PI_park_filter_prac

Design Description

HP

PI_park_filter_prac: Design Description

HP

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Chapter 2. Root System

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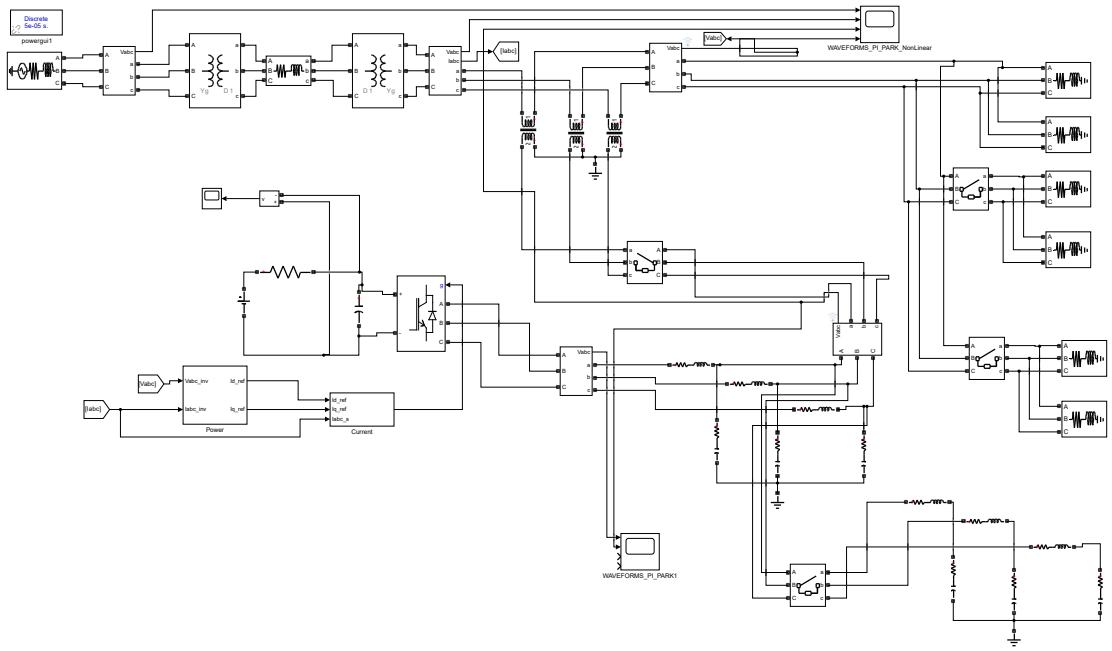
Figure 2.1. PI_park_filter_prac



2.1. Blocks

2.1.1. Parameters

2.1.1.1. "DC Voltage Source" (SubSystem)

Table 2.1. "DC Voltage Source" Parameters

Parameter	Value
Amplitude (V)	400
Measurements	None

2.1.1.2. "From" (From)

Table 2.2. "From" Parameters

Parameter	Value
Goto tag	Iabc
Icon display	Tag

2.1.1.3. "From1" (From)

Table 2.3. "From1" Parameters

Parameter	Value
Goto tag	Vabc
Icon display	Tag

2.1.1.4. "Goto2" (Goto)

Table 2.4. "Goto2" Parameters

Parameter	Value
Tag	Iabc
Icon display	Tag
Tag visibility	local

2.1.1.5. "Goto3" (Goto)

Table 2.5. "Goto3" Parameters

Parameter	Value
Tag	Vabc
Icon display	Tag
Tag visibility	local

2.1.1.6. "Ground" (PMComponent)

Table 2.6. "Ground" Parameters

Parameter	Value
Physical Domain	powersysdomain

Parameter	Value
Sub Class Name	unknown
Left Port Type	p1
Right Port Type	p1

2.1.1.7. "Ground1" (PMComponent)

Table 2.7. "Ground1" Parameters

Parameter	Value
Physical Domain	powersysdomain
Sub Class Name	unknown
Left Port Type	p1
Right Port Type	p1

2.1.1.8. "Ground2" (PMComponent)

Table 2.8. "Ground2" Parameters

Parameter	Value
Physical Domain	powersysdomain
Sub Class Name	unknown
Left Port Type	p1
Right Port Type	p1

2.1.1.9. "Linear Transformer" (SubSystem)

Table 2.9. "Linear Transformer" Parameters

Parameter	Value
Units	pu
Nominal power and frequency [Pn(VA) fn(Hz)]	[250e6 50]
Winding 1 parameters [V1(Vrms) R1(pu) L1(pu)]	[11e3 0.002 0.08]

Parameter	Value
Winding 2 parameters [V2(Vrms) R2(pu) L2(pu)]	[22e3 0.002 0.08]
Three windings transformer	off
Winding 3 parameters [V3(Vrms) R3(pu) L3(pu)]	[315e3 0.002 0.08]
Magnetization resistance and inductance [Rm(pu) Lm(pu)]	[500 750]
Measurements	None
Use SI units	off

2.1.1.10. "Linear Transformer1" (SubSystem)

Table 2.10. "Linear Transformer1" Parameters

Parameter	Value
Units	pu
Nominal power and frequency [Pn(VA) fn(Hz)]	[250e6 50]
Winding 1 parameters [V1(Vrms) R1(pu) L1(pu)]	[11e3 0.002 0.08]
Winding 2 parameters [V2(Vrms) R2(pu) L2(pu)]	[22e3 0.002 0.08]
Three windings transformer	off
Winding 3 parameters [V3(Vrms) R3(pu) L3(pu)]	[315e3 0.002 0.08]
Magnetization resistance and inductance [Rm(pu) Lm(pu)]	[500 750]
Measurements	None

Parameter	Value
Use SI units	off

2.1.1.11. "Linear Transformer2" (SubSystem)

Table 2.11. "Linear Transformer2" Parameters

Parameter	Value
Units	pu
Nominal power and frequency [Pn(VA) fn(Hz)]	[250e6 50]
Winding 1 parameters [V1(Vrms) R1(pu) L1(pu)]	[11e3 0.002 0.08]
Winding 2 parameters [V2(Vrms) R2(pu) L2(pu)]	[22e3 0.002 0.08]
Three windings transformer	off
Winding 3 parameters [V3(Vrms) R3(pu) L3(pu)]	[315e3 0.002 0.08]
Magnetization resistance and inductance [Rm(pu) Lm(pu)]	[500 750]
Measurements	None
Use SI units	off

2.1.1.12. "powergui1" (SubSystem)

Table 2.12. "powergui1" Parameters

Parameter	Value
Simulation type	Discrete
Sample time (s)	50e-6
Max iterations	50
Frequency (Hz)	50
Base power (VA)	100e6

Parameter	Value
PQ tolerance (pu)	1e-4
Voltage units	kV
Power units	MW
Disable Simscape Power Systems ST warnings	off
Display Simscape Power Systems ST compilation messages	off
Use TLC file when in Accelerator Simulation Mode and for code generation	off
Discrete solver	Tustin/Backward Euler (TBE)
Store switching topologies	off
Start simulation with initial electrical states from	blocks

2.1.1.13. "Series RLC Branch" (PMComponent)

Table 2.13. "Series RLC Branch" Parameters

Parameter	Value
Branch type	R
Resistance (Ohms)	20
Measurements	None

2.1.1.14. "Series RLC Branch1" (PMComponent)

Table 2.14. "Series RLC Branch1" Parameters

Parameter	Value
Branch type	C
Capacitance (F)	1e-3
Set the initial capacitor voltage	off
Measurements	None

2.1.1.15. "Series RLC Branch10" (PMComponent)

Table 2.15. "Series RLC Branch10" Parameters

Parameter	Value
Branch type	RL
Resistance (Ohms)	20
Inductance (H)	7e-3
Set the initial inductor current	off
Measurements	None

2.1.1.16. "Series RLC Branch11" (PMComponent)

Table 2.16. "Series RLC Branch11" Parameters

Parameter	Value
Branch type	RC
Resistance (Ohms)	5
Capacitance (F)	50e-6
Set the initial capacitor voltage	off
Measurements	None

2.1.1.17. "Series RLC Branch12" (PMComponent)

Table 2.17. "Series RLC Branch12" Parameters

Parameter	Value
Branch type	RC
Resistance (Ohms)	5
Capacitance (F)	50e-6
Set the initial capacitor voltage	off
Measurements	None

2.1.1.18. "Series RLC Branch13" (PMComponent)

Table 2.18. "Series RLC Branch13" Parameters

Parameter	Value
Branch type	RC

Parameter	Value
Resistance (Ohms)	5
Capacitance (F)	50e-6
Set the initial capacitor voltage	off
Measurements	None

2.1.1.19. "Series RLC Branch2" (PMComponent)

Table 2.19. "Series RLC Branch2" Parameters

Parameter	Value
Branch type	RL
Resistance (Ohms)	50
Inductance (H)	7e-3
Set the initial inductor current	off
Measurements	None

2.1.1.20. "Series RLC Branch3" (PMComponent)

Table 2.20. "Series RLC Branch3" Parameters

Parameter	Value
Branch type	RL
Resistance (Ohms)	50
Inductance (H)	7e-3
Set the initial inductor current	off
Measurements	None

2.1.1.21. "Series RLC Branch4" (PMComponent)

Table 2.21. "Series RLC Branch4" Parameters

Parameter	Value
Branch type	RL
Resistance (Ohms)	50
Inductance (H)	7e-3

Parameter	Value
Set the initial inductor current	off
Measurements	None

2.1.1.22. "Series RLC Branch5" (PMComponent)

Table 2.22. "Series RLC Branch5" Parameters

Parameter	Value
Branch type	RC
Resistance (Ohms)	5
Capacitance (F)	50e-6
Set the initial capacitor voltage	off
Measurements	None

2.1.1.23. "Series RLC Branch6" (PMComponent)

Table 2.23. "Series RLC Branch6" Parameters

Parameter	Value
Branch type	RC
Resistance (Ohms)	5
Capacitance (F)	50e-6
Set the initial capacitor voltage	off
Measurements	None

2.1.1.24. "Series RLC Branch7" (PMComponent)

Table 2.24. "Series RLC Branch7" Parameters

Parameter	Value
Branch type	RC
Resistance (Ohms)	5
Capacitance (F)	50e-6
Set the initial capacitor voltage	off

Parameter	Value
Measurements	None

2.1.1.25. "Series RLC Branch8" (PMComponent)

Table 2.25. "Series RLC Branch8" Parameters

Parameter	Value
Branch type	RL
Resistance (Ohms)	20
Inductance (H)	7e-3
Set the initial inductor current	off
Measurements	None

2.1.1.26. "Series RLC Branch9" (PMComponent)

Table 2.26. "Series RLC Branch9" Parameters

Parameter	Value
Branch type	RL
Resistance (Ohms)	20
Inductance (H)	7e-3
Set the initial inductor current	off
Measurements	None

2.1.1.27. "Three-Phase Series RLC Branch" (PMComponent)

Table 2.27. "Three-Phase Series RLC Branch" Parameters

Parameter	Value
Branch type	RL
Resistance R (Ohms)	.1
Inductance L (H)	.05
Measurements	None

2.1.1.28. "Three-Phase Series RLC Load" (PMComponent)

Table 2.28. "Three-Phase Series RLC Load" Parameters

Parameter	Value
Configuration	Y (grounded)
Nominal phase-to-phase voltage Vn (Vrms)	11000
Nominal frequency fn (Hz)	50
Specify PQ powers for each phase	off
Active power P (W)	15e3
Inductive reactive power QL (positive var)	400
Capacitive reactive power Qc (negative var)	0
Measurements	None
Load type	constant Z

2.1.1.29. "Three-Phase Series RLC Load1" (PMComponent)

Table 2.29. "Three-Phase Series RLC Load1" Parameters

Parameter	Value
Configuration	Y (grounded)
Nominal phase-to-phase voltage Vn (Vrms)	11000
Nominal frequency fn (Hz)	50
Specify PQ powers for each phase	off
Active power P (W)	15e3
Inductive reactive power QL (positive var)	400
Capacitive reactive power Qc (negative var)	0
Measurements	None

Parameter	Value
Load type	constant Z

2.1.1.30. "Three-Phase Series RLC Load2" (PMComponent)

Table 2.30. "Three-Phase Series RLC Load2" Parameters

Parameter	Value
Configuration	Y (grounded)
Nominal phase-to-phase voltage Vn (Vrms)	11000
Nominal frequency fn (Hz)	50
Specify PQ powers for each phase	off
Active power P (W)	20e3
Inductive reactive power QL (positive var)	60e3
Capacitive reactive power Qc (negative var)	0
Measurements	None
Load type	constant Z

2.1.1.31. "Three-Phase Series RLC Load3" (PMComponent)

Table 2.31. "Three-Phase Series RLC Load3" Parameters

Parameter	Value
Configuration	Y (grounded)
Nominal phase-to-phase voltage Vn (Vrms)	11000
Nominal frequency fn (Hz)	50
Specify PQ powers for each phase	off
Active power P (W)	20e3
Inductive reactive power QL (positive var)	60e3

Parameter	Value
Capacitive reactive power Qc (negative var)	0
Measurements	None
Load type	constant Z

2.1.1.32. "Three-Phase Series RLC Load4" (PMComponent)

Table 2.32. "Three-Phase Series RLC Load4" Parameters

Parameter	Value
Configuration	Y (grounded)
Nominal phase-to-phase voltage Vn (Vrms)	11000
Nominal frequency fn (Hz)	50
Specify PQ powers for each phase	off
Active power P (W)	30e3
Inductive reactive power QL (positive var)	80e3
Capacitive reactive power Qc (negative var)	0
Measurements	None
Load type	constant Z

2.1.1.33. "Three-Phase Series RLC Load5" (PMComponent)

Table 2.33. "Three-Phase Series RLC Load5" Parameters

Parameter	Value
Configuration	Y (grounded)
Nominal phase-to-phase voltage Vn (Vrms)	11000
Nominal frequency fn (Hz)	50
Specify PQ powers for each phase	off

Parameter	Value
Active power P (W)	30e3
Inductive reactive power QL (positive var)	80e3
Capacitive reactive power Qc (negative var)	0
Measurements	None
Load type	constant Z

2.1.1.34. "Three-Phase Transformer (Two Windings)" (SubSystem)

Table 2.34. "Three-Phase Transformer (Two Windings)" Parameters

Parameter	Value
Winding 1 connection (ABC terminals)	Yg
Winding 2 connection (abc terminals)	Delta (D1)
Type	Three single-phase transformers
Simulate saturation	off
Measurements	None
Units	pu
Nominal power and frequency [Pn(VA) , fn(Hz)]	[70e6 , 50]
Winding 1 parameters [V1 Ph-Ph(Vrms) , R1(pu) , L1(pu)]	[13e3 , 0.002 , 0.08]
Winding 2 parameters [V2 Ph-Ph(Vrms) , R2(pu) , L2(pu)]	[115e3 , 0.002 , 0.08]
Magnetization resistance Rm (pu)	500
Magnetization inductance Lm (pu)	1400
Saturation characteristic [i1 , phi1 ; i2 , phi2 ; ...] (pu)	[0,0 ; 0.0024,1.2 ; 1.0,1.52]

Parameter	Value
Initial fluxes [phi0A , phi0B , phi0C] (pu)	[0.8 , -0.8 , 0.7]
Break Algebraic loop in discrete saturation model	off
Use SI units (internal use)	off

2.1.1.35. "Three-Phase Transformer (Two Windings)1" (SubSystem)

Table 2.35. "Three-Phase Transformer (Two Windings)1" Parameters

Parameter	Value
Winding 1 connection (ABC terminals)	Delta (D1)
Winding 2 connection (abc terminals)	Yg
Type	Three single-phase transformers
Simulate saturation	off
Measurements	None
Units	pu
Nominal power and frequency [Pn(VA) , fn(Hz)]	[70e6 , 50]
Winding 1 parameters [V1 Ph-Ph(Vrms) , R1(pu) , L1(pu)]	[115e3 , 0.002 , 0.08]
Winding 2 parameters [V2 Ph-Ph(Vrms) , R2(pu) , L2(pu)]	[11e3 , 0.002 , 0.08]
Magnetization resistance Rm (pu)	500
Magnetization inductance Lm (pu)	800
Saturation characteristic [i1 , phi1 ; i2 , phi2 ; ...] (pu)	[0,0 ; 0.0024,1.2 ; 1.0,1.52]

Parameter	Value
Initial fluxes [phi0A , phi0B , phi0C] (pu)	[0.8 , -0.8 , 0.7]
Break Algebraic loop in discrete saturation model	off
Use SI units (internal use)	off

2.1.1.36. "Three-Phase V-I Measurement" (SubSystem)

Table 2.36. "Three-Phase V-I Measurement" Parameters

Parameter	Value
Voltage measurement	phase-to-ground
Use a label	off
Voltages in pu, based on peak value of nominal phase-to-ground voltage	off
Current measurement	no
Output signals in	Complex

2.1.1.37. "Three-Phase V-I Measurement1" (SubSystem)

Table 2.37. "Three-Phase V-I Measurement1" Parameters

Parameter	Value
Voltage measurement	phase-to-ground
Use a label	off
Voltages in pu, based on peak value of nominal phase-to-ground voltage	off
Current measurement	no
Output signals in	Complex

2.1.1.38. "Three-Phase V-I Measurement2" (SubSystem)

Table 2.38. "Three-Phase V-I Measurement2" Parameters

Parameter	Value
Voltage measurement	phase-to-ground
Use a label	off
Voltages in pu, based on peak value of nominal phase-to-ground voltage	off
Current measurement	yes
Use a label	off
Currents in pu	off
Output signals in	Complex

2.1.1.39. "Three-Phase V-I Measurement3" (SubSystem)

Table 2.39. "Three-Phase V-I Measurement3" Parameters

Parameter	Value
Voltage measurement	phase-to-ground
Use a label	off
Voltages in pu, based on peak value of nominal phase-to-ground voltage	off
Current measurement	no
Output signals in	Complex

2.1.1.40. "Three-Phase V-I Measurement4" (SubSystem)

Table 2.40. "Three-Phase V-I Measurement4" Parameters

Parameter	Value
Voltage measurement	phase-to-ground
Use a label	off
Voltages in pu, based on peak value of	off

Parameter	Value
nominal phase-to-ground voltage	
Current measurement	no
Output signals in	Complex

2.1.1.41. "Three-Phase Breaker1" (SubSystem)

Table 2.41. "Three-Phase Breaker1" Parameters

Parameter	Value
Initial status	open
Phase A	on
Phase B	on
Phase C	on
Switching times (s)	[10/50]
External	off
Breaker resistance Ron (Ohm)	0.01
Snubber resistance Rs (Ohm)	1e6
Snubber capacitance Cs (F)	inf
Measurements	None

2.1.1.42. "Three-Phase Breaker2" (SubSystem)

Table 2.42. "Three-Phase Breaker2" Parameters

Parameter	Value
Initial status	open
Phase A	on
Phase B	on
Phase C	on
Switching times (s)	[10/50]
External	off
Breaker resistance Ron (Ohm)	0.01
Snubber resistance Rs (Ohm)	1e6

Parameter	Value
Snubber capacitance Cs (F)	inf
Measurements	None

2.1.1.43. "Three-Phase Breaker3" (SubSystem)

Table 2.43. "Three-Phase Breaker3" Parameters

Parameter	Value
Initial status	open
Phase A	on
Phase B	on
Phase C	on
Switching times (s)	[20/50]
External	off
Breaker resistance Ron (Ohm)	0.01
Snubber resistance Rs (Ohm)	1e6
Snubber capacitance Cs (F)	inf
Measurements	None

2.1.1.44. "Three-Phase Breaker4" (SubSystem)

Table 2.44. "Three-Phase Breaker4" Parameters

Parameter	Value
Initial status	open
Phase A	on
Phase B	on
Phase C	on
Switching times (s)	[20/50]
External	off
Breaker resistance Ron (Ohm)	0.01
Snubber resistance Rs (Ohm)	1e6
Snubber capacitance Cs (F)	inf

Parameter	Value
Measurements	None

2.1.1.45. "Three-Phase Source" (SubSystem)

Table 2.45. "Three-Phase Source" Parameters

Parameter	Value
Configuration	Yg
Specify internal voltages for each phase	off
Phase-to-phase voltage (Vrms)	13e3
Phase angle of phase A (degrees)	0
Frequency (Hz)	50
Internal	on
Specify short-circuit level parameters	off
Source resistance (Ohms)	0.2929
Source inductance (H)	16.58e-3
Base voltage (Vrms ph-ph)	13e3
Generator type	swing

2.1.1.46. "Universal Bridge" (SubSystem)

Table 2.46. "Universal Bridge" Parameters

Parameter	Value
Number of bridge arms	3
Snubber resistance Rs (Ohms)	1e5
Snubber capacitance Cs (F)	inf
Power Electronic device	IGBT / Diodes
Ron (Ohms)	1

Parameter	Value
Forward voltages [Device Vf(V) , Diode Vfd(V)]	[0 0]
Measurements	None

2.1.1.47. "Voltage Measurement" (SubSystem)

Table 2.47. "Voltage Measurement" Parameters

Parameter	Value
Output signal	Complex

2.1.2. Block Execution Order

1. Sine Wave A [130] (Sin)
2. Sine Wave B [131] (Sin)
3. Sine Wave C [131] (Sin)
4. State-Space [95] (S-Function)
5. SwitchCurrents [195] (Constant)
6. DC [132] (Constant)
7. Sine Wave A (Sin)
8. Sine Wave B (Sin)
9. Sine Wave C (Sin)
10. State-Space [96] (S-Function)
11. do not delete this gain (Gain)
12. do not delete this gain (Gain)
13. do not delete this gain (Gain)
14. Kv1 (Gain)
15. HiddenToAsyncQueue_InsertedFor_Three-Phase V-I Measurement1_at_outport_0 (ToAsyncQueueBlock)
16. do not delete this gain (Gain)
17. do not delete this gain (Gain)
18. do not delete this gain (Gain)
19. Kv1 (Gain)
20. HiddenToAsyncQueue_InsertedFor_Three-Phase V-I Measurement_at_outport_0 (ToAsyncQueueBlock)
21. UniversalBridge (PMComponent)
22. A (PMIOPort)
23. B (PMIOPort)
24. C (PMIOPort)
25. + (PMIOPort)
26. - (PMIOPort)
27. do not delete this gain (Gain)
28. do not delete this gain (Gain)
29. do not delete this gain (Gain)
30. Kv1 (Gain)
31. WAVEFORMS_PI_PARK1 [22] (Scope)

32. do not delete this gain (Gain)
33. do not delete this gain (Gain)
34. do not delete this gain (Gain)
35. Kv1 (Gain)
36. do not delete this gain (Gain)
37. do not delete this gain (Gain)
38. do not delete this gain (Gain)
39. Kv1 (Gain)
40. WAVEFORMS_PI_PARK_NonLinear [22] (Scope)
41. Constant [65] (Constant)
42. Discrete-Time Integrator [75] (DiscreteIntegrator)
43. do not delete this gain (Gain)
44. do not delete this gain (Gain)
45. do not delete this gain (Gain)
46. Kv (Gain)
47. Constant [58] (Constant)
48. Compare [57] (RelationalOperator)
49. Bias1 [72] (Bias)
50. Initial [72] (InitialCondition)
51. Integrator [73] (DiscreteIntegrator)
52. K1 [40] (Constant)
53. Product [42] (Product)
54. K2 [41] (Constant)
55. Product1 [42] (Product)
56. Sum [45] (Sum)
57. Product3 [44] (Product)
58. Product2 [43] (Product)
59. Sum1 [45] (Sum)
60. Sum2 [46] (Sum)
61. Sum3 [47] (Sum)
62. Fcn2 [40] (Fcn)
63. integ1 (Integrator)
64. T (TransportDelay)
65. Sum1 (Sum)
66. Math Function (Math)
67. Integ2 (Integrator)
68. T1 (TransportDelay)
69. Sum2 (Sum)
70. Math Function1 (Math)
71. Sum (Sum)
72. Sqrt (Sqrt)
73. integ1 [105] (Integrator)
74. T [113] (TransportDelay)
75. Sum1 [112] (Sum)
76. Math Function [107] (Math)
77. Integ2 [106] (Integrator)
78. T1 [113] (TransportDelay)
79. Sum2 [112] (Sum)
80. Math Function1 [108] (Math)
81. Sum [111] (Sum)
82. Sqrt [110] (Sqrt)
83. Product [51] (Product)
84. Trigonometric Function (Trigonometry)
85. Gain2 (Gain)

86. Trigonometric Function [114] (Trigonometry)
87. Gain2 [104] (Gain)
88. Sum [53] (Sum)
89. Deg->Rad [48] (Gain)
90. Trigonometric Function1 [54] (Trigonometry)
91. Product1 [52] (Product)
92. Trigonometric Function [54] (Trigonometry)
93. Product2 [52] (Product)
94. Gain [49] (Gain)
95. integ1 (Integrator)
96. T (TransportDelay)
97. Sum1 (Sum)
98. Math Function (Math)
99. Integ2 (Integrator)
100. T1 (TransportDelay)
101. Sum2 (Sum)
102. Math Function1 (Math)
103. Sum (Sum)
104. Sqrt (Sqrt)
105. integ1 (Integrator)
106. T (TransportDelay)
107. Sum1 (Sum)
108. Math Function (Math)
109. Integ2 (Integrator)
110. T1 (TransportDelay)
111. Sum2 (Sum)
112. Math Function1 (Math)
113. Sum (Sum)
114. Sqrt (Sqrt)
115. Product (Product)
116. Trigonometric Function (Trigonometry)
117. Gain2 (Gain)
118. Trigonometric Function (Trigonometry)
119. Gain2 (Gain)
120. Sum (Sum)
121. Deg->Rad (Gain)
122. Trigonometric Function1 (Trigonometry)
123. Product1 (Product)
124. Trigonometric Function (Trigonometry)
125. Product2 (Product)
126. Gain (Gain)
127. integ1 (Integrator)
128. T (TransportDelay)
129. Sum1 (Sum)
130. Math Function (Math)
131. Integ2 (Integrator)
132. T1 (TransportDelay)
133. Sum2 (Sum)
134. Math Function1 (Math)
135. Sum (Sum)
136. Sqrt (Sqrt)
137. integ1 (Integrator)
138. T (TransportDelay)
139. Sum1 (Sum)

140. Math Function (Math)
141. Integ2 (Integrator)
142. T1 (TransportDelay)
143. Sum2 (Sum)
144. Math Function1 (Math)
145. Sum (Sum)
146. Sqrt (Sqrt)
147. Product (Product)
148. Trigonometric Function (Trigonometry)
149. Gain2 (Gain)
150. Trigonometric Function (Trigonometry)
151. Gain2 (Gain)
152. Sum (Sum)
153. Deg->Rad (Gain)
154. Trigonometric Function1 (Trigonometry)
155. Product1 (Product)
156. Trigonometric Function (Trigonometry)
157. Product2 (Product)
158. Gain (Gain)
159. Sum [204] (Sum)
160. Gain [202] (Gain)
161. Constant [176] (Constant)
162. Sum [182] (Sum)
163. Kp4 (Gain)
164. Zero-Order Hold (ZeroOrderHold)
165. Discrete-Time Integrator (DiscreteIntegrator)
166. Sum6 (Sum)
167. Saturation2 (Saturate)
168. Sum [69] (Sum)
169. Kp4 [77] (Gain)
170. Kp5 [77] (Gain)
171. Sum6 [79] (Sum)
172. Saturation2 [79] (Saturate)
173. Discrete-Time Integrator (DiscreteIntegrator)
174. Fcn1 [39] (Fcn)
175. Unit Delay [94] (UnitDelay)
176. Zero-Order Hold [95] (ZeroOrderHold)
177. SQR [93] (Fcn)
178. Sum [94] (Sum)
179. Digital Clock [90] (DigitalClock)
180. SQR1 [93] (Fcn)
181. Elementary Math [90] (Math)
182. Product [92] (Product)
183. SQRT [93] (Math)
184. Gain [179] (Gain)
185. Constant1 [177] (Constant)
186. Sum1 [183] (Sum)
187. Kp4 (Gain)
188. Discrete-Time Integrator (DiscreteIntegrator)
189. Sum6 (Sum)
190. Saturation2 (Saturate)
191. Gain1 [179] (Gain)
192. Sum1 [69] (Sum)
193. Kp4 (Gain)

