

C28SOI_IO_EXT_3V3SF_GPIO3V3_FSNFS_LR_EG Databook

November 2016

BD2SCARUDQPCH_EXT_CSF_1V8_CL_LIN

Cell Description

BD2SCARUDQPCH_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

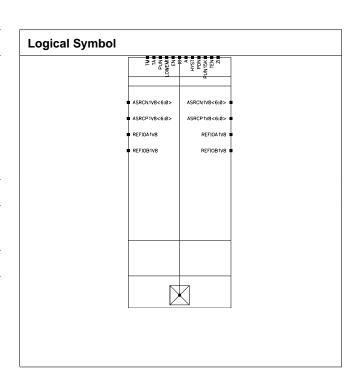
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	IO

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA

-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Б	Valu	e(pF)
Parameter —	best 1.10 125	worst 0.90 -40
A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261



PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Val	lue
PIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function of	of C in pF and Tr in nS)	
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)	,		
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C	
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C	
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C	
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr	
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr	
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr	
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr	
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C	
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C	
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C	
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C	
Path IO-ZI (for pins HYST)	·		
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C	
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C	
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C	
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C	



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F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C
Path TM-IO (for pins EN LOWEMI TEN		1
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr
LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA	(TEN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Event	Value (as a function of	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C			
R-010	1.213 + 0.064*C	1.147 + 0.066*C			
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C			
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			



LZ-00	0.000	0.000
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C
Path IO-ZI (for pins HYST)	0.020 / 0.000 0	
F-1	0.007 + 0.136*C	0.009 + 0.189*C
R-1	0.006 + 0.085*C	0.009 + 0.131*C
F-0	0.007 + 0.137*C	0.009 + 0.188*C
R-0	0.006 + 0.086*C	0.009 + 0.130*C
Path TA-IO (for pins LOWEMI TEN TM		I
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C
R-101	1.212 + 0.064*C	1.147 + 0.066*C
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000
LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI TA		
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power



Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Pin Cycle	Internal Energy (uW/MHz)					
Fill Cycle	best 1.10 125 (Min	best 1.10 125 (Max	worst 0.90 -40 (Min	worst 0.90 -40 (Max		
	values)	values)	values)	values)		
For vdd						
IO toggling/Output	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr		
stable						
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146		
For vdde1v8						
IO toggling/Output	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr		
stable						
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr		



BD2SCARUDQPCH_EXT_CSF_1V8_FC_INNER

Cell Description

BD2SCARUDQPCH_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

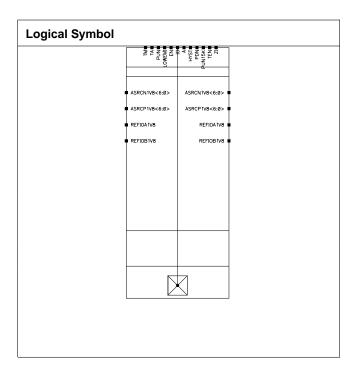
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)		
i aiametei	best 1.10 125	worst 0.90 -40	



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
	Parameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C			
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C			
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C			
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C			
Path EN-IO (for pins LOWEMI TM)	1	1			
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr			
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr			
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr			
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr			
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C			
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ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C			
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C			
Path IO-ZI (for pins HYST)	1	1			
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C			
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C			
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C			
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM	1)	1			
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C			
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C			
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C			
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C			
Path TEN-IO (for pins LOWEMI TM)	1	1			
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr			
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr			
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr			
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr			
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C			
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C			
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C			
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C			
Path TM-IO (for pins EN LOWEMI TEN	1)	1			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr			
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr			
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr			



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LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA 1	EN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C
		1

Transition Time

Frent	Value (as a function of	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		,
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C
R-010	1.213 + 0.064*C	1.147 + 0.066*C
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C
Path EN-IO (for pins LOWEMI TM)	-	,
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.136*C	0.009 + 0.189*C
R-1	0.006 + 0.085*C	0.009 + 0.131*C
F-0	0.007 + 0.137*C	0.009 + 0.188*C
R-0	0.006 + 0.086*C	0.009 + 0.130*C
Path TA-IO (for pins LOWEMI TEN TI	W)	,
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C
R-101	1.212 + 0.064*C	1.147 + 0.066*C
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
	0.000 1 0.000 0	0.00. 0.002 0.000 0
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			•	
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCH_EXT_CSF_1V8_FC_LIN

