AUTOMATIC }
- enum [ArrayActions](#) { [Append](#) = QQStringFormatting::APPEND, [Ascii](#) = QQStringFormatting::ASCII, [Index](#) = QQStringFormatting::INDEX }
- enum [UpdateOptions](#) { [Text](#) = QEGenericButton::UPDATE_TEXT, [Icon](#) = QEGenericButton::UPDATE_ICON, [TextAndIcon](#) = QEGenericButton::UPDATE_TEXT_AND_ICON, [State](#) = QEGenericButton::UPDATE_STATE }

User friendly enumerations for updateOption property - refer to QEGenericButton::updateOptions for details.

- enum [CreationOptionNames](#) { [Open](#) = QForm::CREATION_OPTION_OPEN, [NewTab](#) = QForm::CREATION_OPTION_NEW_TAB, [NewWindow](#) = QForm::CREATION_OPTION_NEW_WINDOW }

Creation options. Used to indicate how to present a GUI when requesting a new GUI be created. Open a new window, open a new tab, or replace the current window.

Public Slots

- void [launchGui](#) (QString guiName, QForm::creationOptions creationOption)
- void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const QString &out)
- void [requestResend](#) ()
Internal use only. Used when changing a property value to force a re-display to reflect the new property value.
- void [newGui](#) (QString guiName, QForm::creationOptions creationOption)
Internal use only. Request a new GUI is created. Typically, this is caught by the QEGui application.
- void [pressed](#) (int value)
- void [released](#) (int value)
- void [clicked](#) (int value)

Public Member Functions

- [QERadioButton](#) (QWidget *parent=0)
- [QERadioButton](#) (const QString &variableName, QWidget *parent=0)
- bool [isEnabled](#) () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void [setEnabled](#) (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.

- void [setUserLevelVisibilityProperty](#) ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) [getUserLevelEnabledProperty](#) ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setUserLevelEnabledProperty](#) ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void [setFormatProperty](#) ([Formats](#) format)
Access function for [format](#) property - refer to [format](#) property for details.
- [Formats](#) [getFormatProperty](#) ()
Access function for [format](#) property - refer to [format](#) property for details.
- void [setNotationProperty](#) ([Notations](#) notation)
Access function for [notation](#) property - refer to [notation](#) property for details.
- [Notations](#) [getNotationProperty](#) ()
Access function for [notation](#) property - refer to [notation](#) property for details.
- void [setArrayActionProperty](#) ([ArrayActions](#) arrayAction)
Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.
- [ArrayActions](#) [getArrayActionProperty](#) ()
Access function for [arrayAction](#) property - refer to [arrayAction](#) property for details.

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned [int](#)
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- int [precision](#)
- bool [useDbPrecision](#)
- bool [leadingZero](#)
- bool [trailingZeros](#)
- bool [addUnits](#)
- QString [localEnumeration](#)
- [Formats](#) [format](#)

- [Notations notation](#)
- [ArrayActions arrayAction](#)
- [Qt::Alignment alignment](#)
- [UpdateOptions updateOption](#)
- [QPixmap pixmap0](#)
- [QPixmap pixmap1](#)
- [QPixmap pixmap2](#)
- [QPixmap pixmap3](#)
- [QPixmap pixmap4](#)
- [QPixmap pixmap5](#)
- [QPixmap pixmap6](#)
- [QPixmap pixmap7](#)
- [QString password](#)
- [bool confirmAction](#)
- [bool writeOnPress](#)
- [bool writeOnRelease](#)
- [bool writeOnClick](#)
- [QString pressText](#)
- [QString releaseText](#)
- [QString clickText](#)
- [QString clickCheckedText](#)
- [QString labelText](#)
- [QString program](#)
- [QStringList arguments](#)
- [QString guiFile](#)
- [CreationOptionNames creationOption](#)
- [QString prioritySubstitutions](#)

9.99.1 Member Enumeration Documentation

9.99.1.1 enum QERadioButton::ArrayActions

User friendly enumerations for arrayAction property - refer to [QCStringFormatting::arrayActions](#) for details.

Enumerator:

Append Refer to [QCStringFormatting::APPEND](#) for details.

Ascii Refer to [QCStringFormatting::ASCII](#) for details.

Index Refer to [QCStringFormatting::INDEX](#) for details.

9.99.1.2 enum `QERadioButton::CreationOptionNames`

Creation options. Used to indicate how to present a GUI when requesting a new GUI be created. Open a new window, open a new tab, or replace the current window.

Enumerator:

Open Replace the current GUI with the new GUI.

NewTab Open new GUI in a new tab.

NewWindow Open new GUI in a new window.

9.99.1.3 enum `QERadioButton::Formats`

User friendly enumerations for format property - refer to [QStringFormatting::formats](#) for details.

Enumerator:

Default Format as best appropriate for the data type.

Floating Format as a floating point number.

Integer Format as an integer.

UnsignedInteger Format as an unsigned integer.

Time Format as a time.

LocalEnumeration Format as a selection from the [localEnumeration](#) property.

9.99.1.4 enum `QERadioButton::Notations`

User friendly enumerations for notation property - refer to [QStringFormatting::notations](#) for details.

Enumerator:

Fixed Refer to [QStringFormatting::NOTATION_FIXED](#) for details.

Scientific Refer to [QStringFormatting::NOTATION_SCIENTIFIC](#) for details.

Automatic Refer to [QStringFormatting::NOTATION_AUTOMATIC](#) for details.

9.99.1.5 enum `QERadioButton::UpdateOptions`

User friendly enumerations for updateOption property - refer to [QEGenericButton::updateOptions](#) for details.

Enumerator:

Text Data updates will update the button text.

Icon Data updates will update the button icon.

TextAndIcon Data updates will update the button text and icon.

State Data updates will update the button state (checked or unchecked)

9.99.1.6 enum QERadioButton::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to `USERLEVEL_USER` for details.

Scientist Refer to `USERLEVEL_SCIENTIST` for details.

Engineer Refer to `USERLEVEL_ENGINEER` for details.

9.99.2 Constructor & Destructor Documentation

9.99.2.1 QERadioButton::QERadioButton (QWidget * *parent* = 0)

Create without a variable. Use `setVariableNameProperty()` and `setSubstitutionsProperty()` to define a variable and, optionally, macro substitutions later.

9.99.2.2 QERadioButton::QERadioButton (const QString & *variableName*, QWidget * *parent* = 0)

Create with a variable. A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.99.3 Member Function Documentation

9.99.3.1 void QERadioButton::clicked (int *value*) [signal]

Button has been Clicked. The value emitted is the integer interpretation of the `clickText` property (or the `clickCheckedText` property if the button was checked)

9.99.3.2 void QERadioButton::dbValueChanged (const QString & *out*) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a `QList` widget could log updates from this widget.

9.99.3.3 void QERadioButton::launchGui (QString *guiName*, QForm::creationOptions *creationOption*) [inline, slot]

Default slot used to create a new GUI if there is no slot indicated in the [ContainerProfile](#) class. This slot is typically used when the button is pressed within the Designer preview window to allow the operation of the button to be tested. If an application does not

specify a slot to use for creating new windows (through the [ContainerProfile](#) class) a window will still be created through this slot, but it will not respect the window creation options or any other window related application constraints. For example, the QEGui application does provide a slot for creating new GUIs in the [ContainerProfile](#) class which respects the creation options, knows how to add tabs in the application, and extend the application's window menu in the menu bar.

Reimplemented from [QEGenericButton](#).

9.99.3.4 void QERadioButton::pressed (int *value*) [signal]

Button has been Pressed. The value emitted is the integer interpretation of the press-Text property

9.99.3.5 void QERadioButton::released (int *value*) [signal]

Button has been Released The value emitted is the integer interpretation of the release-Text property

9.99.3.6 void QERadioButton::requestEnabled (const bool & *state*) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.99.4 Property Documentation

9.99.4.1 bool QERadioButton::addUnits [read, write]

If true (default), add engineering units supplied with the data.

9.99.4.2 Qt::Alignment QERadioButton::alignment [read, write]

Set the buttons text alignment. Left justification is particularly useful when displaying quickly changing numeric data updates.

9.99.4.3 bool QERadioButton::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.99.4.4 QStringList QERadioButton::arguments [read, write]

Arguments for program specified in the 'program' property.

Reimplemented from [QEGenericButton](#).

9.99.4.5 ArrayActions QERadioButton::arrayAction [read, write]

Text formatting option for array data. Default is ASCII. Options are:

- ASCII - treat array as a single text string. For example an array of three characters 'a' 'b' 'c' will be formatted as 'abc'.
- APPEND - treat array as an array of numbers and format a string containing them all with a space between each. For example, an array of three numbers 10, 11 and 12 will be formatted as '10 11 12'.
- INDEX - Extract a single item from the array. The item is then formatted as any other non array data would be. The item selected is determined by the arrayIndex property. For example, if arrayIndex property is 1, an array of three numbers 10, 11 and 12 will be formatted as '11'.

9.99.4.6 QString QERadioButton::clickCheckedText [read, write]

Text used to compare with text written or read to determine if push button should be marked as checked. Note, must be an exact match following formatting of data updates. When writing values, the 'pressText', 'ReleaseText', or 'clickedtext' must match this property to cause the button to be checked when the write occurs.

Good example: formatting set to display a data value of '1' as 'On', clickCheckedText is 'On', clickText is 'On'. In this example, the push button will be checked when a data update occurs with a value of 1 or when the button is clicked.

Bad example: formatting set to display a data value of '1' as 'On', clickCheckedText is 'On', clickText is '1'. In this example, the push button will be checked when a data update occurs with a value of 1 but, although a valid value will be written when clicked, the button will not be checked when clicked as '1' is not the same as 'On'.

Reimplemented from [QEGenericButton](#).

9.99.4.7 QString QERadioButton::clickText [read, write]

Value written when user clicks button if 'writeOnClick' property is true

Reimplemented from [QEGenericButton](#).

9.99.4.8 bool QERadioButton::confirmAction [read, write]

If true, a dialog will be presented asking the user to confirm if the button action should be carried out

9.99.4.9 **CreationOptionNames** `QERadioButton::creationOption` [read, write]

Creation options when opening a new GUI. Open a new window, open a new tab, or replace the current window. the creation option is supplied when the button generates a newGui signal. Application code connected to this signal should honour this request if possible. When used within the QEGui application, the QEGui application creates a new window, new tab, or replaces the current window as appropriate.

Reimplemented from [QEGenericButton](#).

9.99.4.10 **bool** `QERadioButton::displayAlarmState` [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.99.4.11 **bool** `QERadioButton::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.99.4.12 **Formats** `QERadioButton::format` [read, write]

Format to apply to data. Default is 'Default' in which case the data type supplied with the data determines how the data is formatted. For all other options, an attempt is made to format the data as requested (whatever its native form).

9.99.4.13 **QString** `QERadioButton::guiFile` [read, write]

File name of GUI to be presented on button click. File name can be absolute, relative to the path of the QEform in which the [QEPushButton](#) is located, relative to any path in the path list published in the [ContainerProfile](#) class, or relative to the current path. See [QEWidget::openQEFile\(\)](#) in QEWidget.cpp for details.

9.99.4.14 **unsigned** `QERadioButton::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

Base used for when formatting integers. Default is 10 (duh!)

Index used to select a single item of data for formatting from an array of data. Default is 0. Only used when the `arrayAction` property is `INDEX`. Refer to the `arrayAction` property for more details.

9.99.4.15 QString QERadioButton::labelText [read, write]

Button label text (prior to substitution). Macro substitutions will be applied to this text and the result will be set as the button text. Used when data updates are not being represented in the button text. IF NOT LEFT EMPTY, THIS TEXT WILL TAKE PRIORITY OVER THE PUSH BUTTON 'text' PROPERTY! For example, a button in a sub form may have a 'labelText' property of 'Turn Pump On'. When the sub form is used twice in a main form with substitutions `PUMPNUM=1` and `PUMPNUM=2` respectively, the two identical buttons in the sub forms will have the labels 'Turn Pump 1 On' and 'Turn Pump 2 On' respectively.

Reimplemented from [QEGenericButton](#).

9.99.4.16 bool QERadioButton::leadingZero [read, write]

If true (default), always add a leading zero when formatting numbers.

9.99.4.17 QString QERadioButton::localEnumeration [read, write]

An enumeration list used to data values. Used only when the formatting option is 'local enumeration'. Value is converted to an integer and used to select a string from this list.

Format is:

```
[[<|<=|!=|>|=|>]value1|*]: string1 , [[<|<=|!=|>|=|>]value2|*]: string2 , [[<|<=|!=|>|=|>]value3|*]: string3 , ...
```

Where: < Less than <= Less than or equal = Equal (default if no operator specified)
>= Greather than or equal > Greater than Always match (used to specify default text)

Values may be numeric or textual Values do not have to be in any order, but first match wins Values may be quoted Strings may be quoted Consecutive values do not have to be present. Operator is assumed to be equality if not present. White space is ignored except within quoted strings.

may be included in a string to indicate a line break

Examples are:

```
0:Off,1:On 0 : "Pump Running", 1 : "Pump not running" 0:"", 1:"Warning!\nAlarm"
<2:"Value is less than two", =2:"Value is equal to two", >2:"Value is grater than 2"
3:"Beamline Available", *:"" "Pump Off": "OH NO!, the pump is OFF!","Pump On": "It's OK, the pump is on"
```

The data value is converted to a string if no enumeration for that value is available. For example, if the local enumeration is '0:off,1:on', and a value of 10 is processed, the

text generated is '10'. If a blank string is required, this should be explicit. for example, '0:off,1:on,10:'''

A range of numbers can be covered by a pair of values as in the following example: ≥ 4 :"Between 4 and 8", ≤ 8 :"Between 4 and 8"

9.99.4.18 Notations QERadioButton::notation [read, write]

Notation used for numerical formatting. Default is fixed.

9.99.4.19 QString QERadioButton::password [read, write]

Password user will need to enter before any action is taken

Reimplemented from [QEGenericButton](#).

9.99.4.20 QPixmap QERadioButton::pixmap0 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 0

9.99.4.21 QPixmap QERadioButton::pixmap1 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 1

9.99.4.22 QPixmap QERadioButton::pixmap2 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 2

9.99.4.23 QPixmap QERadioButton::pixmap3 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 3

9.99.4.24 QPixmap QERadioButton::pixmap4 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 4

9.99.4.25 QPixmap QERadioButton::pixmap5 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 5

9.99.4.26 QPixmap QERadioButton::pixmap6 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 6

9.99.4.27 QPixmap QERadioButton::pixmap7 [read, write]

Pixmap to display if updateOption is Icon or TextAndIcon and data value translates to an index of 7

9.99.4.28 int QERadioButton::precision [read, write]

Precision used when formatting floating point numbers. The default is 4. This is only used if useDbPrecision is false.

9.99.4.29 QString QERadioButton::pressText [read, write]

Value written when user presses button if 'writeOnPress' property is true

Reimplemented from [QEGenericButton](#).

9.99.4.30 QString QERadioButton::prioritySubstitutions [read, write]

Overriding macro substitutions. These macro substitutions take precedence over any existing macro substitutions defined by the variableSubstitutions property, any parent forms, or the application containing the button. These macro substitutions are particularly usefull when the button's function is to reload the same form but with different macro substitutions. The variableSubstitutions property cannot be used for this since, although they are added to the list of macro substittions applied to the new form, they are appended to the list and the existing macro substitutions take precedence.

Reimplemented from [QEGenericButton](#).

9.99.4.31 QString QERadioButton::program [read, write]

Program to run when the button is clicked. No attempt to run a program is made if this property is empty. Example: firefox

Reimplemented from [QEGenericButton](#).

9.99.4.32 QString QERadioButton::releaseText [read, write]

Value written when user releases button if 'writeOnRelease' property is true

Reimplemented from [QEGenericButton](#).

9.99.4.33 bool QERadioButton::subscribe [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEObject](#).

9.99.4.34 bool QERadioButton::trailingZeros [read, write]

If true (default), always remove any trailing zeros when formatting numbers.

9.99.4.35 UpdateOptions QERadioButton::updateOption [read, write]

Update options (text, pixmap, both, or state (checked or unchecked))

Reimplemented from [QEGenericButton](#).

9.99.4.36 bool QERadioButton::useDbPrecision [read, write]

If true (default), format floating point numbers using the precision supplied with the data. If false, the precision property is used.

9.99.4.37 UserLevels QERadioButton::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.99.4.38 QString QERadioButton::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.99.4.39 QString QERadioButton::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager`

class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.99.4.40 `QString QERadioButton::userLevelUserStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.99.4.41 `UserLevels QERadioButton::userLevelVisibility` [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.99.4.42 `QString QERadioButton::variable` [read, write]

EPICS variable name (CA PV)

9.99.4.43 `bool QERadioButton::variableAsToolTip` [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.99.4.44 `QString QERadioButton::variableSubstitutions` [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.99.4.45 `bool QERadioButton::visible` [read, write]

Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

9.99.4.46 bool QERadioButton::writeOnClick [read, write]

If true, the 'clickText' property is written when the button is clicked. Default is true

Reimplemented from [QEGenericButton](#).

9.99.4.47 bool QERadioButton::writeOnPress [read, write]

If true, the 'pressText' property is written when the button is pressed. Default is false

Reimplemented from [QEGenericButton](#).

9.99.4.48 bool QERadioButton::writeOnRelease [read, write]

If true, the 'releaseText' property is written when the button is released. Default is false

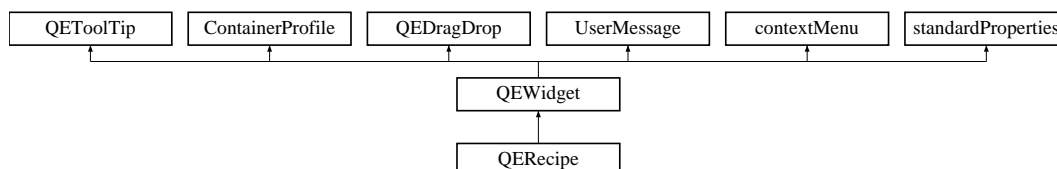
Reimplemented from [QEGenericButton](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QERadioButton.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEButton/QERadioButton.cpp

9.100 QERecipe Class Reference

Inheritance diagram for QERecipe:



Public Types

- enum **configurationTypesProperty** { **File** = FROM_FILE, **Text** = FROM_TEXT }
- enum **detailsLayoutProperty** { **Top** = TOP, **Bottom** = BOTTOM, **Left** = LEFT, **Right** = RIGHT }
- enum **userTypesProperty** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }

Public Member Functions

- **QERecipe** (QWidget *pParent=0)

- void **setRecipeDescription** (QString pValue)
- QString **getRecipeDescription** ()
- void **setShowRecipeList** (bool pValue)
- bool **getShowRecipeList** ()
- void **setShowNew** (bool pValue)
- bool **getShowNew** ()
- void **setShowSave** (bool pValue)
- bool **getShowSave** ()
- void **setShowDelete** (bool pValue)
- bool **getShowDelete** ()
- void **setShowApply** (bool pValue)
- bool **getShowApply** ()
- void **setShowRead** (bool pValue)
- bool **getShowRead** ()
- void **setShowFields** (bool pValue)
- bool **getShowFields** ()
- void **setConfigurationType** (int pValue)
- int **getConfigurationType** ()
- void **setConfigurationFile** (QString pValue)
- QString **getConfigurationFile** ()
- void **setRecipeFile** (QString pValue)
- QString **getRecipeFile** ()
- void **setConfigurationText** (QString pValue)
- QString **getConfigurationText** ()
- void **setDetailsLayout** (int pValue)
- int **getDetailsLayout** ()
- void **setCurrentUserType** (int pValue)
- int **getCurrentUserType** ()
- bool **saveRecipeList** ()
- void **refreshRecipeList** ()
- void **refreshButton** ()
- void **userLevelChanged** ([userLevelTypes::userLevels](#) pValue)
- void **setConfigurationTypeProperty** (configurationTypesProperty pConfigurationType)
- configurationTypesProperty **getConfigurationTypeProperty** ()
- void **setDetailsLayoutProperty** (detailsLayoutProperty pDetailsLayout)
- detailsLayoutProperty **getDetailsLayoutProperty** ()
- void **setCurrentUserTypeProperty** (userTypesProperty pUserType)
- userTypesProperty **getCurrentUserTypeProperty** ()

Protected Attributes

- QLabel * **qLabelRecipeDescription**
- QComboBox * **qComboBoxRecipeList**
- QPushButton * **qPushButtonNew**
- QPushButton * **qPushButtonSave**
- QPushButton * **qPushButtonDelete**
- QPushButton * **qPushButtonApply**
- QPushButton * **qPushButtonRead**
- [QEConfiguredLayout](#) * **qEConfiguredLayoutRecipeFields**
- QDomDocument **document**
- QString **recipeFile**
- QString **filename**
- int **detailsLayout**
- int **currentUserType**

Properties

- QString **recipeDescription**
- bool **showRecipeList**
- bool **showNew**
- bool **showSave**
- bool **showDelete**
- bool **showApply**
- bool **showRead**
- bool **showFields**
- configurationTypesProperty **configurationType**
- QString **configurationFile**
- QString **configurationText**
- detailsLayoutProperty **detailsLayout**
- userTypesProperty **currentUserType**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QERecipe/QERecipe.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QERecipe/QERecipe.cpp

9.101 QERecordFieldName Class Reference

Static Public Member Functions

- static QString **recordName** (const QString &pvName)
- static QString **fieldName** (const QString &pvName)
- static QString **fieldPvName** (const QString &pvName, const QString &field)
- static QString **rtypePvName** (const QString &pvName)