194. Kp5 (Gain)
195. Sum6 (Sum)
196. Saturation2 (Saturate)
197. Constant10 (Constant)
198. Add3 [60] (Sum)
199. Digital Clock [119] (DigitalClock)
200. Constant3 [119] (Constant)
201. Add1 [116] (Sum)
202. Constant1 [118] (Constant)
203. Math Function [120] (Math)
204. 1\ib1 [116] (Gain)
205. Lookup Table [119] (Lookup)
206. Constant2 [118] (Constant)
207. Add3 [117] (Sum)
208. Gain1 [62] (Gain)
209. MUL1 [63] (Product)
210. Add4 [60] (Sum)
211. K1 [83] (Constant)
212. Product [84] (Product)
213. K2 [83] (Constant)
214. Product1 [85] (Product)
215. Sum [87] (Sum)
216. Product3 [86] (Product)
217. Product2 [85] (Product)
218. Sum1 [88] (Sum)
219. Sum2 [88] (Sum)
220. Sum3 [89] (Sum)
221. Fcn2 [82] (Fcn)
222. Fcn4 [82] (Fcn)
223. Fcn5 [82] (Fcn)
224. Relational Operator2 [170] (RelationalOperator)
225. Logical Operator4 (Logic)
226. Data Type Conversion (DataTypeConversion)
227. do not delete this gain (Gain)
228. do not delete this gain (Gain)
229. do not delete this gain (Gain)
230. Kv1 (Gain)
231. VoltageMeasurement (PMComponent)
232. + (PMIOPort)
233. - (PMIOPort)
234. VoltageMeasurement (PMComponent)
235. + (PMIOPort)
236. - (PMIOPort)
237. VoltageMeasurement (PMComponent)
238. + (PMIOPort)
239. - (PMIOPort)
240. Ground [124] (PMComponent)
241. Multimeter [125] (PMComponent)
242. Multimeter1 [125] (PMComponent)
243. Multimeter2 [125] (PMComponent)
244. A [122] (PMIOPort)
245. B [123] (PMIOPort)
246. C [123] (PMIOPort)
247. a [123] (PMIOPort)

248. b [123] (PMIOPort)
249. c [123] (PMIOPort)
250. A (PMIOPort)
251. B (PMIOPort)
252. C (PMIOPort)
253. a (PMIOPort)
254. b (PMIOPort)
255. c (PMIOPort)
256. d (Fcn)
257. q (Fcn)
258. 0 (Fcn)
259. Gain1 (Gain)
260. Integral Gain [172] (Gain)
261. Integrator [173] (DiscreteIntegrator)
262. Proportional Gain [173] (Gain)
263. Sum [174] (Sum)
264. Unit Delay [71] (UnitDelay)
265. ThreePhaseSourceBlk (PMComponent)
266. A (PMIOPort)
267. B (PMIOPort)
268. C (PMIOPort)
269. Ground [67] (PMComponent)
270. Kp5 (Gain)
271. Kp5 (Gain)
272. Gain1 [104] (Gain)
273. sin(nwt) [110] (Sin)
274. Product [108] (Product)
275. cos(nwt) [103] (Sin)
276. Product1 [109] (Product)
277. Gain [207] (Gain)
278. Sum [209] (Sum)
279. Gain1 [208] (Gain)
280. Gain1 (Gain)
281. sin(nwt) (Sin)
282. Product (Product)
283. cos(nwt) (Sin)
284. Product1 (Product)
285. Gain1 (Gain)
286. sin(nwt) (Sin)
287. Product (Product)
288. cos(nwt) (Sin)
289. Product1 (Product)
290. Sum1 [210] (Sum)
291. Gain2 [208] (Gain)
292. Gain1 (Gain)
293. sin(nwt) (Sin)
294. Product (Product)
295. cos(nwt) (Sin)
296. Product1 (Product)
297. Gain1 (Gain)
298. sin(nwt) (Sin)
299. Product (Product)
300. cos(nwt) (Sin)
301. Product1 (Product)

302. Sum2 [210] (Sum)
303. Gain1 (Gain)
304. sin(nwt) (Sin)
305. Product (Product)
306. cos(nwt) (Sin)
307. Product1 (Product)
308. VoltageMeasurement (PMComponent)
309. + (PMIOPort)
310. - (PMIOPort)
311. VoltageMeasurement (PMComponent)
312. + (PMIOPort)
313. - (PMIOPort)
314. VoltageMeasurement (PMComponent)
315. + (PMIOPort)
316. - (PMIOPort)
317. Ground (PMComponent)
318. Multimeter (PMComponent)
319. Multimeter1 (PMComponent)
320. Multimeter2 (PMComponent)
321. A (PMIOPort)
322. B (PMIOPort)
323. C (PMIOPort)
324. a (PMIOPort)
325. b (PMIOPort)
326. c (PMIOPort)
327. A (PMIOPort)
328. B (PMIOPort)
329. C (PMIOPort)
330. a (PMIOPort)
331. b (PMIOPort)
332. c (PMIOPort)
333. VoltageMeasurement (PMComponent)
334. + (PMIOPort)
335. - (PMIOPort)
336. VoltageMeasurement (PMComponent)
337. + (PMIOPort)
338. - (PMIOPort)
339. VoltageMeasurement (PMComponent)
340. + (PMIOPort)
341. - (PMIOPort)
342. Ground (PMComponent)
343. Multimeter (PMComponent)
344. Multimeter1 (PMComponent)
345. Multimeter2 (PMComponent)
346. A (PMIOPort)
347. B (PMIOPort)
348. C (PMIOPort)
349. a (PMIOPort)
350. b (PMIOPort)
351. c (PMIOPort)
352. A (PMIOPort)
353. B (PMIOPort)
354. C (PMIOPort)
355. a (PMIOPort)

356. b (PMIOPort)
357. c (PMIOPort)
358. VoltageMeasurement (PMComponent)
359. + (PMIOPort)
360. - (PMIOPort)
361. VoltageMeasurement (PMComponent)
362. + (PMIOPort)
363. - (PMIOPort)
364. VoltageMeasurement (PMComponent)
365. + (PMIOPort)
366. - (PMIOPort)
367. CurrentMeasurement (PMComponent)
368. + (PMIOPort)
369. - (PMIOPort)
370. CurrentMeasurement (PMComponent)
371. + (PMIOPort)
372. - (PMIOPort)
373. CurrentMeasurement (PMComponent)
374. + (PMIOPort)
375. - (PMIOPort)
376. Ground [146] (PMComponent)
377. Multimeter [148] (PMComponent)
378. Multimeter1 [148] (PMComponent)
379. Multimeter2 [148] (PMComponent)
380. A [145] (PMIOPort)
381. B [145] (PMIOPort)
382. C [145] (PMIOPort)
383. a [145] (PMIOPort)
384. b [145] (PMIOPort)
385. c [146] (PMIOPort)
386. A (PMIOPort)
387. B (PMIOPort)
388. C (PMIOPort)
389. a (PMIOPort)
390. b (PMIOPort)
391. c (PMIOPort)
392. VoltageMeasurement (PMComponent)
393. + (PMIOPort)
394. - (PMIOPort)
395. VoltageMeasurement (PMComponent)
396. + (PMIOPort)
397. - (PMIOPort)
398. VoltageMeasurement (PMComponent)
399. + (PMIOPort)
400. - (PMIOPort)
401. Ground (PMComponent)
402. Multimeter (PMComponent)
403. Multimeter1 (PMComponent)
404. Multimeter2 (PMComponent)
405. A (PMIOPort)
406. B (PMIOPort)
407. C (PMIOPort)
408. a (PMIOPort)
409. b (PMIOPort)

410. c (PMIOPort)
411. A (PMIOPort)
412. B (PMIOPort)
413. C (PMIOPort)
414. a (PMIOPort)
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419. - (PMIOPort)
420. VoltageMeasurement (PMComponent)
421. + (PMIOPort)
422. - (PMIOPort)
423. VoltageMeasurement (PMComponent)
424. + (PMIOPort)
425. - (PMIOPort)
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427. Multimeter (PMComponent)
428. Multimeter1 (PMComponent)
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430. A (PMIOPort)
431. B (PMIOPort)
432. C (PMIOPort)
433. a (PMIOPort)
434. b (PMIOPort)
435. c (PMIOPort)
436. A (PMIOPort)
437. B (PMIOPort)
438. C (PMIOPort)
439. a (PMIOPort)
440. b (PMIOPort)
441. c (PMIOPort)
442. do not delete this gain (Gain)
443. Scope [7] (Scope)
444. VoltageMeasurement (PMComponent)
445. + (PMIOPort)
446. - (PMIOPort)
447. DCVoltageSource (PMComponent)
448. - (PMIOPort)
449. + (PMIOPort)
450. LinearTransformer (PMComponent)
451. A (PMIOPort)
452. B (PMIOPort)
453. 1 (PMIOPort)
454. 2 (PMIOPort)
455. LinearTransformer (PMComponent)
456. A (PMIOPort)
457. B (PMIOPort)
458. 1 (PMIOPort)
459. 2 (PMIOPort)
460. LinearTransformer (PMComponent)
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463. 1 (PMIOPort)

464. 2 (PMIOPort)
465. Three-PhaseTransformer (PMComponent)
466. A (PMIOPort)
467. B (PMIOPort)
468. C (PMIOPort)
469. a (PMIOPort)
470. b (PMIOPort)
471. c (PMIOPort)
472. Three-PhaseTransformer (PMComponent)
473. A (PMIOPort)
474. B (PMIOPort)
475. C (PMIOPort)
476. a (PMIOPort)
477. b (PMIOPort)
478. c (PMIOPort)
479. C4 [150] (Constant)
480. com (Constant)
481. C4 (Constant)
482. Digital Clock [154] (DigitalClock)
483. Look-Up Table [154] (Lookup)
484. Switch3 (Switch)
485. Constant1 (Constant)
486. Constant5 (Constant)
487. Switch (Switch)
488. Clock [211] (Clock)
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490. Switch3 [153] (Switch)
491. Derivative [212] (Derivative)
492. Hit Crossing [212] (HitCross)
493. Breaker (PMComponent)
494. 1 (PMIOPort)
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496. C4 (Constant)
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498. Switch1 (Switch)
499. Clock (Clock)
500. Look-Up Table (Lookup)
501. Switch3 (Switch)
502. Derivative (Derivative)
503. Hit Crossing (HitCross)
504. Breaker (PMComponent)
505. 1 (PMIOPort)
506. 2 (PMIOPort)
507. C4 (Constant)
508. Constant3 (Constant)
509. Switch2 (Switch)
510. Clock (Clock)
511. Look-Up Table (Lookup)
512. Switch3 (Switch)
513. Derivative (Derivative)
514. Hit Crossing (HitCross)
515. Breaker (PMComponent)
516. 1 (PMIOPort)
517. 2 (PMIOPort)

518. ThreePhaseBreaker (PMComponent)
519. A (PMIOPort)
520. B (PMIOPort)
521. C (PMIOPort)
522. a (PMIOPort)
523. b (PMIOPort)
524. c (PMIOPort)
525. C4 (Constant)
526. com (Constant)
527. C4 (Constant)
528. Digital Clock (DigitalClock)
529. Look-Up Table (Lookup)
530. Switch3 (Switch)
531. Constant1 (Constant)
532. Constant5 (Constant)
533. Switch (Switch)
534. Clock (Clock)
535. Look-Up Table (Lookup)
536. Switch3 (Switch)
537. Derivative (Derivative)
538. Hit Crossing (HitCross)
539. Breaker (PMComponent)
540. 1 (PMIOPort)
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542. C4 (Constant)
543. Constant2 (Constant)
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606. Hit Crossing (HitCross)
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609. 2 (PMIOPort)
610. ThreePhaseBreaker (PMComponent)
611. A (PMIOPort)
612. B (PMIOPort)
613. C (PMIOPort)
614. a (PMIOPort)
615. b (PMIOPort)
616. c (PMIOPort)
617. C4 (Constant)
618. com (Constant)
619. C4 (Constant)
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622. Switch3 (Switch)
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625. Switch (Switch)

626. Clock (Clock)
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628. Switch3 (Switch)
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630. Breaker (PMComponent)
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634. C4 (Constant)
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645. C4 (Constant)
646. Constant3 (Constant)
647. Switch2 (Switch)
648. Clock (Clock)
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650. Switch3 (Switch)
651. Derivative (Derivative)
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655. 2 (PMIOPort)
656. ThreePhaseBreaker (PMComponent)
657. A (PMIOPort)
658. B (PMIOPort)
659. C (PMIOPort)
660. a (PMIOPort)
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663. ThreePhaseSourceBlk (PMComponent)
664. A (PMIOPort)
665. B (PMIOPort)
666. C (PMIOPort)
667. Ground [3] (PMComponent)
668. Ground1 [4] (PMComponent)
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670. Series RLC Branch [7] (PMComponent)
671. Series RLC Branch1 [7] (PMComponent)
672. Series RLC Branch10 [7] (PMComponent)
673. Series RLC Branch11 [8] (PMComponent)
674. Series RLC Branch12 [8] (PMComponent)
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676. Series RLC Branch2 [9] (PMComponent)
677. Series RLC Branch3 [9] (PMComponent)
678. Series RLC Branch4 [9] (PMComponent)
679. Series RLC Branch5 [10] (PMComponent)

680. Series RLC Branch6 [10] (PMComponent)
681. Series RLC Branch7 [10] (PMComponent)
682. Series RLC Branch8 [11] (PMComponent)
683. Series RLC Branch9 [11] (PMComponent)
684. Three-Phase Series RLC Branch [11] (PMComponent)
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686. Three-Phase Series RLC Load1 [12] (PMComponent)
687. Three-Phase Series RLC Load2 [13] (PMComponent)
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Chapter 3. Subsystems

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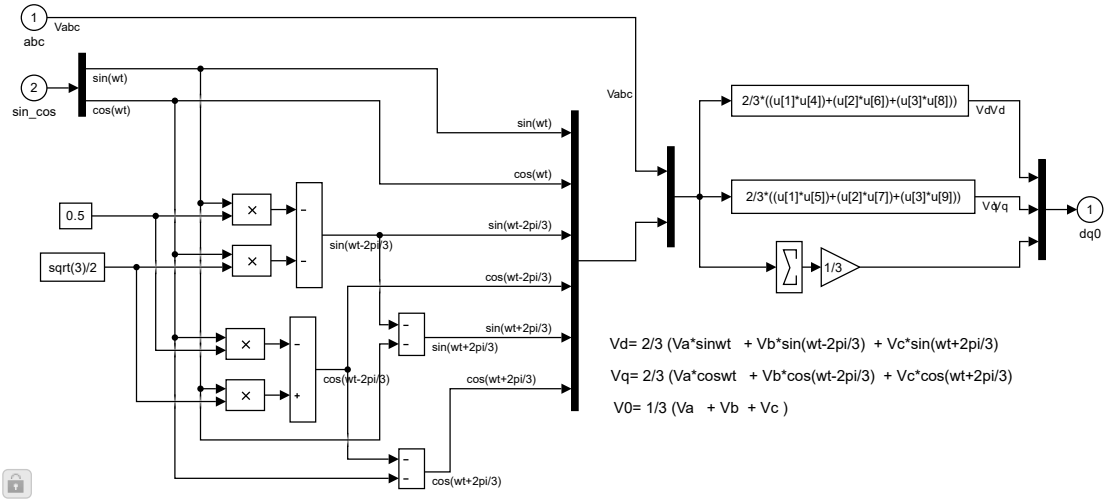
3.1. abc_to_dq0 Transformation1

Figure 3.1. PI_park_filter_prac/Current /abc_to_dq0 Transformation1



3.1.1. Blocks

3.1.1.1. Parameters

3.1.1.1.1. "abc" (Inport)

Table 3.1. "abc" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	3
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.1.1.1.2. "Demux" (Demux)

Table 3.2. "Demux" Parameters

Parameter	Value
Number of outputs	2

Parameter	Value
Display option	bar
Bus selection mode	off

3.1.1.1.3. "dq0" (Outport)

Table 3.3. "dq0" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.1.1.1.4. "Fcn1" (Fcn)

Table 3.4. "Fcn1" Parameters

Parameter	Value
Expression	2/3*((u[1]*u[5])+(u[2]*u[7])+(u[3]*u[9]))
Sample time (-1 for inherited)	-1

3.1.1.1.5. "Fcn2" (Fcn)

Table 3.5. "Fcn2" Parameters

Parameter	Value
Expression	2/3*((u[1]*u[4])+(u[2]*u[6])+(u[3]*u[8]))
Sample time (-1 for inherited)	-1

3.1.1.1.6. "Gain1" (Gain)

Table 3.6. "Gain1" Parameters

Parameter	Value
Gain	1/3
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.7. "K1" (Constant)

Table 3.7. "K1" Parameters

Parameter	Value
Constant value	0.5
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.1.1.1.8. "K2" (Constant)

Table 3.8. "K2" Parameters

Parameter	Value
Constant value	sqrt(3)/2
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.1.1.1.9. "Mux" (Mux)

Table 3.9. "Mux" Parameters

Parameter	Value
Number of inputs	2
Display option	bar

3.1.1.1.10. "Mux1" (Mux)

Table 3.10. "Mux1" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.1.1.1.11. "Mux2" (Mux)

Table 3.11. "Mux2" Parameters

Parameter	Value
Number of inputs	6
Display option	bar

3.1.1.1.12. "Product" (Product)

Table 3.12. "Product" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.13. "Product1" (Product)

Table 3.13. "Product1" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.14. "Product2" (Product)

Table 3.14. "Product2" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.15. "Product3" (Product)

Table 3.15. "Product3" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.16. "sin_cos" (Inport)

Table 3.16. "sin_cos" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	2

Parameter	Value
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.1.1.1.17. "Sum" (Sum)

Table 3.17. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	--
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.18. "Sum1" (Sum)

Table 3.18. "Sum1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	-+
Sum over	All dimensions

Parameter	Value
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.19. "Sum2" (Sum)

Table 3.19. "Sum2" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	--
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.20. "Sum3" (Sum)

Table 3.20. "Sum3" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	--
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.1.1.1.21. "Sum4" (Sum)

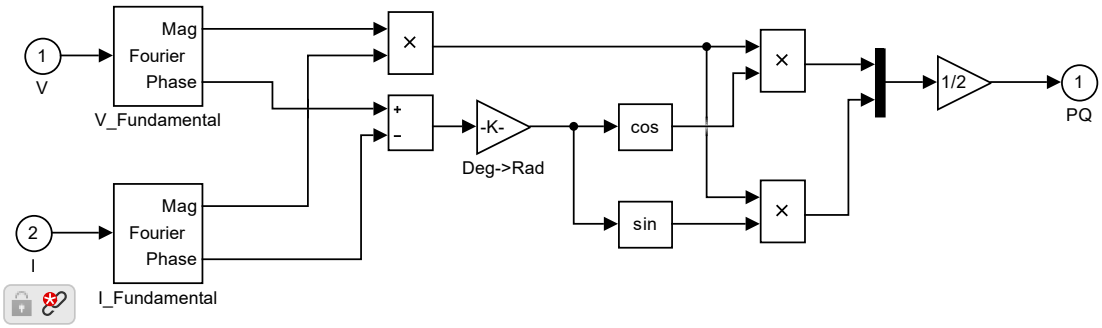
Table 3.21. "Sum4" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	1
Sum over	All dimensions
Dimension	1

Parameter	Value
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2. Active & Reactive Power

Figure 3.2. PI_park_filter_prac/Power/Subsystem/Active & Reactive Power



3.2.1. Blocks

3.2.1.1. Parameters

3.2.1.1.1. "Deg->Rad" (Gain)

Table 3.22. "Deg->Rad" Parameters

Parameter	Value
Gain	pi/180

Parameter	Value
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2.1.1.2. "Gain" (Gain)

Table 3.23. "Gain" Parameters

Parameter	Value
Gain	1/2
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2.1.1.3. "I" (Inport)

Table 3.24. "I" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.2.1.1.4. "I_Fundamental" (SubSystem)

Table 3.25. "I_Fundamental" Parameters

Parameter	Value
Fundamental frequency f1 (Hz)	f1
Harmonic n (0=DC; 1=fundamental; 2=2nd harm; ...)	1

3.2.1.1.5. "Mux1" (Mux)

Table 3.26. "Mux1" Parameters

Parameter	Value
Number of inputs	2
Display option	bar

3.2.1.1.6. "PQ" (Outport)

Table 3.27. "PQ" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto

Parameter	Value
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.2.1.1.7. "Product" (Product)

Table 3.28. "Product" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input

Parameter	Value
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2.1.1.8. "Product1" (Product)

Table 3.29. "Product1" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2.1.1.9. "Product2" (Product)

Table 3.30. "Product2" Parameters

Parameter	Value
Number of inputs	2

Parameter	Value
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2.1.1.10. "Sum" (Sum)

Table 3.31. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	+-
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.2.1.1.11. "Trigonometric Function" (Trigonometry)

Table 3.32. "Trigonometric Function" Parameters

Parameter	Value
Function	sin
Approximation method	None
Number of iterations	11
Sample time (-1 for inherited)	-1

3.2.1.1.12. "Trigonometric Function1" (Trigonometry)

Table 3.33. "Trigonometric Function1" Parameters

Parameter	Value
Function	cos
Approximation method	None
Number of iterations	11
Sample time (-1 for inherited)	-1

3.2.1.1.13. "V" (Inport)

Table 3.34. "V" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

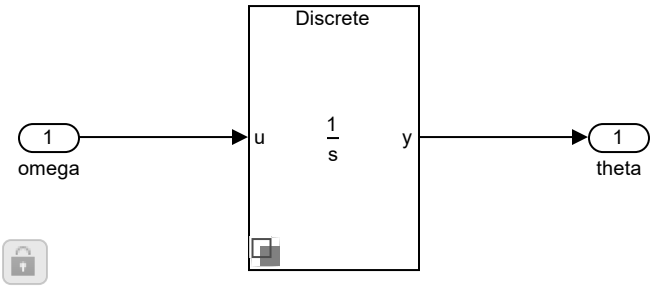
3.2.1.1.14. "V_Fundamental" (SubSystem)

Table 3.35. "V_Fundamental" Parameters

Parameter	Value
Fundamental frequency f1 (Hz)	f1
Harmonic n (0=DC; 1=fundamental; 2=2nd harm; ...)	1

3.3. Angle

Figure 3.3. PI_park_filter_prac/Current /Three-Phase Sinusoidal Measurement (PLL)/Angle



3.3.1. Blocks

3.3.1.1. Parameters

3.3.1.1.1. "Integrator with Wrapped State (Discrete or Continuous)" (SubSystem)

Table 3.36. "Integrator with Wrapped State (Discrete or Continuous)" Parameters

Parameter	Value
Wrapped state upper value	2*pi
Wrapped state lower value	0
Initial condition	Theta0
Sample time (-1 for inherited)	Ts

3.3.1.1.2. "omega" (Inport)

Table 3.37. "omega" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.3.1.1.3. "theta" (Outport)

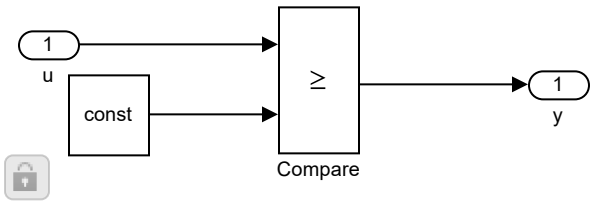
Table 3.38. "theta" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held

Parameter	Value
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.4. Compare To Constant

Figure 3.4. PI_park_filter_prac/Current /Three-Phase Sinusoidal Measurement (PLL)/Angle/Integrator with Wrapped State (Discrete or Continuous)/Discrete/Compare To Constant



3.4.1. Blocks

3.4.1.1. Parameters

3.4.1.1.1. "Compare" (RelationalOperator)

Table 3.39. "Compare" Parameters

Parameter	Value
Relational operator	>=
Require all inputs to have the same data type	on
Output data type	boolean
Enable zero-crossing detection	on
Sample time (-1 for inherited)	-1
Integer rounding mode	Nearest

3.4.1.1.2. "Constant" (Constant)

Table 3.40. "Constant" Parameters

Parameter	Value
Constant value	const
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via back propagation
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.4.1.1.3. "u" (Inport)

Table 3.41. "u" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.4.1.1.4. "y" (Outport)

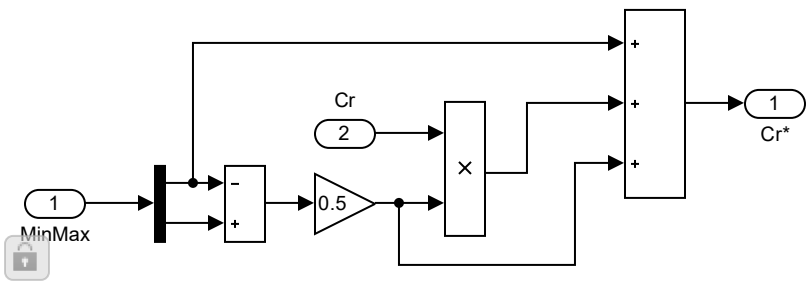
Table 3.42. "y" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]

Parameter	Value
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.5. Cr_MinMax

Figure 3.5. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Cr_MinMax



3.5.1. Blocks

3.5.1.1. Parameters

3.5.1.1.1. "Add3" (Sum)

Table 3.43. "Add3" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	-+
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.5.1.1.2. "Add4" (Sum)

Table 3.44. "Add4" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	+++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off

Parameter	Value
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.5.1.1.3. "Cr" (Inport)

Table 3.45. "Cr" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.5.1.1.4. "Cr*" (Outport)

Table 3.46. "Cr*" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.5.1.1.5. "Demux" (Demux)

Table 3.47. "Demux" Parameters

Parameter	Value
Number of outputs	2
Display option	bar
Bus selection mode	off

3.5.1.1.6. "Gain1" (Gain)

Table 3.48. "Gain1" Parameters

Parameter	Value
Gain	0.5

Parameter	Value
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.5.1.1.7. "MinMax" (Inport)

Table 3.49. "MinMax" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.5.1.1.8. "MUL1" (Product)

