# **Coverage Report for FBFunctions**

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# **Analysis Information**

#### **Model Information**

Model version 1.72

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Last saved Mon Feb 04 19:42:27 2019

### **Harness information**

Harness model(s) FBFunctions Harness BOR

Harness model owner FBFunctions

# **Simulation Optimization Options**

Default parameter behavior tunable

Block reduction forced off

Conditional branch optimization on

# **Coverage Options**

Analyzed model FBFunctions\_Harness\_BOR/BOR\_DUPLEX

Logic block short circuiting off

MCDC mode masking

# **Tests**

Test# Started execution Ended execution

Test 1 04-Feb-2019 19:44:20 04-Feb-2019 19:46:53

# Summary

Model Hierarchy/Complexity		Test 1			
		Decision	Condition	MCDC	Execution
1. BOR_DUPLEX	20	93%	98%	64%	99%
2 <u>BOR</u>	9	100%	100%	70%	100%
3 2 val shift register	4	NA	NA	NA	100%
4 <u>Data 1</u>	1	NA	NA	NA	100%
5 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
6 <u>Data 2</u>	1	NA	NA	NA	100%
7 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
8 <u>Type 1</u>	1	NA	NA	NA	100%
9 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
10 <u>Type 2</u>	1	NA	NA	NA	100%
11 <u>Unit Delay Enabled</u> Resettable	1	NA	NA	NA	100%
12 <u>TypeCheck2T1D</u>	1	100%	100%	0%	100%
13 <u>code_type_bit</u>		NA	NA	NA	100%
14 cond generate error code	1	100%	NA	NA	100%
15 <u>code_no_error</u>		NA	NA	NA	100%
16 <u>isType</u>		NA	100%	NA	100%
17 <u>typeMask</u>		NA	NA	NA	100%
18 <u>isType1</u>		NA	100%	NA	100%
19 <u>typeMask</u>		NA	NA	NA	100%
20 <u>isTypeMatch2</u>		NA	100%	NA	100%
21 <u>typeMask</u>		NA	NA	NA	100%
22 <u>typeMask1</u>		NA	NA	NA	100%
23 <u>Unit Delay Enabled Resettable</u> <u>Synchronous8</u>	1	NA	NA	NA	100%
24 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
25 <u>Unit Delay Enabled Resettable</u> <u>Synchronous9</u>	1	NA	NA	NA	100%
26 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
27 <u>int type</u>		NA	NA	NA	100%
28 <u>BOR1</u>	9	100%	100%	70%	100%
29 2 val shift register	4	NA	NA	NA	100%
30 <u>Data 1</u>	1	NA	NA	NA	100%
31 <u>Unit Delay Enabled</u> Resettable	1	NA	NA	NA	100%

32 <u>Data 2</u>	1	NA	NA	NA	100%
33 <u>Unit Delay Enabled</u> Resettable	1	NA	NA	NA	100%
34 <u>Type 1</u>	1	NA	NA	NA	100%
35 <u>Unit Delay Enabled</u> Resettable	1	NA	NA	NA	100%
36 <u>Type 2</u>	1	NA	NA	NA	100%
37	1	NA	NA	NA	100%
38 <u>TypeCheck2T1D</u>	1	100%	100%	0%	100%
39 <u>code_type_bit</u>		NA	NA	NA	100%
40 <u>cond_generate_error_code</u>	1	100%	NA	NA	100%
41 <u>code_no_error</u>		NA	NA	NA	100%
42 <u>isType</u>		NA	100%	NA	100%
43 <u>typeMask</u>		NA	NA	NA	100%
44 <u>isType1</u>		NA	100%	NA	100%
45 <u>typeMask</u>		NA	NA	NA	100%
46 <u>isTypeMatch2</u>		NA	100%	NA	100%
47 <u>tvpeMask</u>		NA	NA	NA	100%
48 <u>tvpeMask1</u>		NA	NA	NA	100%
49 <u>Unit Delay Enabled Resettable</u> <u>Synchronous8</u>	1	NA	NA	NA	100%
50 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
51 <u>Unit Delay Enabled Resettable</u> <u>Synchronous9</u>	1	NA	NA	NA	100%
52 <u>Unit Delay Enabled Resettable</u>	1	NA	NA	NA	100%
53 <u>int type</u>		NA	NA	NA	100%
54 State Comparator	1	50%	100%	NA	80%
55 <u>Compare To Zero</u>		NA	100%	NA	100%
56 <u>combine_error_codes</u>		NA	NA	NA	100%