- static bool **pvNamesValid** (const QString &pvName)
- static bool **extractPvName** (const QString &item, QString &pvName)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesUtilities.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesUtilities.cpp

9.102 QERecordSpec Class Reference

Public Member Functions

- **QERecordSpec** (const QString recordType)
- QString **getRecordType** ()
- QString **getFieldName** (const int index)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesUtilities.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesUtilities.cpp

9.103 QERecordSpecList Class Reference

Public Member Functions

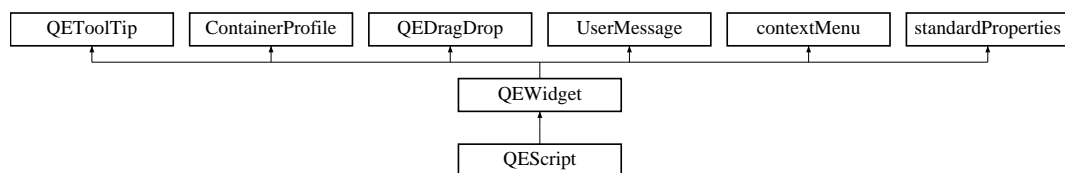
- [QERecordSpec](#) * **find** (const QString recordType)
- void **appendOrReplace** ([QERecordSpec](#) *recordSpec)
- bool **processRecordSpecFile** (const QString &filename)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesUtilities.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvPropertiesUtilities.cpp

9.104 QEScript Class Reference

Inheritance diagram for QEScript:



Public Types

- enum **detailsLayoutProperty** { **Top** = TOP, **Bottom** = BOTTOM, **Left** = LEFT, **Right** = RIGHT }

Signals

- void **selected** (QString pFilename)

Public Member Functions

- **QEScript** (QWidget *pParent=0)
- void **setDirectoryPath** (QString pValue)
- QString **getDirectoryPath** ()
- void **setShowDirectoryPath** (bool pValue)
- bool **getShowDirectoryPath** ()
- void **setShowDirectoryBrowser** (bool pValue)
- bool **getShowDirectoryBrowser** ()
- void **setShowRefresh** (bool pValue)
- bool **getShowRefresh** ()
- void **setShowColumnTime** (bool pValue)
- bool **getShowColumnTime** ()
- void **setShowColumnSize** (bool pValue)
- bool **getShowColumnSize** ()
- void **setShowColumnFilename** (bool pValue)
- bool **getShowColumnFilename** ()
- void **setShowFileExtension** (bool pValue)
- bool **getShowFileExtension** ()
- void **setFileFilter** (QString pValue)
- QString **getFileFilter** ()
- void **setDetailsLayout** (int pValue)
- int **getDetailsLayout** ()
- void **updateTable** ()
- void **setDetailsLayoutProperty** (detailsLayoutProperty pDetailsLayout)
- detailsLayoutProperty **getDetailsLayoutProperty** ()

Protected Attributes

- QLineEdit * **qlineEditDirectoryPath**
- QPushButton * **qPushButtonDirectoryBrowser**
- QPushButton * **qPushButtonRefresh**
- [_QTableWidgetScript](#) * **qTableWidgetScript**
- QString **fileFilter**
- bool **showFileExtension**
- int **detailsLayout**

Properties

- QString **directoryPath**
- bool **showDirectoryPath**
- bool **showDirectoryBrowser**
- bool **showRefresh**
- bool **showColumnTime**
- bool **showColumnSize**
- bool **showColumnFilename**
- detailsLayoutProperty **detailsLayout**

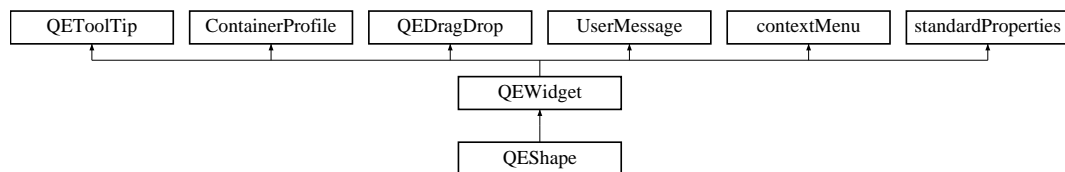
The documentation for this class was generated from the following files:

- /home/rhydera/epicsqt/trunk/framework/widgets/QEScript/QEScript.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEScript/QEScript.cpp

9.105 QEShape Class Reference

```
#include <QEShape.h>
```

Inheritance diagram for QEShape:



Public Types

- enum [shapeOptions](#) {
Line, Points, Polyline, Polygon,
Rect, RoundedRect, Ellipse, Arc,
Chord, Pie, Path }
- enum [animationOptions](#) {
Width, Height, X, Y,
Transparency, Rotation, ColourHue, ColourSaturation,
ColourValue, ColourIndex, Penwidth }
- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void requestEnabled (const bool &state)

Signals

- void [dbValueChanged1](#) (const qlonglong &out)
- void [dbValueChanged2](#) (const qlonglong &out)
- void [dbValueChanged3](#) (const qlonglong &out)
- void [dbValueChanged4](#) (const qlonglong &out)
- void [dbValueChanged5](#) (const qlonglong &out)
- void [dbValueChanged6](#) (const qlonglong &out)

Public Member Functions

- [QEShape](#) (QWidget *parent=0)
- [QEShape](#) (const QString &variableName, QWidget *parent=0)
- void [scaleBy](#) (const int m, const int d)
Scale the widgets my m/d.
- void [setAnimation](#) ([animationOptions](#) animation, const int index)
Access function for #animation' properties - refer to animation' properties for details.
- [animationOptions](#) [getAnimation](#) (const int index)
Access function for #animation' properties - refer to animation' properties for details.
- void [setScale](#) (const double scale, const int index)
Access function for #scale' properties - refer to scale' properties for details.
- double [getScale](#) (const int index)
Access function for #scale' properties - refer to scale' properties for details.
- void [setOffset](#) (const double offset, const int index)
Access function for #offset' properties - refer to offset' properties for details.
- double [getOffset](#) (const int index)
Access function for #offset' properties - refer to offset' properties for details.
- void [setBorder](#) (const bool border)
Access function for #border' properties - refer to border' properties for details.
- bool [getBorder](#) ()
Access function for #border' properties - refer to border' properties for details.
- void [setFill](#) (const bool fill)
Access function for #fill' properties - refer to fill' properties for details.
- bool [getFill](#) ()
Access function for #fill' properties - refer to fill' properties for details.
- void [setShape](#) ([shapeOptions](#) shape)
Access function for #shape' properties - refer to shape' properties for details.
- [shapeOptions](#) [getShape](#) ()
Access function for #shape' properties - refer to shape' properties for details.
- void [setNumPoints](#) (const unsigned int numPoints)
Access function for #number of points' properties - refer to number of points' properties for details.
- unsigned int [getNumPoints](#) ()

Access function for #number of points' properties - refer to number of points' properties for details.

- void [setOriginTranslation](#) (const QPoint originTranslation)

Access function for #origin translation' properties - refer to origin translation' properties for details.

- QPoint [getOriginTranslation](#) ()

Access function for #origin translation' properties - refer to origin translation' properties for details.

- void [setPoint](#) (const QPoint point, const int index)

Access function for #point' properties - refer to point' properties for details.

- QPoint [getPoint](#) (const int index)

Access function for #point' properties - refer to point' properties for details.

- void [setColor](#) (const QColor color, const int index)

Access function for #colour' properties - refer to colour' properties for details.

- QColor [getColor](#) (const int index)

Access function for #colour' properties - refer to colour' properties for details.

- void [setDrawBorder](#) (const bool drawBorder)

Access function for #draw border' properties - refer to draw border' properties for details.

- bool [getDrawBorder](#) ()

Access function for #draw border' properties - refer to draw border' properties for details.

- void [setLineWidth](#) (const unsigned int lineWidth)

Access function for #line width' properties - refer to line width' properties for details.

- unsigned int [getLineWidth](#) ()

Access function for #line width' properties - refer to line width' properties for details.

- void [setStartAngle](#) (const double startAngle)

Access function for #start angle' properties - refer to start angle' properties for details.

- double [getStartAngle](#) ()

Access function for #start angle' properties - refer to start angle' properties for details.

- void [setRotation](#) (const double rotation)

Access function for #rotation' properties - refer to rotation' properties for details.

- double [getRotation](#) ()

Access function for #rotation' properties - refer to rotation' properties for details.

- void [setArcLength](#) (const double arcLength)

Access function for #arc length' properties - refer to arc length' properties for details.

- double [getArcLength](#) ()

Access function for #arc length' properties - refer to arc length' properties for details.

- bool [isEnabled](#) () const

Access function for [enabled](#) property - refer to [enabled](#) property for details.

- void [setEnabled](#) (bool state)

Access function for [enabled](#) property - refer to [enabled](#) property for details.

- [UserLevels](#) [getUserLevelVisibilityProperty](#) ()

Access function for *userLevelVisibility* property - refer to *userLevelVisibility* property for details.

- void [setUserLevelVisibilityProperty](#) (UserLevels level)

Access function for *userLevelVisibility* property - refer to *userLevelVisibility* property for details.

- UserLevels [getUserLevelEnabledProperty](#) ()

Access function for *userLevelEnabled* property - refer to *userLevelEnabled* property for details.

- void [setUserLevelEnabledProperty](#) (UserLevels level)

Access function for *userLevelEnabled* property - refer to *userLevelEnabled* property for details.

Properties

- QString [variable1](#)
- QString [variable2](#)
- QString [variable3](#)
- QString [variable4](#)
- QString [variable5](#)
- QString [variable6](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- UserLevels [userLevelVisibility](#)
- UserLevels [userLevelEnabled](#)
- bool [displayAlarmState](#)
- animationOptions [animation1](#)
- animationOptions [animation2](#)
- animationOptions [animation3](#)
- animationOptions [animation4](#)
- animationOptions [animation5](#)
- animationOptions [animation6](#)
- double [scale1](#)

Scale factor applied to data from the 1st variable before it is used to animate the shape.

- double [scale2](#)
- double [scale3](#)
- double [scale4](#)
- double [scale5](#)
- double [scale6](#)
- double [offset1](#)

- double [offset2](#)
- double [offset3](#)
- double [offset4](#)
- double [offset5](#)
- double [offset6](#)
- QPoint [point1](#)
- QPoint [point2](#)
- QPoint [point3](#)
- QPoint [point4](#)
- QPoint [point5](#)
- QPoint [point6](#)
- QPoint [point7](#)
- QPoint [point8](#)
- QPoint [point9](#)
- QPoint [point10](#)
- QColor [color1](#)
- QColor [color2](#)
- QColor [color3](#)
- QColor [color4](#)
- QColor [color5](#)
- QColor [color6](#)
- QColor [color7](#)
- QColor [color8](#)
- QColor [color9](#)
- QColor [color10](#)

9.105.1 Detailed Description

This class is a EPICS aware shape widget based on the Qt widget. One of several shapes can be drawn within the widget, and up to 6 variables can be used to animate various attributes of the shape. For example to represent beam positino and size, an ellipse can be drawn with four variables animating its vertcal and horizontal size and position. It is tightly integrated with the base class [QEWidget](#) which provides generic support such as macro substitutions, drag/drop, and standard properties.

9.105.2 Member Enumeration Documentation

9.105.2.1 enum QEShape::animationOptions

Options for how a variable will animate the shape.

9.105.2.2 enum QEShape::shapeOptions

Options for the type of shape.

9.105.2.3 enum QEShape::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and [userLevel](#) enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.105.3 Constructor & Destructor Documentation

9.105.3.1 QEShape::QEShape (QWidget * parent = 0)

Create without a variable. Use [setVariableNameProperty\(\)](#) and [setSubstitutionsProperty\(\)](#) to define a variable and, optionally, macro substitutions later.

9.105.3.2 QEShape::QEShape (const QString & variableName, QWidget * parent = 0)

Create with a single variable. (Note, the [QEShape](#) widget can use up to 6 variables) A connection is automatically established. If macro substitutions are required, create without a variable and set the variable and macro substitutions after creation.

9.105.4 Member Function Documentation

9.105.4.1 void QEShape::dbValueChanged1 (const qlonglong & out) [signal]

Sent when the widget is updated following a data change for the first variable Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.105.4.2 void QEShape::dbValueChanged2 (const qlonglong & out) [signal]

Sent when the widget is updated following a data change for the second variable Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.105.4.3 void QEShape::dbValueChanged3 (const qlonglong & out) [signal]

Sent when the widget is updated following a data change for the third variable Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.105.4.4 void QEShape::dbValueChanged4 (const qlonglong & out) [signal]

Sent when the widget is updated following a data change for the fourth variable Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.105.4.5 void QEShape::dbValueChanged5 (const qlonglong & out) [signal]

Sent when the widget is updated following a data change for the fifth variable Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.105.4.6 void QEShape::dbValueChanged6 (const qlonglong & out) [signal]

Sent when the widget is updated following a data change for the sixth variable Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.105.4.7 void QEShape::requestEnabled (const bool & state) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.105.5 Property Documentation**9.105.5.1** bool QEShape::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.105.5.2 animationOptions QEShape::animation1 [read, write]

Animation to be effected by the 1st variable. This is used to select what the effect changing data for the 1st variable will have on the shape.

9.105.5.3 animationOptions QEShape::animation2 [read, write]

Animation to be effected by the 2nd variable. This is used to select what the effect changing data for the 2nd variable will have on the shape.

9.105.5.4 animationOptions QEShape::animation3 [read, write]

Animation to be effected by the 3rd variable. This is used to select what the effect changing data for the 3rd variable will have on the shape.

9.105.5.5 animationOptions QEShape::animation4 [read, write]

Animation to be effected by the 4th variable. This is used to select what the effect changing data for the 4th variable will have on the shape.

9.105.5.6 animationOptions QEShape::animation5 [read, write]

Animation to be effected by the 5th variable. This is used to select what the effect changing data for the 5th variable will have on the shape.

9.105.5.7 animationOptions QEShape::animation6 [read, write]

Animation to be effected by the 6th variable. This is used to select what the effect changing data for the 6th variable will have on the shape.

9.105.5.8 QColor QEShape::color1 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.9 QColor QEShape::color10 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.10 QColor QEShape::color2 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.11 QColor QEShape::color3 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.12 QColor QEShape::color4 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.13 QColor QEShape::color5 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.14 QColor QEShape::color6 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.15 QColor QEShape::color7 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.16 QColor QEShape::color8 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.17 QColor QEShape::color9 [read, write]

Used by the color animation to determine the color based on a data value. The scaled and offset data is used as an index to select color properties 'color1' to 'color10'.

9.105.5.18 bool QEShape::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.105.5.19 bool QEShape::enabled [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.105.5.20 unsigned QEShape::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

The number of points to use when drawing shapes that are defined by a variable number of points, such as polyline, polygon, path, and series of points.

Sets the width of the pen. Used for the following shapes: Line, Points, Polyline, Polygon, Rect, RoundedRect, Ellipse, Arc, Chord, Pie, Path

9.105.5.21 double QEShape::offset1 [read, write]

Offset applied to data from the 1st variable before it is used to animate the shape

9.105.5.22 double QEShape::offset2 [read, write]

Offset applied to data from the 2nd variable before it is used to animate the shape

9.105.5.23 double QEShape::offset3 [read, write]

Offset applied to data from the 3rd variable before it is used to animate the shape

9.105.5.24 double QEShape::offset4 [read, write]

Offset applied to data from the 4th variable before it is used to animate the shape

9.105.5.25 double QEShape::offset5 [read, write]

Offset applied to data from the 5th variable before it is used to animate the shape

9.105.5.26 double QEShape::offset6 [read, write]

Offset applied to data from the 6th variable before it is used to animate the shape

9.105.5.27 QPoint QEShape::point1 [read, write]

1st coordinate used when drawing the shape. Used for the following shapes: Line, Points, Polyline, Polygon, Rect, RoundedRect, Ellipse, Arc, Chord, Pie, Path, Text, QPixmap

9.105.5.28 QPoint QEShape::point10 [read, write]

10th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.29 QPoint QEShape::point2 [read, write]

2nd coordinate used when drawing the shape. Used for the following shapes: Line, Points, Polyline, Polygon, Rect, RoundedRect, Ellipse, Arc, Chord, Pie, Path, Pixmap

9.105.5.30 QPoint QEShape::point3 [read, write]

3rd coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.31 QPoint QEShape::point4 [read, write]

4th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.32 QPoint QEShape::point5 [read, write]

5th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.33 QPoint QEShape::point6 [read, write]

6th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.34 QPoint QEShape::point7 [read, write]

7th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.35 QPoint QEShape::point8 [read, write]

8th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.36 QPoint QEShape::point9 [read, write]

9th coordinate used when drawing the shape. Used for the following shapes: Points, Polyline, Polygon, Path

9.105.5.37 `double QEShape::scale2` [read, write]

Scale factor applied to data from the 2nd variable before it is used to animate the shape

9.105.5.38 `double QEShape::scale3` [read, write]

Scale factor applied to data from the 3rd variable before it is used to animate the shape

9.105.5.39 `double QEShape::scale4` [read, write]

Scale factor applied to data from the 4th variable before it is used to animate the shape

9.105.5.40 `double QEShape::scale5` [read, write]

Scale factor applied to data from the 5th variable before it is used to animate the shape

9.105.5.41 `double QEShape::scale6` [read, write]

Scale factor applied to data from the 6th variable before it is used to animate the shape

9.105.5.42 `UserLevels QEShape::userLevelEnabled` [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()`. Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.105.5.43 `QString QEShape::userLevelEngineerStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red'. This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.105.5.44 QString QEShape::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.105.5.45 QString QEShape::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.105.5.46 UserLevels QEShape::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel() Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.105.5.47 QString QEShape::variable1 [read, write]

EPICS variable name (CA PV). This variable is read and used to animate an attribute of the shape. The value read is first scaled and offset by properties scale1 and offset1 then the attribute selected for animation is selected by the property animation1.

9.105.5.48 QString QEShape::variable2 [read, write]

EPICS variable name (CA PV). This variable is read and used to animate an attribute of the shape. The value read is first scaled and offset by properties scale2 and offset2 then the attribute selected for animation is selected by the property animation2.

9.105.5.49 QString QEShape::variable3 [read, write]

EPICS variable name (CA PV). This variable is read and used to animate an attribute of the shape. The value read is first scaled and offset by properties scale3 and offset3 then the attribute selected for animation is selected by the property animation3.

9.105.5.50 QString QEShape::variable4 [read, write]

EPICS variable name (CA PV). This variable is read and used to animate an attribute of the shape. The value read is first scaled and offset by properties scale4 and offset4 then the attribute selected for animation is selected by the property animation4.

9.105.5.51 QString QEShape::variable5 [read, write]

EPICS variable name (CA PV). This variable is read and used to animate an attribute of the shape. The value read is first scaled and offset by properties scale5 and offset5 then the attribute selected for animation is selected by the property animation5.

9.105.5.52 QString QEShape::variable6 [read, write]

EPICS variable name (CA PV). This variable is read and used to animate an attribute of the shape. The value read is first scaled and offset by properties scale6 and offset6 then the attribute selected for animation is selected by the property animation6.

9.105.5.53 bool QEShape::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.105.5.54 QString QEShape::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'SAMPLE=SAM1, NAME = "Ref foil"' These substitutions are applied to all the variable names.

9.105.5.55 bool QEShape::visible [read, write]

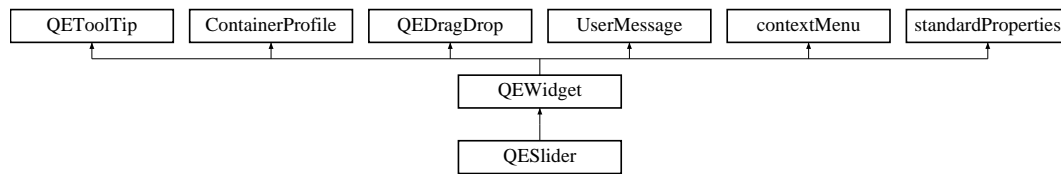
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEShape/QEShape.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEShape/QEShape.cpp

9.106 QESlider Class Reference

Inheritance diagram for QESlider:



Public Types

- enum **UserLevels** { **User** = userLevelTypes::USERLEVEL_USER, **Scientist** = userLevelTypes::USERLEVEL_SCIENTIST, **Engineer** = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void **requestEnabled** (const bool &state)

Signals

- void **dbValueChanged** (const qlonglong &out)

Public Member Functions

- QESlider** (QWidget *parent=0)
- QESlider** (const QString &variableName, QWidget *parent=0)
- void **setWriteOnChange** (bool **writeOnChange**)
- bool **getWriteOnChange** ()
- void **setSubscribe** (bool subscribe)
- bool **getSubscribe** ()
- void **setScale** (double scaleIn)
- double **getScale** ()
- void **setOffset** (double offsetIn)
- double **getOffset** ()
- bool **isEnabled** () const
Access function for **enabled** property - refer to **enabled** property for details.
- void **setEnabled** (bool state)
Access function for **enabled** property - refer to **enabled** property for details.
- UserLevels** **getUserLevelVisibilityProperty** ()
Access function for **userLevelVisibility** property - refer to **userLevelVisibility** property for details.
- void **setUserLevelVisibilityProperty** (**UserLevels** level)
Access function for **userLevelVisibility** property - refer to **userLevelVisibility** property for details.
- UserLevels** **getUserLevelEnabledProperty** ()

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

- void [setUserLevelEnabledProperty](#) (UserLevels level)

Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

Protected Member Functions

- void **establishConnection** (unsigned int variableIndex)
- void **dragEnterEvent** (QDragEnterEvent *event)
- void **dropEvent** (QDropEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()

Protected Attributes

- [QEFloatingFormatting](#) **floatingFormatting**
- bool [writeOnChange](#)

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [subscribe](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int
- QString [userLevelUserStyle](#)
- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- UserLevels [userLevelVisibility](#)
- UserLevels [userLevelEnabled](#)
- bool [displayAlarmState](#)

9.106.1 Member Enumeration Documentation

9.106.1.1 enum QESlider::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and userLevel enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.106.2 Member Function Documentation**9.106.2.1 void QESlider::dbValueChanged (const qlonglong & out) [signal]**

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.106.2.2 void QESlider::requestEnabled (const bool & state) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.106.3 Member Data Documentation**9.106.3.1 bool QESlider::writeOnChange [read, write, protected]**

Sets if this widget writes any changes as the user moves the slider (the QSlider 'valueChanged' signal is emitted). Default is 'true' (writes any changes when the QSlider 'valueChanged' signal is emitted).