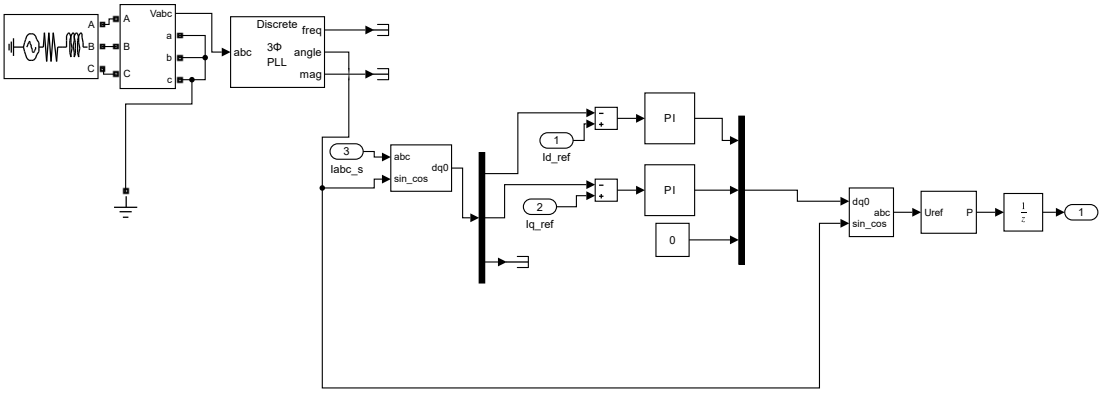
Table 3.50. "MUL1" Parameters

Parameter	Value
Number of inputs	**
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1

Parameter	Value
Require all inputs to have the same data type	off
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.6. Current

Figure 3.6. PI_park_filter_prac/Current



3.6.1. Blocks

3.6.1.1. Parameters

3.6.1.1.1. " " (Outport)

Table 3.51. " " Parameters

Parameter	Value
Port number	1

Parameter	Value
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.6.1.1.2. "Constant" (Constant)

Table 3.52. "Constant" Parameters

Parameter	Value
Constant value	0
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]

Parameter	Value
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	-1
Frame period	inf

3.6.1.1.3. "Demux" (Demux)

Table 3.53. "Demux" Parameters

Parameter	Value
Number of outputs	3
Display option	bar
Bus selection mode	off

3.6.1.1.4. "Discrete PI Controller1" (SubSystem)

Table 3.54. "Discrete PI Controller1" Parameters

Parameter	Value
Proportional gain (Kp)	4
Integral gain (Ki)	2000
Output limits [Upper Lower]	[1e6 -1e6]
Output initial value	0
Sample time	-1

3.6.1.1.5. "Discrete PI Controller2" (SubSystem)

Table 3.55. "Discrete PI Controller2" Parameters

Parameter	Value
Proportional gain (Kp)	4
Integral gain (Ki)	2000
Output limits [Upper Lower]	[1e6 -1e6]

Parameter	Value
Output initial value	0
Sample time	-1

3.6.1.1.6. "Ground" (PMComponent)

Table 3.56. "Ground" Parameters

Parameter	Value
Physical Domain	powersysdomain
Sub Class Name	unknown
Left Port Type	p1
Right Port Type	p1

3.6.1.1.7. "Iabc_s" (Inport)

Table 3.57. "Iabc_s" Parameters

Parameter	Value
Port number	3
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.6.1.1.8. "Id_ref" (Inport)

Table 3.58. "Id_ref" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]

Parameter	Value
Data type	Inherit: auto

3.6.1.1.9. "Iq_ref" (Inport)

Table 3.59. "Iq_ref" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.6.1.1.10. "Mux" (Mux)

Table 3.60. "Mux" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.6.1.1.11. "PWM Generator (2-Level)" (SubSystem)

Table 3.61. "PWM Generator (2-Level)" Parameters

Parameter	Value
Generator type	Three-phase bridge (6 pulses)
Mode of operation	Unsynchronized
Frequency (Hz)	10000
Initial phase (degrees)	90
Minimum and maximum values [Min Max]	[-1 1]
Sampling technique	Natural
Internal generation of reference signal	off

Parameter	Value
Sample time (s)	2
Show measurement port	off

3.6.1.1.12. "Sum" (Sum)

Table 3.62. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	-+
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.6.1.1.13. "Sum1" (Sum)

Table 3.63. "Sum1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	-+
Sum over	All dimensions
Dimension	1

Parameter	Value
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.6.1.1.14. "Three-Phase V-I Measurement1" (SubSystem)

Table 3.64. "Three-Phase V-I Measurement1" Parameters

Parameter	Value
Voltage measurement	phase-to-ground
Use a label	off
Voltages in pu, based on peak value of nominal phase-to-ground voltage	off
Current measurement	no
Output signals in	Complex

3.6.1.1.15. "Three-Phase Sinusoidal Measurement (PLL)" (SubSystem)

Table 3.65. "Three-Phase Sinusoidal Measurement (PLL)" Parameters

Parameter	Value
Loop filter proportional gain	200

Parameter	Value
Loop filter integral gain	2000
Initial freqeuncy (Hz)	50
Initial phase angle (rad)	0
Sample time (-1 for inherited)	-1

3.6.1.1.16. "Three-Phase Source" (SubSystem)

Table 3.66. "Three-Phase Source" Parameters

Parameter	Value
Configuration	Yg
Specify internal voltages for each phase	off
Phase-to-phase voltage (Vrms)	11e3
Phase angle of phase A (degrees)	0
Frequency (Hz)	50
Internal	on
Specify short-circuit level parameters	off
Source resistance (Ohms)	0.8929
Source inductance (H)	16.58e-3
Base voltage (Vrms ph-ph)	11e3
Generator type	swing

3.6.1.1.17. "Unit Delay" (UnitDelay)

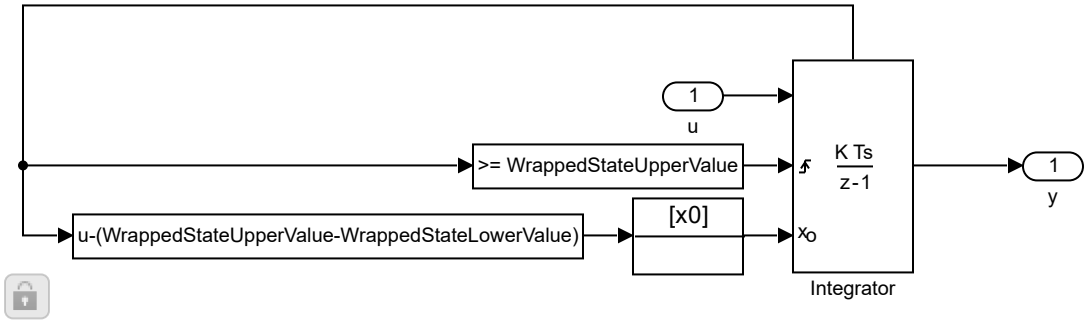
Table 3.67. "Unit Delay" Parameters

Parameter	Value
Initial condition	0
Input processing	Inherited
Sample time (-1 for inherited)	-1

Parameter	Value
State name must resolve to Simulink signal object	off

3.7. Discrete

Figure 3.7. PI_park_filter_prac/Current /Three-Phase Sinusoidal Measurement (PLL)/Angle/Integrator with Wrapped State (Discrete or Continuous)/Discrete



3.7.1. Blocks

3.7.1.1. Parameters

3.7.1.1.1. "Bias1" (Bias)

Table 3.68. "Bias1" Parameters

Parameter	Value
Bias	-(WrappedStateUpperValue-WrappedStateLowerValue)
Saturate on integer overflow	off

3.7.1.1.2. "Compare To Constant" (SubSystem)

Table 3.69. "Compare To Constant" Parameters

Parameter	Value
SimulinkmasksOperator_MP	>=
SimulinkmasksConstantValue_MP	WrappedStateUpperValue
SimulinkmasksOutputDataType_MP	boolean
SimulinkmasksEnableZeroCrossingDetection_MP	off

3.7.1.1.3. "Initial" (InitialCondition)

Table 3.70. "Initial" Parameters

Parameter	Value
Initial value	x0
Sample time (-1 for inherited)	-1

3.7.1.1.4. "Integrator" (DiscreteIntegrator)

Table 3.71. "Integrator" Parameters

Parameter	Value
Integrator method	Integration: Forward Euler
Gain value	1.0
External reset	rising
Initial condition source	external
Initial condition	0
Initial condition setting	State (most efficient)
Sample time (-1 for inherited)	Ts
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Limit output	off
Upper saturation limit	inf
Lower saturation limit	-inf
Show saturation port	off
Show state port	on
Ignore limit and reset when linearizing	off

Parameter	Value
State name must resolve to Simulink signal object	off

3.7.1.1.5. "u" (Inport)

Table 3.72. "u" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.7.1.1.6. "y" (Outport)

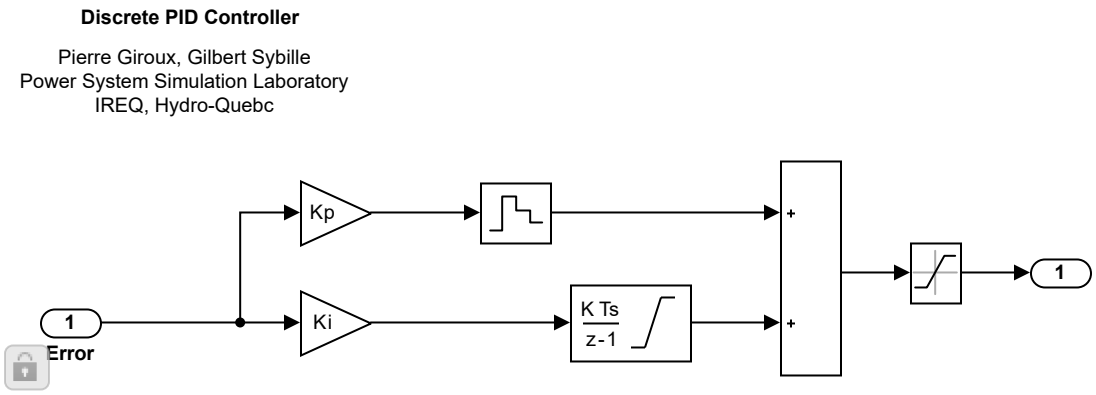
Table 3.73. "y" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off

Parameter	Value
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.8. Discrete PI Controller1

Figure 3.8. PI_park_filter_prac/Current /Discrete PI Controller1



3.8.1. Blocks

3.8.1.1. Parameters

3.8.1.1.1. "Discrete-Time Integrator" (DiscreteIntegrator)

Table 3.74. "Discrete-Time Integrator" Parameters

Parameter	Value
Integrator method	Integration: Forward Euler
Gain value	1.0
External reset	none
Initial condition source	internal

Parameter	Value
Initial condition	Init
Initial condition setting	Output
Sample time (-1 for inherited)	Ts
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Limit output	on
Upper saturation limit	UpperLimit
Lower saturation limit	LowerLimit
Show saturation port	off
Show state port	off
Ignore limit and reset when linearizing	off
State name must resolve to Simulink signal object	off

3.8.1.1.2. "Error" (Inport)

Table 3.75. "Error" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	Ts
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.8.1.1.3. "Kp4" (Gain)

Table 3.76. "Kp4" Parameters

Parameter	Value
Gain	Kp
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	Ts

3.8.1.1.4. "Kp5" (Gain)

Table 3.77. "Kp5" Parameters

Parameter	Value
Gain	Ki
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off

Parameter	Value
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	Ts

3.8.1.1.5. "Out" (Outport)

Table 3.78. "Out" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	Ts
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0

Parameter	Value
Interpret vector parameters as 1-D	off

3.8.1.1.6. "Saturation2" (Saturate)

Table 3.79. "Saturation2" Parameters

Parameter	Value
Upper limit	UpperLimit
Lower limit	LowerLimit
Treat as gain when linearizing	on
Enable zero-crossing detection	on
Sample time (-1 for inherited)	Ts
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

3.8.1.1.7. "Sum6" (Sum)

Table 3.80. "Sum6" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]

Parameter	Value
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	Ts

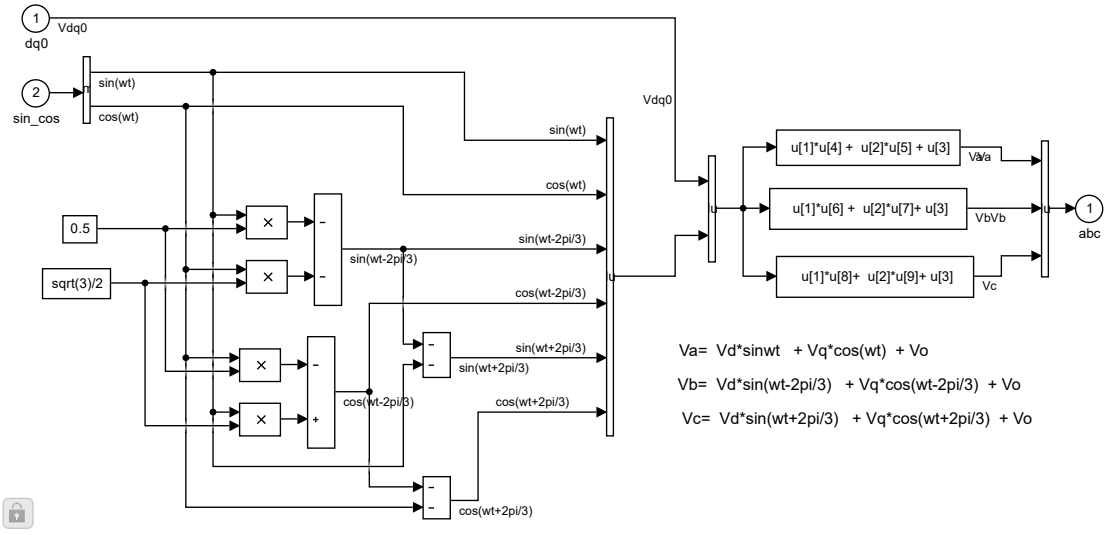
3.8.1.1.8. "Zero-Order Hold" (ZeroOrderHold)

Table 3.81. "Zero-Order Hold" Parameters

Parameter	Value
Sample time (-1 for inherited)	Ts

3.9. dq0_to_abc Transformation

Figure 3.9. PI_park_filter_prac/Current /dq0_to_abc Transformation



3.9.1. Blocks

3.9.1.1. Parameters

3.9.1.1.1. "abc" (Outport)

Table 3.82. "abc" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.9.1.1.2. "Demux" (Demux)

Table 3.83. "Demux" Parameters

Parameter	Value
Number of outputs	2

Parameter	Value
Display option	none
Bus selection mode	off

3.9.1.1.3. "dq0" (Inport)

Table 3.84. "dq0" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	3
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.9.1.1.4. "Fcn2" (Fcn)

Table 3.85. "Fcn2" Parameters

Parameter	Value
Expression	u[1]*u[4] + u[2]*u[5] + u[3]
Sample time (-1 for inherited)	-1

3.9.1.1.5. "Fcn4" (Fcn)

Table 3.86. "Fcn4" Parameters

Parameter	Value
Expression	u[1]*u[6] + u[2]*u[7]+ u[3]
Sample time (-1 for inherited)	-1

3.9.1.1.6. "Fcn5" (Fcn)

Table 3.87. "Fcn5" Parameters

Parameter	Value
Expression	u[1]*u[8]+ u[2]*u[9]+ u[3]

Parameter	Value
Sample time (-1 for inherited)	-1

3.9.1.1.7. "K1" (Constant)

Table 3.88. "K1" Parameters

Parameter	Value
Constant value	0.5
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.8. "K2" (Constant)

Table 3.89. "K2" Parameters

Parameter	Value
Constant value	sqrt(3)/2
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.9.1.1.9. "Mux" (Mux)

Table 3.90. "Mux" Parameters

Parameter	Value
Number of inputs	2
Display option	none

3.9.1.1.10. "Mux1" (Mux)

Table 3.91. "Mux1" Parameters

Parameter	Value
Number of inputs	3
Display option	none

3.9.1.1.11. "Mux2" (Mux)

Table 3.92. "Mux2" Parameters

Parameter	Value
Number of inputs	6
Display option	none

3.9.1.1.12. "Product" (Product)

Table 3.93. "Product" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.9.1.1.13. "Product1" (Product)

Table 3.94. "Product1" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.9.1.1.14. "Product2" (Product)

Table 3.95. "Product2" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)

Parameter	Value
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.9.1.1.15. "Product3" (Product)

Table 3.96. "Product3" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on

Parameter	Value
Sample time (-1 for inherited)	-1

3.9.1.1.16. "sin_cos" (Inport)

Table 3.97. "sin_cos" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	2
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.9.1.1.17. "Sum" (Sum)

Table 3.98. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	--
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.9.1.1.18. "Sum1" (Sum)

Table 3.99. "Sum1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	-+
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.9.1.1.19. "Sum2" (Sum)

Table 3.100. "Sum2" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	--
Sum over	All dimensions

Parameter	Value
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.9.1.1.20. "Sum3" (Sum)

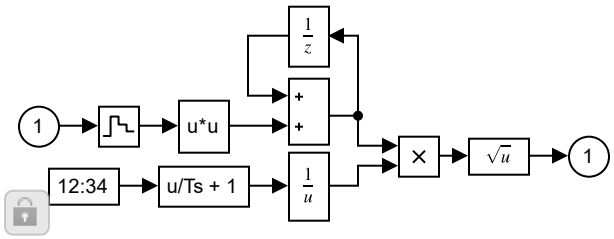
Table 3.101. "Sum3" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	--
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.10. DRMS

Figure 3.10. PI_park_filter_prac/Power/DRMS



3.10.1. Blocks

3.10.1.1. Parameters

3.10.1.1.1. "Digital Clock" (DigitalClock)

Table 3.102. "Digital Clock" Parameters

Parameter	Value
Sample time	Ts

3.10.1.1.2. "Elementary Math" (Math)

Table 3.103. "Elementary Math" Parameters

Parameter	Value
Function	reciprocal
Sample time (-1 for inherited)	-1
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Integer rounding mode	Floor
Saturate on integer overflow	on
Intermediate results data type	Inherit: Inherit via internal rule
Method	Newton-Raphson
Number of iterations	3

3.10.1.1.3. "In" (Inport)

Table 3.104. "In" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.10.1.1.4. "Out" (Outport)

Table 3.105. "Out" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off

Parameter	Value
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.10.1.1.5. "Product" (Product)

Table 3.106. "Product" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.10.1.1.6. "SQR" (Fcn)

Table 3.107. "SQR" Parameters

Parameter	Value
Expression	u*u
Sample time (-1 for inherited)	-1

3.10.1.1.7. "SQR1" (Fcn)

Table 3.108. "SQR1" Parameters

Parameter	Value
Expression	u/Ts + 1
Sample time (-1 for inherited)	-1

3.10.1.1.8. "SQRT" (Math)

Table 3.109. "SQRT" Parameters

Parameter	Value
Function	sqrt
Sample time (-1 for inherited)	-1
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Intermediate results data type	Inherit: Inherit via internal rule
Method	Newton-Raphson
Number of iterations	3

3.10.1.1.9. "Sum" (Sum)

Table 3.110. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.10.1.1.10. "Unit Delay" (UnitDelay)

Table 3.111. "Unit Delay" Parameters

Parameter	Value
Initial condition	0

Parameter	Value
Input processing	Inherited
Sample time (-1 for inherited)	Ts
State name must resolve to Simulink signal object	off

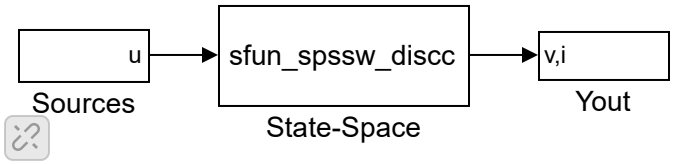
3.10.1.1.11. "Zero-Order Hold" (ZeroOrderHold)

Table 3.112. "Zero-Order Hold" Parameters

Parameter	Value
Sample time (-1 for inherited)	Ts

3.11. EquivalentModel1

Figure 3.11. PI_park_filter_prac/powergui1/EquivalentModel1



3.11.1. Blocks

3.11.1.1. Parameters

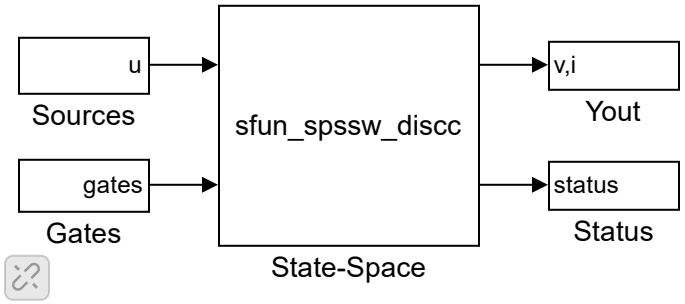
3.11.1.1.1. "State-Space" (S-Function)

Table 3.113. "State-Space" Parameters

Parameter	Value
S-function name	sfun_spssw_discc
S-function parameters	S.Ts,S.A, S.B, S.C, S.D, S.x0,S.EnableUseOfTLC
S-function modules	''

3.12. EquivalentModel2

Figure 3.12. PI_park_filter_prac/powergui1/EquivalentModel2



3.12.1. Blocks

3.12.1.1. Parameters

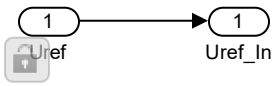
3.12.1.1.1. "State-Space" (S-Function)

Table 3.114. "State-Space" Parameters

Parameter	Value
S-function name	sfun_spssw_discc
S-function parameters	S.Ts,S.A, S.B, S.C, S.D, S.x0, S.EnableUseOfTLC,S.SwitchResistance ,S.SwitchType, S.SwitchGateInitialValue, S.OutputsToResetToZero, S.TBEON,S.SaveMatrices,S.BufferSize
S-function modules	''

3.13. External

Figure 3.13. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Reference signal/External



3.13.1. Blocks

3.13.1.1. Parameters

3.13.1.1.1. "Uref" (Inport)

Table 3.115. "Uref" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	sps.UrefInport_PortDimensions
Sample time (-1 for inherited)	Ts
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.13.1.1.2. "Uref_In" (Outport)

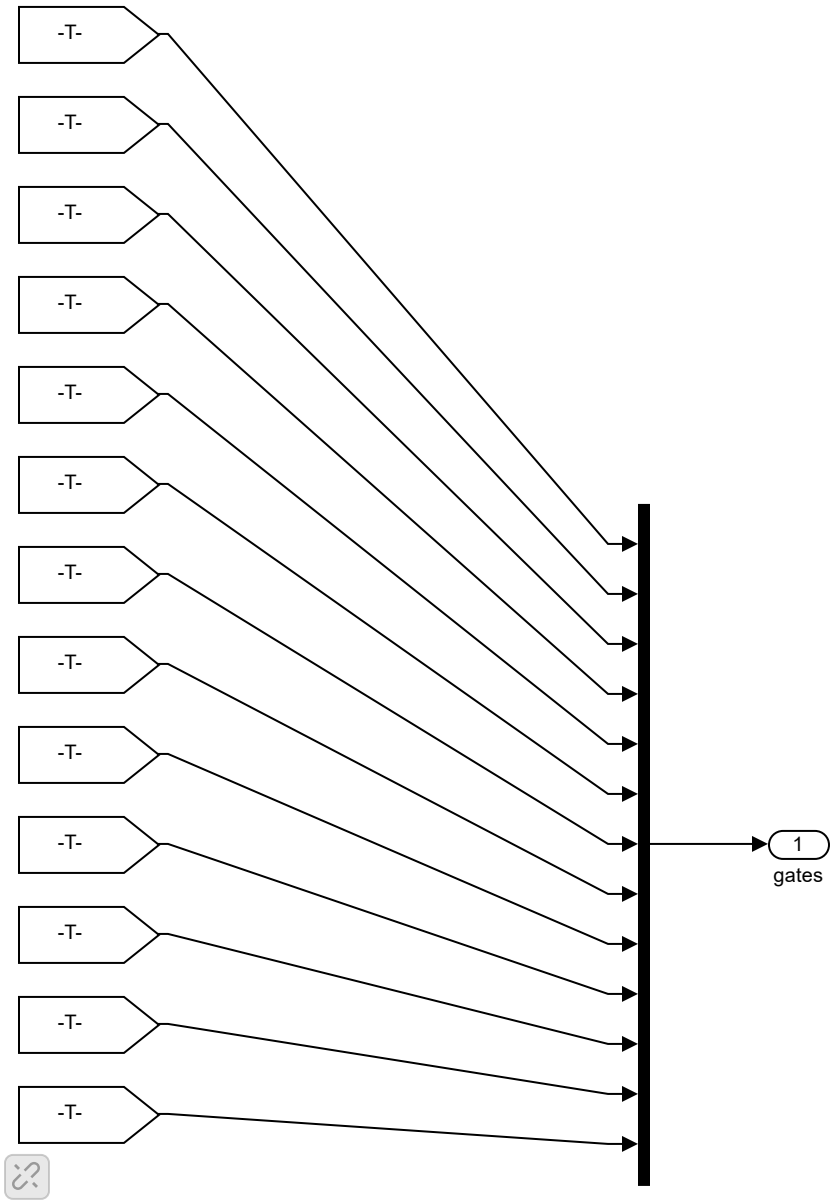
Table 3.116. "Uref_In" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

Parameter	Value
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.14. Gates

Figure 3.14. PI_park_filter_prac/powergui1/EquivalentModel2/Gates



3.14.1. Blocks

3.14.1.1. Parameters

3.14.1.1.1. "From1" (From)

Table 3.117. "From1" Parameters

Parameter	Value
Goto tag	T55_5110_4434333992741
Icon display	Tag

3.14.1.1.2. "From10" (From)

Table 3.118. "From10" Parameters

Parameter	Value
Goto tag	T55_5113_4430598150741
Icon display	Tag

3.14.1.1.3. "From11" (From)

Table 3.119. "From11" Parameters

Parameter	Value
Goto tag	T55_5114_4432933729246
Icon display	Tag

3.14.1.1.4. "From12" (From)

Table 3.120. "From12" Parameters

Parameter	Value
Goto tag	T55_5115_4435421529205
Icon display	Tag

3.14.1.1.5. "From13" (From)

Table 3.121. "From13" Parameters

Parameter	Value
Goto tag	T41_4013_2646237854951

Parameter	Value
Icon display	Tag

3.14.1.1.6. "From2" (From)

Table 3.122. "From2" Parameters

Parameter	Value
Goto tag	T55_5111_4436676328801
Icon display	Tag

3.14.1.1.7. "From3" (From)

Table 3.123. "From3" Parameters

Parameter	Value
Goto tag	T55_5112_4439170886316
Icon display	Tag

3.14.1.1.8. "From4" (From)

Table 3.124. "From4" Parameters

Parameter	Value
Goto tag	T55_5111_4432991516074
Icon display	Tag

3.14.1.1.9. "From5" (From)

Table 3.125. "From5" Parameters

Parameter	Value
Goto tag	T55_5112_4435331599616
Icon display	Tag

3.14.1.1.10. "From6" (From)

Table 3.126. "From6" Parameters

Parameter	Value
Goto tag	T55_5113_4437823904613
Icon display	Tag

3.14.1.1.11. "From7" (From)

Table 3.127. "From7" Parameters

Parameter	Value
Goto tag	T55_5112_4431746235407
Icon display	Tag

3.14.1.1.12. "From8" (From)

Table 3.128. "From8" Parameters

Parameter	Value
Goto tag	T55_5113_4434084066431
Icon display	Tag

3.14.1.1.13. "From9" (From)

Table 3.129. "From9" Parameters

Parameter	Value
Goto tag	T55_5114_4436574118909
Icon display	Tag

3.14.1.1.14. "gates" (Outport)