# **Details**

# 1. SubSystem block "BOR\_DUPLEX"

Child Systems: BOR, BOR1, State Comparator, combine\_error\_codes

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	1	20
Condition	NA	98% (86/88) condition outcomes
Decision	NA	93% (13/14) decision outcomes
		64% (14/22) conditions reversed the

MCDC	NA	outcome

Execution NA 99% (70/71) objective outcomes

# Logic block "Logical Operator"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX

Uncovered Links: **→** 

Metric Coverage

Cyclomatic Complexity 0

Condition 50% (2/4) condition outcomes

MCDC 0% (0/2) conditions reversed the outcome

Execution 100% (1/1) objective outcomes

# **Conditions analyzed**

Description	True	False
input port 1	110	0
input port 2	110	0

### MC/DC analysis (combinations in parentheses did not occur)

<b>Decision/Condition</b>	True Out	False Out
expression for output		
input port 1	TT	( <b>F</b> T)
input port 2	TT	(TF)

# **Full Coverage**

Model Object	Metric
Relational Operator block "Relational Operator"	Condition, Execution
Constant block "Num Ins"	Execution
Constant block "Num Outs"	Execution
Constant block "fb_num_constant"	Execution

# 2. SubSystem block "BOR"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX

Child Systems: 

2\_val\_shift\_register, TypeCheck2T1D, Unit Delay Enabled Resettable
Synchronous8, Unit Delay Enabled Resettable Synchronous9, int type

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	9
Condition	NA	100% (34/34) condition outcomes
Decision	NA	100% (6/6) decision outcomes
MCDC	NA	70% (7/10) conditions reversed the outcome
Execution	NA	100% (30/30) objective outcomes

# Logic block "Logical Operator3"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (4/4) condition outcomes

MCDC <u>see Logical Operator</u>

Execution 100% (1/1) objective outcomes

### **Full Coverage**

Model Object	Metric
Logic block "Logical Operator"	Condition, MCDC, Execution
Logic block "Logical Operator1"	Condition, MCDC, Execution
Logic block "Logical Operator2"	Condition, MCDC, Execution
Switch block "Switch"	Decision, Execution
Switch block "Switch1"	Decision, Execution
S-Function block "Bitwise Operator"	Execution
Constant block "Constant"	Execution
Constant block "Constant1"	Execution

# 3. SubSystem block "2\_val\_shift\_register"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR

Child Systems: <u>Data 1</u>, <u>Data 2</u>, <u>Type 1</u>, <u>Type 2</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (4/4) objective outcomes

## 4. SubSystem block "Data 1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 5. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register/Data

1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

# **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 6. SubSystem block "Data 2"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 7. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions\_Harness\_BOR/BOR\_DUPLEX/BOR/2\_val\_shift\_register/Data

2

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 8. SubSystem block "Type 1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 9. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register/Type

1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

#### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 10. SubSystem block "Type 2"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 11. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/2 val shift register/Type

<u>2</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

## **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 12. SubSystem block "TypeCheck2T1D"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR

Metric	<b>Coverage (this object)</b>	Coverage (inc. descendants)
Cyclomatic Complexity	0	1
Condition	NA	100% (18/18) condition outcomes
Decision	NA	100% (2/2) decision outcomes
MCDC	NA	0% (0/3) conditions reversed the outcome
Execution	NA	100% (14/14) objective outcomes

### Logic block "Logical Operator1"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

**Uncovered Links: ← →** 

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (6/6) condition outcomes

MCDC 0% (0/3) conditions reversed the outcome

Execution 100% (1/1) objective outcomes

# MC/DC analysis (combinations in parentheses did not occur) Includes 4 blocks

Decision/Condition	True Out	False Out
(~C1    ~C2)    ~C3		
C1 (Logical Operator4 In1)	(FTT)	TTT
C2 (Logical Operator2 In1)	(TFT)	TTT
C3 (Logical Operator3 In1)	(TT <b>F</b> )	TTT

# Logic block "Logical Operator2"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (2/2) condition outcomes

MCDC <u>see Logical Operator 1</u>

Execution 100% (1/1) objective outcomes

### Logic block "Logical Operator3"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (2/2) condition outcomes

MCDC <u>see Logical Operator 1</u>

Execution 100% (1/1) objective outcomes

### Logic block "Logical Operator4"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (2/2) condition outcomes

MCDC <u>see Logical Operator 1</u>

Execution 100% (1/1) objective outcomes

# 13. SubSystem block "code type bit"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

#### **Full Coverage**

Model Object Metric

# 14. SubSystem block "cond generate error code"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Child Systems: <u>code no error</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Decision NA 100% (2/2) decision outcomes Execution NA 100% (2/2) objective outcomes

### **Full Coverage**

Model Object Metric

Switch block "Switch" Decision, Execution

# 15. SubSystem block "code no error"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D/cond generate error code

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Constant block "type1" Execution