9.106.4 Property Documentation**9.106.4.1 bool QESlider::allowDrop [read, write]**

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.106.4.2 bool QESlider::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.106.4.3 `bool QESlider::enabled` [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.106.4.4 `unsigned QESlider::int` [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.106.4.5 `bool QESlider::subscribe` [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEWidget](#).

9.106.4.6 `UserLevels QESlider::userLevelEnabled` [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.106.4.7 `QString QESlider::userLevelEngineerStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.106.4.8 `QString QESlider::userLevelScientistStyle` [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager

class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.106.4.9 QString QESlider::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.106.4.10 UserLevels QESlider::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.106.4.11 QString QESlider::variable [read, write]

EPICS variable name (CA PV)

9.106.4.12 bool QESlider::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.106.4.13 QString QESlider::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME = "My Pump"' These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.106.4.14 bool QESlider::visible [read, write]

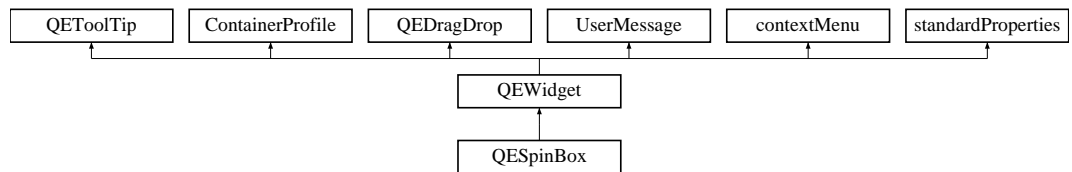
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QESlider/QESlider.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QESlider/QESlider.cpp

9.107 QESpinBox Class Reference

Inheritance diagram for QESpinBox:



Public Types

- enum [UserLevels](#) { [User](#) = userLevelTypes::USERLEVEL_USER, [Scientist](#) = userLevelTypes::USERLEVEL_SCIENTIST, [Engineer](#) = userLevelTypes::USERLEVEL_ENGINEER }

Public Slots

- void [requestEnabled](#) (const bool &state)

Signals

- void [dbValueChanged](#) (const double &out)
- void [userChange](#) (const QString &oldValue, const QString &newValue, const QString &lastValue)

Internal use only. Used by [QEConfiguredLayout](#) to be notified when one of its widgets has written something.

Public Member Functions

- **QESpinBox** (QWidget *parent=0)
- **QESpinBox** (const QString &variableName, QWidget *parent=0)
- void **setWriteOnChange** (bool writeOnChangeIn)
- bool **getWriteOnChange** ()
- void **setSubscribe** (bool subscribe)
- bool **getSubscribe** ()
- void **setAddUnitsAsSuffix** (bool addUnitsAsSuffixIn)
- bool **getAddUnitsAsSuffix** ()

- void **setUseDbPrecisionForDecimals** (bool useDbPrecisionForDecimalIn)
- bool **getUseDbPrecisionForDecimals** ()
- bool **isEnabled** () const
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- void **setEnabled** (bool state)
Access function for [enabled](#) property - refer to [enabled](#) property for details.
- [UserLevels](#) **getUserLevelVisibilityProperty** ()
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- void **setUserLevelVisibilityProperty** ([UserLevels](#) level)
Access function for [userLevelVisibility](#) property - refer to [userLevelVisibility](#) property for details.
- [UserLevels](#) **getUserLevelEnabledProperty** ()
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.
- void **setUserLevelEnabledProperty** ([UserLevels](#) level)
Access function for [userLevelEnabled](#) property - refer to [userLevelEnabled](#) property for details.

Protected Member Functions

- void **establishConnection** (unsigned int variableIndex)
- void **dragEnterEvent** (QDragEnterEvent *event)
- void **dropEvent** (QDropEvent *event)
- void **setDrop** (QVariant drop)
- QVariant **getDrop** ()

Protected Attributes

- [QEFloatingFormatting](#) **floatingFormatting**
- bool **writeOnChange**
- bool **addUnitsAsSuffix**
- bool **useDbPrecisionForDecimal**

Properties

- QString [variable](#)
- QString [variableSubstitutions](#)
- bool [variableAsToolTip](#)
- bool [enabled](#)
- bool [allowDrop](#)
- bool [visible](#)
- unsigned int [int](#)
- QString [userLevelUserStyle](#)

- QString [userLevelScientistStyle](#)
- QString [userLevelEngineerStyle](#)
- [UserLevels](#) [userLevelVisibility](#)
- [UserLevels](#) [userLevelEnabled](#)
- bool [displayAlarmState](#)
- bool [subscribe](#)
- bool **useDbPrecision**
- bool **addUnits**

9.107.1 Member Enumeration Documentation

9.107.1.1 enum QESpinBox::UserLevels

User friendly enumerations for [userLevelVisibility](#) and [userLevelEnabled](#) properties - refer to [userLevelVisibility](#) and [userLevelEnabled](#) properties and userLevel enumeration for details.

Enumerator:

User Refer to USERLEVEL_USER for details.

Scientist Refer to USERLEVEL_SCIENTIST for details.

Engineer Refer to USERLEVEL_ENGINEER for details.

9.107.2 Member Function Documentation

9.107.2.1 void QESpinBox::dbValueChanged (const double & *out*) [signal]

Sent when the widget is updated following a data change Can be used to pass on EPICS data (as presented in this widget) to other widgets. For example a QList widget could log updates from this widget.

9.107.2.2 void QESpinBox::requestEnabled (const bool & *state*) [inline, slot]

Similar to standard setEnabled slot, but allows QE widget to determine if the widget remains disabled due to invalid data. If disabled due to invalid data, a request to enable the widget will be honoured when the data is no longer invalid.

9.107.3 Property Documentation

9.107.3.1 bool QESpinBox::allowDrop [read, write]

Allow drag/drops operations to this widget. Default is false. Any dropped text will be used as a new variable name.

Reimplemented from [QEDragDrop](#).

9.107.3.2 bool QESpinBox::displayAlarmState [read, write]

If set (default) widget will indicate the alarm state of any variable data is displaying. Typically the background colour is set to indicate the alarm state. Note, this property is included in the set of standard properties as it applies to most widgets. It will do nothing for widgets that don't display data.

Reimplemented from [standardProperties](#).

9.107.3.3 bool QESpinBox::enabled [read, write]

Set the preferred 'enabled' state. Default is true. This property is copied to the standard Qt 'enabled' property if the data being displayed is valid. If the data being displayed is invalid the standard Qt 'enabled' property will always be set to false to indicate invalid data. The value of this property will only be copied to the standard Qt 'enabled' property once data is valid.

9.107.3.4 unsigned QESpinBox::int [read, write]

Set the ID used by the message filtering system. Default is zero. Widgets or applications that use messages from the framework have the option of filtering on this ID. For example, by using a unique message source ID a [QELog](#) widget may be set up to only log messages from a select set of widgets.

9.107.3.5 bool QESpinBox::subscribe [read, write]

Sets if this widget subscribes for data updates and displays current data. Default is 'true' (subscribes for and displays data updates)

Reimplemented from [QEWidget](#).

9.107.3.6 UserLevels QESpinBox::userLevelEnabled [read, write]

Lowest user level at which the widget is enabled. Default is 'User'. Used when designing GUIs that allow access to more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through `setUserLevel()` Widgets that are always accessible should be visible at 'User'. Widgets that are only accessible to scientists managing the facility should be visible at 'Scientist'. Widgets that are only accessible to engineers maintaining the facility should be visible at 'Engineer'.

9.107.3.7 QString QESpinBox::userLevelEngineerStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Engineer' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the `styleManager` class. Refer to the `styleManager` class for details about how this Style Sheet string

will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.107.3.8 QString QESpinBox::userLevelScientistStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'Scientist' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.107.3.9 QString QESpinBox::userLevelUserStyle [read, write]

Style Sheet string to be applied when the widget is displayed in 'User' mode. Default is an empty string. The syntax is the standard Qt Style Sheet syntax. For example, 'background-color: red' This Style Sheet string will be applied by the styleManager class. Refer to the styleManager class for details about how this Style Sheet string will be merged with any pre-existing Style Sheet string and any Style Sheet strings generated during the display of data.

9.107.3.10 UserLevels QESpinBox::userLevelVisibility [read, write]

Lowest user level at which the widget is visible. Default is 'User'. Used when designing GUIs that display more and more detail according to the user mode. The user mode is set application wide through the [QELogin](#) widget, or programatically through setUserLevel() Widgets that are always visible should be visible at 'User'. Widgets that are only used by scientists managing the facility should be visible at 'Scientist'. Widgets that are only used by engineers maintaining the facility should be visible at 'Engineer'.

9.107.3.11 QString QESpinBox::variable [read, write]

EPICS variable name (CA PV)

9.107.3.12 bool QESpinBox::variableAsToolTip [read, write]

Use the variable as the tool tip. Default is true. Tool tip property will be overwritten by the variable name.

Reimplemented from [QEToolTip](#).

9.107.3.13 QString QESpinBox::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[, NAME2=VALUE2... Values may be quoted strings. For example, 'PUMP=PMP3, NAME

= "My Pump" These substitutions are applied to variable names for all QE widgets. In some widgets are also used for other purposes.

9.107.3.14 bool QESpinBox::visible [read, write]

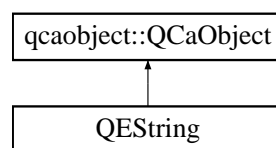
Display the widget. Default is true. Setting this property false is usefull if widget is only used to provide a signal - for example, when supplying data to a [QELink](#) widget. Note, when false the widget will still be visible in Qt Designer.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QESpinBox/QESpinBox.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QESpinBox/QESpinBox.cpp

9.108 QString Class Reference

Inheritance diagram for QString:



Public Slots

- void **writeString** (const QString &data)

Signals

- void **stringConnectionChanged** ([QCaConnectionInfo](#) &connectionInfo, const unsigned int &variableIndex)
- void **stringChanged** (const QString &value, [QCaAlarmInfo](#) &alarmInfo, [QCaDateTime](#) &timeStamp, const unsigned int &variableIndex)

Public Member Functions

- **QString** (QString recordName, QObject *eventObject, [QStringFormatting](#) *stringFormattingIn, unsigned int variableIndexIn)
- **QString** (QString recordName, QObject *eventObject, [QStringFormatting](#) *stringFormattingIn, unsigned int variableIndexIn, [UserMessage](#) *userMessageIn)
- bool **writeString** (const QString &data, QString &message)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QEString.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QEString.cpp

9.109 QEStringFormatting Class Reference

Public Types

- enum [formats](#) {
[FORMAT_DEFAULT](#), [FORMAT_FLOATING](#), [FORMAT_INTEGER](#), [FORMAT_UNSIGNEDINTEGER](#),
[FORMAT_TIME](#), [FORMAT_LOCAL_ENUMERATE](#), [FORMAT_STRING](#) }
- enum [notations](#) { [NOTATION_FIXED](#) = QTextStream::FixedNotation, [NOTATION_SCIENTIFIC](#) = QTextStream::ScientificNotation, [NOTATION_AUTOMATIC](#) = QTextStream::SmartNotation }
- enum [arrayActions](#) { [APPEND](#), [ASCII](#), [INDEX](#) }

Public Member Functions

- QString **formatString** (const QVariant &value)
- QVariant **formatValue** (const QString &text, bool &ok)
- void **setDbEgu** (QString egu)
- void **setDbEnumerations** (QStringList enumerations)
- void **setDbPrecision** (unsigned int dbPrecisionIn)
- void **setPrecision** (int precision)
- void **setUseDbPrecision** (bool useDbPrecision)
- void **setLeadingZero** (bool leadingZero)
- void **setTrailingZeros** (bool trailingZeros)
- void **setFormat** ([formats](#) format)
- void **setRadix** (unsigned int radix)
- void **setNotation** ([notations](#) notation)
- void **setArrayAction** ([arrayActions](#) arrayActionIn)
- void **setArrayIndex** (unsigned int arrayIndexIn)
- void **setAddUnits** (bool addUnits)
- void **setLocalEnumeration** (QString localEnumerationIn)
- int **getPrecision** ()
- bool **getUseDbPrecision** ()
- bool **getLeadingZero** ()
- bool **getTrailingZeros** ()
- [formats](#) **getFormat** ()
- unsigned int **getRadix** ()
- [notations](#) **getNotation** ()
- [arrayActions](#) **getArrayAction** ()
- unsigned int **getArrayIndex** ()
- bool **getAddUnits** ()
- QString **getLocalEnumeration** ()

9.109.1 Member Enumeration Documentation

9.109.1.1 enum QCStringFormatting::arrayActions

What action to take when formatting array data

Enumerator:

APPEND Interpret each element in the array as an unsigned integer and append string representations of each element from the array with a space in between each.

ASCII Interpret each element from the array as a character in a string. Translate all non printing characters to '?' except for trailing zeros (ignore them)

INDEX Interpret the element selected by setArrayIndex() as an unsigned integer.

9.109.1.2 enum QCStringFormatting::formats

Formatting options

Enumerator:

FORMAT_DEFAULT Format according to the EPICS database record type.

FORMAT_FLOATING Format as a floating point number.

FORMAT_INTEGER Format as an integer.

FORMAT_UNSIGNEDINTEGER Format as an unsigned integer.

FORMAT_TIME Format as a time.

FORMAT_LOCAL_ENUMERATE Format as a selection from the local enumerations set by setLocalEnumeration()

FORMAT_STRING Format as a string.

9.109.1.3 enum QCStringFormatting::notations

Notations when formatting a floating point number

Enumerator:

NOTATION_FIXED Standard floating point 123456.789.

NOTATION_SCIENTIFIC Scientific representation 1.23456789e6.

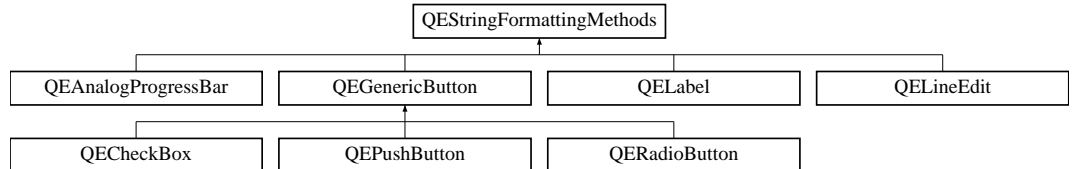
NOTATION_AUTOMATIC Automatic choice of standard or scientific notation.

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCStringFormatting.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCStringFormatting.cpp

9.110 QStringFormattingMethods Class Reference

Inheritance diagram for QStringFormattingMethods:



Public Member Functions

- virtual void **stringFormattingChange** ()=0
- void **setPrecision** (int precision)
- int **getPrecision** ()
- void **setUseDbPrecision** (bool useDbPrecision)
- bool **getUseDbPrecision** ()
- void **setLeadingZero** (bool leadingZero)
- bool **getLeadingZero** ()
- void **setTrailingZeros** (bool trailingZeros)
- bool **getTrailingZeros** ()
- void **setAddUnits** (bool addUnits)
- bool **getAddUnits** ()
- void **setLocalEnumeration** (QString localEnumeration)
- QString **getLocalEnumeration** ()
- void **setFormat** (QStringFormatting::formats format)
- QStringFormatting::formats **getFormat** ()
- void **setRadix** (unsigned int radix)
- unsigned int **getRadix** ()
- void **setNotation** (QStringFormatting::notations notation)
- QStringFormatting::notations **getNotation** ()
- void **setArrayAction** (QStringFormatting::arrayActions arrayAction)
- QStringFormatting::arrayActions **getArrayAction** ()
- void **setArrayIndex** (unsigned int arrayIndex)
- unsigned int **getArrayIndex** ()

Protected Attributes

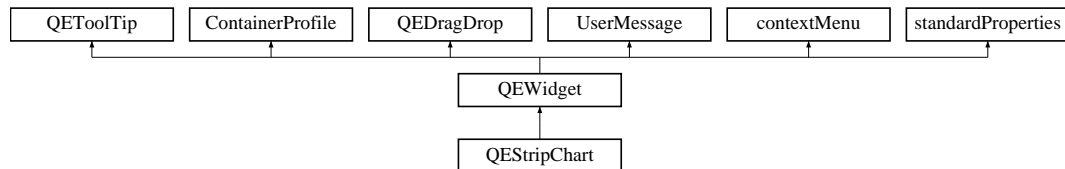
- [QStringFormatting](#) **stringFormatting**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/QStringFormattingMethods.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/QStringFormattingMethods.cpp

9.111 QEStripChart Class Reference

Inheritance diagram for QEStripChart:



Classes

- class [PrivateData](#)

Public Types

- enum **Constants** { **NUMBER_OF_PVS** = 12 }

Public Member Functions

- **QEStripChart** (QWidget *parent=0)
- QSize **sizeHint** () const
- QDateTime **getStartDateTime** ()
- QDateTime **getEndDateTime** ()
- void **setEndDateTime** (QDateTime endDateTimeIn)
- int **getDuration** ()
- void **setDuration** (int durationIn)
- double **getYMinimum** ()
- void **setYMinimum** (const double yMinimumIn)
- double **getYMaximum** ()
- void **setYMaximum** (const double yMaximumIn)
- void **setYRange** (const double yMinimumIn, const double yMaximumIn)
- void **plotData** ()
- void **addToPredefinedList** (const QString &pvName)
- QString **getPredefinedItem** (int i)

Protected Member Functions

- void **setup** ()
- [qcaobject::QCaObject](#) * **createQcalItem** (unsigned int variableIndex)
- void **establishConnection** (unsigned int variableIndex)
- void **saveConfiguration** ([PersistenceManager](#) *pm)
- void **restoreConfiguration** ([PersistenceManager](#) *pm, [restorePhases](#) restorePhase)

Properties

- int **duration**
- double **yMinimum**
- double **yMaximum**
- QString **variable1**
- QString **variable2**
- QString **variable3**
- QString **variable4**
- QString **variable5**
- QString **variable6**
- QString **variable7**
- QString **variable8**
- QString **variable9**
- QString **variable10**
- QString **variable11**
- QString **variable12**
- QString [variableSubstitutions](#)
- QColor **colour1**
- QColor **colour2**
- QColor **colour3**
- QColor **colour4**
- QColor **colour5**
- QColor **colour6**
- QColor **colour7**
- QColor **colour8**
- QColor **colour9**
- QColor **colour10**
- QColor **colour11**
- QColor **colour12**

Friends

- class **PrivateData**
- class [QEStripChartItem](#)

9.111.1 Member Function Documentation

9.111.1.1 void [QEStripChart::restoreConfiguration](#) ([PersistenceManager](#) *,
restorePhases) [[protected](#), [virtual](#)]

Service a request to restore the QE widget's configuration. A QE widget recover any configuration details from the [PersistenceManager](#). For example, a [QEStripChart](#) may restore the variables being plotted. Many QE widgets do not have any persistent data requirements and do not implement this method. This is called twice with an incrementing `restorePhase`. Most widgets will miss the first call as they don't exist yet (they are created as part of the first phase)

Reimplemented from [QEWidget](#).

9.111.1.2 void QEStripChart::saveConfiguration (PersistenceManager *)
[protected, virtual]

Service a request to save the QE widget's current configuration. A widget may save any configuration details through the [PersistenceManager](#). For example, a [QEStripChart](#) may save the variables being plotted. Many QE widgets do not have any persistent data requirements and do not implement this method.

Reimplemented from [QEWidget](#).