Table 3.130. "gates" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit

Parameter	Value
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

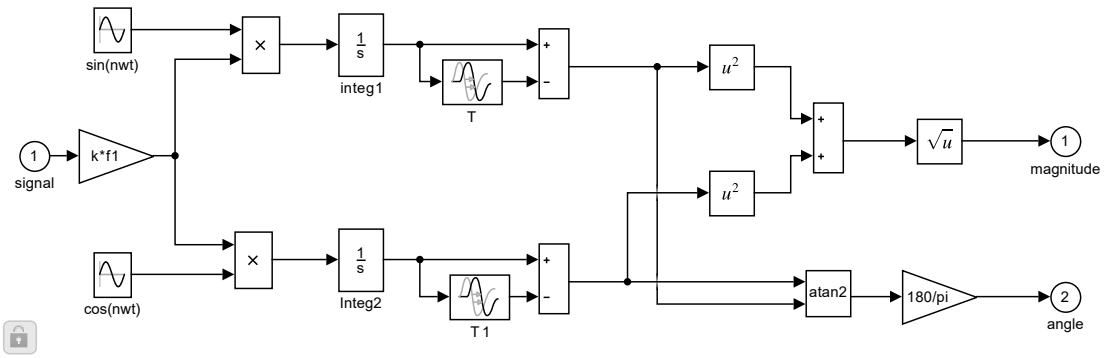
3.14.1.1.15. "Mux" (Mux)

Table 3.131. "Mux" Parameters

Parameter	Value
Number of inputs	[1 1 1 1 1 1 1 1 1 1 1 1 6]
Display option	bar

3.15. I_Fundamental

Figure 3.15. PI_park_filter_prac/Power/Subsystem/Active & Reactive Power/I_Fundamental



3.15.1. Blocks

3.15.1.1. Parameters

3.15.1.1.1. "angle" (Outport)

Table 3.132. "angle" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.15.1.1.2. "cos(nwt)" (Sin)

Table 3.133. "cos(nwt)" Parameters

Parameter	Value
Sine type	Time based
Time (t)	Use simulation time
Amplitude	1
Bias	0
Frequency (rad/sec)	2*pi*n*f1
Phase (rad)	pi/2
Samples per period	10
Number of offset samples	0
Sample time	0
Interpret vector parameters as 1-D	on

3.15.1.1.3. "Gain1" (Gain)

Table 3.134. "Gain1" Parameters

Parameter	Value
Gain	k*f1
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.15.1.1.4. "Gain2" (Gain)

Table 3.135. "Gain2" Parameters

Parameter	Value
Gain	180/pi
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.15.1.1.5. "integ1" (Integrator)

Table 3.136. "integ1" Parameters

Parameter	Value
External reset	none
Initial condition source	internal
Initial condition	0
Limit output	off
Upper saturation limit	inf
Lower saturation limit	-inf
Wrap state	off
Wrapped state upper value	pi
Wrapped state lower value	-pi
Show saturation port	off

Parameter	Value
Show state port	off
Ignore limit and reset when linearizing	off
Enable zero-crossing detection	on
State Name (e.g., 'position')	''

3.15.1.1.6. "Integ2" (Integrator)

Table 3.137. "Integ2" Parameters

Parameter	Value
External reset	none
Initial condition source	internal
Initial condition	0
Limit output	off
Upper saturation limit	inf
Lower saturation limit	-inf
Wrap state	off
Wrapped state upper value	pi
Wrapped state lower value	-pi
Show saturation port	off
Show state port	off
Ignore limit and reset when linearizing	off
Enable zero-crossing detection	on
State Name (e.g., 'position')	''

3.15.1.1.7. "magnitude" (Outport)

Table 3.138. "magnitude" Parameters

Parameter	Value
Port number	1
Icon display	Port number

Parameter	Value
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.15.1.1.8. "Math Function" (Math)

Table 3.139. "Math Function" Parameters

Parameter	Value
Function	square
Sample time (-1 for inherited)	-1
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input

Parameter	Value
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Intermediate results data type	Inherit: Inherit via internal rule
Method	Newton-Raphson
Number of iterations	3

3.15.1.1.9. "Math Function1" (Math)

Table 3.140. "Math Function1" Parameters

Parameter	Value
Function	square
Sample time (-1 for inherited)	-1
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Intermediate results data type	Inherit: Inherit via internal rule
Method	Newton-Raphson
Number of iterations	3

3.15.1.1.10. "Product" (Product)

Table 3.141. "Product" Parameters

Parameter	Value
Number of inputs	2

Parameter	Value
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.15.1.1.11. "Product1" (Product)

Table 3.142. "Product1" Parameters

Parameter	Value
Number of inputs	2
Multiplication	Element-wise(.*)
Multiply over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on

Parameter	Value
Sample time (-1 for inherited)	-1

3.15.1.1.12. "signal" (Inport)

Table 3.143. "signal" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.15.1.1.13. "sin(nwt)" (Sin)

Table 3.144. "sin(nwt)" Parameters

Parameter	Value
Sine type	Time based
Time (t)	Use simulation time
Amplitude	1
Bias	0
Frequency (rad/sec)	2*pi*n*f1
Phase (rad)	0
Samples per period	10
Number of offset samples	0
Sample time	0
Interpret vector parameters as 1-D	on

3.15.1.1.14. "Sqrt" (Sqrt)

Table 3.145. "Sqrt" Parameters

Parameter	Value
Function	sqrt

Parameter	Value
Sample time (-1 for inherited)	-1
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Intermediate results data type	Inherit: Inherit via internal rule
Method	Newton-Raphson
Number of iterations	3

3.15.1.1.15. "Sum" (Sum)

Table 3.146. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on

Parameter	Value
Sample time (-1 for inherited)	-1

3.15.1.1.16. "Sum1" (Sum)

Table 3.147. "Sum1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	+-
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.15.1.1.17. "Sum2" (Sum)

Table 3.148. "Sum2" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	+-
Sum over	All dimensions
Dimension	1

Parameter	Value
Require all inputs to have the same data type	on
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.15.1.1.18. "T" (TransportDelay)

Table 3.149. "T" Parameters

Parameter	Value
Time delay	1/f1
Initial output	0
Initial buffer size	2048
Use fixed buffer size	off
Direct feedthrough of input during linearization	off
Pade order (for linearization)	0

3.15.1.1.19. "T1" (TransportDelay)

Table 3.150. "T1" Parameters

Parameter	Value
Time delay	1/f1
Initial output	0

Parameter	Value
Initial buffer size	2048
Use fixed buffer size	off
Direct feedthrough of input during linearization	off
Pade order (for linearization)	0

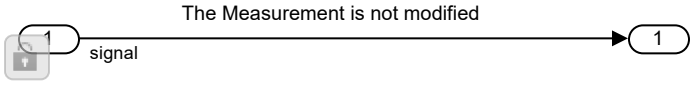
3.15.1.1.20. "Trigonometric Function" (Trigonometry)

Table 3.151. "Trigonometric Function" Parameters

Parameter	Value
Function	atan2
Approximation method	None
Number of iterations	11
Sample time (-1 for inherited)	-1

3.16. Mode I

Figure 3.16. PI_park_filter_prac/Current /Three-Phase V-I Measurement1/Mode I



3.16.1. Blocks

3.16.1.1. Parameters

3.16.1.1.1. "In1" (Inport)

Table 3.152. "In1" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1

Parameter	Value
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.16.1.1.2. "Out1" (Outport)

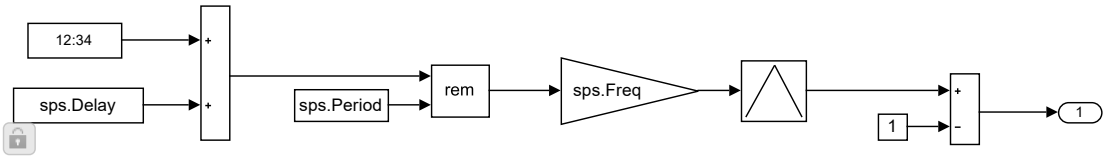
Table 3.153. "Out1" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0

Parameter	Value
Interpret vector parameters as 1-D	off

3.17. Model

Figure 3.17. PI_park_filter_prac/Current /PWM Generator (2-Level)/Sampling/Unsync Natural/Unsync_NaturalSampling/Triangle Generator/Model



3.17.1. Blocks

3.17.1.1. Parameters

3.17.1.1.1. "1\ib1" (Gain)

Table 3.154. "1\ib1" Parameters

Parameter	Value
Gain	sps.Freq
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.17.1.1.2. "Add1" (Sum)

Table 3.155. "Add1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.17.1.1.3. "Add3" (Sum)

Table 3.156. "Add3" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	+-
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]

Parameter	Value
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.17.1.1.4. "Constant1" (Constant)

Table 3.157. "Constant1" Parameters

Parameter	Value
Constant value	sps.Period
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	Ts
Frame period	inf

3.17.1.1.5. "Constant2" (Constant)

Table 3.158. "Constant2" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Sample time	Ts
Frame period	inf

3.17.1.1.6. "Constant3" (Constant)

Table 3.159. "Constant3" Parameters

Parameter	Value
Constant value	sps.Delay
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	Ts
Frame period	inf

3.17.1.1.7. "Digital Clock" (DigitalClock)

Table 3.160. "Digital Clock" Parameters

Parameter	Value
Sample time	Ts

3.17.1.1.8. "Lookup Table" (Lookup)

Table 3.161. "Lookup Table" Parameters

Parameter	Value
Vector of input values	[0 .5 1]
Table data	[0 2 0]
Lookup method	Interpolation-Use End Values
Output minimum	[]
Output maximum	[]

Parameter	Value
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

Figure 3.18. Lookup Table

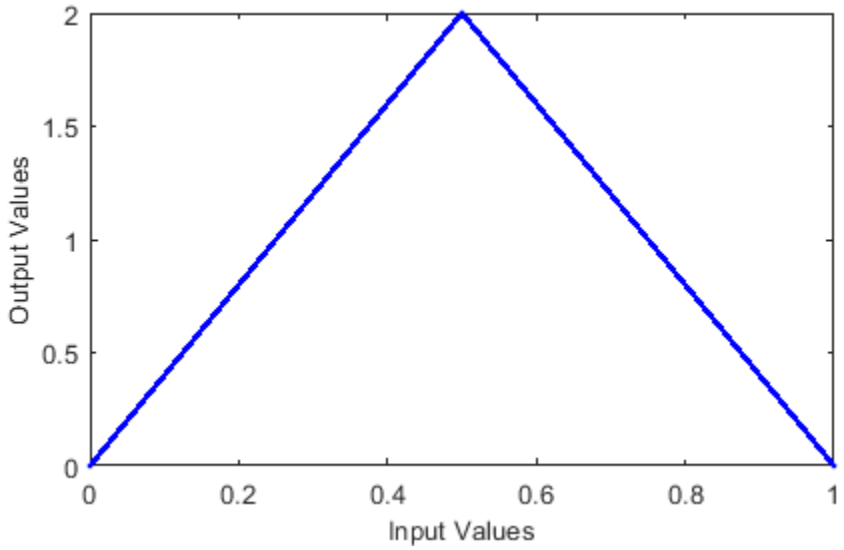


Table 3.162. Lookup Table

0	0
0.5000	2
1	0

3.17.1.1.9. "Math Function" (Math)

Table 3.163. "Math Function" Parameters

Parameter	Value
Function	rem
Sample time (-1 for inherited)	-1

Parameter	Value
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as first input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Intermediate results data type	Inherit: Inherit via internal rule
Method	Newton-Raphson
Number of iterations	3

3.17.1.1.10. "Out" (Outport)

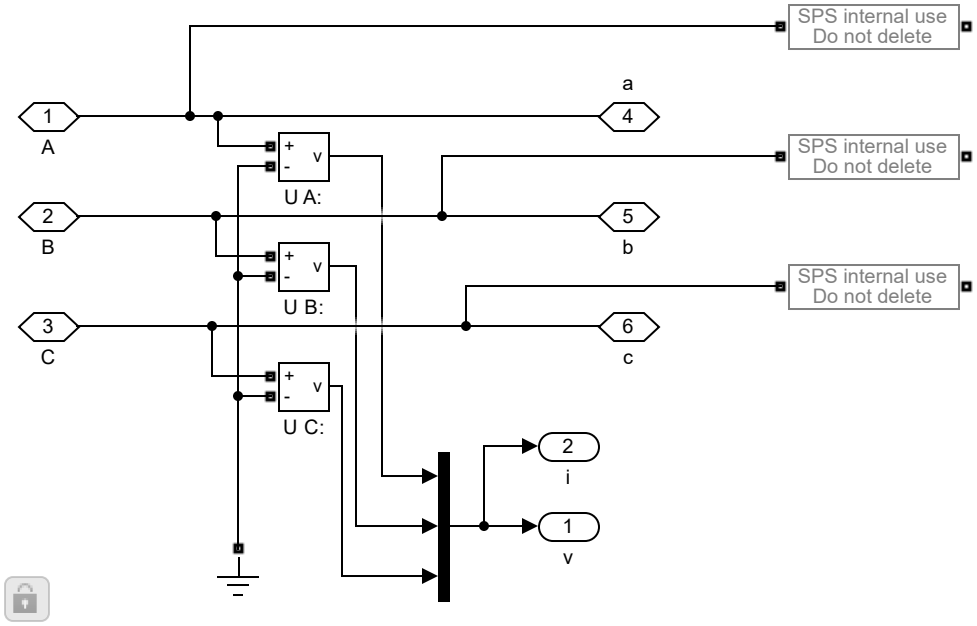
Table 3.164. "Out" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog

Parameter	Value
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.18. Model

Figure 3.19. PI_park_filter_prac/Current /Three-Phase V-I Measurement1/Model



3.18.1. Blocks

3.18.1.1. Parameters

3.18.1.1.1. "A" (PMIOPort)

Table 3.165. "A" Parameters

Parameter	Value
Port number	1

Parameter	Value
Port location on parent subsystem	Left

3.18.1.1.2. "a" (PMIOPort)

Table 3.166. "a" Parameters

Parameter	Value
Port number	4
Port location on parent subsystem	Right

3.18.1.1.3. "B" (PMIOPort)

Table 3.167. "B" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Left

3.18.1.1.4. "b" (PMIOPort)

Table 3.168. "b" Parameters

Parameter	Value
Port number	5
Port location on parent subsystem	Right

3.18.1.1.5. "C" (PMIOPort)

Table 3.169. "C" Parameters

Parameter	Value
Port number	3
Port location on parent subsystem	Left

3.18.1.1.6. "c" (PMIOPort)

Table 3.170. "c" Parameters

Parameter	Value
Port number	6
Port location on parent subsystem	Right

3.18.1.1.7. "Ground" (PMComponent)

Table 3.171. "Ground" Parameters

Parameter	Value
Physical Domain	powersysdomain
Sub Class Name	unknown
Left Port Type	p1
Right Port Type	p1

3.18.1.1.8. "i" (Outport)

Table 3.172. "i" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off

Parameter	Value
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.18.1.1.9. "Multimeter" (PMComponent)

Table 3.173. "Multimeter" Parameters

Parameter	Value
PhysicalDomain	powersysdomain
SubClassName	unknown
LeftPortType	p1
RightPortType	p1

3.18.1.1.10. "Multimeter1" (PMComponent)

Table 3.174. "Multimeter1" Parameters

Parameter	Value
PhysicalDomain	powersysdomain
SubClassName	unknown
LeftPortType	p1
RightPortType	p1

3.18.1.1.11. "Multimeter2" (PMComponent)

Table 3.175. "Multimeter2" Parameters

Parameter	Value
PhysicalDomain	powersysdomain
SubClassName	unknown

Parameter	Value
LeftPortType	p1
RightPortType	p1

3.18.1.1.12. "Mux" (Mux)

Table 3.176. "Mux" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.18.1.1.13. "U A:" (SubSystem)

Table 3.177. "U A:" Parameters

Parameter	Value
Output signal	Complex

3.18.1.1.14. "U B:" (SubSystem)

Table 3.178. "U B:" Parameters

Parameter	Value
Output signal	Complex

3.18.1.1.15. "U C:" (SubSystem)

Table 3.179. "U C:" Parameters

Parameter	Value
Output signal	Complex

3.18.1.1.16. "v" (Outport)

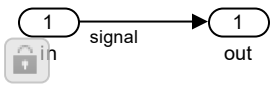
Table 3.180. "v" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]

Parameter	Value
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.19. Model

Figure 3.20. PI_park_filter_prac/Current /Three-Phase V-I Measurement1/Model/U A:/Model



3.19.1. Blocks

3.19.1.1. Parameters

3.19.1.1.1. "in" (Inport)

Table 3.181. "in" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.19.1.1.2. "out" (Outport)

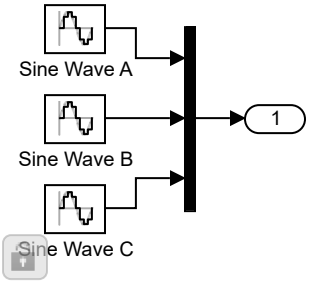
Table 3.182. "out" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]

Parameter	Value
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.20. Model

Figure 3.21. PI_park_filter_prac/Current /Three-Phase Source/Model



3.20.1. Blocks

3.20.1.1. Parameters

3.20.1.1.1. "Mux" (Mux)

Table 3.183. "Mux" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.20.1.1.2. "Out1" (Outport)

Table 3.184. "Out1" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]

Parameter	Value
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.20.1.1.3. "Sine Wave A" (Sin)

Table 3.185. "Sine Wave A" Parameters

Parameter	Value
Sine type	Time based
Time (t)	Use simulation time
Amplitude	Aa
Bias	0
Frequency (rad/sec)	2*pi*Frequency
Phase (rad)	Pa
Samples per period	10

Parameter	Value
Number of offset samples	0
Sample time	Ts
Interpret vector parameters as 1-D	on

3.20.1.1.4. "Sine Wave B" (Sin)

Table 3.186. "Sine Wave B" Parameters

Parameter	Value
Sine type	Time based
Time (t)	Use simulation time
Amplitude	Ab
Bias	0
Frequency (rad/sec)	2*pi*Frequency
Phase (rad)	Pb
Samples per period	10
Number of offset samples	0
Sample time	Ts
Interpret vector parameters as 1-D	on

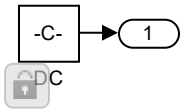
3.20.1.1.5. "Sine Wave C" (Sin)

Table 3.187. "Sine Wave C" Parameters

Parameter	Value
Sine type	Time based
Time (t)	Use simulation time
Amplitude	Ac
Bias	0
Frequency (rad/sec)	2*pi*Frequency
Phase (rad)	Pc
Samples per period	10
Number of offset samples	0
Sample time	Ts
Interpret vector parameters as 1-D	on

3.21. Model

Figure 3.22. PI_park_filter_prac/DC Voltage Source/Model



3.21.1. Blocks

3.21.1.1. Parameters

3.21.1.1.1. "DC" (Constant)

Table 3.188. "DC" Parameters

Parameter	Value
Constant value	Amplitude
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.21.1.1.2. "Out1" (Outport)

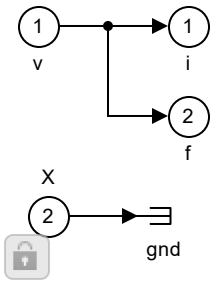
Table 3.189. "Out1" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.22. Model

Figure 3.23. PI_park_filter_prac/Linear Transformer/Model



3.22.1. Blocks

3.22.1.1. Parameters

3.22.1.1.1. "f" (Outport)

Table 3.190. "f" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.22.1.1.2. "i" (Outport)

Table 3.191. "i" Parameters

Parameter	Value
Port number	1

Parameter	Value
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.22.1.1.3. "v" (Inport)

Table 3.192. "v" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	1
Sample time (-1 for inherited)	-1

Parameter	Value
Minimum	[]
Maximum	[]
Data type	Inherit: auto

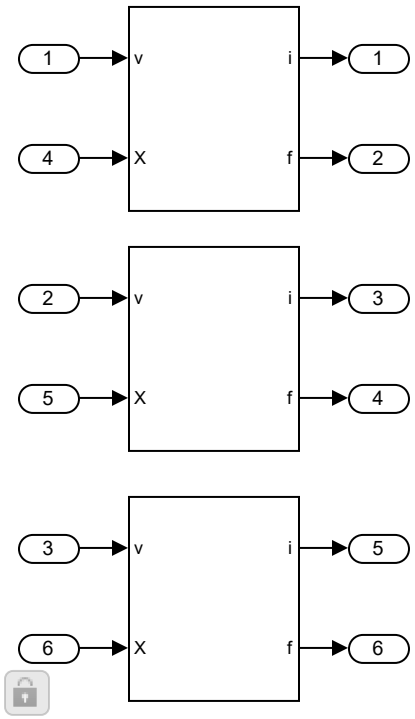
3.22.1.1.4. "X" (Inport)

Table 3.193. "X" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.23. Model

Figure 3.24. PI_park_filter_prac/Three-Phase Transformer (Two Windings)/Model



3.23.1. Blocks

3.23.1.1. Parameters

3.23.1.1.1. "In1" (Inport)

Table 3.194. "In1" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.23.1.1.2. "In2" (Inport)

Table 3.195. "In2" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.23.1.1.3. "In3" (Inport)

Table 3.196. "In3" Parameters

Parameter	Value
Port number	3
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]

Parameter	Value
Maximum	[]
Data type	Inherit: auto

3.23.1.1.4. "In4" (Inport)

Table 3.197. "In4" Parameters

Parameter	Value
Port number	4
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.23.1.1.5. "In5" (Inport)

Table 3.198. "In5" Parameters

Parameter	Value
Port number	5
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.23.1.1.6. "In6" (Inport)

Table 3.199. "In6" Parameters

Parameter	Value
Port number	6
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1

Parameter	Value
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.23.1.1.7. "Out1" (Outport)

Table 3.200. "Out1" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.23.1.1.8. "Out2" (Outport)

Table 3.201. "Out2" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.23.1.1.9. "Out3" (Outport)

Table 3.202. "Out3" Parameters

Parameter	Value
Port number	3

Parameter	Value
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.23.1.1.10. "Out4" (Outport)

Table 3.203. "Out4" Parameters

Parameter	Value
Port number	4
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto

Parameter	Value
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.23.1.1.11. "Out5" (Outport)

Table 3.204. "Out5" Parameters

Parameter	Value
Port number	5
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off

Parameter	Value
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.23.1.1.12. "Out6" (Outport)

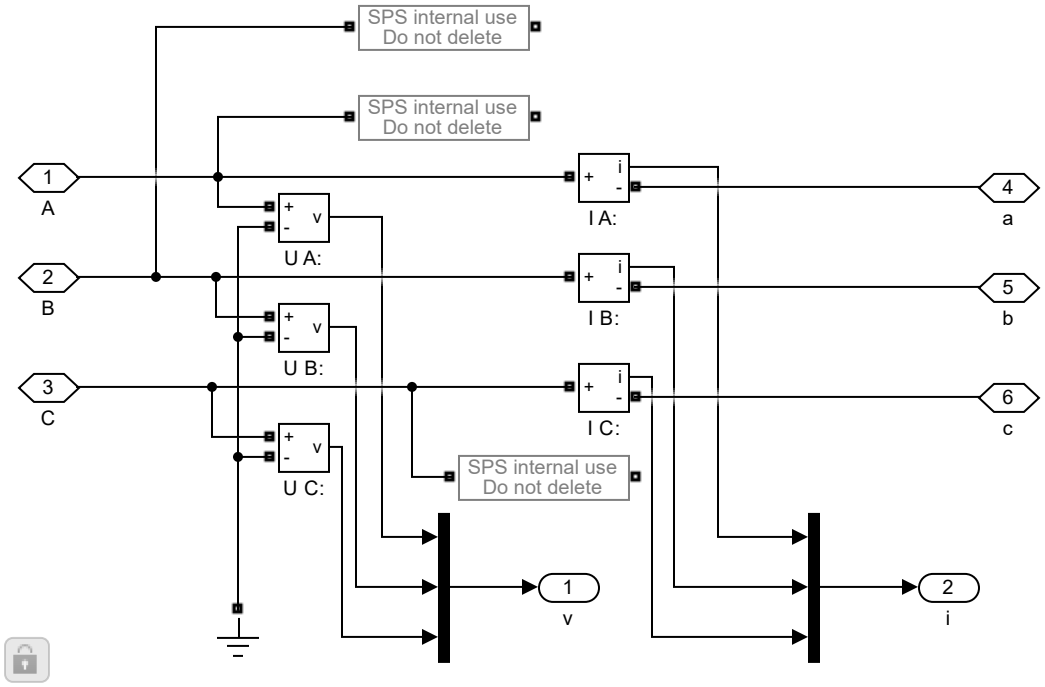
Table 3.205. "Out6" Parameters

Parameter	Value
Port number	6
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit

Parameter	Value
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.24. Model

Figure 3.25. PI_park_filter_prac/Three-Phase V-I Measurement2/Model



3.24.1. Blocks

3.24.1.1. Parameters

3.24.1.1.1. "A" (PMIOPort)

Table 3.206. "A" Parameters

Parameter	Value
Port number	1
Port location on parent subsystem	Left

3.24.1.1.2. "a" (PMIOPort)

Table 3.207. "a" Parameters

Parameter	Value
Port number	4
Port location on parent subsystem	Right

3.24.1.1.3. "B" (PMIOPort)

Table 3.208. "B" Parameters

Parameter	Value
Port number	2
Port location on parent subsystem	Left

3.24.1.1.4. "b" (PMIOPort)

Table 3.209. "b" Parameters

Parameter	Value
Port number	5
Port location on parent subsystem	Right

3.24.1.1.5. "C" (PMIOPort)

Table 3.210. "C" Parameters

Parameter	Value
Port number	3
Port location on parent subsystem	Left

3.24.1.1.6. "c" (PMIOPort)

Table 3.211. "c" Parameters

Parameter	Value
Port number	6
Port location on parent subsystem	Right

3.24.1.1.7. "Ground" (PMComponent)

Table 3.212. "Ground" Parameters

Parameter	Value
Physical Domain	powersysdomain
Sub Class Name	unknown
Left Port Type	p1
Right Port Type	p1

3.24.1.1.8. "i" (Outport)

Table 3.213. "i" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off

Parameter	Value
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.24.1.1.9. "I A:" (SubSystem)

Table 3.214. "I A:" Parameters

Parameter	Value
Output signal	Complex

3.24.1.1.10. "I B:" (SubSystem)

Table 3.215. "I B:" Parameters

Parameter	Value
Output signal	Complex

3.24.1.1.11. "I C:" (SubSystem)

Table 3.216. "I C:" Parameters

Parameter	Value
Output signal	Complex

3.24.1.1.12. "Multimeter" (PMComponent)

Table 3.217. "Multimeter" Parameters

Parameter	Value
PhysicalDomain	powersysdomain
SubClassName	unknown
LeftPortType	p1
RightPortType	p1

3.24.1.1.13. "Multimeter1" (PMComponent)

Table 3.218. "Multimeter1" Parameters

Parameter	Value
PhysicalDomain	powersysdomain
SubClassName	unknown
LeftPortType	p1
RightPortType	p1

3.24.1.1.14. "Multimeter2" (PMComponent)

Table 3.219. "Multimeter2" Parameters

Parameter	Value
PhysicalDomain	powersysdomain
SubClassName	unknown
LeftPortType	p1
RightPortType	p1

3.24.1.1.15. "Mux" (Mux)

Table 3.220. "Mux" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.24.1.1.16. "Mux1" (Mux)

Table 3.221. "Mux1" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.24.1.1.17. "U A:" (SubSystem)

Table 3.222. "U A:" Parameters

Parameter	Value
Output signal	Complex

3.24.1.1.18. "U B:" (SubSystem)

Table 3.223. "U B:" Parameters

Parameter	Value
Output signal	Complex

3.24.1.1.19. "U C:" (SubSystem)

Table 3.224. "U C:" Parameters

Parameter	Value
Output signal	Complex

3.24.1.1.20. "v" (Outport)