# 16. SubSystem block "isType"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Child Systems: <u>tvpeMask</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (2/2) objective outcomes

### **Full Coverage**

Model Object Metric

Relational Operator block "Relational Operator1" Condition, Execution

# 17. SubSystem block "typeMask"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D/isType

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

# **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 18. SubSystem block "isType1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

**Child Systems:** <u>typeMask</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (2/2) objective outcomes

### **Full Coverage**

Model Object Metric

Relational Operator block "Relational Operator1" Condition, Execution

# 19. SubSystem block "typeMask"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D/isType1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 20. SubSystem block "isTypeMatch2"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D

Child Systems: typeMask, typeMask1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (3/3) objective outcomes

### **Full Coverage**

Model Object Metric

Relational Operator block "Relational Operator1" Condition, Execution

## 21. SubSystem block "typeMask"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D/isTypeMatch2

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 22. SubSystem block "typeMask1"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/TypeCheck2T1D/isTypeMatch2

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

#### **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 23. SubSystem block "Unit Delay Enabled Resettable Synchronou..."

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 24. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/Unit Delay Enabled

Resettable Synchronous8

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 25. SubSystem block "Unit Delay Enabled Resettable Synchronou..."

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

1

# 26. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR/Unit Delay Enabled

Resettable Synchronous9

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

**Model Object** Metric

Delay block "Enabled Resettable Delay" Execution

# 27. SubSystem block "int type"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR

Metric **Coverage (this object) Coverage (inc. descendants)** 

Cyclomatic Complexity

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

**Model Object** Metric

Constant block "type1" Execution

# 28. SubSystem block "BOR1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX

2\_val\_shift\_register, TypeCheck2T1D, Unit Delay Enabled Resettable **Child Systems:** Synchronous8, Unit Delay Enabled Resettable Synchronous9, int type

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	9
Condition	NA	100% (34/34) condition outcomes
Decision	NA	100% (6/6) decision outcomes
MCDC	NA	70% (7/10) conditions reversed the outcome
Execution	NA	100% (30/30) objective outcomes

# Logic block "Logical Operator3"

### Justify or Exclude

FBFunctions Harness BOR/BOR DUPLEX/BOR1 Parent:

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (4/4) condition outcomes

MCDC <u>see Logical Operator</u>

Execution 100% (1/1) objective outcomes

#### **Full Coverage**

Model Object Metric

Logic block "Logical Operator" Condition, MCDC, Execution

Logic block "Logical Operator1" Condition, MCDC, Execution

Logic block "Logical Operator2" Condition, MCDC, Execution

Switch block "Switch" Decision, Execution

Switch block "Switch1" Decision, Execution

S-Function block "<u>Bitwise Operator</u>" Execution

Constant block "Constant" Execution

Constant block "Constant1" Execution

# 29. SubSystem block "2\_val\_shift\_register"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1

Child Systems: <u>Data 1</u>, <u>Data 2</u>, <u>Type 1</u>, <u>Type 2</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 4

Execution NA 100% (4/4) objective outcomes

# 30. SubSystem block "Data 1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

1

Cyclomatic Complexity 0

# 31. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions\_Harness\_BOR/BOR\_DUPLEX/BOR1/2\_val\_shift\_register/Data

1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

**Full Coverage** 

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

### 32. SubSystem block "Data 2"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 33. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register/Data

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

#### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

### 34. SubSystem block "Type 1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 35. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register/Type

1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

## **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 36. SubSystem block "Type 2"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 37. SubSystem block "Unit Delay Enabled Resettable"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/2 val shift register/Type

2

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

## 38. SubSystem block "TypeCheck2T1D"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1

Child Systems: code type bit, cond generate error code, isType, isType1, isTypeMatch2

**Coverage (this object)** Metric Coverage (inc. descendants) Cyclomatic Complexity 0 Condition NA 100% (18/18) condition outcomes Decision 100% (2/2) decision outcomes NA 0% (0/3) conditions reversed the **MCDC** NA outcome NA Execution 100% (14/14) objective outcomes

# Logic block "Logical Operator1"

### <u>Justify or Exclude</u>

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Uncovered Links:

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (6/6) condition outcomes

MCDC 0% (0/3) conditions reversed the outcome

Execution 100% (1/1) objective outcomes

### MC/DC analysis (combinations in parentheses did not occur)

**Includes 4 blocks** 

<b>Decision/Condition</b>	True Out	False Out
(~C1    ~C2)    ~C3		
C1 (Logical Operator4 In1)	(FTT)	TTT
C2 (Logical Operator2 In1)	(TFT)	TTT
C3 (Logical Operator3 In1)	(TTF)	TTT