9.111.2 Property Documentation

9.111.2.1 QString QEStripChart::variableSubstitutions [read, write]

Macro substitutions. The default is no substitutions. The format is NAME1=VALUE1[,] NAME2=VALUE2... Values may be quoted strings. For example, 'SAMPLE=SAM1, NAME = "Ref foil"' These substitutions are applied to all the variable names.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChart.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChart.cpp

9.112 QEStripChartAdjustPVDialo Class Reference

Public Member Functions

- **QEStripChartAdjustPVDialo** (QWidget *parent=0)
- void **setValueScaling** (const [ValueScaling](#) &valueScale)
- [ValueScaling](#) **getValueScaling** ()
- void **setSupport** (const double min, const double max, const [TrackRange](#) &lo-prHopr, const [TrackRange](#) &plotted, const [TrackRange](#) &buffered)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartAdjustPVDialo.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartAdjustPVDialo.cpp

9.113 QEStripChartContextMenu Class Reference

Public Types

- enum **Options** {
 SCCM_NONE = contextMenu::CM_SPECIFIC_WIDGETS_START_HERE, **SCCM_READ_ARCHIVE**, **SCCM_SCALE_CHART_AUTO**, **SCCM_SCALE_CHART_PLOTTED**,

```

SCCM_SCALE_CHART_BUFFERED, SCCM_SCALE_PV_RESET, SCCM_SCALE_ -
PV_GENERAL, SCCM_SCALE_PV_AUTO,
SCCM_SCALE_PV_PLOTTED, SCCM_SCALE_PV_BUFFERED, SCCM_SCALE_ -
PV_CENTRE, SCCM_PLOT_RECTANGULAR,
SCCM_PLOT_SMOOTH, SCCM_PLOT_SERVER_TIME, SCCM_PLOT_CLIENT_ -
TIME, SCCM_ARCH_LINEAR,
SCCM_ARCH_PLOTBIN, SCCM_ARCH_RAW, SCCM_ARCH_SHEET, SCCM_ -
ARCH_AVERAGED,
SCCM_LINE_HIDE, SCCM_LINE_REGULAR, SCCM_LINE_BOLD, SCCM_LINE_ -
COLOUR,
SCCM_PV_EDIT_NAME, SCCM_ADD_TO_PREDEFINED, SCCM_PV_WRITE_ -
TRACE, SCCM_PV_STATS,
SCCM_PV_CLEAR, SCCM_PV_ADD_NAME, SCCM_PV_PASTE_NAME, SCCM_ -
PREDEFINED_01,
SCCM_PREDEFINED_02, SCCM_PREDEFINED_03, SCCM_PREDEFINED_ -
04, SCCM_PREDEFINED_05,
SCCM_PREDEFINED_06, SCCM_PREDEFINED_07, SCCM_PREDEFINED_ -
08, SCCM_PREDEFINED_09,
SCCM_PREDEFINED_10, SCCM_LAST }

```

Signals

- void **contextMenuSelected** (const unsigned int, const QStripChartContextMenu::Options)

Public Member Functions

- [QStripChartContextMenu](#) (bool inUse, QWidget *parent=0)
- void **setPredefinedNames** (const QStringList &pvList)
- QAction * **exec** (const unsigned int slot, const QPoint &pos, QAction *at=0)

Static Public Attributes

- static const int **numberPrefefinedItems** = 10

9.113.1 Constructor & Destructor Documentation

9.113.1.1 **QStripChartContextMenu::QStripChartContextMenu** (bool *inUse*, QWidget *
parent = 0) [explicit]

Construct strip chart item context menu. This menu item creates all required sub menu items. *inUse* set true for an inuse slot, i.e. already has a PV allocated. *inUse* set false for an empty slot.

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartContextMenu.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartContextMenu.cpp`

9.114 QEStripChartItem Class Reference

Classes

- class [PrivateData](#)

Public Slots

- void **setColour** (const QColor &colour)

Signals

- void **customContextMenuRequested** (const unsigned int, const QPoint &)

Public Member Functions

- **QEStripChartItem** ([QEStripChart](#) *chart, QLabel *pvName, [QELabel](#) *caLabel, unsigned int slot)
- bool **isInUse** ()
- void **setPvName** (QString pvName, QString substitutions)
- QString **getPvName** ()
- void **setScaling** (const double d, const double m, const double c)
- void **getScaling** (double &d, double &m, double &c)
- bool **isScaled** ()
- QColor **getColour** ()
- [TrackRange](#) **getLoprHopr** (bool doScale)
- [TrackRange](#) **getDisplayedMinMax** (bool doScale)
- [TrackRange](#) **getBufferedMinMax** (bool doScale)
- void **readArchive** ()
- void **normalise** ()
- void **plotData** (const double timeScale, const QEStripChartNames::YScaleModes yScaleMode)
- void **contextMenuSelected** (const QEStripChartContextMenu::Options option)
- void **saveConfiguration** ([PMElement](#) &parentElement)
- void **restoreConfiguration** ([PMElement](#) &parentElement)

Public Attributes

- [QCaVariableNamePropertyManager](#) **pvNamePropertyManager**

Protected Member Functions

- bool **eventFilter** (QObject *obj, QEvent *event)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartItem.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartItem.cpp

9.115 QEStripChartItemDialog Class Reference

Public Member Functions

- **QEStripChartItemDialog** (QWidget *parent=0)
- void **setPvName** (QString pvNameIn)
- QString **getPvName** ()
- bool **isClear** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartItemDialog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartItemDialog.cpp

9.116 QEStripChartNames Class Reference

Public Types

- enum **ChartTimeModes** { **tmRealTime**, **tmPaused**, **tmHistorical** }
- enum **ChartYRanges** {
 manual, **operatingRange**, **plotted**, **buffered**,
 dynamic, **normalised** }
- enum **PlayModes** {
 play, **pause**, **forward**, **backward**,
 selectTimes }
- enum **StateModes** { **previous**, **next** }
- enum **VideoModes** { **normal**, **reverse** }
- enum **YScaleModes** { **linear**, **log** }

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartNames.h

9.117 QEStripChartRangeDialog Class Reference

Public Member Functions

- **QEStripChartRangeDialog** (QWidget *parent=0)
- void **setRange** (const double min, const double max)
- double **getMinimum** ()
- double **getMaximum** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartRangeDialog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartRangeDialog.cpp

9.118 QEStripChartTimeDialog Class Reference

Public Member Functions

- **QEStripChartTimeDialog** (QWidget *parent=0)
- void **setMaximumDateTime** (QDateTime datetime)
- void **setStartDateTime** (QDateTime datetime)
- QDateTime **getStartDateTime** ()
- void **setEndDateTime** (QDateTime datetime)
- QDateTime **getEndDateTime** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartTimeDialog.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartTimeDialog.cpp

9.119 QEStripChartToolBar Class Reference

This class holds all the StripChart tool bar widgets.

```
#include <QEStripChartToolBar.h>
```

Classes

- class [OwnWidgets](#)

Signals

- void **stateSelected** (const QEStripChartNames::StateModes mode)
- void **videoModeSelected** (const QEStripChartNames::VideoModes mode)
- void **yScaleModeSelected** (const QEStripChartNames::YScaleModes mode)
- void **yRangeSelected** (const QEStripChartNames::ChartYRanges scale)
- void **durationSelected** (const int seconds)
- void **timeZoneSelected** (const Qt::TimeSpec timeSpec)
- void **playModeSelected** (const QEStripChartNames::PlayModes mode)
- void **readArchiveSelected** ()

Public Member Functions

- **QEStripChartToolBar** (QWidget *parent=0)
- void **setTimeStatus** (const QString &timeStatus)
- void **setStateSelectionEnabled** (const QEStripChartNames::StateModes mode, const bool enabled)

Static Public Attributes

- static const int **designHeight** = 44

Protected Member Functions

- void **resizeEvent** (QResizeEvent *event)

9.119.1 Detailed Description

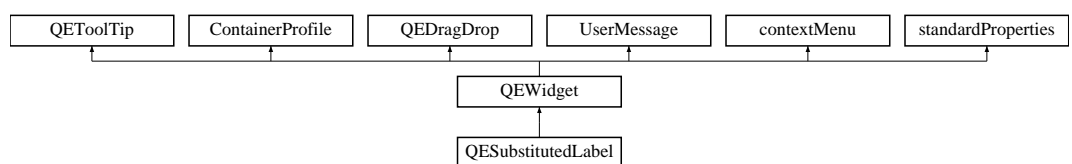
This class holds all the StripChart tool bar widgets.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartToolBar.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartToolBar.cpp

9.120 QESubstitutedLabel Class Reference

Inheritance diagram for QESubstitutedLabel:



Public Member Functions

- **QESubstitutedLabel** (QWidget *parent=0)
- void **establishConnection** (unsigned int variableIndex)
- void **setLabelTextProperty** (QString labelTextIn)
- QString **getLabelTextProperty** ()
- QString **getLabelTextPropertyFormat** ()
- void **setLabelTextPropertyFormat** (QString labelTextIn)

Protected Attributes

- QString [labelText](#)

Properties

- QString [textSubstitutions](#)

9.120.1 Member Data Documentation

9.120.1.1 **QString QESubstitutedLabel::labelText** [read, write, protected]

Label text to be substituted. This text will be copied to the label text after applying any macro substitutions from the textSubstitutions property

9.120.2 Property Documentation

9.120.2.1 **QString QESubstitutedLabel::textSubstitutions** [read, write]

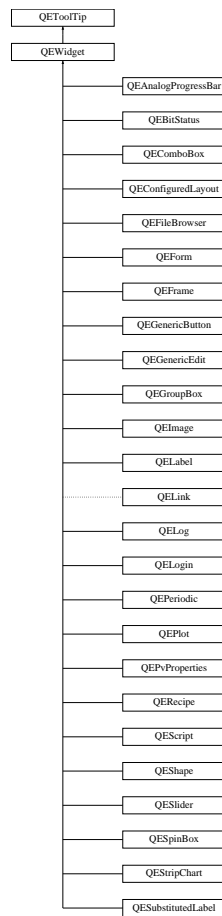
Text substitutions. These substitutions are applied to the 'labelText' property prior to copying it to the label text.

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QESubstitutedLabel/QESubstitutedLabel.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QESubstitutedLabel/QESubstitutedLabel.cpp

9.121 QEToolTip Class Reference

Inheritance diagram for QEToolTip:



Public Member Functions

- **QEToolTip** (QWidget *ownerIn)
- void **updateToolTipVariable** (const QString &variable)
- void **updateToolTipAlarm** (const QString &alarm)
- void **updateToolTipCustom** (const QString &custom)
- void **updateToolTipConnection** (bool connection)
- void **setVariableAsToolTip** (bool variableAsToolTip)
- bool **getVariableAsToolTip** ()

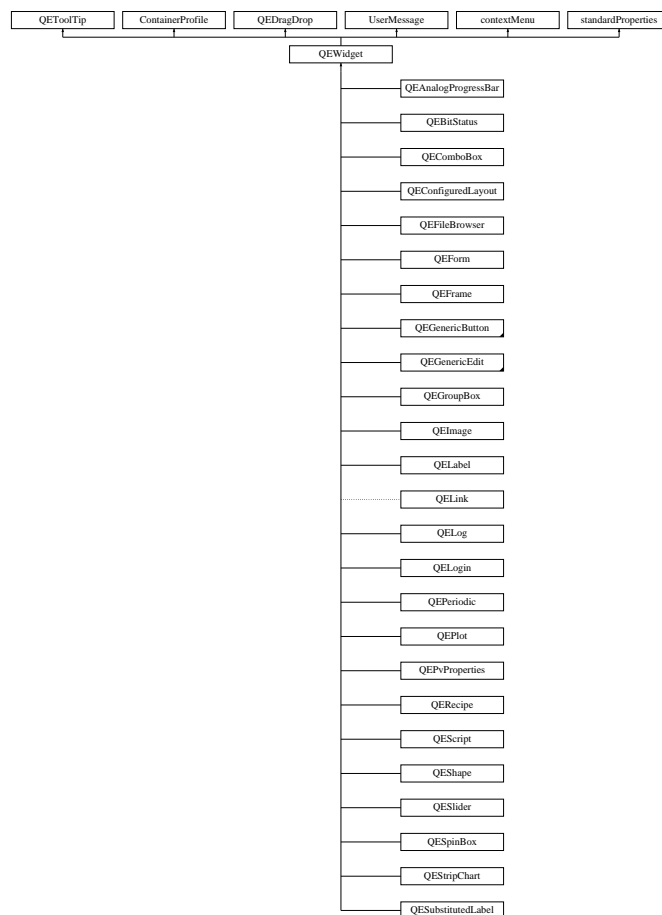
The documentation for this class was generated from the following files:

- /home/rhydera/epicsqt/trunk/framework/widgets/include/QEToolTip.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/QEToolTip.cpp

9.122 QEWidget Class Reference

```
#include <QEWidget.h>
```

Inheritance diagram for QEWidget:



Public Types

- enum [restorePhases](#) { **APPLICATION** = SaveRestoreSignal::RESTORE_APPLICATION, **FRAMEWORK** = SaveRestoreSignal::RESTORE_QEFRAMEWORK }

Restore phases. When a widget's persistent data is restored, the restore occurs in two phases.

Public Member Functions

- [QEWidget](#) (QWidget *ownerIn)

Constructor.

- virtual `~QEWidget ()`
Destructor.
- void `activate ()`
- void `deactivate ()`
- unsigned int `getMessageSourceId ()`
- void `setMessageSourceId (unsigned int messageId)`
- `qcaobject::QCaObject *` `getQcaltem (unsigned int variableIndex)`
- void `setupContextMenu (QWidget *w)`
- QColor `getColor (QCaAlarmInfo &alarmInfo, const int saturation)`
- void `processAlarmInfo (QCaAlarmInfo &alarmInfo)`
- void `readNow ()`
- virtual void `writeNow ()`
- virtual void `setVariableNameAndSubstitutions (QString variableNameIn, QString variableNameSubstitutionsIn, unsigned int variableIndex)`
- QFile * `openQEFile (QString name, QFile::OpenModeFlag mode)`
- QString `defaultFileLocation ()`
- QString `getFrameworkVersion ()`
- virtual void `saveConfiguration (PersistenceManager *)`
- virtual void `restoreConfiguration (PersistenceManager *, restorePhases)`
- virtual void `scaleBy (const int, const int)`

Static Public Member Functions

- static QFile * `findQEFile (QString name, ContainerProfile *profile)`
- static bool `inDesigner ()`

Protected Member Functions

- void `setNumVariables (unsigned int numVariablesIn)`
- `qcaobject::QCaObject *` `createConnection (unsigned int variableIndex)`
- virtual `qcaobject::QCaObject *` `createQcaltem (unsigned int variableIndex)`
- virtual void `establishConnection (unsigned int variableIndex)`
- QString `persistantName (QString prefix)`

Protected Attributes

- bool `subscribe`

9.122.1 Detailed Description

This class is used as a base for all CA aware wigets, such as `QELabel`, `QESpinBox`, etc. It manages common issues including creating a source of CA data updates, handling error, warning and status messages, and setting tool tips based on variable names.

Note, there is tight integration between the CA aware widget classes, this class, and its base classes, especially [VariableNameManager](#) and [QEToolTip](#).

In particular, this class manages [QCaObject](#) classes that stream updates to the CA aware widget class. But this class, however, doesn't know how to format the data, or how the updates will be used. To resolve this, this class asks its parent class (such as [QELabel](#)) to create the [QCaObject](#) class in what ever flavour it wants, by calling the virtual function `createQcaltem`. A [QELabel](#), for example, wants string updates so it creates a [QEString](#) which is based on a [QCaObject](#) class and formats all updates as strings.

The CA aware parent class (such as [QELabel](#)) defines a variable by calling `VariableNameManager::setVariableName()`. The `VariableNamePropertyManager` class calls the `establishConnection` function of the CA aware parent class, such as [QELabel](#) when it has a new variable name.

This class uses its base [QEToolTip](#) class to format tool tips. that class in turn calls the CA aware parent class (such as [QELabel](#)) directly to make use of a new tool tip.

After construction, a CA aware widget is activated (starts updating) by calling it's `establishConnection()` function in one of two ways:

- 1) The variable name or variable name substitutions is changed by calling `setVariableName` or `setVariableNameSubstitutions` respectively. These functions are in the `VariableNameManager` class. The `VariableNamePropertyManager` calls a virtual function `establishConnection()` which is implemented by the CA aware widget. This is how a CA aware widget is activated in 'designer'. It occurs when 'designer' updates the variable name property or variable name substitution property.

- 2) When an [QEForm](#) widget is created, resulting in a set of CA aware widgets being created by loading a UI file containing plugin definitions. After loading the plugin widgets, code in the [QEForm](#) class calls the `activate()` function in this class ([QEWidget](#)). the `activate()` function calls `establishConnection()` in the CA aware widget for each variable. This simulates what the `VariableNamePropertyManager` does as each variable name is entered (see 1, above, for details)

No matter which way a CA aware widget is activated, the `establishConnection()` function in the CA aware widget is called for each variable. The `establishConnection()` function asks this [QEWidget](#) base class, by calling the `createConnection()` function, to perform the tasks common to all CA aware widgets for establishing a stream of CA data.

The `createConnection()` function sets up the widget 'tool tip', then immediately calls the CA aware widget back asking it to create an object based on [QCaObject](#). This object will supply a stream of CA update signals to the CA aware object in a form that it needs. For example a [QELabel](#) creates a [QEString](#) object. The [QEString](#) class is based on the [QCaObject](#) class and converts all update data to a strings which is required for updating a Qt label widget. This class stores the [QCaObject](#) based class.

After the `establishConnection()` function in the CA aware widget has called `createConnection()`, the remaining task of the `establishConnection()` function is to connect the signals of the newly created [QCaObject](#) based classes to its own slots so that data updates can be used. For example, a [QELabel](#) connects the 'stringChanged' signal from the [QEString](#) object to its `setLabelText` slot.

9.122.2 Member Function Documentation

9.122.2.1 void QEWidget::activate ()

Initiate updates. Called after all configuration is complete.

9.122.2.2 void QEWidget::deactivate ()

Terminates updates. This has been provided for third party (non QEGui) applications using the framework.

9.122.2.3 QString QEWidget::defaultFileLocation ()

Returns the default location to create files. Use this to create files in a consistent location

9.122.2.4 QFile * QEWidget::findQEFile (QString *name*, ContainerProfile * *profile*) [static]

Static method that looks for a file in a standard set of locations Returns a pointer to a QFile which is the caller's responsibility to delete, or NULL if the file was not found.

9.122.2.5 QColor QEWidget::getColor (QCaAlarmInfo & *alarmInfo*, const int *saturation*)

Return a colour to update the widget's look to reflect the current alarm state Note, the color is determined by the alarmInfo class, but since that class is used in non gui applications, it can't return a QColor

9.122.2.6 QString QEWidget::getFrameworkVersion ()

Returns the QE framework that built this instance of the widget. On windows, the QE-Framework DLL may be loaded twice with potentially different versions of it.

9.122.2.7 unsigned int QEWidget::getMessageSourceId () [inline]

Get the message source ID. The message source ID is used as part of the system where QE widgets can emit a message and have the right QE widget in the right form catch the message. Refer to the [UserMessage](#) class for further details.

9.122.2.8 qcaobject::QCaObject * QEWidget::getQcaltem (unsigned int *variableIndex*)

Return a reference to one of the qCaObjects used to stream CA updates

9.122.2.9 `QFile * QEWidget::openQEFile (QString name, QFile::OpenModeFlag mode)`

Looks for a file in a standard set of locations (and opens the file)

9.122.2.10 `void QEWidget::processAlarmInfo (QCaAlarmInfo & alarmInfo)`

This convenience function updates the alarm tool tip, and alarm status style if the `displayAlarmState` property is set to true - assumes the widget uses standard properties. This function is perhaps most usefull for single-variable widgets.

9.122.2.11 `void QEWidget::readNow ()`

Perform a single shot read on all variables (Usefull when not subscribing by default)

9.122.2.12 `virtual void QEWidget::restoreConfiguration (PersistenceManager *,
restorePhases) [inline, virtual]`

Service a request to restore the QE widget's configuration. A QE widget recover any configuration details from the [PersistenceManager](#). For example, a [QEStripChart](#) may restore the variables being plotted. Many QE widgets do not have any persistant data requirements and do not implement this method. This is called twice with an incrementing `restorePhase`. Most widgets will miss the first call as they don't exist yet (they are created as part of the first phase)

Reimplemented in [QEPvProperties](#), and [QEStripChart](#).

9.122.2.13 `virtual void QEWidget::saveConfiguration (PersistenceManager *)
[inline, virtual]`

Service a request to save the QE widget's current configuration. A widget may save any configuration details through the [PersistenceManager](#). For example, a [QEStripChart](#) may save the variables being plotted. Many QE widgets do not have any persistant data requirements and do not implement this method.

Reimplemented in [QEPvProperties](#), and [QEStripChart](#).

9.122.2.14 `virtual void QEWidget::scaleBy (const int , const int) [inline,
virtual]`

Any [QEWidget](#) that requires additional scaling, i.e. above and beyond the standard scaling applied to size, minimum size, maximum size and font size, may override this function in order to perform any bespoke scaling need by the widget (for example see [QEShape](#)). The scaling is defined using a rational number specified by two integers (m, d). The first (m) parameter is the multiplier and the second (d) parameter is the divisor. For example, if m = 4 and d = 5, then an 80% scaling should be applied. And if m = 5 and d = 4, and a 125% scaling is required.

Reimplemented in [QEPvProperties](#), and [QEShape](#).

9.122.2.15 `void QEWidget::setMessageSourceId (unsigned int messageSourceId)`
`[inline]`

Set the message source ID. The message source ID is used as part of the system where QE widgets can emit a message and have the right QE widget in the right form catch the message. Refer to the [UserMessage](#) class for further details.

9.122.2.16 `void QEWidget::setupContextMenu (QWidget * w)`

Take a menu widget and add it as the context menu for this widget

9.122.2.17 `void QEWidget::setVariableNameAndSubstitutions (QString variableNameIn,
 QString variableNameSubstitutionsIn, unsigned int variableIndex)` `[virtual]`

Virtual function that may be implemented by users of [QEWidget](#) to update variable names and macro substitutions. A default is provided that is suitable in most cases.

Reimplemented in [QEBitStatus](#), and [QEForm](#).

9.122.2.18 `virtual void QEWidget::writeNow ()` `[inline, virtual]`

(Control widgets only - such as [QELineEdit](#)) Write the value now. Used when writeOnChange, writeOnEnter, etc are all false

Reimplemented in [QEGenericEdit](#).