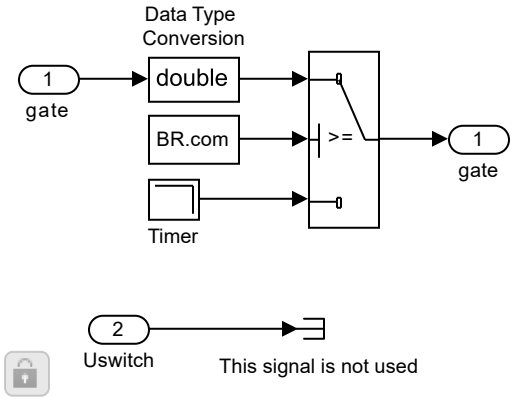
Table 3.225. "v" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off

Parameter	Value
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.25. Model

Figure 3.26. PI_park_filter_prac/Three-Phase Breaker1/Breaker A/ Model



3.25.1. Blocks

3.25.1.1. Parameters

3.25.1.1.1. "C4" (Constant)

Table 3.226. "C4" Parameters

Parameter	Value
Constant value	BR.com
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.25.1.1.2. "Data Type Conversion" (DataTypeConversion)

Table 3.227. "Data Type Conversion" Parameters

Parameter	Value
Output minimum	[]
Output maximum	[]
Output data type	double
Lock output data type setting against changes by the fixed-point tools	off
Input and output to have equal	Real World Value (RWV)
Integer rounding mode	Zero
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.25.1.1.3. "gate" (Outport)

Table 3.228. "gate" Parameters

Parameter	Value
Port number	1

Parameter	Value
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.25.1.1.4. "gate " (Inport)

Table 3.229. "gate " Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1

Parameter	Value
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.25.1.1.5. "Switch3" (Switch)

Table 3.230. "Switch3" Parameters

Parameter	Value
Criteria for passing first input	u2 >= Threshold
Threshold	0.5
Require all data port inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Enable zero-crossing detection	off
Sample time (-1 for inherited)	-1
Allow different data input sizes (Results in variable-size output signal)	off

3.25.1.1.6. "Timer" (SubSystem)

Table 3.231. "Timer" Parameters

Parameter	Value
Time (s)	BR.SwitchingTimes

Parameter	Value
Amplitude	BR.switchings

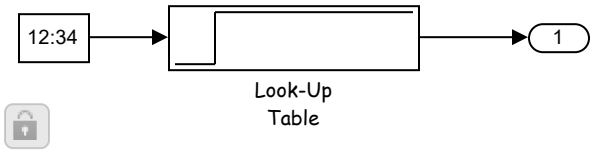
3.25.1.1.7. "Uswitch" (Inport)

Table 3.232. "Uswitch" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.26. Model

Figure 3.27. PI_park_filter_prac/Three-Phase Breaker1/Stair Generator/Model



3.26.1. Blocks

3.26.1.1. Parameters

3.26.1.1.1. "Digital Clock" (DigitalClock)

Table 3.233. "Digital Clock" Parameters

Parameter	Value
Sample time	Ts

3.26.1.1.2. "Look-Up Table" (Lookup)

Table 3.234. "Look-Up Table" Parameters

Parameter	Value
Vector of input values	sps.tv
Table data	sps.opv
Lookup method	Interpolation-Extrapolation
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	Ts

Figure 3.28. Look-Up Table

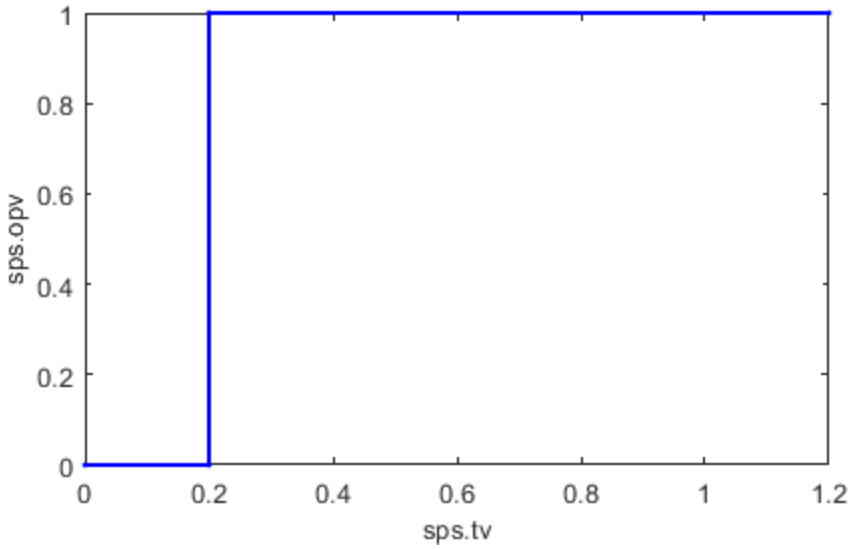


Table 3.235. Look-Up Table

0	0
0.2000	0

0.2000	1
1.2000	1

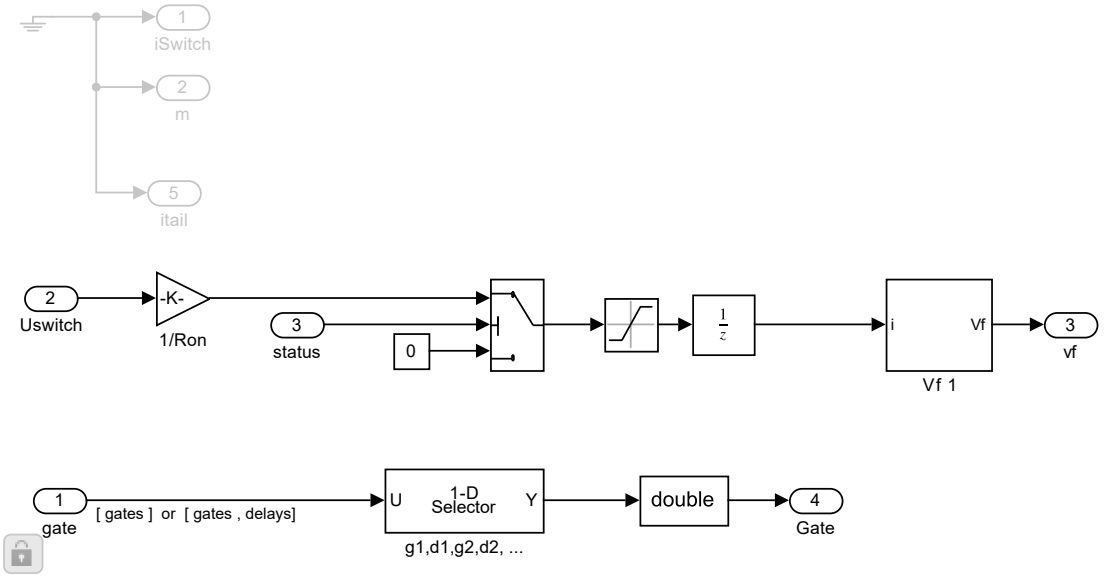
3.26.1.1.3. "Out" (Outport)

Table 3.236. "Out" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.27. Model

Figure 3.29. PI_park_filter_prac/Universal Bridge/Model



3.27.1. Blocks

3.27.1.1. Parameters

3.27.1.1.1. "0 4" (Constant)

Table 3.237. "0 4" Parameters

Parameter	Value
Constant value	0
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	Ts
Frame period	inf

3.27.1.1.2. "1/Ron" (Gain)

Table 3.238. "1/Ron" Parameters

Parameter	Value
Gain	1./Ron
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Same as input
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	on
Sample time (-1 for inherited)	Ts

3.27.1.1.3. "Data Type Conversion" (DataTypeConversion)

Table 3.239. "Data Type Conversion" Parameters

Parameter	Value
Output minimum	[]
Output maximum	[]
Output data type	double
Lock output data type setting against changes by the fixed-point tools	off
Input and output to have equal	Real World Value (RWV)
Integer rounding mode	Zero
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

3.27.1.1.4. "g1,d1,g2,d2, ..." (Selector)

Table 3.240. "g1,d1,g2,d2, ..." Parameters

Parameter	Value
Number of input dimensions	1
Index mode	One-based
Index Option	Index vector (dialog)
Index	ReorderGatesDelays
Output Size	1
Input port size	SignalLength
Sample time (-1 for inherited)	-1
Index Option	Index vector (dialog)
Index	ReorderGatesDelays
Output Size	1

3.27.1.1.5. "Gate" (Outport)

Table 3.241. "Gate" Parameters

Parameter	Value
Port number	4
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1

Parameter	Value
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.27.1.1.6. "gate" (Inport)

Table 3.242. "gate" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.27.1.1.7. "iSwitch" (Outport)

Table 3.243. "iSwitch" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto

Parameter	Value
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.27.1.1.8. "itail" (Outport)

Table 3.244. "itail" Parameters

Parameter	Value
Port number	5
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off

Parameter	Value
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.27.1.1.9. "m" (Outport)

Table 3.245. "m" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit

Parameter	Value
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.27.1.1.10. "Saturation" (Saturate)

Table 3.246. "Saturation" Parameters

Parameter	Value
Upper limit	inf
Lower limit	0
Treat as gain when linearizing	on
Enable zero-crossing detection	on
Sample time (-1 for inherited)	Ts
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

3.27.1.1.11. "status" (Inport)

Table 3.247. "status" Parameters

Parameter	Value
Port number	3
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	Ts
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.27.1.1.12. "Switch" (Switch)

Table 3.248. "Switch" Parameters

Parameter	Value
Criteria for passing first input	u2 >= Threshold
Threshold	0.5
Require all data port inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Enable zero-crossing detection	on
Sample time (-1 for inherited)	Ts
Allow different data input sizes (Results in	off

Parameter	Value
variable-size output signal)	

3.27.1.1.13. "Unit Delay" (UnitDelay)

Table 3.249. "Unit Delay" Parameters

Parameter	Value
Initial condition	0
Input processing	Inherited
Sample time (-1 for inherited)	Ts
State name must resolve to Simulink signal object	off

3.27.1.1.14. "Uswitch" (Inport)

Table 3.250. "Uswitch" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	Ts
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.27.1.1.15. "vf" (Outport)

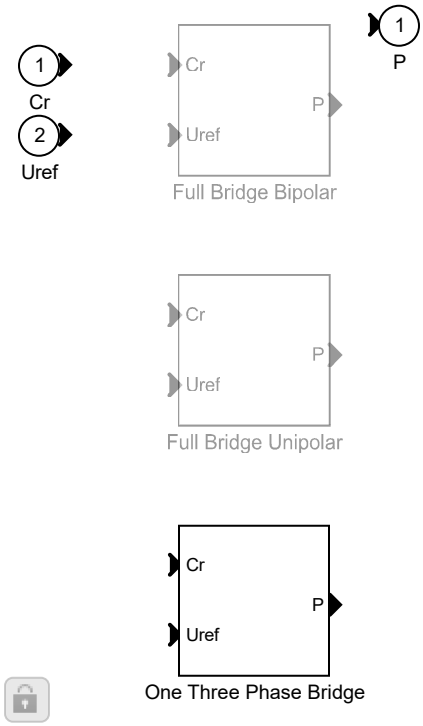
Table 3.251. "vf" Parameters

Parameter	Value
Port number	3
Icon display	Port number
Minimum	[]

Parameter	Value
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.28. Modulator type

Figure 3.30. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Modulator type



3.28.1. Blocks

3.28.1.1. Parameters

3.28.1.1.1. "Cr" (Inport)

Table 3.252. "Cr" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.28.1.1.2. "P" (Outport)

Table 3.253. "P" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.28.1.1.3. "Uref" (Inport)

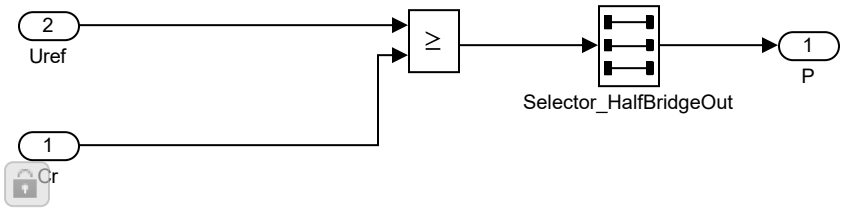
Table 3.254. "Uref" Parameters

Parameter	Value
Port number	2

Parameter	Value
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.29. One Three Phase Bridge

Figure 3.31. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Modulator type/One Three Phase Bridge



3.29.1. Blocks

3.29.1.1. Parameters

3.29.1.1.1. "Cr" (Inport)

Table 3.255. "Cr" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.29.1.1.2. "P" (Outport)

Table 3.256. "P" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	sps.SelectorHalfBridgeOut_PortSize
Variable-size signal	Inherit
Sample time (-1 for inherited)	Ts
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.29.1.1.3. "Relational Operator2" (RelationalOperator)

Table 3.257. "Relational Operator2" Parameters

Parameter	Value
Relational operator	>=

Parameter	Value
Require all inputs to have the same data type	on
Output data type	boolean
Enable zero-crossing detection	on
Sample time (-1 for inherited)	-1
Integer rounding mode	Nearest

3.29.1.1.4. "Selector_HalfBridgeOut" (Selector)

Table 3.258. "Selector_HalfBridgeOut" Parameters

Parameter	Value
Number of input dimensions	1
Index mode	One-based
Index Option	Index vector (dialog)
Index	sps.SelectorHalfBridgeOut_Index
Output Size	1
Input port size	sps.SelectorHalfBridgeOut_PortSize
Sample time (-1 for inherited)	-1
Index Option	Index vector (dialog)
Index	sps.SelectorHalfBridgeOut_Index
Output Size	1

3.29.1.1.5. "Uref" (Inport)

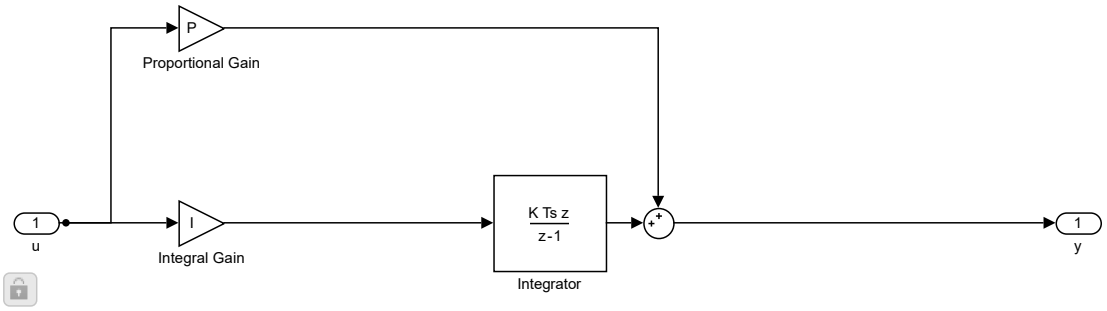
Table 3.259. "Uref" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]

Parameter	Value
Data type	Inherit: auto

3.30. PI

Figure 3.32. PI_park_filter_prac/Current /Three-Phase Sinusoidal Measurement (PLL)/PI



3.30.1. Blocks

3.30.1.1. Parameters

3.30.1.1.1. "Integral Gain" (Gain)

Table 3.260. "Integral Gain" Parameters

Parameter	Value
Gain	I
Multiplication	Element-wise(K.*u)
Parameter minimum	IParamMin
Parameter maximum	IParamMax
Parameter data type	Inherit: Inherit via internal rule
Output minimum	IOutMin
Output maximum	IOutMax
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off

Parameter	Value
Sample time (-1 for inherited)	SampleTime

3.30.1.1.2. "Integrator" (DiscreteIntegrator)

Table 3.261. "Integrator" Parameters

Parameter	Value
Integrator method	Integration: Backward Euler
Gain value	1.0
External reset	none
Initial condition source	internal
Initial condition	InitialConditionForIntegrator
Initial condition setting	State (most efficient)
Sample time (-1 for inherited)	SampleTime
Output minimum	IntegratorOutMin
Output maximum	IntegratorOutMax
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Limit output	off
Upper saturation limit	inf
Lower saturation limit	-inf
Show saturation port	off
Show state port	off
Ignore limit and reset when linearizing	off
State name must resolve to Simulink signal object	off

3.30.1.1.3. "Proportional Gain" (Gain)

Table 3.262. "Proportional Gain" Parameters

Parameter	Value
Gain	P
Multiplication	Element-wise(K.*u)
Parameter minimum	PParamMin
Parameter maximum	PParamMax
Parameter data type	Inherit: Inherit via internal rule
Output minimum	POutMin
Output maximum	POutMax
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	SampleTime

3.30.1.1.4. "Sum" (Sum)

Table 3.263. "Sum" Parameters

Parameter	Value
Icon shape	round
List of signs	++|
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	SumOutMin
Output maximum	SumOutMax
Output data type	Inherit: Inherit via internal rule
Lock data type settings against	off

Parameter	Value
changes by the fixed-point tools	
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	SampleTime

3.30.1.1.5. "u" (Inport)

Table 3.264. "u" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	SampleTime
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.30.1.1.6. "y" (Outport)

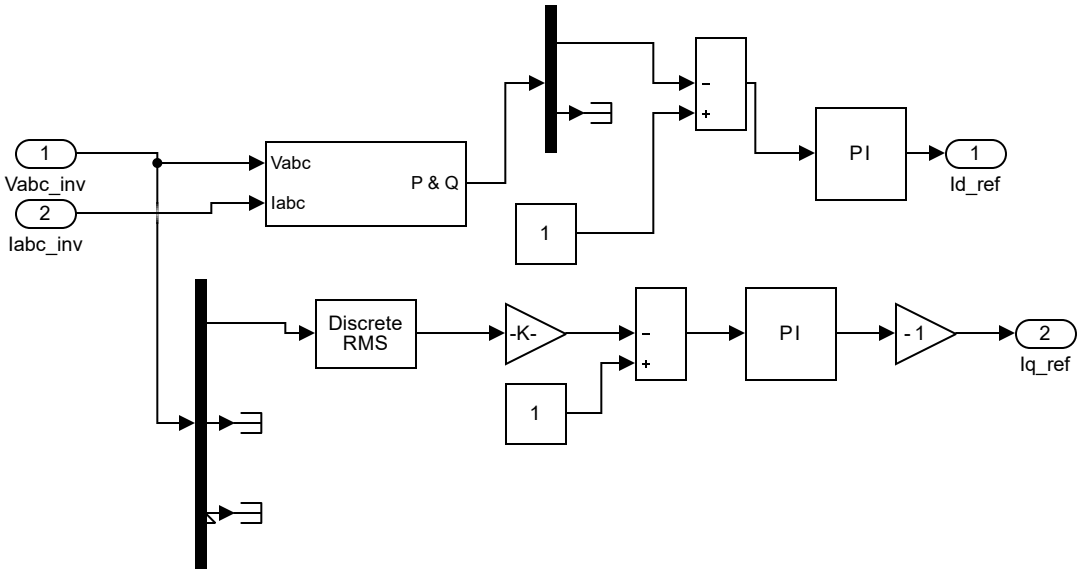
Table 3.265. "y" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1

Parameter	Value
Variable-size signal	Inherit
Sample time (-1 for inherited)	SampleTime
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	0
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.31. Power

Figure 3.33. PI_park_filter_prac/Power



3.31.1. Blocks

3.31.1.1. Parameters

3.31.1.1.1. "Constant" (Constant)

Table 3.266. "Constant" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	-1
Frame period	inf

3.31.1.1.2. "Constant1" (Constant)

Table 3.267. "Constant1" Parameters

Parameter	Value
Constant value	1
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	-1
Frame period	inf

3.31.1.1.3. "Demux" (Demux)

Table 3.268. "Demux" Parameters

Parameter	Value
Number of outputs	3

Parameter	Value
Display option	bar
Bus selection mode	off

3.31.1.1.4. "Demux1" (Demux)

Table 3.269. "Demux1" Parameters

Parameter	Value
Number of outputs	2
Display option	bar
Bus selection mode	off

3.31.1.1.5. "Discrete PI Controller" (SubSystem)

Table 3.270. "Discrete PI Controller" Parameters

Parameter	Value
Proportional gain (Kp)	0.4
Integral gain (Ki)	3000
Output limits [Upper Lower]	[1e6 -1e6]
Output initial value	0
Sample time	-1

3.31.1.1.6. "Discrete PI Controller2" (SubSystem)

Table 3.271. "Discrete PI Controller2" Parameters

Parameter	Value
Proportional gain (Kp)	200
Integral gain (Ki)	3800
Output limits [Upper Lower]	[1e6 -1e6]
Output initial value	0
Sample time	-1

3.31.1.1.7. "DRMS" (SubSystem)

Table 3.272. "DRMS" Parameters

Parameter	Value
Sampling Interval (s)	2e-6

3.31.1.1.8. "Gain" (Gain)

Table 3.273. "Gain" Parameters

Parameter	Value
Gain	1/444
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.31.1.1.9. "Gain1" (Gain)

Table 3.274. "Gain1" Parameters

Parameter	Value
Gain	-1
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule

Parameter	Value
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.31.1.1.10. "Iabc_inv" (Inport)

Table 3.275. "Iabc_inv" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.31.1.1.11. "Id_ref" (Outport)

Table 3.276. "Id_ref" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.31.1.1.12. "Iq_ref" (Outport)

Table 3.277. "Iq_ref" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off

Parameter	Value
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.31.1.1.13. "Sum" (Sum)

Table 3.278. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	|-+
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off

Parameter	Value
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.31.1.1.14. "Sum1" (Sum)

Table 3.279. "Sum1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	|-+
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.31.1.1.15. "Vabc_inv" (Inport)

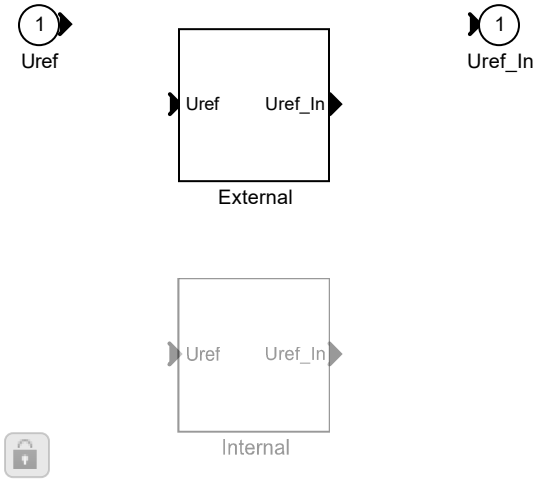
Table 3.280. "Vabc_inv" Parameters

Parameter	Value
Port number	1

Parameter	Value
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.32. Reference signal

Figure 3.34. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Reference signal



3.32.1. Blocks

3.32.1.1. Parameters

3.32.1.1.1. "Uref" (Inport)

Table 3.281. "Uref" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1

Parameter	Value
Minimum	[]
Maximum	[]
Data type	Inherit: auto

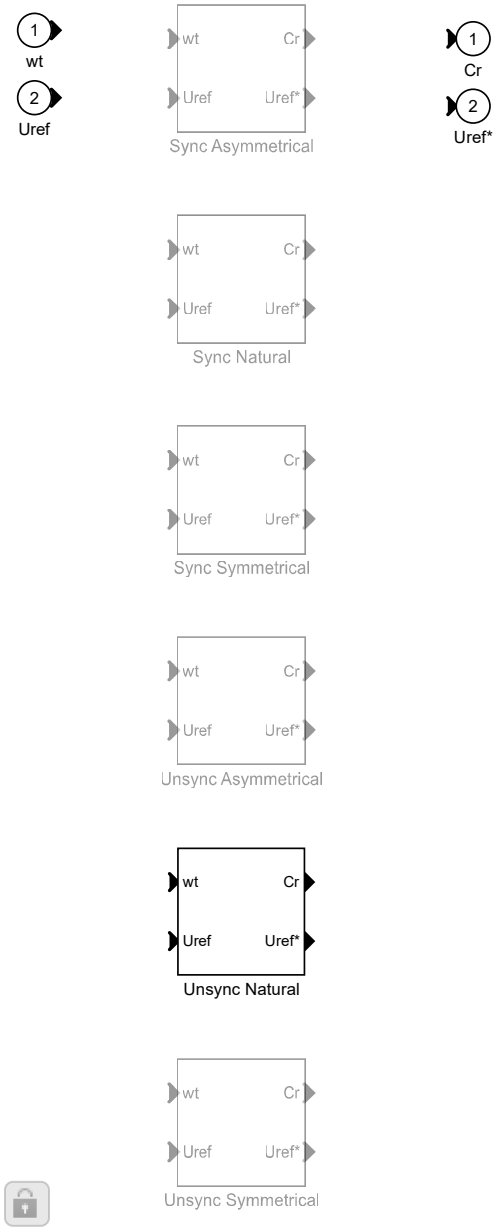
3.32.1.1.2. "Uref_In" (Outport)

Table 3.282. "Uref_In" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.33. Sampling

Figure 3.35. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Sampling



3.33.1. Blocks

3.33.1.1. Parameters

3.33.1.1.1. "Cr" (Outport)

Table 3.283. "Cr" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.33.1.1.2. "Uref" (Inport)

Table 3.284. "Uref" Parameters

Parameter	Value
Port number	2

Parameter	Value
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.33.1.1.3. "Uref*" (Outport)

Table 3.285. "Uref*" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off

Parameter	Value
Constant value	0
Interpret vector parameters as 1-D	off

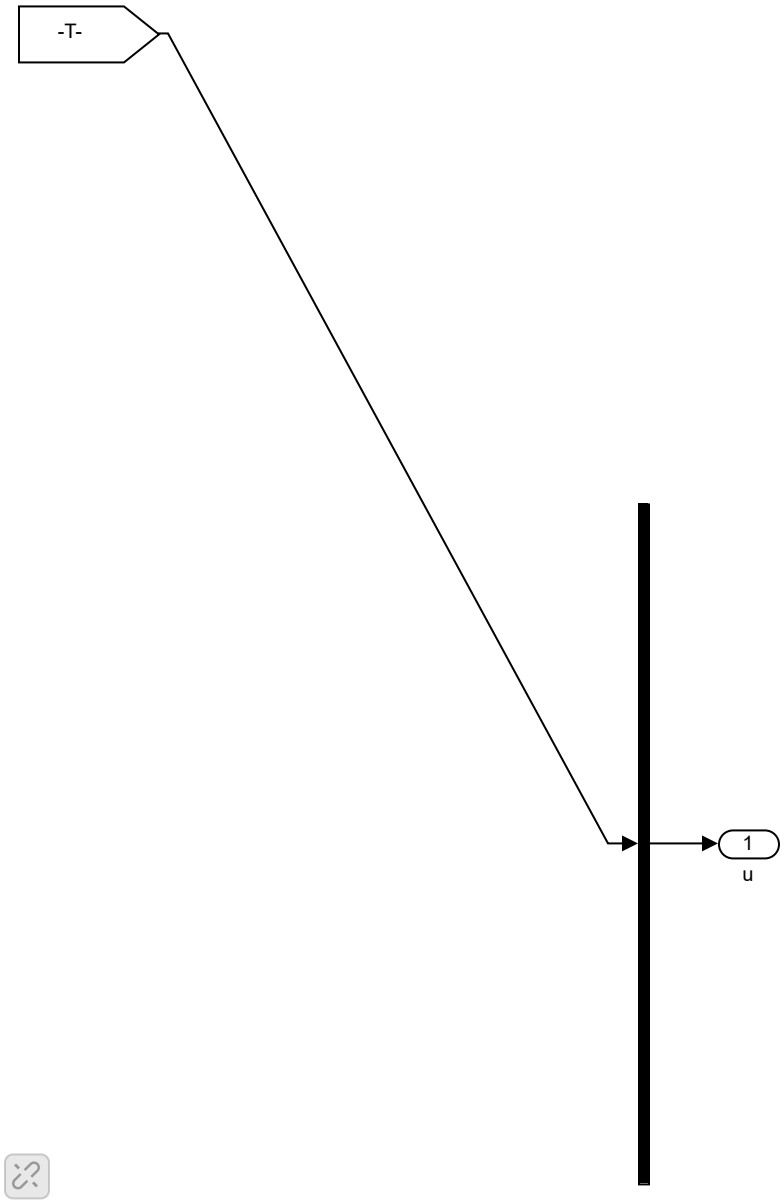
3.33.1.1.4. "wt" (Inport)