### Logic block "Logical Operator2"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (2/2) condition outcomes

MCDC <u>see Logical Operator1</u>

Execution 100% (1/1) objective outcomes

# Logic block "Logical Operator3"

## Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Metric Coverage

Cyclomatic Complexity 0

Condition 100% (2/2) condition outcomes

MCDC <u>see Logical Operator1</u>

Execution 100% (1/1) objective outcomes

# Logic block "Logical Operator4"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

**Metric** Coverage

Cyclomatic Complexity 0

Condition 100% (2/2) condition outcomes

MCDC <u>see Logical Operator 1</u>

Execution 100% (1/1) objective outcomes

# 39. SubSystem block "code type bit"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Constant block "type1" Execution

# 40. SubSystem block "cond\_generate\_error\_code"

# Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Child Systems: code no error

MetricCoverage (this object)Coverage (inc. descendants)Cyclomatic Complexity01DecisionNA100% (2/2) decision outcomesExecutionNA100% (2/2) objective outcomes

# Full Coverage

Model Object Metric

# 41. SubSystem block "code no error"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D/cond generate error code

Metric	Coverage (this object)	Coverage (inc. descendants)
14161116	Coverage (this object)	Coverage (inc. descendants

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object	Metric
MIUUCI ODJECE	14161116

Constant block "type1" Execution

### 42. SubSystem block "isType"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Child Systems: <u>typeMask</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (2/2) objective outcomes

# **Full Coverage**

Model Object Metric

Relational Operator block "Relational Operator1" Condition, Execution

# 43. SubSystem block "typeMask"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D/isType

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 44. SubSystem block "isType1"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

**Child Systems:** <u>typeMask</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (2/2) objective outcomes

# **Full Coverage**

Model Object Metric

Relational Operator block "Relational Operator1" Condition, Execution

# 45. SubSystem block "typeMask"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D/isType1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 46. SubSystem block "isTypeMatch2"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D

Child Systems: <u>typeMask</u>, <u>typeMask1</u>

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (3/3) objective outcomes

### **Full Coverage**

Model Object Metric

Relational Operator block "Relational Operator1" Condition, Execution

# 47. SubSystem block "typeMask"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D/isTypeMatch2

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 48. SubSystem block "typeMask1"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/TypeCheck2T1D/isTypeMatch2

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

S-Function block "Apply Type Mask" Execution

# 49. SubSystem block "Unit Delay Enabled Resettable Synchronou..."

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

1

# 50. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/Unit Delay Enabled

Resettable Synchronous8

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 51. SubSystem block "Unit Delay Enabled Resettable Synchronou..."

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1

Child Systems: Unit Delay Enabled Resettable

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0

Execution NA 100% (1/1) objective outcomes

# 52. SubSystem block "Unit Delay Enabled Resettable"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1/Unit Delay Enabled

Resettable Synchronous9

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 1

Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Delay block "Enabled Resettable Delay" Execution

# 53. SubSystem block "int type"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/BOR1

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

### Full Coverage

Model Object Metric

# 54. SubSystem block "State Comparator"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX

Child Systems: Compare To Zero

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	1
Condition	NA	100% (14/14) condition outcomes
Decision	NA	50% (1/2) decision outcomes
Execution	NA	80% (4/5) objective outcomes

### Switch block "Switch1"

#### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/State Comparator

Uncovered Links: ←▶

Metric Coverage

Cyclomatic Complexity 1

Decision 50% (1/2) decision outcomes Execution 100% (1/1) objective outcomes

**Decisions analyzed** 

logical trigger input	50%
false (output is from 3rd input port)	0/110
true (output is from 1st input port)	110/110

### Constant block "Constant1"

### Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/State Comparator

**Uncovered Links:**  $\bullet$ 

Metric Coverage

Cyclomatic Complexity 0

### **Full Coverage**

Model Object Metric

Sum block "Sum of Elements" Execution

Relational Operator block "Relational Operator" Condition, Execution

# 55. SubSystem block "Compare To Zero"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX/State Comparator

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Condition NA 100% (2/2) condition outcomes Execution NA 100% (1/1) objective outcomes

### **Full Coverage**

Model Object Metric

Relational Operator block "Compare" Condition, Execution

# 56. SubSystem block "combine\_error\_codes"

Justify or Exclude

Parent: FBFunctions Harness BOR/BOR DUPLEX

Metric Coverage (this object) Coverage (inc. descendants)

Cyclomatic Complexity 0 0

Execution NA 100% (1/1) objective outcomes

### Full Coverage

Model Object Metric

S-Function block "Bitwise Operator"

Execution