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/QEWidget.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/QEWidget.cpp

9.123 QEWidgets Class Reference

Public Member Functions

- **QEWidgets** (QObject *parent=0)
- virtual QList< QDesignerCustomWidgetInterface * > **customWidgets** () const

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/QEDesignerPlugin.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/QEDesignerPlugin.cpp

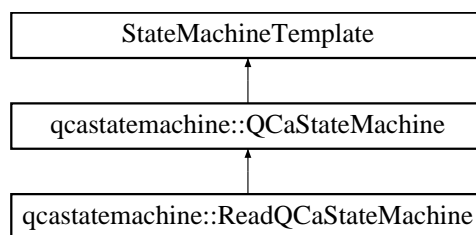
9.124 QList Class Reference

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPvProperties/QEPvProperties.cpp

9.125 qcastatemachine::ReadQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::ReadQCaStateMachine:



Public Member Functions

- **ReadQCaStateMachine** (void *parent)
- bool **process** (int requestedState)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaStateMachine.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaStateMachine.cpp

9.126 ROInfo Class Reference

Public Member Functions

- void **setX** (long x)
- void **setY** (long y)
- void **setW** (long w)
- void **setH** (long h)
- void **clearX** ()
- void **clearY** ()
- void **clearW** ()
- void **clearH** ()
- bool **getStatus** ()
- QRect **getArea** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/QEImage.h

9.127 SaveRestoreSignal Class Reference

Public Types

- enum **saveRestoreOptions** { **SAVE**, **RESTORE_APPLICATION**, **RESTORE_QEFRAMEWORK** }

Signals

- void **saveRestore** (SaveRestoreSignal::saveRestoreOptions option)

Public Member Functions

- void **setOwner** ([PersistenceManager](#) *ownerIn)
- void [save](#) ()
- void [restore](#) ()

9.127.1 Member Function Documentation

9.127.1.1 void SaveRestoreSignal::restore ()

!! signal must be blocking

9.127.1.2 void SaveRestoreSignal::save ()

!! signal must be blocking

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/persistenceManager.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/persistenceManager.cpp

9.128 saveRestoreSlot Class Reference

Public Slots

- void **saveRestore** (SaveRestoreSignal::saveRestoreOptions option)

Public Member Functions

- void **setOwner** (QWidget *ownerIn)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/QEWidget.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/QEWidget.cpp

9.129 selectMenu Class Reference

Public Member Functions

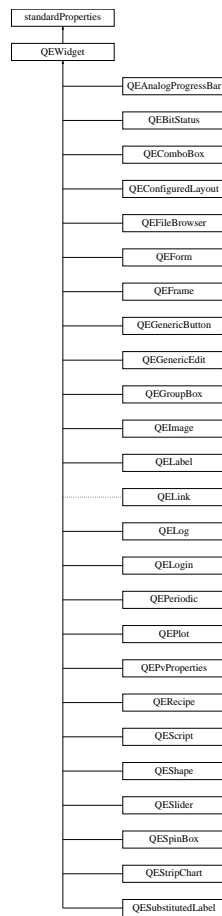
- **selectMenu** (QWidget *parent=0)
- imageContextMenu::imageContextMenuOptions **getSelectOption** (const QPoint &pos)
- void **setChecked** (const int mode)
- void **setPanEnabled** (bool enablePan)
- void **setVSliceEnabled** (bool enableVSliceSelection)
- void **setHSliceEnabled** (bool enableHSliceSelection)
- void **setAreaEnabled** (bool enableAreaSelection)
- void **setProfileEnabled** (bool enableProfileSelection)
- void **setTargetEnabled** (bool enableTargetSelection)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/selectMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/selectMenu.cpp

9.130 standardProperties Class Reference

Inheritance diagram for standardProperties:



Public Member Functions

- **standardProperties** (QWidget *ownerIn)
- **userLevelTypes::userLevels** **getUserLevelVisibility** ()
- void **setUserLevelVisibility** (userLevelTypes::userLevels level)
- **userLevelTypes::userLevels** **getUserLevelEnabled** ()
- void **setUserLevelEnabled** (userLevelTypes::userLevels level)
- bool **getApplicationEnabled** () const
- void **setApplicationEnabled** (bool state)
- void **setRunVisible** (bool visibleIn)
- bool **getRunVisible** ()
- void **setDisplayAlarmState** (bool displayAlarmStateIn)
- bool **getDisplayAlarmState** ()

Protected Member Functions

- void **setDataDisabled** (bool disable)

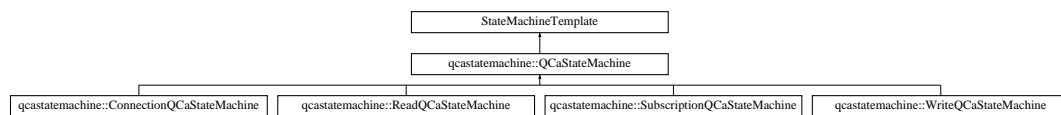
- void **checkVisibilityEnabledLevel** ([userLevelTypes::userLevels](#) level)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/standardProperties.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/standardProperties.cpp

9.131 StateMachineTemplate Class Reference

Inheritance diagram for StateMachineTemplate:



Public Member Functions

- virtual bool **process** (int requestedState)=0

Public Attributes

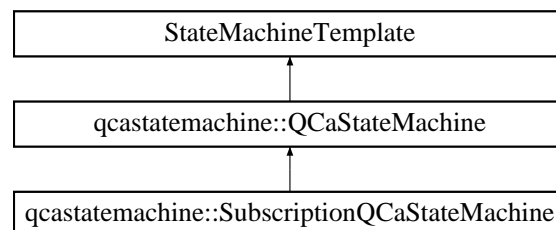
- int **currentState**
- int **requestState**

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaStateMachine.h

9.132 qcastatemachine::SubscriptionQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::SubscriptionQCaStateMachine:



Public Member Functions

- **SubscriptionQCaStateMachine** (void *parent)
- bool **process** (int requestedState)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaStateMachine.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaStateMachine.cpp

9.133 trace Class Reference

Public Attributes

- QVector< [QCaDateTime](#) > **timeStamps**
- QVector< double > **xdata**
- QVector< double > **ydata**
- QwtPlotCurve * **curve**
- QColor **color**
- QString **legend**
- bool **waveform**
- QwtPlotCurve::CurveStyle **style**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPlot/QEPlot.h

9.134 TrackRange Class Reference

Public Member Functions

- void **clear** ()
- void **merge** (const double d)
- void **merge** (const [TrackRange](#) &that)
- bool **getMinMax** (double &min, double &max) const

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartUtilities.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartUtilities.cpp

9.135 userInfoStruct Class Reference

Public Attributes

- bool **enable**
- double **value1**
- double **value2**
- QString **elementText**

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodic.h

9.136 QEPeriodic::userInfoStructArray Struct Reference

Public Attributes

- [userInfoStruct](#) **array** [NUM_ELEMENTS]

The documentation for this struct was generated from the following file:

- /home/rhydera/epicsqt/trunk/framework/widgets/QEPeriodic/QEPeriodic.h

9.137 userLevelSignal Class Reference

Signals

- void [userChanged](#) ([userLevelTypes::userLevels](#) level)
Internal use only. Send when the user level has changed.

Public Member Functions

- void **setLevel** ([userLevelTypes::userLevels](#) levelIn)
- [userLevelTypes::userLevels](#) **getLevel** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/ContainerProfile.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/ContainerProfile.cpp

9.138 userLevelSlot Class Reference

Public Slots

- void **userChanged** ([userLevelTypes::userLevels](#) level)

Public Member Functions

- void **setOwner** ([ContainerProfile](#) *ownerIn)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/ContainerProfile.h
- /home/rhydera/epicsqt/trunk/framework/widgets/src/ContainerProfile.cpp

9.139 userLevelTypes Class Reference

Public Types

- enum [userLevels](#) { [USERLEVEL_USER](#), [USERLEVEL_SCIENTIST](#), [USERLEVEL_ENGINEER](#) }

9.139.1 Member Enumeration Documentation

9.139.1.1 enum userLevelTypes::userLevels

User levels set by widgets such as [QELogin](#) and used by many widgets to determine visibility, enabled state, and style.

Enumerator:

USERLEVEL_USER User level - least privileged.

USERLEVEL_SCIENTIST User level - more privileged than user, less than engineer.

USERLEVEL_ENGINEER User level - most privileged.

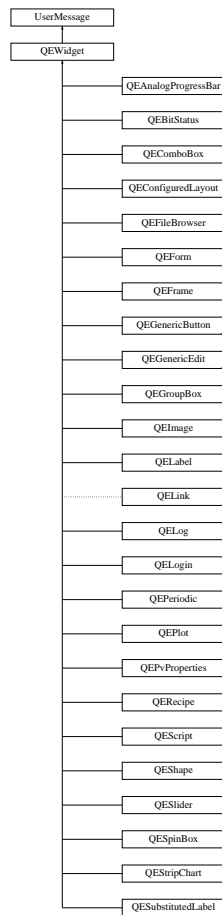
The documentation for this class was generated from the following file:

- /home/rhydera/epicsqt/trunk/framework/widgets/include/ContainerProfile.h

9.140 UserMessage Class Reference

```
#include <UserMessage.h>
```

Inheritance diagram for UserMessage:



Public Types

- enum **message_filter_options** { MESSAGE_FILTER_ANY, MESSAGE_FILTER_MATCH, MESSAGE_FILTER_NONE }

Public Member Functions

- void **setSourceId** (unsigned int sourceId)
Set the source ID (the ID set up by the GUI designer, usually matched to the source ID of logging widgets)
- void **setFormId** (unsigned int formId)
Set the form ID (the the same ID for all sibling widgets within an [QEForm](#) widget)
- void **setFormFilter** (message_filter_options formFilterIn)
Set the message filtering applied to the form ID.
- void **setSourceFilter** (message_filter_options sourceFilterIn)

Set the message filtering applied to the source ID.

- unsigned int [getSourceId](#) ()

Get the source ID (the ID set up by the GUI designer, usually matched to the source ID of logging widgets).

- unsigned int [getFormId](#) ()

Get the form ID (the the same ID for all sibling widgets within an [QEForm](#) widget)

- message_filter_options [getFormFilter](#) ()

Get the message filtering applied to the form ID.

- message_filter_options [getSourceFilter](#) ()

Get the message filtering applied to the source ID.

- void [setChildFormId](#) (unsigned int)

Set the for ID of all widgets that are children of this widget.

- unsigned int [getChildFormId](#) ()

Get the for ID of all widgets that are children of this widget.

- unsigned int [getNextMessageFormId](#) ()

Generate a new form ID for all widgets in a new form.

- void [sendMessage](#) (QString message, [message_types](#) type=[message_types](#)(MESSAGE_TYPE_INFO))

Send a message to the user.

- void [sendMessage](#) (QString message, QString source, [message_types](#) type=[message_types](#)(MESSAGE_TYPE_INFO))

Send a message to the user with a source reference.

- QString [getMessageTypeName](#) ([message_types](#) type)

Convenience function to provide string names for each message type.

- virtual void [newMessage](#) (QString, [message_types](#))

Virtual function to pass messages to derived classes (typically logging widgets or application windows)

Friends

- class [UserMessageSlot](#)
- class [UserMessageSignal](#)

9.140.1 Detailed Description

A class to manage user messages.

This class passes messages between widgets and application code

This class is used as a base class.

Messages are sent by calling [sendMessage\(\)](#) Messages are received by implementing [newMessage\(\)](#) in the derived class.

Messages can be filtered based on a source ID or a form ID

The derived widget is free to set the source ID to any value

Derived form widgets ([QForm](#)) get a unique form ID using [getNextMessageFormId\(\)](#) (as well as being able to set a source ID like any other QE widget) and pass this unique form ID to all widgets within the form using the [ContainerProfile](#) class.

Messages sent by a QE widget are received by all QE widgets and can filter the messages required by form ID and source ID. The form ID is under the management of the [QForm](#) widget, the source ID is under the control of the GUI designer.

The [QForm](#) widget does not display messages, but re-send them using its own form ID. Read on to see how this can be used.

Widgets that generate messages, and widgets (or application code) that use messages can be set up as follows:

- Application wide logging: An application with a single log window can base a class on the [UserMessage](#) class and set up filtering to receive all messages. An application with log messages for separate windows containing [QForm](#) widgets (such as [QEGui](#)) can base each window class on the [UserMessage](#) class, then set up filtering for the appropriate form ID.
- Logging within a [QForm](#). A logging widget can be set to filter matching on the current form and so will pick up messages from any sibling widget. This includes messages from a sibling widget which is a nested [QForm](#). Whatever messages that nested form is set to receive, it will resend to its siblings. For example, if it is set to receive messages from the widgets it contains, these are resent up one level to the main form. If messages are dealt with within the nested [QForm](#) (for example, it may have its own logging QE widget) then the nested [QForm](#) could be set up not to filter and resend any messages.

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/include/UserMessage.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/src/UserMessage.cpp`

9.141 UserMessageSignal Class Reference

```
#include <UserMessage.h>
```

Signals

- void [message](#) (QString msg, [message_types](#) type, unsigned int formId, unsigned int sourceId, [UserMessage](#) *originator)

Emit a message signal. Any widget based on the [UserMessage](#) class can receive these messages, filtered on formId and sourceId.

Public Member Functions

- void [sendMessage](#) (QString msg, [message_types](#) type, unsigned int formId, unsigned int sourceId, [UserMessage](#) *originator)

Send a message to all widgets based on the [UserMessage](#) class.

9.141.1 Detailed Description

Class used to send message signals. Used only within `UserMessage.cpp` A single instance of this class is shared by all instances of the [UserMessage](#) class. This allows every [UserMessage](#) class instance to connect to a single source of messages

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/include/UserMessage.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/src/UserMessage.cpp`

9.142 UserMessageSlot Class Reference

```
#include <UserMessage.h>
```

Public Slots

- void [message](#) (QString msg, [message_types](#) type, unsigned int formId, unsigned int sourceId, [UserMessage](#) *originator)

A message has been received.

Public Member Functions

- void [setOwner](#) ([UserMessage](#) *ownerIn)
Set the [UserMessage](#) class this is a part of.

9.142.1 Detailed Description

Class used to receive message signals. Used only within `UserMessage.cpp` An instance of this class is created by all instances of the [UserMessage](#) class. The [UserMessage](#) class uses an instance of this class to receive messages so it does not have to be based on `QObject` itself. This is required as derived classes generally need to be also based on another object derived from `QObject` (and `QObject` can only be the base of a single base class)

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

- `/home/rhydera/epicsqt/trunk/framework/widgets/include/UserMessage.h`
- `/home/rhydera/epicsqt/trunk/framework/widgets/src/UserMessage.cpp`

9.143 ValueScaling Class Reference

Public Member Functions

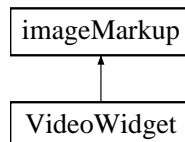
- void **reset** ()
- void **assign** (const [ValueScaling](#) &s)
- void **set** (const double dIn, const double mIn, const double cIn)
- void **get** (double &dOut, double &mOut, double &cOut)
- void **map** (const double fromLower, const double fromUpper, const double toLower, const double toUpper)
- bool **isScaled** ()
- double **value** (const double x)
- [TrackRange](#) **value** (const [TrackRange](#) &x)
- void **saveConfiguration** ([PMElement](#) &parentElement)
- void **restoreConfiguration** ([PMElement](#) &parentElement)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartUtilities.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEStripChart/QEStripChartUtilities.cpp

9.144 VideoWidget Class Reference

Inheritance diagram for VideoWidget:



Signals

- void **userSelection** (imageMarkup::markupIds mode, bool complete, bool clearing, QPoint point1, QPoint point2, unsigned int thickness)
- void **zoomInOut** (int zoomAmount)
- void **currentPixelInfo** (QPoint pos)
- void **pan** (QPoint pos)

Public Member Functions

- **VideoWidget** (QWidget *parent=0)
- void **setNewImage** (const QImage image, [QCaDateTime](#) &time)
- void **setPanning** (bool panningIn)

- bool **getPanning** ()
- QPoint **scalePoint** (QPoint pnt)
- int **scaleOrdinate** (int ord)
- QPoint **scaleImagePoint** (QPoint pnt)
- int **scaleImageOrdinate** (int ord)
- QImage **getImage** ()

Protected Member Functions

- void **paintEvent** (QPaintEvent *)
- void **mousePressEvent** (QMouseEvent *event)
- void **mouseReleaseEvent** (QMouseEvent *event)
- void **mouseMoveEvent** (QMouseEvent *event)
- void **wheelEvent** (QWheelEvent *event)
- void **markupChange** (QImage &markups, QVector< QRect > &changedAreas)
- void **resizeEvent** (QResizeEvent *event)
- void **markupSetCursor** (QCursor cursor)
- void **markupAction** (markupIds mode, bool complete, bool clearing, QPoint point1, QPoint point2, unsigned int thickness)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/videowidget.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/videowidget.cpp

9.145 WidgetRef Class Reference

Public Member Functions

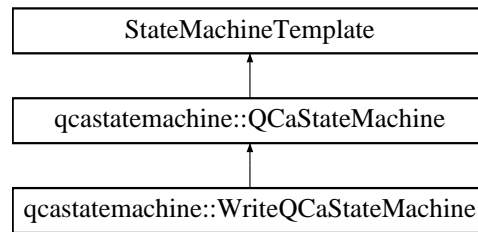
- **WidgetRef** ([QEWidget](#) *refIn)
- [QEWidget](#) * **getRef** ()

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

- /home/rhydera/epicsqt/trunk/framework/widgets/include/ContainerProfile.h

9.146 qcastatemachine::WriteQCaStateMachine Class Reference

Inheritance diagram for qcastatemachine::WriteQCaStateMachine:



Public Member Functions

- **WriteQCaStateMachine** (void *parent)
- bool **process** (int requestedState)

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

- /home/rhydera/epicsqt/trunk/framework/data/include/QCaStateMachine.h
- /home/rhydera/epicsqt/trunk/framework/data/src/QCaStateMachine.cpp

9.147 zoomMenu Class Reference

Public Member Functions

- **zoomMenu** (QWidget *parent=0)
- void **enableAreaSelected** (bool enable)
- imageContextMenu::imageContextMenuOptions **getZoom** (const QPoint &pos)

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

- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/zoomMenu.h
- /home/rhydera/epicsqt/trunk/framework/widgets/QEImage/zoomMenu.cpp

Index

- [_Field, 27](#)
- [_Item, 28](#)
- [_QDialogItem, 28](#)
- [_QDialogLogin, 28](#)
- [_QPushButtonGroup, 29](#)
- [_QTableWidgetFileBrowser, 29](#)
- [_QTableWidgetLog, 30](#)
- [_QTableWidgetScript, 30](#)
- activate
 - [QEWidget, 274](#)
- addUnits
 - [QEAnalogProgressBar, 73](#)
 - [QECheckBox, 90](#)
 - [QELabel, 155](#)
 - [QELineEdit, 163](#)
 - [QENumericEdit, 176](#)
 - [QEPushButton, 200](#)
 - [QERadioButton, 220](#)
- alarmSeverityDisplayMode
 - [QEAnalogProgressBar, 73](#)
- alignment
 - [QECheckBox, 90](#)
 - [QEPushButton, 200](#)
 - [QERadioButton, 220](#)
- allowDrop
 - [QEAnalogProgressBar, 73](#)
 - [QEBitStatus, 80](#)
 - [QECheckBox, 90](#)
 - [QEComboBox, 101](#)
 - [QEFrame, 114](#)
 - [QEGenericEdit, 122](#)
 - [QEGroupBox, 126](#)
 - [QEImage, 140](#)
 - [QELabel, 155](#)
 - [QEPeriodic, 182](#)
 - [QEPlot, 191](#)
 - [QEPushButton, 200](#)
 - [QEPvProperties, 211](#)
 - [QERadioButton, 220](#)
 - [QEShape, 239](#)
 - [QESlider, 249](#)
 - [QESpinBox, 254](#)
- altReadbackVariable
 - [QEPushButton, 200](#)
- animation1
 - [QEShape, 239](#)
- animation2
 - [QEShape, 239](#)
- animation3
 - [QEShape, 239](#)
- animation4
 - [QEShape, 240](#)
- animation5
 - [QEShape, 240](#)
- animation6
 - [QEShape, 240](#)
- animationOptions
 - [QEShape, 237](#)
- APPEND
 - [QEStringFormatting, 259](#)
- Append
 - [QEAnalogProgressBar, 72](#)
 - [QECheckBox, 87](#)
 - [QELabel, 153](#)
 - [QELineEdit, 162](#)
 - [QEPushButton, 197](#)
 - [QERadioButton, 217](#)
- areaColor
 - [QEImage, 140](#)
- arguments
 - [QECheckBox, 90](#)
 - [QEPushButton, 200](#)
 - [QERadioButton, 220](#)
- arrayAction
 - [QEAnalogProgressBar, 74](#)
 - [QECheckBox, 90](#)
 - [QELabel, 155](#)
 - [QELineEdit, 163](#)
 - [QEPushButton, 200](#)
 - [QERadioButton, 221](#)
- ArrayActions