Table 3.286. "wt" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.34. Sources

Figure 3.36. PI_park_filter_prac/powergui1/EquivalentModel1/Sources



3.34.1. Blocks

3.34.1.1. Parameters

3.34.1.1.1. "From1" (From)

Table 3.287. "From1" Parameters

Parameter	Value
Goto tag	T52_4938_4444919004717
Icon display	Tag

3.34.1.1.2. "Mux" (Mux)

Table 3.288. "Mux" Parameters

Parameter	Value
Number of inputs	1
Display option	bar

3.34.1.1.3. "u" (Outport)

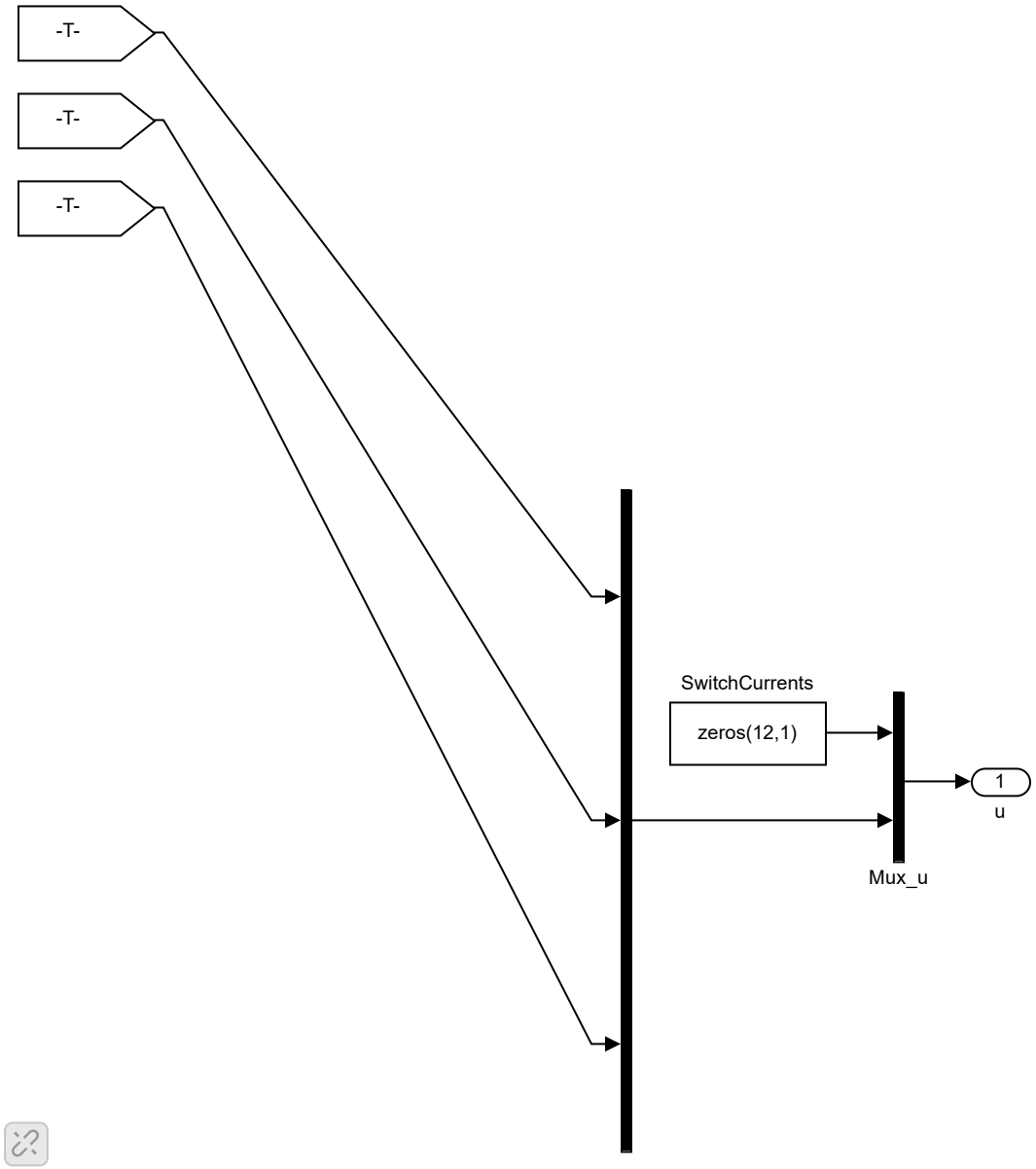
Table 3.289. "u" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off

Parameter	Value
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.35. Sources

Figure 3.37. PI_park_filter_prac/powergui1/EquivalentModel2/Sources



3.35.1. Blocks

3.35.1.1. Parameters

3.35.1.1.1. "From1" (From)

Table 3.290. "From1" Parameters

Parameter	Value
Goto tag	T42_3975_1990593393084
Icon display	Tag

3.35.1.1.2. "From2" (From)

Table 3.291. "From2" Parameters

Parameter	Value
Goto tag	T42_3985_2917881133775
Icon display	Tag

3.35.1.1.3. "From3" (From)

Table 3.292. "From3" Parameters

Parameter	Value
Goto tag	T43_4142_2964693307597
Icon display	Tag

3.35.1.1.4. "Mux" (Mux)

Table 3.293. "Mux" Parameters

Parameter	Value
Number of inputs	[6 1 3]
Display option	bar

3.35.1.1.5. "Mux_u" (Mux)

Table 3.294. "Mux_u" Parameters

Parameter	Value
Number of inputs	[12 10]

Parameter	Value
Display option	bar

3.35.1.1.6. "SwitchCurrents" (Constant)

Table 3.295. "SwitchCurrents" Parameters

Parameter	Value
Constant value	zeros(12,1)
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit from 'Constant value'
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.35.1.1.7. "u" (Outport)

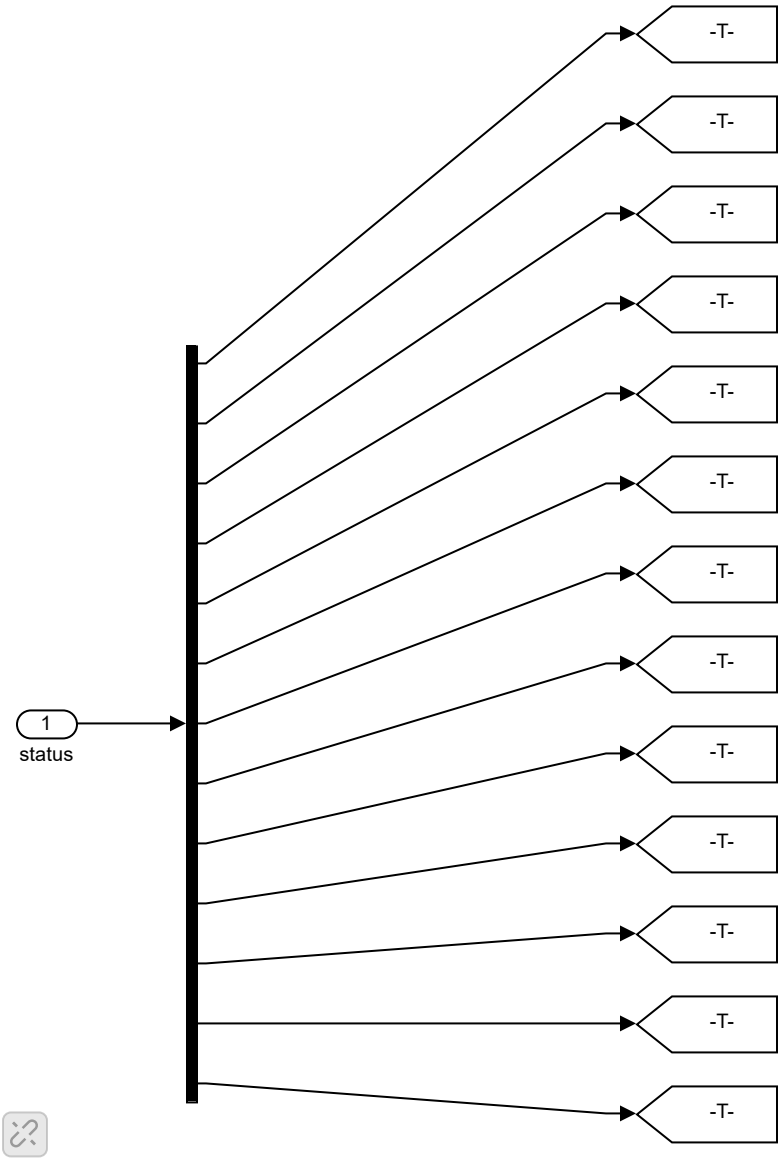
Table 3.296. "u" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1

Parameter	Value
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.36. Status

Figure 3.38. PI_park_filter_prac/powergui1/EquivalentModel2/Status



3.36.1. Blocks

3.36.1.1. Parameters

3.36.1.1.1. "Demux" (Demux)

Table 3.297. "Demux" Parameters

Parameter	Value
Number of outputs	[1 1 1 1 1 1 1 1 1 1 1 6]
Display option	bar
Bus selection mode	off

3.36.1.1.2. "Goto1" (Goto)

Table 3.298. "Goto1" Parameters

Parameter	Value
Tag	T57_5345_5189296996078
Icon display	Tag
Tag visibility	global

3.36.1.1.3. "Goto10" (Goto)

Table 3.299. "Goto10" Parameters

Parameter	Value
Tag	T57_5348_5184661974461
Icon display	Tag
Tag visibility	global

3.36.1.1.4. "Goto11" (Goto)

Table 3.300. "Goto11" Parameters

Parameter	Value
Tag	T57_5349_5186483551071
Icon display	Tag
Tag visibility	global

3.36.1.1.5. "Goto12" (Goto)

Table 3.301. "Goto12" Parameters

Parameter	Value
Tag	T57_5350_5188452008033

Parameter	Value
Icon display	Tag
Tag visibility	global

3.36.1.1.6. "Goto13" (Goto)

Table 3.302. "Goto13" Parameters

Parameter	Value
Tag	T43_4248_3137961564352
Icon display	Tag
Tag visibility	global

3.36.1.1.7. "Goto2" (Goto)

Table 3.303. "Goto2" Parameters

Parameter	Value
Tag	T57_5346_5191124860263
Icon display	Tag
Tag visibility	global

3.36.1.1.8. "Goto3" (Goto)

Table 3.304. "Goto3" Parameters

Parameter	Value
Tag	T57_5347_5193099604799
Icon display	Tag
Tag visibility	global

3.36.1.1.9. "Goto4" (Goto)

Table 3.305. "Goto4" Parameters

Parameter	Value
Tag	T57_5346_5187658203258
Icon display	Tag
Tag visibility	global

3.36.1.1.10. "Goto5" (Goto)

Table 3.306. "Goto5" Parameters

Parameter	Value
Tag	T57_5347_5189483971585
Icon display	Tag
Tag visibility	global

3.36.1.1.11. "Goto6" (Goto)

Table 3.307. "Goto6" Parameters

Parameter	Value
Tag	T57_5348_5191456620263
Icon display	Tag
Tag visibility	global

3.36.1.1.12. "Goto7" (Goto)

Table 3.308. "Goto7" Parameters

Parameter	Value
Tag	T57_5347_5186113196053
Icon display	Tag
Tag visibility	global

3.36.1.1.13. "Goto8" (Goto)

Table 3.309. "Goto8" Parameters

Parameter	Value
Tag	T57_5348_5187936868521
Icon display	Tag
Tag visibility	global

3.36.1.1.14. "Goto9" (Goto)

Table 3.310. "Goto9" Parameters

Parameter	Value
Tag	T57_5349_5189907421341
Icon display	Tag
Tag visibility	global

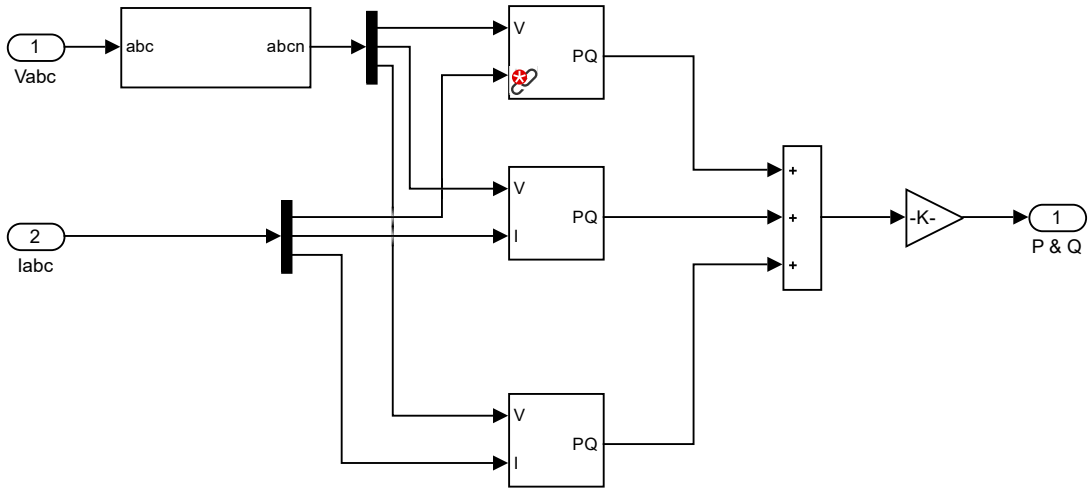
3.36.1.1.15. "status" (Inport)

Table 3.311. "status" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.37. Subsystem

Figure 3.39. PI_park_filter_prac/Power/Subsystem



3.37.1. Blocks

3.37.1.1. Parameters

3.37.1.1.1. "Active & Reactive Power" (SubSystem)

Table 3.312. "Active & Reactive Power" Parameters

Parameter	Value
Fundamental frequency (Hz)	50

3.37.1.1.2. "Active & Reactive Power1" (SubSystem)

Table 3.313. "Active & Reactive Power1" Parameters

Parameter	Value
Fundamental frequency (Hz)	50

3.37.1.1.3. "Active & Reactive Power2" (SubSystem)

Table 3.314. "Active & Reactive Power2" Parameters

Parameter	Value
Fundamental frequency (Hz)	50

3.37.1.1.4. "Demux" (Demux)

Table 3.315. "Demux" Parameters

Parameter	Value
Number of outputs	3
Display option	bar
Bus selection mode	off

3.37.1.1.5. "Demux1" (Demux)

Table 3.316. "Demux1" Parameters

Parameter	Value
Number of outputs	3
Display option	bar
Bus selection mode	off

3.37.1.1.6. "Gain" (Gain)

Table 3.317. "Gain" Parameters

Parameter	Value
Gain	1/50e3
Multiplication	Element-wise(K.*u)

Parameter	Value
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.37.1.1.7. "Iabc" (Inport)

Table 3.318. "Iabc" Parameters

Parameter	Value
Port number	2
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.37.1.1.8. "P & Q" (Outport)

Table 3.319. "P & Q" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto

Parameter	Value
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.37.1.1.9. "Sum" (Sum)

Table 3.320. "Sum" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	3
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]

Parameter	Value
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

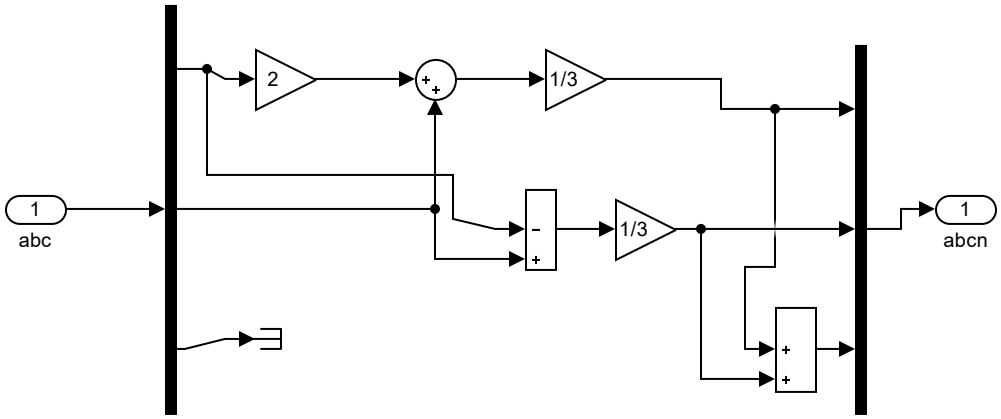
3.37.1.1.10. "Vabc" (Inport)

Table 3.321. "Vabc" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.38. Subsystem

Figure 3.40. PI_park_filter_prac/Power/Subsystem/Subsystem



3.38.1. Blocks

3.38.1.1. Parameters

3.38.1.1.1. "abc" (Inport)

Table 3.322. "abc" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.38.1.1.2. "abcn" (Outport)

Table 3.323. "abcn" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off

Parameter	Value
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.38.1.1.3. "Demux" (Demux)

Table 3.324. "Demux" Parameters

Parameter	Value
Number of outputs	3
Display option	bar
Bus selection mode	off

3.38.1.1.4. "Gain" (Gain)

Table 3.325. "Gain" Parameters

Parameter	Value
Gain	2
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.38.1.1.5. "Gain1" (Gain)

Table 3.326. "Gain1" Parameters

Parameter	Value
Gain	1/3
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.38.1.1.6. "Gain2" (Gain)

Table 3.327. "Gain2" Parameters

Parameter	Value
Gain	1/3
Multiplication	Element-wise(K.*u)
Parameter minimum	[]
Parameter maximum	[]
Parameter data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]

Parameter	Value
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.38.1.1.7. "Mux" (Mux)

Table 3.328. "Mux" Parameters

Parameter	Value
Number of inputs	3
Display option	bar

3.38.1.1.8. "Sum" (Sum)

Table 3.329. "Sum" Parameters

Parameter	Value
Icon shape	round
List of signs	|++
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.38.1.1.9. "Sum1" (Sum)

Table 3.330. "Sum1" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	|-+
Sum over	All dimensions
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.38.1.1.10. "Sum2" (Sum)

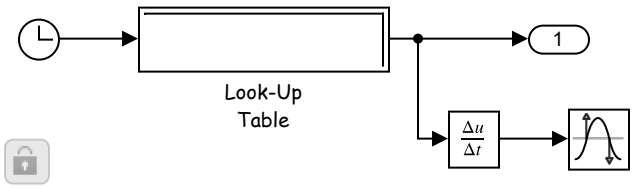
Table 3.331. "Sum2" Parameters

Parameter	Value
Icon shape	rectangular
List of signs	|++
Sum over	All dimensions

Parameter	Value
Dimension	1
Require all inputs to have the same data type	off
Accumulator data type	Inherit: Inherit via internal rule
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock data type settings against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Sample time (-1 for inherited)	-1

3.39. Timer

Figure 3.41. PI_park_filter_prac/Three-Phase Breaker1/Breaker A/Model/Timer



3.39.1. Blocks

3.39.1.1. Parameters

3.39.1.1.1. "Clock" (Clock)

Table 3.332. "Clock" Parameters

Parameter	Value
Display time	off
Decimation	10

3.39.1.1.2. "Derivative" (Derivative)

Table 3.333. "Derivative" Parameters

Parameter	Value
Coefficient c in the transfer function approximation s/(c*s + 1) used for linearization	inf

3.39.1.1.3. "Hit Crossing" (HitCross)

Table 3.334. "Hit Crossing" Parameters

Parameter	Value
Hit crossing offset	0
Hit crossing direction	either
Show output port	off
Enable zero-crossing detection	on
Sample time (-1 for inherited)	-1

3.39.1.1.4. "Look-Up Table" (Lookup)

Table 3.335. "Look-Up Table" Parameters

Parameter	Value
Vector of input values	tv
Table data	opv
Lookup method	Interpolation-Extrapolation
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Same as input
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor

Parameter	Value
Saturate on integer overflow	on
Sample time (-1 for inherited)	-1

Figure 3.42. Look-Up Table

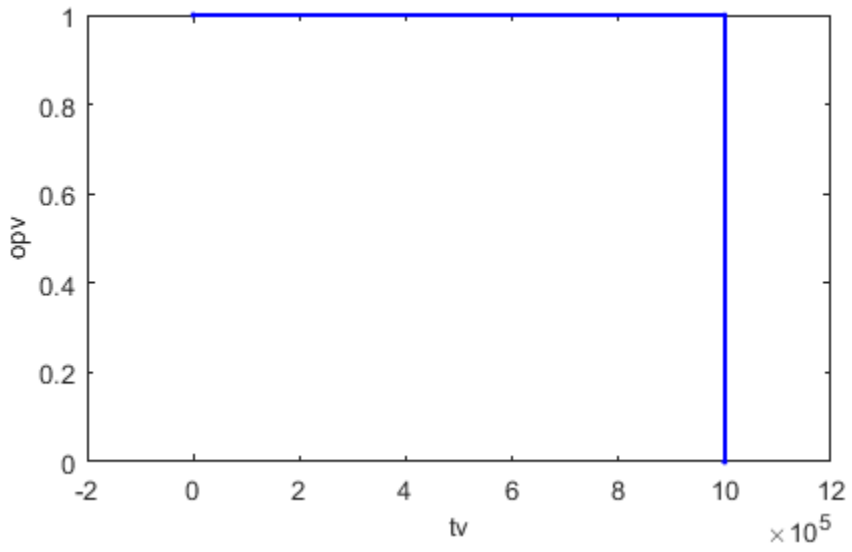


Table 3.336. Look-Up Table

-1	1
0	1
1000000	1
1000000	0
1000001	0

3.39.1.1.5. "Out" (Outport)

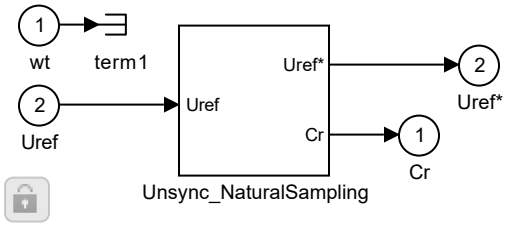
Table 3.337. "Out" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against	off

Parameter	Value
changes by the fixed-point tools	
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.40. Unsync Natural

Figure 3.43. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Sampling/Unsync Natural



3.40.1. Blocks

3.40.1.1. Parameters

3.40.1.1.1. "Cr" (Outport)

Table 3.338. "Cr" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.40.1.1.2. "Uref" (Inport)

Table 3.339. "Uref" Parameters

Parameter	Value
Port number	2

Parameter	Value
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.40.1.1.3. "Uref*" (Outport)

Table 3.340. "Uref*" Parameters

Parameter	Value
Port number	2
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off

Parameter	Value
Constant value	0
Interpret vector parameters as 1-D	off

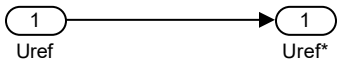
3.40.1.1.4. "wt" (Inport)

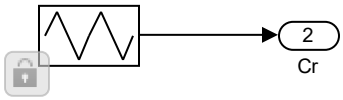
Table 3.341. "wt" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.41. Unsync_NaturalSampling

Figure 3.44. PI_park_filter_prac/Current /PWM Generator (2-Level)/ Sampling/Unsync Natural/Unsync_NaturalSampling





3.41.1. Blocks

3.41.1.1. Parameters

3.41.1.1.1. "Cr" (Outport)

Table 3.342. "Cr" Parameters

Parameter	Value
Port number	2

Parameter	Value
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.41.1.1.2. "Triangle Generator" (SubSystem)

Table 3.343. "Triangle Generator" Parameters

Parameter	Value
Frequency (Hz)	sps.Fc
Phase (degrees)	sps.Pc
Sample time	Ts

3.41.1.1.3. "Uref" (Inport)

Table 3.344. "Uref" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.41.1.1.4. "Uref*" (Outport)

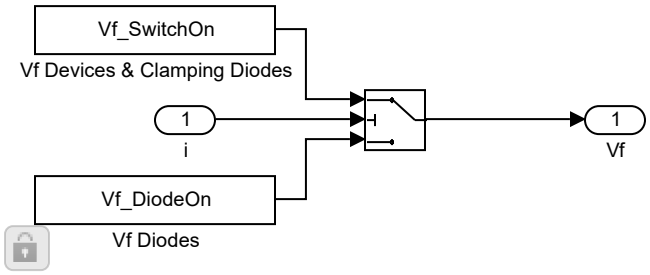
Table 3.345. "Uref*" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held

Parameter	Value
Initial output	[]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.42. Vf 1

Figure 3.45. PI_park_filter_prac/Universal Bridge/Model/Vf 1



3.42.1. Blocks

3.42.1.1. Parameters

3.42.1.1.1. "i" (Inport)

Table 3.346. "i" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	double

3.42.1.1.2. "Switch" (Switch)

Table 3.347. "Switch" Parameters

Parameter	Value
Criteria for passing first input	u2 ~= 0
Threshold	0.5
Require all data port inputs to have the same data type	on
Output minimum	[]
Output maximum	[]
Output data type	Inherit: Inherit via internal rule
Lock output data type setting against changes by the fixed-point tools	off
Integer rounding mode	Floor
Saturate on integer overflow	off
Enable zero-crossing detection	on
Sample time (-1 for inherited)	-1
Allow different data input sizes (Results in variable-size output signal)	off

3.42.1.1.3. "Vf" (Outport)

Table 3.348. "Vf" Parameters

Parameter	Value
Port number	1
Icon display	Port number
Minimum	[]
Maximum	[]
Data type	Inherit: auto
Lock output data type setting against changes by the fixed-point tools	off

Parameter	Value
Output as nonvirtual bus in parent model	off
Unit (e.g., m, m/s^2, N*m)	inherit
Port dimensions (-1 for inherited)	-1
Variable-size signal	Inherit
Sample time (-1 for inherited)	-1
Ensure outport is virtual	off
Source of initial output value	Dialog
Output when disabled	held
Initial output	[0]
MustResolveToSignalObject	off
Specify output when source is unconnected	off
Constant value	0
Interpret vector parameters as 1-D	off

3.42.1.1.4. "Vf Devices & Clamping Diodes" (Constant)

Table 3.349. "Vf Devices & Clamping Diodes" Parameters

Parameter	Value
Constant value	Vf_SwitchOn
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	double
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