- QEAAnalogProgressBar, 71
- QECheckBox, 87
- QELabel, 153
- QELineEdit, 162
- QEPushButton, 197
- QERadioButton, 217
- arrayActions
 - QEStrFormatting, 259
- ASCII
 - QEStrFormatting, 259
- Ascii
 - QEAAnalogProgressBar, 72
 - QECheckBox, 87
 - QELabel, 153
 - QELineEdit, 162
 - QEPushButton, 197
 - QERadioButton, 217
- autoBrightnessContrast
 - QImage, 139
- Automatic
 - QEAAnalogProgressBar, 72
 - QECheckBox, 88
 - QELabel, 153
 - QELineEdit, 162
 - QEPushButton, 198
 - QERadioButton, 218
- autoScale
 - QENumericEdit, 176
- backgroundColour
 - QEAAnalogIndicator, 67
- Bar
 - QEAAnalogIndicator, 66
- beamColor
 - QImage, 140
- beamXVariable
 - QImage, 140
- beamYVariable
 - QImage, 140
- borderColour
 - QEAAnalogIndicator, 67
- Bottom_To_Top
 - QEAAnalogIndicator, 67
- centreAngle
 - QEAAnalogIndicator, 67
- ChartState, 31
- clickCheckedText
 - QECheckBox, 90
 - QEPushButton, 201
- QERadioButton, 221
 - clicked
 - QECheckBox, 89
 - QEPushButton, 199
 - QERadioButton, 219
 - clickText
 - QECheckBox, 91
 - QEPushButton, 201
 - QERadioButton, 221
 - clippingHighVariable
 - QImage, 140
 - clippingLowVariable
 - QImage, 141
 - clippingOnOffVariable
 - QImage, 141
 - color1
 - QEShape, 240
 - color10
 - QEShape, 240
 - color2
 - QEShape, 240
 - color3
 - QEShape, 240
 - color4
 - QEShape, 240
 - color5
 - QEShape, 240
 - color6
 - QEShape, 241
 - color7
 - QEShape, 241
 - color8
 - QEShape, 241
 - color9
 - QEShape, 241
 - confirmAction
 - QECheckBox, 91
 - QEPushButton, 201
 - QERadioButton, 221
 - confirmWrite
 - QEGenericEdit, 122
 - ContainerProfile, 32
 - contextMenu, 34
 - contextMenuObject, 36
 - creationOption
 - QECheckBox, 91
 - QEPushButton, 201
 - QERadioButton, 221
 - CreationOptionNames
 - QECheckBox, 87

- QEPushButton, [197](#)
 - QERadioButton, [217](#)
- dbElementChanged
 - QEPeriodic, [181](#)
- dbValueChanged
 - QEAnalogProgressBar, [73](#)
 - QEBitStatus, [80](#)
 - QECheckBox, [89](#)
 - QECombobox, [100](#)
 - QEImage, [139](#)
 - QELabel, [155](#)
 - QELineEdit, [163](#)
 - QENumericEdit, [176](#)
 - QEPeriodic, [181](#)
 - QEPlot, [191](#)
 - QEPushButton, [199](#)
 - QERadioButton, [219](#)
 - QESlider, [249](#)
 - QESpinBox, [254](#)
- dbValueChanged1
 - QEShape, [238](#)
- dbValueChanged2
 - QEShape, [238](#)
- dbValueChanged3
 - QEShape, [238](#)
- dbValueChanged4
 - QEShape, [238](#)
- dbValueChanged5
 - QEShape, [239](#)
- dbValueChanged6
 - QEShape, [239](#)
- deactivate
 - QEWidget, [274](#)
- Default
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [197](#)
 - QERadioButton, [218](#)
- defaultFileLocation
 - QEWidget, [274](#)
- displayAlarmState
 - QEAnalogProgressBar, [74](#)
 - QEBitStatus, [80](#)
 - QECheckBox, [91](#)
 - QECombobox, [101](#)
 - QEFrame, [114](#)
 - QEGenericEdit, [122](#)
- QEGroupBox, [126](#)
 - QEImage, [141](#)
 - QELabel, [155](#)
 - QEPeriodic, [182](#)
 - QEPlot, [191](#)
 - QEPushButton, [201](#)
 - QEPvProperties, [211](#)
 - QERadioButton, [222](#)
 - QEShape, [241](#)
 - QESlider, [249](#)
 - QESpinBox, [254](#)
- displayButtonBar
 - QEImage, [139](#)
- drawMarkup
 - markupHLine, [42](#)
 - markupVLine, [48](#)
- enableBrightnessContrast
 - QEImage, [140](#)
- enabled
 - QEAnalogProgressBar, [74](#)
 - QEBitStatus, [80](#)
 - QECheckBox, [91](#)
 - QECombobox, [101](#)
 - QEFrame, [114](#)
 - QEGenericEdit, [122](#)
 - QEGroupBox, [127](#)
 - QEImage, [141](#)
 - QELabel, [156](#)
 - QEPeriodic, [182](#)
 - QEPlot, [191](#)
 - QEPushButton, [202](#)
 - QEPvProperties, [212](#)
 - QERadioButton, [222](#)
 - QEShape, [241](#)
 - QESlider, [249](#)
 - QESpinBox, [255](#)
- enableHozSliceSelection
 - QEImage, [141](#)
- enableVertSliceSelection
 - QEImage, [141](#)
- Engineer
 - QEAnalogProgressBar, [72](#)
 - QEBitStatus, [79](#)
 - QECheckBox, [88](#)
 - QECombobox, [100](#)
 - QEFrame, [113](#)
 - QEGenericEdit, [120](#)
 - QEGroupBox, [126](#)
 - QEImage, [139](#)

- QELabel, [154](#)
- QEPeiodic, [181](#)
- QEPlot, [190](#)
- QEPushButton, [198](#)
- QEPvProperties, [210](#)
- QERadioButton, [219](#)
- QEShape, [238](#)
- QESlider, [249](#)
- QESpinBox, [254](#)
- findQEFile
 - QEWidget, [274](#)
- Fit
 - QEImage, [137](#)
- Fixed
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [88](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [198](#)
 - QERadioButton, [218](#)
- flipRotateMenu, [37](#)
- Floating
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [197](#)
 - QERadioButton, [218](#)
- floating
 - QCaDateTime, [59](#)
- fontColour
 - QEAnalogIndicator, [67](#)
- foregroundColour
 - QEAnalogIndicator, [67](#)
- format
 - QEAnalogProgressBar, [74](#)
 - QECheckBox, [91](#)
 - QELabel, [156](#)
 - QELineEdit, [163](#)
 - QEPushButton, [202](#)
 - QERadioButton, [222](#)
- FORMAT_DEFAULT
 - QStringFormatting, [259](#)
- FORMAT_FLOATING
 - QStringFormatting, [259](#)
- FORMAT_INTEGER
 - QStringFormatting, [259](#)
- FORMAT_LOCAL_ENUMERATE
 - QStringFormatting, [259](#)
- FORMAT_STRING
 - QStringFormatting, [259](#)
- FORMAT_TIME
 - QStringFormatting, [259](#)
- FORMAT_UNSIGNEDINTEGER
 - QStringFormatting, [259](#)
- formatInteger
 - QEIntegerFormatting, [149](#)
- formatIntegerArray
 - QEIntegerFormatting, [149](#)
- formatOption
 - QEImage, [141](#)
- FormatOptions
 - QEImage, [137](#)
- formatOptions
 - QEImage, [137](#)
- Formats
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [197](#)
 - QERadioButton, [218](#)
- formats
 - QStringFormatting, [259](#)
- formatValue
 - QEIntegerFormatting, [149](#)
- getColor
 - QEWidget, [274](#)
- getConfirmWrite
 - QEGenericEdit, [120](#)
- getElement
 - PMElementList, [53](#)
- getFrameworkVersion
 - QEWidget, [274](#)
- getLocalEnumeration
 - QELocalEnumeration, [168](#)
- getMessageSourceId
 - QEWidget, [274](#)
- getQcaltem
 - QEWidget, [274](#)
- getSubscribe
 - QEGenericEdit, [120](#)
- getWriteOnEnter
 - QEGenericEdit, [120](#)
- getWriteOnFinish
 - QEGenericEdit, [120](#)
- getWriteOnLoseFocus
 - QEGenericEdit, [121](#)

- GREY12
 - QEImage, [137](#)
- GREY16
 - QEImage, [137](#)
- GREY8
 - QEImage, [137](#)
- Grey_12
 - QEImage, [137](#)
- Grey_16
 - QEImage, [137](#)
- Grey_8
 - QEImage, [137](#)
- guiFile
 - QCheckBox, [92](#)
 - QEPushButton, [202](#)
 - QERadioButton, [222](#)
- heightVariable
 - QEImage, [142](#)
- horizontalFlip
 - QEImage, [142](#)
- hozSliceColor
 - QEImage, [142](#)
- Icon
 - QCheckBox, [88](#)
 - QEPushButton, [198](#)
 - QERadioButton, [218](#)
- imageContextMenu, [37](#)
- imageInfo, [38](#)
- imageMarkup, [39](#)
- imageVariable
 - QEImage, [142](#)
- INDEX
 - QStringFormatting, [259](#)
- Index
 - QEAnalogProgressBar, [72](#)
 - QCheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [197](#)
 - QERadioButton, [217](#)
- initialHosScrollPos
 - QEImage, [142](#)
- initialVertScrollPos
 - QEImage, [140](#)
- int
 - QEAnalogProgressBar, [74](#)
 - QEBitStatus, [80](#)
 - QCheckBox, [92](#)
 - QComboBox, [101](#)
 - QFrame, [114](#)
 - QEGenericEdit, [122](#)
 - QEGroupBox, [127](#)
 - QEImage, [142](#)
 - QELabel, [156](#)
 - QELineEdit, [164](#)
 - QEPeriodic, [182](#)
 - QEPlot, [192](#)
 - QEPushButton, [202](#)
 - QEPvProperties, [212](#)
 - QERadioButton, [222](#)
 - QEShape, [241](#)
 - QESlider, [250](#)
 - QESpinBox, [255](#)
- Integer
 - QEAnalogProgressBar, [72](#)
 - QCheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [197](#)
 - QERadioButton, [218](#)
- isDefined
 - QELocalEnumeration, [168](#)
- labelText
 - QCheckBox, [92](#)
 - QEPushButton, [202](#)
 - QERadioButton, [223](#)
 - QESubstitutedLabel, [269](#)
- launchGui
 - QCheckBox, [89](#)
 - QEPushButton, [199](#)
 - QERadioButton, [219](#)
- leadingZero
 - QEAnalogProgressBar, [75](#)
 - QCheckBox, [92](#)
 - QELabel, [156](#)
 - QELineEdit, [164](#)
 - QEPushButton, [203](#)
 - QERadioButton, [223](#)
- leadingZeros
 - QENumericEdit, [176](#)
- Left_To_Right
 - QEAnalogIndicator, [66](#)
- LocalEnumeration
 - QEAnalogProgressBar, [72](#)
 - QCheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)

- QEPushButton, [198](#)
- QERadioButton, [218](#)
- localEnumeration
 - QEAnalogProgressBar, [75](#)
 - QECheckBox, [92](#)
 - QECombobox, [102](#)
 - QELabel, [156](#)
 - QELineEdit, [164](#)
 - QEPushButton, [203](#)
 - QERadioButton, [223](#)
- logScale
 - QEAnalogIndicator, [67](#)
- logScaleInterval
 - QEAnalogIndicator, [67](#)
- majorInterval
 - QEAnalogIndicator, [67](#)
- managePixmap, [40](#)
- markupBeam, [41](#)
- markupHLine, [42](#)
 - drawMarkup, [42](#)
- markupItem, [43](#)
- markupLine, [45](#)
- markupRegion, [45](#)
- markupTarget, [46](#)
- markupText, [47](#)
- markupVLine, [48](#)
 - drawMarkup, [48](#)
- maximum
 - QEAnalogIndicator, [67](#)
 - QENumericEdit, [177](#)
- message_types, [49](#)
- Meter
 - QEAnalogIndicator, [66](#)
- minimum
 - QEAnalogIndicator, [67](#)
 - QENumericEdit, [177](#)
- minorInterval
 - QEAnalogIndicator, [68](#)
- mode
 - QEAnalogIndicator, [68](#)
- Modes
 - QEAnalogIndicator, [66](#)
- NewTab
 - QECheckBox, [87](#)
 - QEPushButton, [197](#)
 - QERadioButton, [218](#)
- NewWindow
 - QECheckBox, [87](#)
- QEPushButton, [197](#)
- QERadioButton, [218](#)
- NoRotation
 - QEImage, [138](#)
- notation
 - QEAnalogProgressBar, [75](#)
 - QECheckBox, [93](#)
 - QELabel, [157](#)
 - QELineEdit, [165](#)
 - QEPushButton, [203](#)
 - QERadioButton, [224](#)
- NOTATION_AUTOMATIC
 - QESTringFormatting, [259](#)
- NOTATION_FIXED
 - QESTringFormatting, [259](#)
- NOTATION_SCIENTIFIC
 - QESTringFormatting, [259](#)
- Notations
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [198](#)
 - QERadioButton, [218](#)
- notations
 - QESTringFormatting, [259](#)
- offset1
 - QEShape, [242](#)
- offset2
 - QEShape, [242](#)
- offset3
 - QEShape, [242](#)
- offset4
 - QEShape, [242](#)
- offset5
 - QEShape, [242](#)
- offset6
 - QEShape, [242](#)
- Open
 - QECheckBox, [87](#)
 - QEPushButton, [197](#)
 - QERadioButton, [218](#)
- openQEFile
 - QEWidget, [274](#)
- orientation
 - QEAnalogIndicator, [68](#)
- Orientations
 - QEAnalogIndicator, [66](#)

- password
 - QCheckBox, [93](#)
 - QEPushButton, [203](#)
 - QERadioButton, [224](#)
- PeriodicDialog, [50](#)
- PeriodicElementSetupForm, [51](#)
- PeriodicSetupDialog, [51](#)
- PersistenceManager, [51](#)
- Picture
 - QELabel, [154](#)
- pixmap0
 - QCheckBox, [93](#)
 - QELabel, [157](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap1
 - QCheckBox, [93](#)
 - QELabel, [157](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap2
 - QCheckBox, [93](#)
 - QELabel, [157](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap3
 - QCheckBox, [94](#)
 - QELabel, [157](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap4
 - QCheckBox, [94](#)
 - QELabel, [157](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap5
 - QCheckBox, [94](#)
 - QELabel, [158](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap6
 - QCheckBox, [94](#)
 - QELabel, [158](#)
 - QEPushButton, [204](#)
 - QERadioButton, [224](#)
- pixmap7
 - QCheckBox, [94](#)
 - QELabel, [158](#)
 - QEPushButton, [204](#)
 - QERadioButton, [225](#)
- PMContext, [52](#)
- PMElement, [52](#)
- PMElementList, [52](#)
 - getElement, [53](#)
- point1
 - QEShape, [242](#)
- point10
 - QEShape, [242](#)
- point2
 - QEShape, [243](#)
- point3
 - QEShape, [243](#)
- point4
 - QEShape, [243](#)
- point5
 - QEShape, [243](#)
- point6
 - QEShape, [243](#)
- point7
 - QEShape, [243](#)
- point8
 - QEShape, [243](#)
- point9
 - QEShape, [243](#)
- precision
 - QEAAnalogProgressBar, [75](#)
 - QCheckBox, [94](#)
 - QELabel, [158](#)
 - QELineEdit, [165](#)
 - QENumericEdit, [177](#)
 - QEPushButton, [204](#)
 - QERadioButton, [225](#)
- pressed
 - QCheckBox, [89](#)
 - QEPushButton, [199](#)
 - QERadioButton, [220](#)
- pressText
 - QCheckBox, [94](#)
 - QEPushButton, [205](#)
 - QERadioButton, [225](#)
- prioritySubstitutions
 - QCheckBox, [94](#)
 - QEPushButton, [205](#)
 - QERadioButton, [225](#)
- processAlarmInfo
 - QEWWidget, [275](#)
- profileColor
 - QEImage, [142](#)
- profilePlot, [54](#)
- program

- QCheckBox, [95](#)
- QEPushButton, [205](#)
- QERadioButton, [225](#)
- PublishedProfile, [54](#)
- PushButtonSpecifications, [55](#)
- QBitStatus, [55](#)
- QCaAlarmInfo, [57](#)
- QCaConnectionInfo, [58](#)
- QCaDataPoint, [58](#)
- QCaDataPointList, [58](#)
- QCaDateTime, [58](#)
 - floating, [59](#)
- QCaEventFilter, [59](#)
- QCaEventItem, [59](#)
- QCaEventUpdate, [59](#)
- QCaInstalledFiltersListItem, [60](#)
- qcaobject::QCaObject, [60](#)
- qcastatemachine::ConnectionQCaStateMachine, [31](#)
- qcastatemachine::QCaStateMachine, [62](#)
- qcastatemachine::ReadQCaStateMachine, [277](#)
- qcastatemachine::SubscriptionQCaStateMachine, [281](#)
- qcastatemachine::WriteQCaStateMachine, [290](#)
- QCaVariableNamePropertyManager, [63](#)
- QEAnalogIndicator, [63](#)
 - backgroundColour, [67](#)
 - Bar, [66](#)
 - borderColour, [67](#)
 - Bottom_To_Top, [67](#)
 - centreAngle, [67](#)
 - fontColour, [67](#)
 - foregroundColour, [67](#)
 - Left_To_Right, [66](#)
 - logScale, [67](#)
 - logScaleInterval, [67](#)
 - majorInterval, [67](#)
 - maximum, [67](#)
 - Meter, [66](#)
 - minimum, [67](#)
 - minorInterval, [68](#)
 - mode, [68](#)
 - Modes, [66](#)
 - orientation, [68](#)
 - Orientations, [66](#)
 - Right_To_Left, [67](#)
 - Scale, [66](#)
 - showScale, [68](#)
 - showText, [68](#)
 - spanAngle, [68](#)
 - Top_To_Bottom, [66](#)
 - value, [68](#)
- QEAnalogIndicator::Band, [30](#)
- QEAnalogIndicator::BandList, [31](#)
- QEAnalogProgressBar, [68](#)
 - addUnits, [73](#)
 - alarmSeverityDisplayMode, [73](#)
 - allowDrop, [73](#)
 - Append, [72](#)
 - arrayAction, [74](#)
 - ArrayActions, [71](#)
 - Ascii, [72](#)
 - Automatic, [72](#)
 - dbValueChanged, [73](#)
 - Default, [72](#)
 - displayAlarmState, [74](#)
 - enabled, [74](#)
 - Engineer, [72](#)
 - Fixed, [72](#)
 - Floating, [72](#)
 - format, [74](#)
 - Formats, [72](#)
 - Index, [72](#)
 - int, [74](#)
 - Integer, [72](#)
 - leadingZero, [75](#)
 - LocalEnumeration, [72](#)
 - localEnumeration, [75](#)
 - notation, [75](#)
 - Notations, [72](#)
 - precision, [75](#)
 - QEAnalogProgressBar, [73](#)
 - requestEnabled, [73](#)
 - Scientific, [72](#)
 - Scientist, [72](#)
 - Time, [72](#)
 - trailingZeros, [76](#)
 - UnsignedInteger, [72](#)
 - useDbDisplayLimits, [76](#)
 - useDbPrecision, [76](#)
 - User, [72](#)
 - userLevelEnabled, [76](#)
 - userLevelEngineerStyle, [76](#)
 - UserLevels, [72](#)
 - userLevelScientistStyle, [76](#)
 - userLevelUserStyle, [76](#)
 - userLevelVisibility, [77](#)

- variable, [77](#)
- variableAsToolTip, [77](#)
- variableSubstitutions, [77](#)
- visible, [77](#)
- QEBitStatus, [78](#)
 - allowDrop, [80](#)
 - dbValueChanged, [80](#)
 - displayAlarmState, [80](#)
 - enabled, [80](#)
 - Engineer, [79](#)
 - int, [80](#)
 - requestEnabled, [80](#)
 - Scientist, [79](#)
 - setVariableNameAndSubstitutions, [80](#)
 - User, [79](#)
 - userLevelEnabled, [81](#)
 - userLevelEngineerStyle, [81](#)
 - UserLevels, [79](#)
 - userLevelScientistStyle, [81](#)
 - userLevelUserStyle, [81](#)
 - userLevelVisibility, [81](#)
 - variable, [82](#)
 - variableAsToolTip, [82](#)
 - variableSubstitutions, [82](#)
 - visible, [82](#)
- QEByteArray, [82](#)
- QEChartStateLists, [83](#)
- QECheckBox, [83](#)
 - addUnits, [90](#)
 - alignment, [90](#)
 - allowDrop, [90](#)
 - Append, [87](#)
 - arguments, [90](#)
 - arrayAction, [90](#)
 - ArrayActions, [87](#)
 - Ascii, [87](#)
 - Automatic, [88](#)
 - clickCheckedText, [90](#)
 - clicked, [89](#)
 - clickText, [91](#)
 - confirmAction, [91](#)
 - creationOption, [91](#)
 - CreationOptionNames, [87](#)
 - dbValueChanged, [89](#)
 - Default, [87](#)
 - displayAlarmState, [91](#)
 - enabled, [91](#)
 - Engineer, [88](#)
 - Fixed, [88](#)
 - Floating, [87](#)
 - format, [91](#)
 - Formats, [87](#)
 - guiFile, [92](#)
 - Icon, [88](#)
 - Index, [87](#)
 - int, [92](#)
 - Integer, [87](#)
 - labelText, [92](#)
 - launchGui, [89](#)
 - leadingZero, [92](#)
 - LocalEnumeration, [87](#)
 - localEnumeration, [92](#)
 - NewTab, [87](#)
 - NewWindow, [87](#)
 - notation, [93](#)
 - Notations, [87](#)
 - Open, [87](#)
 - password, [93](#)
 - pixmap0, [93](#)
 - pixmap1, [93](#)
 - pixmap2, [93](#)
 - pixmap3, [94](#)
 - pixmap4, [94](#)
 - pixmap5, [94](#)
 - pixmap6, [94](#)
 - pixmap7, [94](#)
 - precision, [94](#)
 - pressed, [89](#)
 - pressText, [94](#)
 - prioritySubstitutions, [94](#)
 - program, [95](#)
 - QECheckBox, [88](#)
 - released, [89](#)
 - releaseText, [95](#)
 - requestEnabled, [89](#)
 - Scientific, [88](#)
 - Scientist, [88](#)
 - State, [88](#)
 - subscribe, [95](#)
 - Text, [88](#)
 - TextAndIcon, [88](#)
 - Time, [87](#)
 - trailingZeros, [95](#)
 - UnsignedInteger, [87](#)
 - updateOption, [95](#)
 - UpdateOptions, [88](#)
 - useDbPrecision, [95](#)
 - User, [88](#)
 - userLevelEnabled, [95](#)
 - userLevelEngineerStyle, [96](#)

- UserLevels, 88
- userLevelScientistStyle, 96
- userLevelUserStyle, 96
- userLevelVisibility, 96
- variable, 96
- variableAsToolTip, 97
- variableSubstitutions, 97
- visible, 97
- writeOnClick, 97
- writeOnPress, 97
- writeOnRelease, 97
- QECheckBoxManager, 98
- QEComboBox, 98
 - allowDrop, 101
 - dbValueChanged, 100
 - displayAlarmState, 101
 - enabled, 101
 - Engineer, 100
 - int, 101
 - localEnumeration, 102
 - requestEnabled, 100
 - Scientist, 100
 - subscribe, 102
 - useDbEnumerations, 101
 - User, 100
 - userLevelEnabled, 102
 - userLevelEngineerStyle, 102
 - UserLevels, 100
 - userLevelScientistStyle, 102
 - userLevelUserStyle, 102
 - userLevelVisibility, 103
 - variable, 103
 - variableAsToolTip, 103
 - variableSubstitutions, 103
 - visible, 103
 - writeOnChange, 101
- QEConfiguredLayout, 104
- QEConfiguredLayoutManager, 105
- QEDragDrop, 106
- QEFileBrowser, 107
- QEFloating, 109
- QEFloatingFormatting, 109
- QEForm, 110
 - setVariableNameAndSubstitutions, 112
- QEFrame, 112
 - allowDrop, 114
 - displayAlarmState, 114
 - enabled, 114
 - Engineer, 113
 - int, 114
 - requestEnabled, 113
 - Scientist, 113
 - User, 113
 - userLevelEnabled, 114
 - userLevelEngineerStyle, 114
 - UserLevels, 113
 - userLevelScientistStyle, 115
 - userLevelUserStyle, 115
 - userLevelVisibility, 115
 - variableAsToolTip, 115
 - visible, 115
- QEGenericButton, 116
- QEGenericEdit, 117
 - allowDrop, 122
 - confirmWrite, 122
 - displayAlarmState, 122
 - enabled, 122
 - Engineer, 120
 - getConfirmWrite, 120
 - getSubscribe, 120
 - getWriteOnEnter, 120
 - getWriteOnFinish, 120
 - getWriteOnLoseFocus, 121
 - int, 122
 - QEGenericEdit, 120
 - requestEnabled, 121
 - Scientist, 120
 - setConfirmWrite, 121
 - setSubscribe, 121
 - setWriteOnEnter, 121
 - setWriteOnFinish, 121
 - setWriteOnLoseFocus, 121
 - subscribe, 122
 - User, 120
 - userLevelEnabled, 122
 - userLevelEngineerStyle, 123
 - UserLevels, 120
 - userLevelScientistStyle, 123
 - userLevelUserStyle, 123
 - userLevelVisibility, 123
 - variable, 123
 - variableAsToolTip, 124
 - variableSubstitutions, 124
 - visible, 124
 - writeOnEnter, 124
 - writeOnFinish, 124
 - writeOnLoseFocus, 124
- QEGroupBox, 125
 - allowDrop, 126
 - displayAlarmState, 126

- enabled, [127](#)
- Engineer, [126](#)
- int, [127](#)
- requestEnabled, [126](#)
- Scientist, [126](#)
- User, [126](#)
- userLevelEnabled, [127](#)
- userLevelEngineerStyle, [127](#)
- UserLevels, [126](#)
- userLevelScientistStyle, [127](#)
- userLevelUserStyle, [128](#)
- userLevelVisibility, [128](#)
- variableAsToolTip, [128](#)
- visible, [128](#)
- QEImage, [129](#)
 - allowDrop, [140](#)
 - areaColor, [140](#)
 - autoBrightnessContrast, [139](#)
 - beamColor, [140](#)
 - beamXVariable, [140](#)
 - beamYVariable, [140](#)
 - clippingHighVariable, [140](#)
 - clippingLowVariable, [141](#)
 - clippingOnOffVariable, [141](#)
 - dbValueChanged, [139](#)
 - displayAlarmState, [141](#)
 - displayButtonBar, [139](#)
 - enableBrightnessContrast, [140](#)
 - enabled, [141](#)
 - enableHozSliceSelection, [141](#)
 - enableVertSliceSelection, [141](#)
 - Engineer, [139](#)
 - Fit, [137](#)
 - formatOption, [141](#)
 - FormatOptions, [137](#)
 - formatOptions, [137](#)
 - GREY12, [137](#)
 - GREY16, [137](#)
 - GREY8, [137](#)
 - Grey_12, [137](#)
 - Grey_16, [137](#)
 - Grey_8, [137](#)
 - heightVariable, [142](#)
 - horizontalFlip, [142](#)
 - hozSliceColor, [142](#)
 - imageVariable, [142](#)
 - initialHosScrollPos, [142](#)
 - initialVertScrollPos, [140](#)
 - int, [142](#)
 - NoRotation, [138](#)
 - profileColor, [142](#)
 - QEImage, [139](#)
 - regionOfInterest1HVariable, [142](#)
 - regionOfInterest1WVariable, [142](#)
 - regionOfInterest1XVariable, [143](#)
 - regionOfInterest1YVariable, [143](#)
 - regionOfInterest2HVariable, [143](#)
 - regionOfInterest2WVariable, [143](#)
 - regionOfInterest2XVariable, [143](#)
 - regionOfInterest2YVariable, [143](#)
 - regionOfInterest3HVariable, [143](#)
 - regionOfInterest3WVariable, [143](#)
 - regionOfInterest3XVariable, [143](#)
 - regionOfInterest3YVariable, [144](#)
 - regionOfInterest4HVariable, [144](#)
 - regionOfInterest4WVariable, [144](#)
 - regionOfInterest4XVariable, [144](#)
 - regionOfInterest4YVariable, [144](#)
 - requestEnabled, [139](#)
 - RESIZE_OPTION_FIT, [137](#)
 - RESIZE_OPTION_ZOOM, [137](#)
 - resizeOption, [144](#)
 - ResizeOptions, [137](#)
 - resizeOptions, [137](#)
 - RGB_888, [137](#)
 - Rotate180, [138](#)
 - Rotate90Left, [138](#)
 - Rotate90Right, [138](#)
 - rotation, [144](#)
 - ROTATION_0, [138](#)
 - ROTATION_180, [138](#)
 - ROTATION_90_LEFT, [138](#)
 - ROTATION_90_RIGHT, [138](#)
 - RotationOptions, [138](#)
 - rotationOptions, [137](#)
 - Scientist, [139](#)
 - selectOptions, [138](#)
 - showTime, [144](#)
 - SO_AREA4, [138](#)
 - SO_BEAM, [138](#)
 - SO_HSLICE, [138](#)
 - SO_NONE, [138](#)
 - SO_PANNING, [138](#)
 - SO_PROFILE, [138](#)
 - SO_TARGET, [138](#)
 - SO_VSLICE, [138](#)
 - targetColor, [144](#)
 - targetTriggerVariable, [145](#)
 - targetXVariable, [145](#)
 - targetYVariable, [145](#)

- timeColor, [145](#)
- User, [139](#)
- userLevelEnabled, [145](#)
- userLevelEngineerStyle, [145](#)
- UserLevels, [138](#)
- userLevelScientistStyle, [145](#)
- userLevelUserStyle, [146](#)
- userLevelVisibility, [146](#)
- variableAsToolTip, [146](#)
- variableSubstitutions, [146](#)
- verticalFlip, [146](#)
- vertSliceColor, [146](#)
- visible, [147](#)
- widthVariable, [147](#)
- Zoom, [137](#)
- QEInteger, [147](#)
- QEIntegerFormatting, [148](#)
 - formatInteger, [149](#)
 - formatIntegerArray, [149](#)
 - formatValue, [149](#)
- QELabel, [149](#)
 - addUnits, [155](#)
 - allowDrop, [155](#)
 - Append, [153](#)
 - arrayAction, [155](#)
 - ArrayActions, [153](#)
 - Ascii, [153](#)
 - Automatic, [153](#)
 - dbValueChanged, [155](#)
 - Default, [153](#)
 - displayAlarmState, [155](#)
 - enabled, [156](#)
 - Engineer, [154](#)
 - Fixed, [153](#)
 - Floating, [153](#)
 - format, [156](#)
 - Formats, [153](#)
 - Index, [153](#)
 - int, [156](#)
 - Integer, [153](#)
 - leadingZero, [156](#)
 - LocalEnumeration, [153](#)
 - localEnumeration, [156](#)
 - notation, [157](#)
 - Notations, [153](#)
 - Picture, [154](#)
 - pixmap0, [157](#)
 - pixmap1, [157](#)
 - pixmap2, [157](#)
 - pixmap3, [157](#)
 - pixmap4, [157](#)
 - pixmap5, [158](#)
 - pixmap6, [158](#)
 - pixmap7, [158](#)
 - precision, [158](#)
 - QELabel, [154](#)
 - requestEnabled, [155](#)
 - Scientific, [153](#)
 - Scientist, [154](#)
 - Text, [154](#)
 - Time, [153](#)
 - trailingZeros, [158](#)
 - UnsignedInteger, [153](#)
 - UPDATE_PIXMAP, [154](#)
 - UPDATE_TEXT, [154](#)
 - updateOption, [158](#)
 - UpdateOptions, [153](#)
 - updateOptions, [154](#)
 - useDbPrecision, [158](#)
 - User, [154](#)
 - userLevelEnabled, [158](#)
 - userLevelEngineerStyle, [159](#)
 - UserLevels, [154](#)
 - userLevelScientistStyle, [159](#)
 - userLevelUserStyle, [159](#)
 - userLevelVisibility, [159](#)
 - variable, [159](#)
 - variableAsToolTip, [160](#)
 - variableSubstitutions, [160](#)
 - visible, [160](#)
- QELineEdit, [160](#)
 - addUnits, [163](#)
 - Append, [162](#)
 - arrayAction, [163](#)
 - ArrayActions, [162](#)
 - Ascii, [162](#)
 - Automatic, [162](#)
 - dbValueChanged, [163](#)
 - Default, [162](#)
 - Fixed, [162](#)
 - Floating, [162](#)
 - format, [163](#)
 - Formats, [162](#)
 - Index, [162](#)
 - int, [164](#)
 - Integer, [162](#)
 - leadingZero, [164](#)
 - LocalEnumeration, [162](#)
 - localEnumeration, [164](#)
 - notation, [165](#)

- Notations, 162
- precision, 165
- QELineEdit, 163
- Scientific, 162
- Time, 162
- trailingZeros, 165
- UnsignedInteger, 162
- useDbPrecision, 165
- QELineEditManager, 165
- QELink, 166
- QELocalEnumeration, 167
 - getLocalEnumeration, 168
 - isDefined, 168
 - QELocalEnumeration, 168
 - setLocalEnumeration, 168
 - textToDouble, 169
 - textToInt, 169
 - textToValue, 169
 - valueToText, 170
- QELog, 170
- QELogin, 172
- QENumericEdit, 174
 - addUnits, 176
 - autoScale, 176
 - dbValueChanged, 176
 - leadingZeros, 176
 - maximum, 177
 - minimum, 177
 - precision, 177
 - QENumericEdit, 176
- QENumericEditManager, 177
- QEPeriodic, 178
 - allowDrop, 182
 - dbElementChanged, 181
 - dbValueChanged, 181
 - displayAlarmState, 182
 - enabled, 182
 - Engineer, 181
 - int, 182
 - readbackLabelVariable1, 182
 - readbackLabelVariable2, 182
 - requestEnabled, 181
 - Scientist, 181
 - subscribe, 182
 - User, 181
 - userLevelEnabled, 183
 - userLevelEngineerStyle, 183
 - UserLevels, 181
 - userLevelScientistStyle, 183
 - userLevelUserStyle, 183
- userLevelVisibility, 183
- variableAsToolTip, 184
- variableSubstitutions, 184
- visible, 184
- writeButtonVariable1, 184
- writeButtonVariable2, 184
- QEPeriodic::elementInfoStruct, 36
- QEPeriodic::userInfoStructArray, 283
- QEPeriodicComponentData, 184
- QEPeriodicTaskMenu, 185
- QEPeriodicTaskMenuFactory, 185
- QEpicsPV, 186
- QEPlot, 187
 - allowDrop, 191
 - dbValueChanged, 191
 - displayAlarmState, 191
 - enabled, 191
 - Engineer, 190
 - int, 192
 - requestEnabled, 191
 - Scientist, 190
 - User, 190
 - userLevelEnabled, 192
 - userLevelEngineerStyle, 192
 - UserLevels, 190
 - userLevelScientistStyle, 192
 - userLevelUserStyle, 192
 - userLevelVisibility, 192
 - variable1, 193
 - variable2, 193
 - variable3, 193
 - variable4, 193
 - variableAsToolTip, 193
 - variableSubstitutions, 193
 - visible, 193
- QEPushButton, 194
 - addUnits, 200
 - alignment, 200
 - allowDrop, 200
 - altReadbackVariable, 200
 - Append, 197
 - arguments, 200
 - arrayAction, 200
 - ArrayActions, 197
 - Ascii, 197
 - Automatic, 198
 - clickCheckedText, 201
 - clicked, 199
 - clickText, 201
 - confirmAction, 201

creationOption, 201
CreationOptionNames, 197
dbValueChanged, 199
Default, 197
displayAlarmState, 201
enabled, 202
Engineer, 198
Fixed, 198
Floating, 197
format, 202
Formats, 197
guiFile, 202
Icon, 198
Index, 197
int, 202
Integer, 197
labelText, 202
launchGui, 199
leadingZero, 203
LocalEnumeration, 198
localEnumeration, 203
NewTab, 197
NewWindow, 197
notation, 203
Notations, 198
Open, 197
password, 203
pixmap0, 204
pixmap1, 204
pixmap2, 204
pixmap3, 204
pixmap4, 204
pixmap5, 204
pixmap6, 204
pixmap7, 204
precision, 204
pressed, 199
pressText, 205
prioritySubstitutions, 205
program, 205
QEPushButton, 198
released, 199
releaseText, 205
requestEnabled, 199
Scientific, 198
Scientist, 198
State, 198
subscribe, 205
Text, 198
TextAndIcon, 198
Time, 198
trailingZeros, 205
UnsignedInteger, 198
updateOption, 205
UpdateOptions, 198
useDbPrecision, 206
User, 198
userLevelEnabled, 206
userLevelEngineerStyle, 206
UserLevels, 198
userLevelScientistStyle, 206
userLevelUserStyle, 206
userLevelVisibility, 207
variable, 207
variableAsToolTip, 207
variableSubstitutions, 207
visible, 207
writeOnClick, 207
writeOnPress, 207
writeOnRelease, 208
QEPVNameLists, 208
QEPvProperties, 208
 allowDrop, 211
 displayAlarmState, 211
 enabled, 212
 Engineer, 210
 int, 212
 requestEnabled, 210
 restoreConfiguration, 210
 saveConfiguration, 211
 scaleBy, 211
 Scientist, 210
 User, 210
 userLevelEnabled, 212
 userLevelEngineerStyle, 212
 UserLevels, 210
 userLevelScientistStyle, 212
 userLevelUserStyle, 213
 userLevelVisibility, 213
 variable, 213
 variableAsToolTip, 213
 variableSubstitutions, 213
 visible, 213
QEPvProperties::OwnWidgets, 49
QEPvPropertiesManager, 214
QERadioButton, 214
 addUnits, 220
 alignment, 220
 allowDrop, 220
 Append, 217

- arguments, [220](#)
- arrayAction, [221](#)
- ArrayActions, [217](#)
- Ascii, [217](#)
- Automatic, [218](#)
- clickCheckedText, [221](#)
- clicked, [219](#)
- clickText, [221](#)
- confirmAction, [221](#)
- creationOption, [221](#)
- CreationOptionNames, [217](#)
- dbValueChanged, [219](#)
- Default, [218](#)
- displayAlarmState, [222](#)
- enabled, [222](#)
- Engineer, [219](#)
- Fixed, [218](#)
- Floating, [218](#)
- format, [222](#)
- Formats, [218](#)
- guiFile, [222](#)
- Icon, [218](#)
- Index, [217](#)
- int, [222](#)
- Integer, [218](#)
- labelText, [223](#)
- launchGui, [219](#)
- leadingZero, [223](#)
- LocalEnumeration, [218](#)
- localEnumeration, [223](#)
- NewTab, [218](#)
- NewWindow, [218](#)
- notation, [224](#)
- Notations, [218](#)
- Open, [218](#)
- password, [224](#)
- pixmap0, [224](#)
- pixmap1, [224](#)
- pixmap2, [224](#)
- pixmap3, [224](#)
- pixmap4, [224](#)
- pixmap5, [224](#)
- pixmap6, [224](#)
- pixmap7, [225](#)
- precision, [225](#)
- pressed, [220](#)
- pressText, [225](#)
- prioritySubstitutions, [225](#)
- program, [225](#)
- QERadioButton, [219](#)
- released, [220](#)
- releaseText, [225](#)
- requestEnabled, [220](#)
- Scientific, [218](#)
- Scientist, [219](#)
- State, [218](#)
- subscribe, [225](#)
- Text, [218](#)
- TextAndIcon, [218](#)
- Time, [218](#)
- trailingZeros, [226](#)
- UnsignedInteger, [218](#)
- updateOption, [226](#)
- UpdateOptions, [218](#)
- useDbPrecision, [226](#)
- User, [219](#)
- userLevelEnabled, [226](#)
- userLevelEngineerStyle, [226](#)
- UserLevels, [218](#)
- userLevelScientistStyle, [226](#)
- userLevelUserStyle, [227](#)
- userLevelVisibility, [227](#)
- variable, [227](#)
- variableAsToolTip, [227](#)
- variableSubstitutions, [227](#)
- visible, [227](#)
- writeOnClick, [227](#)
- writeOnPress, [228](#)
- writeOnRelease, [228](#)
- QERecipe, [228](#)
- QERecordFieldName, [230](#)
- QERecordSpec, [231](#)
- QERecordSpecList, [231](#)
- QEScript, [231](#)
- QEShape, [233](#)
 - allowDrop, [239](#)
 - animation1, [239](#)
 - animation2, [239](#)
 - animation3, [239](#)
 - animation4, [240](#)
 - animation5, [240](#)
 - animation6, [240](#)
 - animationOptions, [237](#)
 - color1, [240](#)
 - color10, [240](#)
 - color2, [240](#)
 - color3, [240](#)
 - color4, [240](#)
 - color5, [240](#)
 - color6, [241](#)

- color7, [241](#)
- color8, [241](#)
- color9, [241](#)
- dbValueChanged1, [238](#)
- dbValueChanged2, [238](#)
- dbValueChanged3, [238](#)
- dbValueChanged4, [238](#)
- dbValueChanged5, [239](#)
- dbValueChanged6, [239](#)
- displayAlarmState, [241](#)
- enabled, [241](#)
- Engineer, [238](#)
- int, [241](#)
- offset1, [242](#)
- offset2, [242](#)
- offset3, [242](#)
- offset4, [242](#)
- offset5, [242](#)
- offset6, [242](#)
- point1, [242](#)
- point10, [242](#)
- point2, [243](#)
- point3, [243](#)
- point4, [243](#)
- point5, [243](#)
- point6, [243](#)
- point7, [243](#)
- point8, [243](#)
- point9, [243](#)
- QEShape, [238](#)
- requestEnabled, [239](#)
- scale2, [243](#)
- scale3, [244](#)
- scale4, [244](#)
- scale5, [244](#)
- scale6, [244](#)
- Scientist, [238](#)
- shapeOptions, [237](#)
- User, [238](#)
- userLevelEnabled, [244](#)
- userLevelEngineerStyle, [244](#)
- UserLevels, [237](#)
- userLevelScientistStyle, [244](#)
- userLevelUserStyle, [245](#)
- userLevelVisibility, [245](#)
- variable1, [245](#)
- variable2, [245](#)
- variable3, [245](#)
- variable4, [245](#)
- variable5, [246](#)
- variable6, [246](#)
- variableAsToolTip, [246](#)
- variableSubstitutions, [246](#)
- visible, [246](#)
- QESlider, [246](#)
 - allowDrop, [249](#)
 - dbValueChanged, [249](#)
 - displayAlarmState, [249](#)
 - enabled, [249](#)
 - Engineer, [249](#)
 - int, [250](#)
 - requestEnabled, [249](#)
 - Scientist, [249](#)
 - subscribe, [250](#)
 - User, [249](#)
 - userLevelEnabled, [250](#)
 - userLevelEngineerStyle, [250](#)
 - UserLevels, [248](#)
 - userLevelScientistStyle, [250](#)
 - userLevelUserStyle, [251](#)
 - userLevelVisibility, [251](#)
 - variable, [251](#)
 - variableAsToolTip, [251](#)
 - variableSubstitutions, [251](#)
 - visible, [251](#)
 - writeOnChange, [249](#)
- QESpinBox, [252](#)
 - allowDrop, [254](#)
 - dbValueChanged, [254](#)
 - displayAlarmState, [254](#)
 - enabled, [255](#)
 - Engineer, [254](#)
 - int, [255](#)
 - requestEnabled, [254](#)
 - Scientist, [254](#)
 - subscribe, [255](#)
 - User, [254](#)
 - userLevelEnabled, [255](#)
 - userLevelEngineerStyle, [255](#)
 - UserLevels, [254](#)
 - userLevelScientistStyle, [256](#)
 - userLevelUserStyle, [256](#)
 - userLevelVisibility, [256](#)
 - variable, [256](#)
 - variableAsToolTip, [256](#)
 - variableSubstitutions, [256](#)
 - visible, [257](#)
- QString, [257](#)
- QStringFormatting, [258](#)
- APPEND, [259](#)