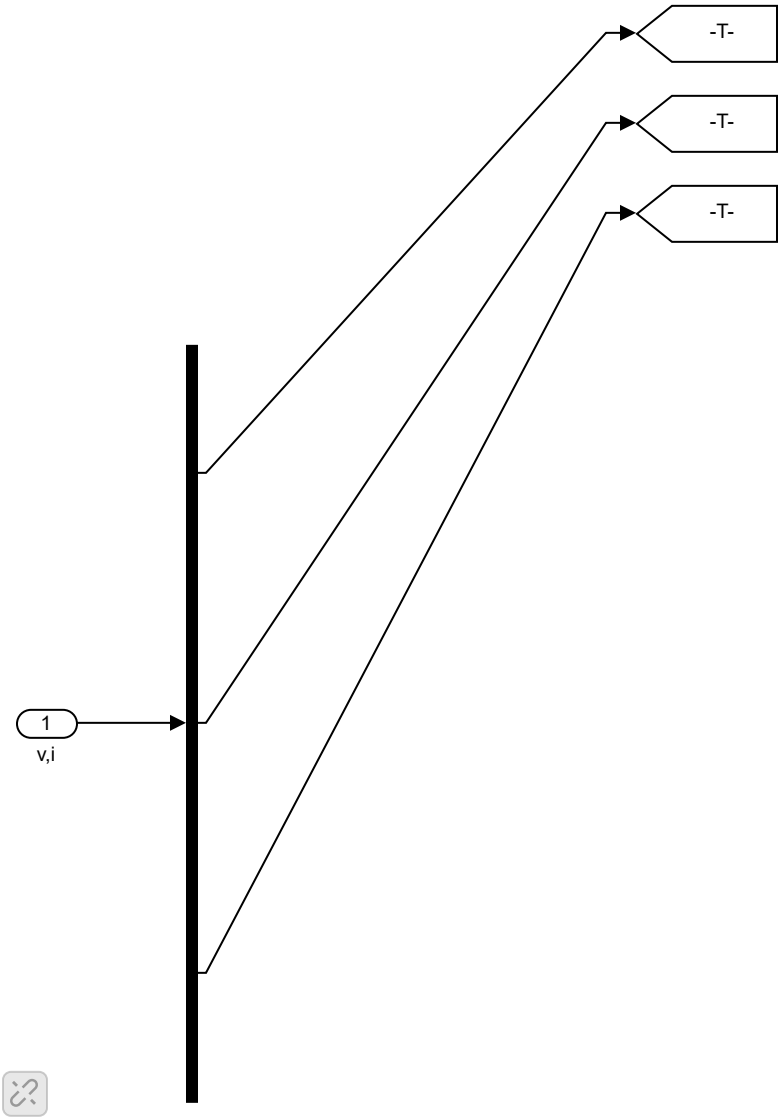
3.42.1.1.5. "Vf Diodes" (Constant)

Table 3.350. "Vf Diodes" Parameters

Parameter	Value
Constant value	Vf_DiodeOn
Interpret vector parameters as 1-D	on
Output minimum	[]
Output maximum	[]
Output data type	double
Lock output data type setting against changes by the fixed-point tools	off
Sample time	inf
Frame period	inf

3.43. Yout

Figure 3.46. PI_park_filter_prac/powergui1/EquivalentModel1/Yout



3.43.1. Blocks

3.43.1.1. Parameters

3.43.1.1.1. "Demux" (Demux)

Table 3.351. "Demux" Parameters

Parameter	Value
Number of outputs	[1 1 1]

Parameter	Value
Display option	bar
Bus selection mode	off

3.43.1.1.2. "Goto1" (Goto)

Table 3.352. "Goto1" Parameters

Parameter	Value
Tag	T75_6813_8691148838468
Icon display	Tag
Tag visibility	global

3.43.1.1.3. "Goto2" (Goto)

Table 3.353. "Goto2" Parameters

Parameter	Value
Tag	T75_6814_8694280695074
Icon display	Tag
Tag visibility	global

3.43.1.1.4. "Goto3" (Goto)

Table 3.354. "Goto3" Parameters

Parameter	Value
Tag	T75_6815_8697613464746
Icon display	Tag
Tag visibility	global

3.43.1.1.5. "v,i" (Inport)

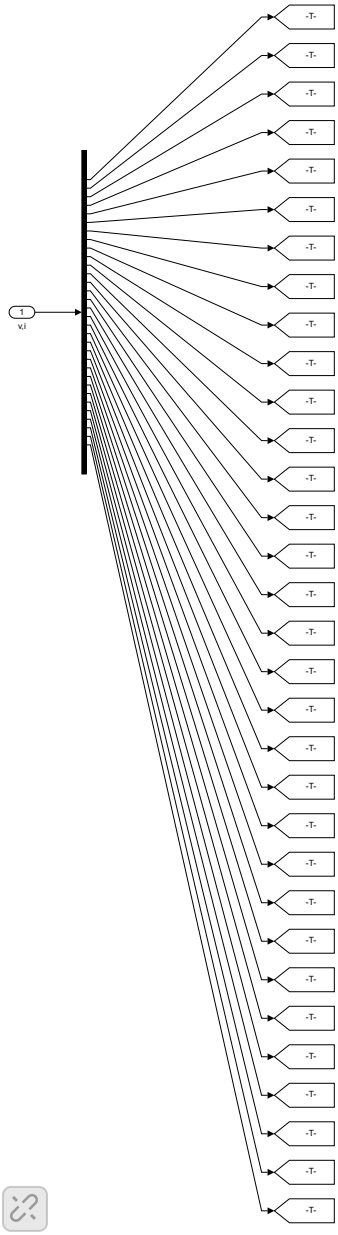
Table 3.355. "v,i" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1

Parameter	Value
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

3.44. Yout

Figure 3.47. PI_park_filter_prac/powergui1/EquivalentModel2/Yout



3.44.1. Blocks

3.44.1.1. Parameters

3.44.1.1.1. "Demux" (Demux)

Table 3.356. "Demux" Parameters

Parameter	Value
Number of outputs	[1 1 1 1 1 1 1 1 1 1 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1]
Display option	bar
Bus selection mode	off

3.44.1.1.2. "Goto1" (Goto)

Table 3.357. "Goto1" Parameters

Parameter	Value
Tag	T58_5444_5330146316419
Icon display	Tag
Tag visibility	global

3.44.1.1.3. "Goto10" (Goto)

Table 3.358. "Goto10" Parameters

Parameter	Value
Tag	T58_5447_5325223852453
Icon display	Tag
Tag visibility	global

3.44.1.1.4. "Goto11" (Goto)

Table 3.359. "Goto11" Parameters

Parameter	Value
Tag	T58_5448_5326859719347
Icon display	Tag
Tag visibility	global

3.44.1.1.5. "Goto12" (Goto)

Table 3.360. "Goto12" Parameters

Parameter	Value
Tag	T58_5449_5328639934171
Icon display	Tag
Tag visibility	global

3.44.1.1.6. "Goto13" (Goto)

Table 3.361. "Goto13" Parameters

Parameter	Value
Tag	T44_4347_3211898493547
Icon display	Tag
Tag visibility	global

3.44.1.1.7. "Goto14" (Goto)

Table 3.362. "Goto14" Parameters

Parameter	Value
Tag	T46_4599_3746091605203
Icon display	Tag
Tag visibility	global

3.44.1.1.8. "Goto15" (Goto)

Table 3.363. "Goto15" Parameters

Parameter	Value
Tag	T65_5968_6582089116572
Icon display	Tag
Tag visibility	global

3.44.1.1.9. "Goto16" (Goto)

Table 3.364. "Goto16" Parameters

Parameter	Value
Tag	T66_6017_6689264847228

Parameter	Value
Icon display	Tag
Tag visibility	global

3.44.1.1.10. "Goto17" (Goto)

Table 3.365. "Goto17" Parameters

Parameter	Value
Tag	T66_6019_6686424147145
Icon display	Tag
Tag visibility	global

3.44.1.1.11. "Goto18" (Goto)

Table 3.366. "Goto18" Parameters

Parameter	Value
Tag	T66_6020_6685179088466
Icon display	Tag
Tag visibility	global

3.44.1.1.12. "Goto19" (Goto)

Table 3.367. "Goto19" Parameters

Parameter	Value
Tag	T65_5969_6584405184101
Icon display	Tag
Tag visibility	global

3.44.1.1.13. "Goto2" (Goto)

Table 3.368. "Goto2" Parameters

Parameter	Value
Tag	T58_5445_5331788254074
Icon display	Tag
Tag visibility	global

3.44.1.1.14. "Goto20" (Goto)

Table 3.369. "Goto20" Parameters

Parameter	Value
Tag	T65_5970_6586888834399
Icon display	Tag
Tag visibility	global

3.44.1.1.15. "Goto21" (Goto)

Table 3.370. "Goto21" Parameters

Parameter	Value
Tag	T66_6018_6691739871888
Icon display	Tag
Tag visibility	global

3.44.1.1.16. "Goto22" (Goto)

Table 3.371. "Goto22" Parameters

Parameter	Value
Tag	T66_6019_6694385805942
Icon display	Tag
Tag visibility	global

3.44.1.1.17. "Goto23" (Goto)

Table 3.372. "Goto23" Parameters

Parameter	Value
Tag	T66_6018_6687786066732
Icon display	Tag
Tag visibility	global

3.44.1.1.18. "Goto24" (Goto)

Table 3.373. "Goto24" Parameters

Parameter	Value
Tag	T66_6019_6690258917168

Parameter	Value
Icon display	Tag
Tag visibility	global

3.44.1.1.19. "Goto25" (Goto)

Table 3.374. "Goto25" Parameters

Parameter	Value
Tag	T66_6020_6692902676998
Icon display	Tag
Tag visibility	global

3.44.1.1.20. "Goto26" (Goto)

Table 3.375. "Goto26" Parameters

Parameter	Value
Tag	T66_6020_6688894823357
Icon display	Tag
Tag visibility	global

3.44.1.1.21. "Goto27" (Goto)

Table 3.376. "Goto27" Parameters

Parameter	Value
Tag	T66_6021_6691536408963
Icon display	Tag
Tag visibility	global

3.44.1.1.22. "Goto28" (Goto)

Table 3.377. "Goto28" Parameters

Parameter	Value
Tag	T66_6021_6687647590455
Icon display	Tag
Tag visibility	global

3.44.1.1.23. "Goto29" (Goto)

Table 3.378. "Goto29" Parameters

Parameter	Value
Tag	T66_6022_6690287001837
Icon display	Tag
Tag visibility	global

3.44.1.1.24. "Goto3" (Goto)

Table 3.379. "Goto3" Parameters

Parameter	Value
Tag	T58_5446_5333574539661
Icon display	Tag
Tag visibility	global

3.44.1.1.25. "Goto30" (Goto)

Table 3.380. "Goto30" Parameters

Parameter	Value
Tag	T66_6006_6637305949249
Icon display	Tag
Tag visibility	global

3.44.1.1.26. "Goto31" (Goto)

Table 3.381. "Goto31" Parameters

Parameter	Value
Tag	T66_6007_6639809259825
Icon display	Tag
Tag visibility	global

3.44.1.1.27. "Goto32" (Goto)

Table 3.382. "Goto32" Parameters

Parameter	Value
Tag	T66_6008_6642483479795

Parameter	Value
Icon display	Tag
Tag visibility	global

3.44.1.1.28. "Goto4" (Goto)

Table 3.383. "Goto4" Parameters

Parameter	Value
Tag	T58_5445_5328413326476
Icon display	Tag
Tag visibility	global

3.44.1.1.29. "Goto5" (Goto)

Table 3.384. "Goto5" Parameters

Parameter	Value
Tag	T58_5446_5330053240544
Icon display	Tag
Tag visibility	global

3.44.1.1.30. "Goto6" (Goto)

Table 3.385. "Goto6" Parameters

Parameter	Value
Tag	T58_5447_5331837502544
Icon display	Tag
Tag visibility	global

3.44.1.1.31. "Goto7" (Goto)

Table 3.386. "Goto7" Parameters

Parameter	Value
Tag	T58_5446_5326772505154
Icon display	Tag
Tag visibility	global

3.44.1.1.32. "Goto8" (Goto)

Table 3.387. "Goto8" Parameters

Parameter	Value
Tag	T58_5447_5328410395635
Icon display	Tag
Tag visibility	global

3.44.1.1.33. "Goto9" (Goto)

Table 3.388. "Goto9" Parameters

Parameter	Value
Tag	T58_5448_5330192634047
Icon display	Tag
Tag visibility	global

3.44.1.1.34. "v,i" (Inport)

Table 3.389. "v,i" Parameters

Parameter	Value
Port number	1
Port dimensions (-1 for inherited)	-1
Sample time (-1 for inherited)	-1
Minimum	[]
Maximum	[]
Data type	Inherit: auto

Chapter 4. System Design Variables

Table of Contents

4.1. Design Variable Summary

Table 4.1. Functions used in Design Variable Expressions

Function Name	Parent Blocks	Calling character vector
Init	Discrete PI Controller1 [66] Discrete PI Controller2 [66] Discrete PI Controller [178] Discrete PI Controller2 [178]	`Init` `Init` `Init` `Init`
MinMax	PWM Generator (2-Level) [68]	`MinMax`
Offset	Three-Phase Sinusoidal Measurement (PLL) [70]	`Offset`
P	Three-Phase Sinusoidal Measurement (PLL) [70]	`P`

Chapter 5. System Model Configuration

Source: Model
Source Name: PI_park_filter_prac

Table 5.1. PI_park_filter_prac Configuration Set

Property	Value
Description	
Components	[PI_park_filter_prac Configuration Set.Components(1) [236], PI_park_filter_prac Configuration Set.Components(2) [237], PI_park_filter_prac Configuration Set.Components(3) [238], PI_park_filter_prac Configuration Set.Components(4) [240], PI_park_filter_prac Configuration Set.Components(5) [242], PI_park_filter_prac Configuration Set.Components(6) [244], PI_park_filter_prac Configuration Set.Components(7) [244], PI_park_filter_prac Configuration Set.Components(8) [245], PI_park_filter_prac Configuration Set.Components(9) [247], PI_park_filter_prac Configuration Set.Components(10) [248], PI_park_filter_prac Configuration Set.Components(11) [249]]
Name	Configuration
SimulationMode	normal
ConfigType	Model

Table 5.2. PI_park_filter_prac Configuration Set.Components [236](1)

Property	Value
Name	Solver
Description	
Components	
StartTime	0.0
StopTime	.8
AbsTol	auto

FixedStep	auto
InitialStep	auto
MaxNumMinSteps	-1
MaxOrder	5
ZcThreshold	auto
ConsecutiveZCsStepRelTol	10*128*eps
MaxConsecutiveZCs	1000
ExtrapolationOrder	4
NumberNewtonIterations	1
MaxStep	1e-4
MinStep	auto
MaxConsecutiveMinStep	1
RelTol	1e-3
SolverMode	SingleTasking
EnableMultiTasking	off
EnableConcurrentExecution	on
ConcurrentTasks	off
Solver	ode23tb
SolverName	ode23tb
SolverType	Variable-step
SolverJacobianMethodControl	auto
ShapePreserveControl	DisableAll
ZeroCrossControl	UseLocalSettings
ZeroCrossAlgorithm	Nonadaptive
SolverResetMethod	Fast
PositivePriorityOrder	off
AutoInsertRateTranBlk	off
SampleTimeConstraint	Unconstrained
InsertRTBMode	Whenever possible
SampleTimeProperty	
DecoupledContinuousIntegration	off

Table 5.3. PI_park_filter_prac Configuration Set.Components [236](2)

Property	Value
Name	Data Import/Export
Description	
Components	
Decimation	1

ExternalInput	[t, u]
FinalStateName	xFinal
InitialState	xInitial
LimitDataPoints	off
MaxDataPoints	1000
LoadExternalInput	off
LoadInitialState	off
SaveFinalState	off
SaveCompleteFinalSimState	off
SaveFormat	Dataset
SaveOutput	on
SaveState	off
SignalLogging	on
DSMLogging	on
InspectSignalLogs	off
SaveTime	on
ReturnWorkspaceOutputs	off
StateSaveName	xout
TimeSaveName	tout
OutputSaveName	yout
SignalLoggingName	logsout
DSMLoggingName	dsmout
OutputOption	RefineOutputTimes
OutputTimes	[]
ReturnWorkspaceOutputsName	out
Refine	1
LoggingToFile	off
DatasetSignalFormat	timeseries
LoggingFileName	out.mat
LoggingIntervals	[-inf, inf]

Table 5.4. PI_park_filter_prac Configuration Set.Components [236](3)

Property	**Value**
Name	Optimization
Description	
Components	
BlockReduction	on
BooleanDataType	on

ConditionallyExecuteInputs	on
DefaultParameterBehavior	Tunable
InlineParams	off
UseDivisionForNetSlopeComputation	off
UseFloatMulNetSlope	off
DefaultUnderspecifiedDataType	double
UseSpecifiedMinMax	off
InlineInvariantSignals	off
OptimizeBlockIOStorage	on
BufferReuse	on
GlobalBufferReuse	on
GlobalVariableUsage	None
StrengthReduction	off
AdvancedOptControl	
EnforceIntegerDowncast	on
ExpressionFolding	on
BooleansAsBitfields	off
BitfieldContainerType	uint_T
EnableMemcpy	on
MemcpyThreshold	64
PassReuseOutputArgsAs	Structure reference
PassReuseOutputArgsThreshold	12
FoldNonRolledExpr	on
LocalBlockOutputs	on
RollThreshold	5
StateBitsets	off
DataBitsets	off
ActiveStateOutputEnumStorageType	Native Integer
UseTempVars	off
ZeroExternalMemoryAtStartup	on
ZeroInternalMemoryAtStartup	on
InitFltsAndDblsToZero	off
NoFixptDivByZeroProtection	off
EfficientFloat2IntCast	off
EfficientMapNaN2IntZero	on
LifeSpan	auto
EvaledLifeSpan	Inf
MaxStackSize	Inherit from target
BufferReusableBoundary	on

SimCompilerOptimization	off
AccelVerboseBuild	off
OptimizeBlockOrder	off
OptimizeDataStoreBuffers	on
BusAssignmentInplaceUpdate	on
DifferentSizesBufferReuse	off

Table 5.5. PI_park_filter_prac Configuration Set.Components [236](4)

Property	Value
Name	Diagnostics
Description	
Components	
RTPrefix	error
ConsistencyChecking	none
ArrayBoundsChecking	none
SignalInfNanChecking	none
SignalRangeChecking	none
ReadBeforeWriteMsg	UseLocalSettings
WriteAfterWriteMsg	UseLocalSettings
WriteAfterReadMsg	UseLocalSettings
AlgebraicLoopMsg	warning
ArtificialAlgebraicLoopMsg	warning
SaveWithDisabledLinksMsg	warning
SaveWithParameterizedLinksMsg	warning
CheckSSInitialOutputMsg	on
UnderspecifiedInitializationDetection	Simplified
MergeDetectMultiDrivingBlocksExec	error
CheckExecutionContextRuntimeOutputMsg	off
SignalResolutionControl	UseLocalSettings
BlockPriorityViolationMsg	warning
MinStepSizeMsg	warning
TimeAdjustmentMsg	none
MaxConsecutiveZCsMsg	error
MaskedZcDiagnostic	warning
IgnoredZcDiagnostic	warning
SolverPrmCheckMsg	none
InheritedTsInSrcMsg	warning
MultiTaskDSMMsg	error

MultiTaskCondExecSysMsg	error
MultiTaskRateTransMsg	error
SingleTaskRateTransMsg	none
TasksWithSamePriorityMsg	warning
SigSpecEnsureSampleTimeMsg	warning
CheckMatrixSingularityMsg	none
IntegerOverflowMsg	warning
Int32ToFloatConvMsg	warning
ParameterDowncastMsg	error
ParameterOverflowMsg	error
ParameterUnderflowMsg	none
ParameterPrecisionLossMsg	warning
ParameterTunabilityLossMsg	warning
FixptConstUnderflowMsg	none
FixptConstOverflowMsg	none
FixptConstPrecisionLossMsg	none
UnderSpecifiedDataTypeMsg	none
UnnecessaryDatatypeConvMsg	none
VectorMatrixConversionMsg	none
InvalidFcnCallConnMsg	error
FcnCallInpInsideContextMsg	error
SignalLabelMismatchMsg	none
UnconnectedInputMsg	warning
UnconnectedOutputMsg	warning
UnconnectedLineMsg	warning
UseOnlyExistingSharedCode	error
SFcnCompatibilityMsg	none
FrameProcessingCompatibilityMsg	error
UniqueDataStoreMsg	none
BusObjectLabelMismatch	warning
RootOutportRequireBusObject	warning
AssertControl	UseLocalSettings
Echo	
EnableOverflowDetection	off
AllowSymbolicDim	on
ModelReferenceIOMsg	none
ModelReferenceVersionMismatchMessage	none
ModelReferenceIOMismatchMessage	none
ModelReferenceCSMismatchMessage	none

ModelReferenceSimTargetVerbose	off
UnknownTsInhSupMsg	warning
ModelReferenceDataLoggingMessage	warning
ModelReferenceSymbolNameMessage	warning
ModelReferenceExtraNoncontSigs	error
StateNameClashWarn	none
SimStateInterfaceChecksumMismatchMsg	warning
SimStateOlderReleaseMsg	error
InitInArrayFormatMsg	warning
StrictBusMsg	ErrorLevel1
BusNameAdapt	WarnAndRepair
NonBusSignalsTreatedAsBus	none
SFUnusedDataAndEventsDiag	warning
SFUnexpectedBacktrackingDiag	error
SFInvalidInputDataAccessInChartInitDiag	warning
SFNoUnconditionalDefaultTransitionDiag	error
SFTransitionOutsideNaturalParentDiag	warning
SFUnconditionalTransitionShadowingDiag	warning
SFUnreachableExecutionPathDiag	warning
SFUndirectedBroadcastEventsDiag	warning
SFTransitionActionBeforeConditionDiag	warning
SFOutputUsedAsStateInMooreChartDiag	error
SFTemporalDelaySmallerThanSampleTimeDiag	warning
SFUnconditionalPathOutOfParentDiag	warning
SFSelfTransitionDiag	warning
SFExecutionAtInitializationDiag	warning
SFMachineParentedDataDiag	warning
SFUnreachableStateOrJunctionDiag	warning
SFDanglingTransitionDiag	warning
IntegerSaturationMsg	warning
AllowedUnitSystems	all
UnitsInconsistencyMsg	warning
AllowAutomaticUnitConversions	on
RCSCRenamedMsg	warning
RCSCObservableMsg	warning
ForceCombineOutputUpdateInSim	off

Table 5.6. PI_park_filter_prac Configuration Set.Components [236](5)

Property	Value
Name	Hardware Implementation
Description	
Components	
ProdBitPerChar	8
ProdBitPerShort	16
ProdBitPerInt	32
ProdBitPerLong	32
ProdBitPerLongLong	64
ProdBitPerFloat	32
ProdBitPerDouble	64
ProdBitPerPointer	64
ProdBitPerSizeT	64
ProdBitPerPtrDiffT	64
ProdLargestAtomicInteger	Char
ProdLargestAtomicFloat	Float
ProdIntDivRoundTo	Zero
ProdEndianess	LittleEndian
ProdWordSize	64
ProdShiftRightIntArith	on
ProdLongLongMode	off
ProdHWDeviceType	Intel->x86-64 (Windows64)
TargetBitPerChar	8
TargetBitPerShort	16
TargetBitPerInt	32
TargetBitPerLong	32
TargetBitPerLongLong	64
TargetBitPerFloat	32
TargetBitPerDouble	64
TargetBitPerPointer	32
TargetBitPerSizeT	32
TargetBitPerPtrDiffT	32
TargetLargestAtomicInteger	Char
TargetLargestAtomicFloat	None
TargetShiftRightIntArith	on
TargetLongLongMode	off
TargetIntDivRoundTo	Undefined

TargetEndianess	Unspecified
TargetWordSize	32
TargetPreprocMaxBitsSint	32
TargetPreprocMaxBitsUint	32
TargetHWDeviceType	Specified
TargetUnknown	off
ProdEqTarget	on
UseEmbeddedCoderFeatures	on
UseSimulinkCoderFeatures	on

Table 5.7. PI_park_filter_prac Configuration Set.Components [236](6)

Property	Value
Name	Model Referencing
Description	
Components	
UpdateModelReferenceTargets	IfOutOfDateOrStructuralChange
SkipRefExpFcnMdlSchedulingOrderCheck	off
EnableRefExpFcnMdlSchedulingChecks	on
CheckModelReferenceTargetMessage	error
EnableParallelModelReferenceBuilds	off
ParallelModelReferenceErrorOnInvalidPool	on
ParallelModelReferenceMATLABWorkerInit	None
ModelReferenceNumInstancesAllowed	Multi
PropagateVarSize	Infer from blocks in model
ModelDependencies	
ModelReferencePassRootInputsByReference	on
ModelReferenceMinAlgLoopOccurrences	off
PropagateSignalLabelsOutOfModel	on
SupportModelReferenceSimTargetCustomCode	off

Table 5.8. PI_park_filter_prac Configuration Set.Components [236](7)

Property	Value
Name	Simulation Target
Description	
Components	
SimCustomSourceCode	
SimCustomHeaderCode	

SimCustomInitializer	
SimCustomTerminator	
SimReservedNameArray	
SimUserSources	
SimUserIncludeDirs	
SimUserLibraries	
SimUserDefines	
SFSimEnableDebug	off
SFSimOverflowDetection	on
SFSimEcho	on
SimBlas	on
SimCtrlC	on
SimExtrinsic	on
SimIntegrity	on
SimUseLocalCustomCode	off
SimParseCustomCode	on
SimBuildMode	sf_incremental_build
SimDataInitializer	
SimGenImportedTypeDefs	off
CompileTimeRecursionLimit	50
EnableRuntimeRecursion	on
MATLABDynamicMemAlloc	on
MATLABDynamicMemAllocThreshold	65536
CustomSymbolStrEMXArray	nothing
CustomSymbolStrEMXArrayFcn	nothing

Table 5.9. PI_park_filter_prac Configuration Set.Components [236](8)

Property	Value
Name	Code Generation
SystemTargetFile	grt.tlc
HardwareBoard	None
TLCOptions	
CodeGenDirectory	
GenCodeOnly	off
MakeCommand	make_rtw
GenerateMakefile	on
PackageGeneratedCodeAndArtifacts	off
PackageName	

TemplateMakefile	grt_default_tmf
PostCodeGenCommand	
Description	
GenerateReport	off
SaveLog	off
RTWVerbose	on
RetainRTWFile	off
ProfileTLC	off
TLCDebug	off
TLCCoverage	off
TLCAssert	off
ProcessScriptMode	Default
ConfigurationMode	Optimized
ProcessScript	
ConfigurationScript	
ConfigAtBuild	off
RTWUseLocalCustomCode	off
RTWUseSimCustomCode	off
CustomSourceCode	
CustomHeaderCode	
CustomInclude	
CustomSource	
CustomLibrary	
CustomDefine	
CustomLAPACKCallback	
CustomFFTCallback	
CustomInitializer	
CustomTerminator	
Toolchain	Automatically locate an installed toolchain
BuildConfiguration	Faster Builds
CustomToolchainOptions	
IncludeHyperlinkInReport	off
LaunchReport	off
RecursionLimit	50
PortableWordSizes	off
GenerateErtSFunction	off
CreateSILPILBlock	None
CodeExecutionProfiling	off
CodeExecutionProfileVariable	executionProfile

CodeProfilingSaveOptions	SummaryOnly
CodeProfilingInstrumentation	off
CodeCoverageSettings	PI_park_filter_prac Configuration Set.Components(8).CodeCoverageSettings [250]
SILDebugging	off
TargetLang	C
IncludeERTFirstTime	off
GenerateTraceInfo	off
GenerateTraceReport	off
GenerateTraceReportSl	off
GenerateTraceReportSf	off
GenerateTraceReportEml	off
GenerateCodeInfo	off
GenerateWebview	off
GenerateCodeMetricsReport	off
GenerateCodeReplacementReport	off
RTWCompilerOptimization	off
ObjectivePriorities	
RTWCustomCompilerOptimizations	
CheckMdlBeforeBuild	Off
CustomRebuildMode	OnUpdate
DataInitializer	
Components	[PI_park_filter_prac Configuration Set.Components(8).Components(1) [250], PI_park_filter_prac Configuration Set.Components(8).Components(2) [252]]

Table 5.10. PI_park_filter_prac Configuration Set.Components [236](9)

Property	**Value**
Description	Simulink Coverage Configuration Component
Components	
Name	Simulink Coverage
CovEnable	off
CovScope	EntireSystem
CovIncludeTopModel	on
RecordCoverage	off
CovPath	/
CovSaveName	covdata

CovCompData	
CovMetricSettings	dwe
CovFilter	
CovHTMLOptions	
CovNameIncrementing	off
CovHtmlReporting	off
CovForceBlockReductionOff	on
CovEnableCumulative	on
CovSaveCumulativeToWorkspaceVar	off
CovSaveSingleToWorkspaceVar	off
CovCumulativeVarName	covCumulativeData
CovCumulativeReport	off
CovSaveOutputData	on
CovOutputDir	slcov_output/$ModelName$
CovDataFileName	$ModelName$_cvdata
CovShowResultsExplorer	on
CovReportOnPause	on
CovModelRefEnable	off
CovModelRefExcluded	
CovExternalEMLEnable	on
CovSFcnEnable	on
CovBoundaryAbsTol	1.0000e-05
CovBoundaryRelTol	0.0100
CovUseTimeInterval	off
CovStartTime	0
CovStopTime	0
CovMetricStructuralLevel	Decision
CovMetricLookupTable	off
CovMetricSignalRange	off
CovMetricSignalSize	off
CovMetricObjectiveConstraint	off
CovMetricSaturateOnIntegerOverflow	off
CovMetricRelationalBoundary	off
CovLogicBlockShortCircuit	off
CovUnsupportedBlockWarning	on
CovHighlightResults	off
CovMcdcMode	Masking

Table 5.11. PI_park_filter_prac Configuration Set.Components [236](10)

Property	Value
Description	HDL Coder custom configuration component
Components	
Name	HDL Coder

Table 5.12. PI_park_filter_prac Configuration Set.Components [236](11)

Property	Value
Description	
Components	[PI_park_filter_prac Configuration Set.Components(11).Components(1) [254], PI_park_filter_prac Configuration Set.Components(11).Components(2) [255]]
Name	Simscape
EditingMode	Full
ExplicitSolverDiagnosticOptions	warning
GlobalZcOffDiagnosticOptions	warning
SimscapeNormalizeSystem	on
SimscapeNominalValues	[{"value":"1","unit":"A"}, {"value":"1","unit":"bar"}, {"value":"1","unit":"cm^2"}, {"value":"1","unit":"cm^3/s"}, {"value":"1","unit":"kJ/kg"}, {"value":"1","unit":"kW"}, {"value":"1","unit":"l"}, {"value":"1","unit":"N"}, {"value":"1","unit":"N*m"}, {"value":"1","unit":"V"}]
SimscapeLogType	none
SimscapeLogSimulationStatistics	off
SimscapeLogOpenViewer	off
SimscapeLogName	simlog
SimscapeLogDecimation	1
SimscapeLogLimitData	on
SimscapeLogDataHistory	5000
SimscapeUseOperatingPoints	off
SimscapeOperatingPoint	
SelectedTab	
Version	1.0

ComponentsAttached	true
Listener	[PI_park_filter_prac Configuration Set.Components(11).Listener(1) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(2) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(3) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(4) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(5) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(6) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(7) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(8) [255], PI_park_filter_prac Configuration Set.Components(11).Listener(9) [256], PI_park_filter_prac Configuration Set.Components(11).Listener(10) [256], PI_park_filter_prac Configuration Set.Components(11).Listener(11) [256], PI_park_filter_prac Configuration Set.Components(11).Listener(12) [256], PI_park_filter_prac Configuration Set.Components(11).Listener(13) [256], PI_park_filter_prac Configuration Set.Components(11).Listener(14) [256], PI_park_filter_prac Configuration Set.Components(11).Listener(15) [256]]
someListenersNotInstalled	false
instanceId	

Table 5.13. PI_park_filter_prac Configuration Set.Components(8) [245].CodeCoverageSettings

Property	Value
TopModelCoverage	off
ReferencedModelCoverage	off
CoverageTool	None

Table 5.14. PI_park_filter_prac Configuration Set.Components(8).Components [247](1)

Property	Value
Name	Code Appearance
Description	
Components	

ForceParamTrailComments	off
GenerateComments	on
CommentStyle	Auto
IgnoreCustomStorageClasses	on
IgnoreTestpoints	off
IncHierarchyInIds	off
MaxIdLength	31
ShowEliminatedStatement	off
OperatorAnnotations	off
IncAutoGenComments	off
SimulinkDataObjDesc	off
SFDataObjDesc	off
MATLABFcnDesc	off
IncDataTypeInIds	off
PrefixModelToSubsysFcnNames	on
MangleLength	1
SharedChecksumLength	8
CustomSymbolStr	RN$M
CustomSymbolStrGlobalVar	RN$M
CustomSymbolStrType	NR$M_T
CustomSymbolStrField	NM
CustomSymbolStrFcn	RNMF
CustomSymbolStrSimulinkFcn	RN
CustomSymbolStrFcnArg	rt$I$N$M
CustomSymbolStrBlkIO	rtb_NM
CustomSymbolStrTmpVar	NM
CustomSymbolStrMacro	RN$M
CustomSymbolStrUtil	NC
CustomSymbolStrEmxType	emxArray_MN
CustomSymbolStrEmxFcn	emx$M$N
CustomUserTokenString	
CustomCommentsFcn	
DefineNamingRule	None
DefineNamingFcn	
ParamNamingRule	None
ParamNamingFcn	
SignalNamingRule	None
SignalNamingFcn	
InsertBlockDesc	off

InsertPolySpaceComments	off
SimulinkBlockComments	on
StateflowObjectComments	off
MATLABSourceComments	off
EnableCustomComments	off
InternalIdentifier	Shortened
InlinedPrmAccess	Literals
ReqsInCode	off
UseSimReservedNames	off
ReservedNameArray	

Table 5.15. PI_park_filter_prac Configuration Set.Components(8).Components [247](2)

Property	Value
Name	Target
Description	
Components	
IsERTTarget	off
TargetLibSuffix	
TargetPreCompLibLocation	
GenFloatMathFcnCalls	NOT IN USE
TargetLangStandard	C99 (ISO)
TargetFunctionLibrary	NOT IN USE
CodeReplacementLibrary	None
UtilityFuncGeneration	Auto
ERTMultiwordTypeDef	System defined
MultiwordTypeDef	System defined
ERTMultiwordLength	2048
MultiwordLength	2048
GenerateFullHeader	on
InferredTypesCompatibility	off
ExistingSharedCode	
SharedCodeLocation	
GenerateSampleERTMain	off
GenerateTestInterfaces	off
ModelReferenceCompliant	on
ParMdlRefBuildCompliant	on
CompOptLevelCompliant	on
ConcurrentExecutionCompliant	on

IncludeMdlTerminateFcn	on
CombineOutputUpdateFcns	on
CombineSignalStateStructs	off
SuppressErrorStatus	off
ERTFirstTimeCompliant	off
IncludeFileDelimiter	Auto
ERTCustomFileBanners	off
SupportAbsoluteTime	on
LogVarNameModifier	rt_
MatFileLogging	on
MultiInstanceERTCode	off
CodeInterfacePackaging	Nonreusable function
SupportNonFinite	on
SupportComplex	on
PurelyIntegerCode	off
SupportContinuousTime	on
SupportNonInlinedSFcns	on
RemoveDisableFunc	off
RemoveResetFunc	off
SupportVariableSizeSignals	off
ParenthesesLevel	Nominal
CastingMode	Nominal
GenerateClassInterface	off
ModelStepFunctionPrototypeControlCompliant	off
CPPClassGenCompliant	on
GRTInterface	off
GenerateAllocFcn	off
UseToolchainInfoCompliant	on
GenerateSharedConstants	on
LUTObjectStructOrderExplicitValues	Size,Breakpoints,Table
LUTObjectStructOrderEvenSpacing	Size,Breakpoints,Table
ExtMode	off
ExtModeStaticAlloc	off
ExtModeTesting	off
ExtModeStaticAllocSize	1000000
ExtModeTransport	0
ExtModeMexFile	ext_comm
ExtModeMexArgs	
ExtModeIntrfLevel	Level1

RTWCAPISignals	off
RTWCAPIParams	off
RTWCAPIStates	off
RTWCAPIRootIO	off
GenerateASAP2	off
MultiInstanceErrorCode	Error

Table 5.16. PI_park_filter_prac Configuration Set.Components(11).Components [249](1)

Property	Value
Description	
Components	
WarnOnRedundantConstraints	on
WarnOnSingularInitialAssembly	off
ShowCutJoints	off
VisOnUpdateDiagram	off
VisDuringSimulation	off
EnableVisSimulationTime	on
VisSampleTime	0
DisableBodyVisControl	off
ShowCG	on
ShowCS	on
ShowOnlyPortCS	off
HighlightModel	on
FramesToBeSkipped	0
AnimationDelay	3
RecordAVI	off
CompressAVI	on
AviFileName	
AutoFitVis	off
EnableSelection	on
LastVizWinPosition	[-1 -1 -1 -1]
CamPosition	[0 0 0]
CamTarget	[0 0 -1]
CamUpVector	[0 1 0]
CamHeight	-1
CamViewAngle	0
VisBackgroundColor	[0.9 0.9 0.95]
DefaultBodyColor	[1 0 0]

MDLBodyVisualizationType	Convex hull from body CS locations
OVRRIDBodyVisualizationType	NONE
Name	SimscapeMultibody1G
VisConfigFile	

Table 5.17. PI_park_filter_prac Configuration Set.Components(11).Components [249](2)

Property	Value
Description	Simscape Multibody
Components	[PI_park_filter_prac Configuration Set.Components(11).Components(2).Components(1) [256], PI_park_filter_prac Configuration Set.Components(11).Components(2).Components(2) [256]]
Name	SimscapeMultibody

PI_park_filter_prac Configuration Set.Components(11).Listener(1) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(2) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(3) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(4) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(5) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(6) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(7) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(8) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(9) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(10) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(11) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(12) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(13) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(14) (handle.listener,)

Note: this object has no unfiltered properties.

PI_park_filter_prac Configuration Set.Components(11).Listener(15) (handle.listener,)

Note: this object has no unfiltered properties.

Table 5.18. PI_park_filter_prac Configuration Set.Components(11).Components(2).Components [255](1)

Property	Value
Description	Diagnostics
Components	
Name	DiagnosticsConfigSet
SimMechanicsInvalidVisualProperty	warning
SimMechanicsCrossSectionNullEdge	warning
SimMechanicsUnconnectedFramePorts	warning
SimMechanicsUnconnectedGeometryPorts	warning
SimMechanicsRedundantBlock	warning
SimMechanicsConflictingReferenceFrames	warning
SimMechanicsRigidlyBoundBlock	error
SimMechanicsUnsatisfiedHighPriorityTargets	warning
SimMechanicsJointTargetOverSpecification	error

Table 5.19. PI_park_filter_prac Configuration Set.Components(11).Components(2).Components [255](2)

Property	Value
Description	Explorer
Components	
Name	ExplorerConfigSet
SimMechanicsOpenEditorOnUpdate	on
InternalSimMechanicsExplorerSettings	

Table 5.20. HDL Coder

Property	Value
HDLSubsystem	PI_park_filter_prac
Workflow	Generic ASIC/FPGA
TargetPlatform	
ReferenceDesign	
ReferenceDesignPath	
CoeffPrefix	coeff
InputType	std_logic_vector
OutputType	Same as input type
ScalarizePorts	off
CoeffMultipliers	Multiplier
ResetType	Asynchronous
FIRAdderStyle	linear
MultiplierInputPipeline	0
MultiplierOutputPipeline	0
FoldingFactor	1
NumMultipliers	-1
OptimizeForHDL	off
TimingControllerPostfix	_tc
OptimizeTimingController	on
TimingControllerArch	default
CastBeforeSum	on
CheckHDL	off
EnablePrefix	enb
ClockEnableInputPort	clk_enable
ClockEnableOutputPort	ce_out
ClockInputPort	clk
ClockEdge	Rising
ResetInputPort	reset

SimulatorFlags	
HDLCompileFilePostfix	_compile.do
HDLCompileInit	vlib %s\n
HDLCompileTerm	
HDLCompileVerilogCmd	vlog %s %s\n
HDLCompileVHDLCmd	vcom %s %s\n
EnableForGenerateLoops	on
HDLMapFilePostfix	_map.txt
HDLMapSeparator	
HDLSimCmd	vsim -novopt %s.%s\n
HDLSimFilePostfix	_sim.do
HDLSimProjectFilePostfix	_init.do
HDLSimInit	onbreak resume\nonerror resume\n
HDLSimProjectCmd	project addfile %s\n
HDLSimProjectTerm	project compileall\n
HDLSimProjectInit	project new . %s work\n
HDLSimTerm	run -all\n
HDLSimViewWaveCmd	add wave sim:%s\n
HDLSynthTool	None
HDLSynthCmd	
HDLSynthFilePostfix	
HDLSynthInit	
HDLSynthLibCmd	
HDLSynthLibSpec	
HDLSynthTerm	
ReservedWordPostfix	_rsvd
BlockGenerateLabel	_gen
VHDLLibraryName	work
UseSingleLibrary	off
VHDLArchitectureName	rtl
ClockProcessPostfix	_process
ComplexImagPostfix	_im
ComplexRealPostfix	_re
EntityConflictPostfix	_block
InstancePrefix	u_
InstancePostfix	
InstanceGenerateLabel	_gen
OutputGenerateLabel	outputgen
PackagePostfix	_pkg

SplitEntityArch	off
SplitEntityFilePostfix	_entity
SplitArchFilePostfix	_arch
VectorPrefix	vector_of_
ClockInputs	Single
TriggerAsClock	off
ConditionalizePipeline	off
InferControlPorts	off
UseRisingEdge	off
TargetDirectory	hdlsrc
TargetSubdirectory	Model
EDAScriptGeneration	on
HDLControlFiles	
AddInputRegister	on
AddOutputRegister	on
AddPipelineRegisters	off
PipelinePostfix	_pipe
InputPort	filter_in
OutputPort	filter_out
FracDelayPort	filter_fd
Name	filter
RemoveResetFrom	None
ResetAssertedLevel	Active-high
ReuseAccum	off
ScaleWarnBits	3
SerialPartition	-1
DALUTPartition	-1
DARadix	2
CoefficientSource	Internal
CoefficientMemory	Registers
InputComplex	off
AddRatePort	off
InputDataType	
GenerateHDLCode	on
GenerateModel	on
GenerateTB	off
GenerateCEGenModel	off
Traceability	off
ResourceReport	off

OptimizationReport	off
ErrorCheckReport	on
HDLGenerateWebview	off
IPCoreReport	off
Recommendations	off
RequirementComments	on
Backannotation	off
HierarchicalDistPipelining	off
PreserveDesignDelays	off
ClockRatePipelining	on
CRPWithoutFlattening	on
IncreaseCRPBudget	on
AdaptivePipelining	on
MinDelaysRequiredAtLocalMultirateOutput	1
ClockRatePipelineOutputPorts	off
CriticalPathEstimation	off
optimizeserializer	on
shareequalwl	on
sharedmulsign	Signed
MultiplierPromotionThreshold	0
RoutingFudgeFactor	0.5000
OptimizationCompatibilityCheck	off
NumCriticalPathsEstimated	1
CriticalPathEstimationFile	criticalPathEstimated
HardwarePipeliningCharacterizationFile	
HighlightFeedbackLoops	on
HighlightFeedbackLoopsFile	highlightFeedbackLoop
HighlightClockRatePipeliningDiagnostic	on
HighlightClockRatePipeliningFile	highlightClockRatePipelining
DistributedPipeliningBarriers	on
DistributedPipeliningBarriersFile	highlightDistributedPipeliningBarriers
BlocksWithNoCharacterizationFile	highlightCriticalPathEstimationOffendingBlocks
AXIStreamingTransformFeatureControl	off
SerializerRatioThreshold	8192
RetimingCP	off
RetimingCPFile	highlightRetimingCP
ClearHighlightingFile	clearhighlighting
FunctionallyEquivalentRetiming	on
DistributedPipeliningPriority	NumericalIntegrity

RetimingDetails	on
CriticalPathDetails	off
SignalNamesMangling	off
GuidedRetiming	off
LatencyConstraint	0
ReduceMatchingDelays	on
OptimizationData	
CPGuidanceFile	
CPAnnotationFile	
HandleAtomicSubsystem	on
OptimizeMdlGen	on
MulticyclePathInfo	off
MulticyclePathConstraints	off
FloatingPointTargetConfiguration	
GenerateTargetComps	on
NativeFloatingPoint	off
FPToleranceValue	1.0000e-07
FPToleranceStrategy	DEFAULT
nfpLatency	DEFAULT
nfpDenormals	DEFAULT
AlteraBackwardIncompatibleSinCosPipeline	off
FamilyDevicePackageSpeed	
ToolName	
SynthesisToolChipFamily	
SynthesisToolDeviceName	
SynthesisToolPackageName	
SynthesisToolSpeedValue	
SynthesisTool	
SynthesisProjectAdditionalFiles	
SimulationLibPath	
XilinxSimulatorLibPath	
AdderSharingMinimumBitwidth	0
MultiplierSharingMinimumBitwidth	0
MultiplyAddSharingMinimumBitwidth	0
ShareAdders	off
ShareMultipliers	on
ShareMultiplyAdds	on
ShareMATLABBlocks	on
ShareAtomicSubsystems	on

ShareFloatingPointIPs	on
PipelinedSharing	on
OptimizeCRPSharingRegisters	on
ClockRatePipeliningBudgetCheck	off
EnableFPGAWorkflow	off
FPGAWorkflowParameters	
GainMultipliers	Multiplier
ProductOfElementsStyle	linear
UserComment	
CustomFileHeaderComment	
CustomFileFooterComment	
DateComment	on
SafeZeroConcat	on
SumOfElementsStyle	linear
TargetLanguage	VHDL
Oversampling	1
ClockRatePipeliningFraction	1
Verbosity	1
TestBenchName	filter_tb
MultifileTestBench	off
IgnoreDataChecking	0
TestBenchPostfix	_tb
TestBenchDataPostfix	_data
TestBenchStimulus	
TestBenchUserStimulus	
TestBenchFracDelayStimulus	
TestBenchCoeffStimulus	
TestBenchRateStimulus	
ForceClockEnable	on
MinimizeClockEnables	off
MinimizeGlobalResets	off
NoResetInitializationMode	InsideModule
NoResetInitScript	noresetinitscript.tcl
ComplexMulElaboration	MultiplyAddBlock
FlattenBus	off
TestBenchClockEnableDelay	1
ForceClock	on
ClockHighTime	5
ClockLowTime	5

HoldTime	2
InputDataInterval	0
ForceReset	on
ErrorMargin	4
HoldInputDataBetweenSamples	on
InitializeTestBenchInputs	off
ResetLength	2
TestBenchReferencePostFix	_ref
GenerateValidationModel	off
RAMMappingThreshold	256
MapPipelineDelaysToRAM	off
RemoveRedundantCounters	on
ReplaceUnitDelayWithIntegerDelay	on
ConcatenateDelays	on
MergeDelaysOnFanouts	on
FoldDelaysToConstant	on
RAMArchitecture	WithClockEnable
InlineMATLABBlockCode	off
InlineHDLCode	off
MaskParameterAsGeneric	off
BalanceDelays	on
TargetFrequency	0
ExtraEffortMargin	1
MaxOversampling	Inf
MaxComputationLatency	1
MultiplierPartitioningThreshold	Inf
TreatDelayBalancingFailureAs	Error
TransformNonZeroInitValDelay	on
DelayElaborationLimit	20
GenerateCoSimBlock	off
HDLCodeCoverage	off
GenerateHDLTestBench	on
GenerateCoSimModel	None
GenerateSVDPITestBench	None
SimulationTool	Mentor Graphics Modelsim
CoSimModelSetup	CosimBlockAndDut
SynthesisOnDirective	
SynthesisOffDirective	
LoopUnrolling	off

InlineConfigurations	on
UseAggregatesForConst	off
UseVerilogTimescale	on
VerilogFileExtension	.v
SystemVerilogFileExtension	.sv
VHDLFileExtension	.vhd
CodeGenerationOutput	GenerateHDLCode
GeneratedModelName	
GeneratedModelNamePrefix	gm_
UseDotLayout	off
ShowCodeGenPIR	off
SerializeModel	0
SerializeIO	0
UseSLAutoRoute	on
UseAutoPlace	on
HighlightAncestors	on
HighlightColor	cyan
InitializeBlockRAM	on
InitializeRealPort	off
MapVectorPortToStream	off
UseFileIOInTestBench	on
TurnkeyWorkflow	off
AlteraWorkflow	off
GenerateFILBlock	off
CoSimLibPostfix	_cosim
TestBenchInitializeInputs	off
MinimizeIntermediateSignals	off
GenerateCodeInfo	off
GatewayoutWithDTC	off
IncrementalCodeGenForTopModel	off
HDLWFSmartbuild	on
HDLCodingStandard	None
HDLCodingStandardCustomizations	
ReferenceDesignParameter	
HDLLintTool	None
HDLLintInit	
HDLLintTerm	
HDLLintCmd	
ModulePrefix	

DetectBlackBoxNameCollision	Warning
PIRTB	on
PIRTC	off
EmitNetlist	off
UsePipelinedToolboxFunctions	on
savepirtoscript	off
ConcatenateHDLModules	off
AMS	off
ML2PIR	off
EnableTestpoints	off
TreatRealsInGeneratedCodeAs	Warning
EnumEncodingScheme	default

Chapter 6. Glossary

Atomic Subsystem. A subsystem treated as a unit by an implementation of the design documented in this report. The implementation computes the outputs of all the blocks in the atomic subsystem before computing the next block in the parent system's block execution order (sorted list).

Block Diagram. A Simulink block diagram represents a set of simultaneous equations that relate a system or subsystem's inputs to its outputs as a function of time. Each block in the diagram represents an equation of the form y = f(t, x, u) where t is the current time, u is a block input, y is a block output, and x is a system state (see the Simulink documentation for information on the functions represented by the various types of blocks that make up the diagram). Lines connecting the blocks represent dependencies among the blocks, i.e., inputs whose current values are the outputs of other blocks. An implementation of a design described in this document computes a root or atomic system's outputs at each time step by computing the outputs of the blocks in an order determined by block input/output dependencies.

Block Parameter. A variable that determines the output of a block along with its inputs, for example, the gain parameter of a Gain block.

Block Execution Order. The order in which Simulink evaluates blocks during simulation of a model. The block execution order determined by Simulink ensures that a block executes only after all blocks on whose outputs it depends are executed.

Checksum. A number that indicates whether different versions of a model or atomic subsystem differ functionally or only cosmetically. Different checksums for different versions of the same model or subsystem indicate that the versions differ functionally.

Design Variable. A symbolic (MATLAB) variable or expression used as the value of a block parameter. Design variables allow the behavior of the model to be altered by altering the value of the design variable.

Signal. A block output, so-called because block outputs typically vary with time.

Virtual Subsystem. A subsystem that is purely graphical, i.e., is intended to reduce the visual complexity of the block diagram of which it is a subsystem. An implementation of the design treats the blocks in the subsystem as part of the first nonvirtual ancestor of the virtual subsystem (see Atomic Subsystem).

Chapter 7. About this Report

Table of Contents

7.1. Report Overview

This report describes the design of the PI_park_filter_prac system. The report was generated automatically from a Simulink model used to validate the design. It contains the following sections:

Model Version. Specifies information about the version of the model from which this design description was generated. Includes the model checksum, a number that indicates whether different versions of the model differ functionally or only cosmetically. Different checksums for different versions indicate that the versions differ functionally.

Root System. Describes the design's root system.

Subsystems. Describes each of the design's subsystems.

Design Variables. Describes system design variables, i.e., MATLAB variables and expressions used as block parameter values.

System Model Configuration. Lists the configuration parameters, e.g., start and stop time, of the model used to simulate the system described by this report.

Glossary. Defines Simulink terms used in this report.

7.2. Root System Description

This section describes a design's root system. It contains the following sections:

Diagram. Simulink block diagram that represents the algorithm used to compute the root system's outputs.

Description. Description of the root system. This section appears only if the model's root system has a Documentation property or a Doc block.

Interface. Name, data type, width, and other properties of the root system's input and output signals. The number of the block port that outputs the signal appears in angle brackets appended to the signal name. This section appears only if the root system has input or output ports.

Blocks. This section has two subsections:

- **Parameters.** Describes key parameters of blocks in the root system. This section also includes graphical and/or tabular representations of lookup table data used by lookup table blocks, i.e., blocks that use lookup tables to compute their outputs.

- **Block Execution Order.** Order in which blocks must be executed at each time step in order to ensure that each block's inputs are available when it executes.

State Charts. Describes state charts used in the root system. This section appears only if the root system contains Stateflow blocks.

7.3. Subsystem Descriptions

This section describes a design's subsystems. Each subsystem description contains the following sections:

Checksum. This section appears only if the subsystem is an atomic subsystem. The checksum indicates whether the version of the model subsystem used to generate this report differs functionally from other versions of the model subsystem. If two model checksums differ, the corresponding versions of the model differ functionally.

Diagram. Simulink block diagram that graphically represents the algorithm used to compute the subsystem's outputs.

Description. Description of the subsystem. This section appears only if the subsystem has a Documentation property or contains a Doc block.

Interface. Name, data type, width, and other properties of the subsystem's input and output signals. The number of the block port that outputs the signal appears in angle brackets appended to the signal name. This section appears only if the subsystem is atomic and has input or output ports.

Blocks. Blocks that this subsystem contains. This section has two subsections:

- **Parameters.** Key parameters of blocks in the subsystem. This section also includes graphical and/or tabular representations of lookup table data used by lookup table blocks, blocks that use lookup tables to compute their outputs.
- **Block Execution Order.** Order in which the subsystem's blocks must be executed at each time step in order to ensure that each block's inputs are available when the block executes .This section appears only if the subsystem is atomic. Note: in Acrobat(PDF) reports, the number in square brackets next to the block name is a hyperlink to the block parameter table. The number has no model significance.

State Charts. Describes state charts used in the subsystem. This section appears only if the root system contains Stateflow blocks.

7.4. State Chart Descriptions

This section describes the state machines used by Stateflow blocks to compute their outputs, i.e., Stateflow blocks. Each state machine description contains the following sections:

Chart. Diagram representing the state machine.

States. Describes the state machine's states. Each state description includes the state's diagram and diagrams and/or descriptions of graphical functions, Simulink functions, truth tables, and MATLAB functions parented by the state.

Transitions. Transitions between the state machine's states. Each transition description specifies the values of key transition properties. Appears only if a transition has properties that do not appear on the chart.

Junctions. Transition junctions. Each junction description specifies the values of key junction properties. Appears only if a junction has properties that do not appear on the chart.

Events. Events that trigger state transitions. Each event description specifies the values of key event properties.

Data. Data types and other properties of the Stateflow block's inputs, outputs, and other state machine data.

Targets. Executable implementations of the state machine used to compute the outputs of the corresponding Stateflow block.

MATLAB Supporting Functions. List of functions invoked by MATLAB functions defined in the chart.