- arrayActions, [259](#)
- ASCII, [259](#)
- FORMAT_DEFAULT, [259](#)
- FORMAT_FLOATING, [259](#)
- FORMAT_INTEGER, [259](#)
- FORMAT_LOCAL_ENUMERATE, [259](#)
- FORMAT_STRING, [259](#)
- FORMAT_TIME, [259](#)
- FORMAT_UNSIGNEDINTEGER, [259](#)
- formats, [259](#)
- INDEX, [259](#)
- NOTATION_AUTOMATIC, [259](#)
- NOTATION_FIXED, [259](#)
- NOTATION_SCIENTIFIC, [259](#)
- notations, [259](#)
- QStringFormattingMethods, [260](#)
- QEStripChart, [261](#)
 - restoreConfiguration, [262](#)
 - saveConfiguration, [262](#)
 - variableSubstitutions, [263](#)
- QEStripChart::PrivateData, [53](#)
- QEStripChartAdjustPVDDialog, [263](#)
- QEStripChartContextMenu, [263](#)
 - QEStripChartContextMenu, [264](#)
- QEStripChartItem, [265](#)
- QEStripChartItem::PrivateData, [54](#)
- QEStripChartItemDialog, [266](#)
- QEStripChartNames, [266](#)
- QEStripChartRangeDialog, [267](#)
- QEStripChartTimeDialog, [267](#)
- QEStripChartToolBar, [267](#)
- QEStripChartToolBar::OwnWidgets, [49](#)
- QESubstitutedLabel, [268](#)
 - labelText, [269](#)
 - textSubstitutions, [269](#)
- QEToolTip, [269](#)
- QEWidget, [271](#)
 - activate, [274](#)
 - deactivate, [274](#)
 - defaultFileLocation, [274](#)
 - findQEFile, [274](#)
 - getColor, [274](#)
 - getFrameworkVersion, [274](#)
 - getMessageSourceId, [274](#)
 - getQcalItem, [274](#)
 - openQEFile, [274](#)
 - processAlarmInfo, [275](#)
 - readNow, [275](#)
 - restoreConfiguration, [275](#)
 - saveConfiguration, [275](#)
 - scaleBy, [275](#)
 - setMessageSourceId, [276](#)
 - setupContextMenu, [276](#)
 - setVariableNameAndSubstitutions, [276](#)
 - writeNow, [276](#)
- QEWidgets, [276](#)
- QLabelList, [277](#)
- readbackLabelVariable1
 - QEPeriodic, [182](#)
- readbackLabelVariable2
 - QEPeriodic, [182](#)
- readNow
 - QEWidget, [275](#)
- regionOfInterest1HVariable
 - QEImage, [142](#)
- regionOfInterest1WVariable
 - QEImage, [142](#)
- regionOfInterest1XVariable
 - QEImage, [143](#)
- regionOfInterest1YVariable
 - QEImage, [143](#)
- regionOfInterest2HVariable
 - QEImage, [143](#)
- regionOfInterest2WVariable
 - QEImage, [143](#)
- regionOfInterest2XVariable
 - QEImage, [143](#)
- regionOfInterest2YVariable
 - QEImage, [143](#)
- regionOfInterest3HVariable
 - QEImage, [143](#)
- regionOfInterest3WVariable
 - QEImage, [143](#)
- regionOfInterest3XVariable
 - QEImage, [143](#)
- regionOfInterest3YVariable
 - QEImage, [144](#)
- regionOfInterest4HVariable
 - QEImage, [144](#)
- regionOfInterest4WVariable
 - QEImage, [144](#)
- regionOfInterest4XVariable
 - QEImage, [144](#)
- regionOfInterest4YVariable
 - QEImage, [144](#)
- released
 - QECheckBox, [89](#)
 - QEPushButton, [199](#)
 - QERadioButton, [220](#)

- releaseText
 - QCheckBox, [95](#)
 - QPushButton, [205](#)
 - QRadioButton, [225](#)
- requestEnabled
 - QAnalogProgressBar, [73](#)
 - QBitStatus, [80](#)
 - QCheckBox, [89](#)
 - QComboBox, [100](#)
 - QFrame, [113](#)
 - QGenericEdit, [121](#)
 - QGroupBox, [126](#)
 - QImage, [139](#)
 - QLabel, [155](#)
 - QPeriodic, [181](#)
 - QPlot, [191](#)
 - QPushButton, [199](#)
 - QEPvProperties, [210](#)
 - QRadioButton, [220](#)
 - QShape, [239](#)
 - QSlider, [249](#)
 - QSpinBox, [254](#)
- RESIZE_OPTION_FIT
 - QImage, [137](#)
- RESIZE_OPTION_ZOOM
 - QImage, [137](#)
- resizeOption
 - QImage, [144](#)
- ResizeOptions
 - QImage, [137](#)
- resizeOptions
 - QImage, [137](#)
- restore
 - SaveRestoreSignal, [278](#)
- restoreConfiguration
 - QEPvProperties, [210](#)
 - QStripChart, [262](#)
 - QWidget, [275](#)
- RGB_888
 - QImage, [137](#)
- Right_To_Left
 - QAnalogIndicator, [67](#)
- ROInfo, [277](#)
- Rotate180
 - QImage, [138](#)
- Rotate90Left
 - QImage, [138](#)
- Rotate90Right
 - QImage, [138](#)
- rotation
 - QImage, [144](#)
- ROTATION_0
 - QImage, [138](#)
- ROTATION_180
 - QImage, [138](#)
- ROTATION_90_LEFT
 - QImage, [138](#)
- ROTATION_90_RIGHT
 - QImage, [138](#)
- RotationOptions
 - QImage, [138](#)
- rotationOptions
 - QImage, [137](#)
- save
 - SaveRestoreSignal, [278](#)
- saveConfiguration
 - QEPvProperties, [211](#)
 - QStripChart, [262](#)
 - QWidget, [275](#)
- SaveRestoreSignal, [278](#)
 - restore, [278](#)
 - save, [278](#)
- saveRestoreSlot, [278](#)
- Scale
 - QAnalogIndicator, [66](#)
- scale2
 - QShape, [243](#)
- scale3
 - QShape, [244](#)
- scale4
 - QShape, [244](#)
- scale5
 - QShape, [244](#)
- scale6
 - QShape, [244](#)
- scaleBy
 - QEPvProperties, [211](#)
 - QWidget, [275](#)
- Scientific
 - QAnalogProgressBar, [72](#)
 - QCheckBox, [88](#)
 - QLabel, [153](#)
 - QLineEdit, [162](#)
 - QPushButton, [198](#)
 - QRadioButton, [218](#)
- Scientist
 - QAnalogProgressBar, [72](#)
 - QBitStatus, [79](#)
 - QCheckBox, [88](#)

- QEComboBox, 100
- QFrame, 113
- QGenericEdit, 120
- QGroupBox, 126
- QImage, 139
- QLabel, 154
- QPeriodic, 181
- QPlot, 190
- QPushButton, 198
- QEPvProperties, 210
- QERadioButton, 219
- QShape, 238
- QSlider, 249
- QSpinBox, 254
- selectMenu, 279
- selectOptions
 - QImage, 138
- setConfirmWrite
 - QGenericEdit, 121
- setLocalEnumeration
 - QLocalEnumeration, 168
- setMessageSourceId
 - QWidget, 276
- setSubscribe
 - QGenericEdit, 121
- setupContextMenu
 - QWidget, 276
- setVariableNameAndSubstitutions
 - QEBitStatus, 80
 - QForm, 112
 - QWidget, 276
- setWriteOnEnter
 - QGenericEdit, 121
- setWriteOnFinish
 - QGenericEdit, 121
- setWriteOnLoseFocus
 - QGenericEdit, 121
- shapeOptions
 - QShape, 237
- showScale
 - QAnalogIndicator, 68
- showText
 - QAnalogIndicator, 68
- showTime
 - QImage, 144
- SO_AREA4
 - QImage, 138
- SO_BEAM
 - QImage, 138
- SO_HSLICE
 - QImage, 138
- SO_NONE
 - QImage, 138
- SO_PANNING
 - QImage, 138
- SO_PROFILE
 - QImage, 138
- SO_TARGET
 - QImage, 138
- SO_VSLICE
 - QImage, 138
- spanAngle
 - QAnalogIndicator, 68
- standardProperties, 279
- State
 - QCheckBox, 88
 - QPushButton, 198
 - QERadioButton, 218
- StateMachineTemplate, 281
- subscribe
 - QCheckBox, 95
 - QEComboBox, 102
 - QGenericEdit, 122
 - QPeriodic, 182
 - QPushButton, 205
 - QERadioButton, 225
 - QSlider, 250
 - QSpinBox, 255
- targetColor
 - QImage, 144
- targetTriggerVariable
 - QImage, 145
- targetXVariable
 - QImage, 145
- targetYVariable
 - QImage, 145
- Text
 - QCheckBox, 88
 - QLabel, 154
 - QPushButton, 198
 - QERadioButton, 218
- TextAndIcon
 - QCheckBox, 88
 - QPushButton, 198
 - QERadioButton, 218
- textSubstitutions
 - QSubstitutedLabel, 269
- textToDouble
 - QLocalEnumeration, 169

- textToInt
 - QELocalEnumeration, [169](#)
- textToValue
 - QELocalEnumeration, [169](#)
- Time
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [198](#)
 - QERadioButton, [218](#)
- timeColor
 - QEImage, [145](#)
- Top_To_Bottom
 - QEAnalogIndicator, [66](#)
- trace, [282](#)
- TrackRange, [282](#)
- trailingZeros
 - QEAnalogProgressBar, [76](#)
 - QECheckBox, [95](#)
 - QELabel, [158](#)
 - QELineEdit, [165](#)
 - QEPushButton, [205](#)
 - QERadioButton, [226](#)
- UnsignedInteger
 - QEAnalogProgressBar, [72](#)
 - QECheckBox, [87](#)
 - QELabel, [153](#)
 - QELineEdit, [162](#)
 - QEPushButton, [198](#)
 - QERadioButton, [218](#)
- UPDATE_PIXMAP
 - QELabel, [154](#)
- UPDATE_TEXT
 - QELabel, [154](#)
- updateOption
 - QECheckBox, [95](#)
 - QELabel, [158](#)
 - QEPushButton, [205](#)
 - QERadioButton, [226](#)
- UpdateOptions
 - QECheckBox, [88](#)
 - QELabel, [153](#)
 - QEPushButton, [198](#)
 - QERadioButton, [218](#)
- updateOptions
 - QELabel, [154](#)
- useDbDisplayLimits
 - QEAnalogProgressBar, [76](#)
- useDbEnumerations
 - QEComboBox, [101](#)
- useDbPrecision
 - QEAnalogProgressBar, [76](#)
 - QECheckBox, [95](#)
 - QELabel, [158](#)
 - QELineEdit, [165](#)
 - QEPushButton, [206](#)
 - QERadioButton, [226](#)
- User
 - QEAnalogProgressBar, [72](#)
 - QEBitStatus, [79](#)
 - QECheckBox, [88](#)
 - QEComboBox, [100](#)
 - QEFrmae, [113](#)
 - QEGenericEdit, [120](#)
 - QEGroupBox, [126](#)
 - QEImage, [139](#)
 - QELabel, [154](#)
 - QEPeriodic, [181](#)
 - QEPlot, [190](#)
 - QEPushButton, [198](#)
 - QEPvProperties, [210](#)
 - QERadioButton, [219](#)
 - QEShape, [238](#)
 - QESlider, [249](#)
 - QESpinBox, [254](#)
- userInfoStruct, [283](#)
- USERLEVEL_ENGINEER
 - userLevelTypes, [284](#)
- USERLEVEL_SCIENTIST
 - userLevelTypes, [284](#)
- USERLEVEL_USER
 - userLevelTypes, [284](#)
- userLevelEnabled
 - QEAnalogProgressBar, [76](#)
 - QEBitStatus, [81](#)
 - QECheckBox, [95](#)
 - QEComboBox, [102](#)
 - QEFrmae, [114](#)
 - QEGenericEdit, [122](#)
 - QEGroupBox, [127](#)
 - QEImage, [145](#)
 - QELabel, [158](#)
 - QEPeriodic, [183](#)
 - QEPlot, [192](#)
 - QEPushButton, [206](#)
 - QEPvProperties, [212](#)
 - QERadioButton, [226](#)
 - QEShape, [244](#)

- QESlider, [250](#)
- QESpinBox, [255](#)
- userLevelEngineerStyle
 - QEAnalogProgressBar, [76](#)
 - QEBitStatus, [81](#)
 - QECheckBox, [96](#)
 - QEComboBox, [102](#)
 - QEFrmae, [114](#)
 - QEGenericEdit, [123](#)
 - QEGroupBox, [127](#)
 - QEImage, [145](#)
 - QELabel, [159](#)
 - QEPeriodic, [183](#)
 - QEPlot, [192](#)
 - QEPushButton, [206](#)
 - QEPvProperties, [212](#)
 - QERadioButton, [226](#)
 - QEShape, [244](#)
 - QESlider, [250](#)
 - QESpinBox, [255](#)
- UserLevels
 - QEAnalogProgressBar, [72](#)
 - QEBitStatus, [79](#)
 - QECheckBox, [88](#)
 - QEComboBox, [100](#)
 - QEFrmae, [113](#)
 - QEGenericEdit, [120](#)
 - QEGroupBox, [126](#)
 - QEImage, [138](#)
 - QELabel, [154](#)
 - QEPeriodic, [181](#)
 - QEPlot, [190](#)
 - QEPushButton, [198](#)
 - QEPvProperties, [210](#)
 - QERadioButton, [218](#)
 - QEShape, [237](#)
 - QESlider, [248](#)
 - QESpinBox, [254](#)
- userLevels
 - userLevelTypes, [284](#)
- userLevelScientistStyle
 - QEAnalogProgressBar, [76](#)
 - QEBitStatus, [81](#)
 - QECheckBox, [96](#)
 - QEComboBox, [102](#)
 - QEFrmae, [115](#)
 - QEGenericEdit, [123](#)
 - QEGroupBox, [127](#)
 - QEImage, [145](#)
 - QELabel, [159](#)
- QEPeriodic, [183](#)
- QEPlot, [192](#)
- QEPushButton, [206](#)
- QEPvProperties, [212](#)
- QERadioButton, [226](#)
- QEShape, [244](#)
- QESlider, [250](#)
- QESpinBox, [256](#)
- userLevelSignal, [283](#)
- userLevelSlot, [284](#)
- userLevelTypes, [284](#)
 - USERLEVEL_ENGINEER, [284](#)
 - USERLEVEL_SCIENTIST, [284](#)
 - USERLEVEL_USER, [284](#)
- userLevels, [284](#)
- userLevelUserStyle
 - QEAnalogProgressBar, [76](#)
 - QEBitStatus, [81](#)
 - QECheckBox, [96](#)
 - QEComboBox, [102](#)
 - QEFrmae, [115](#)
 - QEGenericEdit, [123](#)
 - QEGroupBox, [128](#)
 - QEImage, [146](#)
 - QELabel, [159](#)
 - QEPeriodic, [183](#)
 - QEPlot, [192](#)
 - QEPushButton, [206](#)
 - QEPvProperties, [213](#)
 - QERadioButton, [227](#)
 - QEShape, [245](#)
 - QESlider, [251](#)
 - QESpinBox, [256](#)
- userLevelVisibility
 - QEAnalogProgressBar, [77](#)
 - QEBitStatus, [81](#)
 - QECheckBox, [96](#)
 - QEComboBox, [103](#)
 - QEFrmae, [115](#)
 - QEGenericEdit, [123](#)
 - QEGroupBox, [128](#)
 - QEImage, [146](#)
 - QELabel, [159](#)
 - QEPeriodic, [183](#)
 - QEPlot, [192](#)
 - QEPushButton, [207](#)
 - QEPvProperties, [213](#)
 - QERadioButton, [227](#)
 - QEShape, [245](#)
 - QESlider, [251](#)

- QESpinBox, [256](#)
- UserMessage, [284](#)
- UserMessageSignal, [287](#)
- UserMessageSlot, [288](#)
- value
 - QEAnalogIndicator, [68](#)
- ValueScaling, [289](#)
- valueToText
 - QELocalEnumeration, [170](#)
- variable
 - QEAnalogProgressBar, [77](#)
 - QEBitStatus, [82](#)
 - QECheckBox, [96](#)
 - QEComboBox, [103](#)
 - QEGenericEdit, [123](#)
 - QELabel, [159](#)
 - QEPushButton, [207](#)
 - QEPvProperties, [213](#)
 - QERadioButton, [227](#)
 - QESlider, [251](#)
 - QESpinBox, [256](#)
- variable1
 - QEPlot, [193](#)
 - QEShape, [245](#)
- variable2
 - QEPlot, [193](#)
 - QEShape, [245](#)
- variable3
 - QEPlot, [193](#)
 - QEShape, [245](#)
- variable4
 - QEPlot, [193](#)
 - QEShape, [245](#)
- variable5
 - QEShape, [246](#)
- variable6
 - QEShape, [246](#)
- variableAsToolTip
 - QEAnalogProgressBar, [77](#)
 - QEBitStatus, [82](#)
 - QECheckBox, [97](#)
 - QEComboBox, [103](#)
 - QEFrame, [115](#)
 - QEGenericEdit, [124](#)
 - QEGroupBox, [128](#)
 - QEImage, [146](#)
 - QELabel, [160](#)
 - QEPeriodic, [184](#)
 - QEPlot, [193](#)
 - QEPushButton, [207](#)
 - QEPvProperties, [213](#)
 - QERadioButton, [227](#)
 - QEShape, [246](#)
 - QESlider, [251](#)
 - QESpinBox, [257](#)
- QEPushButton, [207](#)
- QEPvProperties, [213](#)
- QERadioButton, [227](#)
- QEShape, [246](#)
- QESlider, [251](#)
- QESpinBox, [256](#)
- variableSubstitutions
 - QEAnalogProgressBar, [77](#)
 - QEBitStatus, [82](#)
 - QECheckBox, [97](#)
 - QEComboBox, [103](#)
 - QEGenericEdit, [124](#)
 - QEImage, [146](#)
 - QELabel, [160](#)
 - QEPeriodic, [184](#)
 - QEPlot, [193](#)
 - QEPushButton, [207](#)
 - QEPvProperties, [213](#)
 - QERadioButton, [227](#)
 - QEShape, [246](#)
 - QESlider, [251](#)
 - QESpinBox, [256](#)
 - QEStriptChart, [263](#)
- verticalFlip
 - QEImage, [146](#)
- vertSliceColor
 - QEImage, [146](#)
- VideoWidget, [289](#)
- visible
 - QEAnalogProgressBar, [77](#)
 - QEBitStatus, [82](#)
 - QECheckBox, [97](#)
 - QEComboBox, [103](#)
 - QEFrame, [115](#)
 - QEGenericEdit, [124](#)
 - QEGroupBox, [128](#)
 - QEImage, [147](#)
 - QELabel, [160](#)
 - QEPeriodic, [184](#)
 - QEPlot, [193](#)
 - QEPushButton, [207](#)
 - QEPvProperties, [213](#)
 - QERadioButton, [227](#)
 - QEShape, [246](#)
 - QESlider, [251](#)
 - QESpinBox, [257](#)
- WidgetRef, [290](#)
- widthVariable
 - QEImage, [147](#)

- writeButtonVariable1
 - QEP periodic, [184](#)
- writeButtonVariable2
 - QEP periodic, [184](#)
- writeNow
 - QEW widget, [276](#)
- writeOnChange
 - QEC comboBox, [101](#)
 - QES slider, [249](#)
- writeOnClick
 - QEC checkBox, [97](#)
 - QEP push button, [207](#)
 - QER radioButton, [227](#)
- writeOnEnter
 - QEG generic edit, [124](#)
- writeOnFinish
 - QEG generic edit, [124](#)
- writeOnLoseFocus
 - QEG generic edit, [124](#)
- writeOnPress
 - QEC checkBox, [97](#)
 - QEP push button, [207](#)
 - QER radioButton, [228](#)
- writeOnRelease
 - QEC checkBox, [97](#)
 - QEP push button, [208](#)
 - QER radioButton, [228](#)
- Zoom
 - QEI image, [137](#)
- zoomMenu, [291](#)