Cell Description

BD2SCARUDQPCH_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	alue
ГШ	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	,	
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C
Path IO-ZI (for pins HYST)		l
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C
Path TA-IO (for pins LOWEMI TEN TM)		l
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C
Path TEN-IO (for pins LOWEMI TM)		1
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C
Path TM-IO (for pins EN LOWEMI TEN)	· ·	
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr



0.351 + 0.270*Tr	0.430 + 0.574*Tr
0.653 + 0.189*Tr	0.727 + 0.389*Tr
0.329 + 0.093*Tr	0.397 + 0.569*Tr
0.678 + 0.258*Tr	0.774 + 0.424*Tr
0.351 + 0.269*Tr	0.430 + 0.572*Tr
4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
EN)	
1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C
	0.653 + 0.189*Tr 0.329 + 0.093*Tr 0.678 + 0.258*Tr 0.351 + 0.269*Tr 4.105 + 0.205*Tr + 0.141*C 1.696 + 0.200*Tr + 0.239*C 4.118 - 0.031*Tr + 0.141*C 1.711 - 0.023*Tr + 0.239*C 3.194 + 0.213*Tr + 0.117*C 1.143 + 0.201*Tr + 0.233*C 3.208 - 0.032*Tr + 0.117*C 1.159 - 0.025*Tr + 0.233*C FN) 1.657 - 0.021*Tr + 0.239*C 4.052 + 0.260*Tr + 0.141*C 1.642 + 0.222*Tr + 0.239*C 4.028 + 0.024*Tr + 0.141*C 1.132 - 0.028*Tr + 0.141*C 1.1132 - 0.028*Tr + 0.141*C 1.116 + 0.219*Tr + 0.233*C

Transition Time

Event	Value (as a function o	of C in pF and Tr in nS)		
Eveni	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)	•	,		
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146	
For vdde1v8	1	1		1	
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr	
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr	



BD2SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

Cell Description

BD2SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)		
i alametei	best 1.10 125	worst 0.90 -40	



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value			
	Parameter	best 1.10 worst 0.90			
IO (Input)	Min Transition (ns)	0.375	0.375		
IO (Input)	Max Transition (ns)	12.0	12.0		
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35		



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C
Path EN-IO (for pins LOWEMI TM)	1	1
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C
Path IO-ZI (for pins HYST)	1	1
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C
Path TA-IO (for pins LOWEMI TEN TM	1)	1
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C
Path TEN-IO (for pins LOWEMI TM)	1	1
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C
Path TM-IO (for pins EN LOWEMI TEN	1)	1
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr



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LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			•	
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCL_EXT_CSF_1V8_CL_LIN

Cell Description

BD2SCARUDQPCL_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

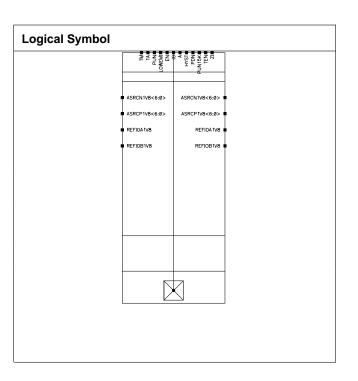
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
ГШ	Farameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C		
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C		
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C		
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr		
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr		
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr		
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr		
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C		
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C		
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C		
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C		
Path IO-ZI (for pins HYST)		l		
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C		
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C		
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C		
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM)		1		
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C		
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C		
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C		
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C		
Path TEN-IO (for pins LOWEMI TM)		1		
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr		
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr		
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr		
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr		
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C		
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C		
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C		
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C		
Path TM-IO (for pins EN LOWEMI TEN)	1		
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr		
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr		
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr		



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Front	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)	'			
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
E 00040	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
F-00010	0.116 + 0.002 11 + 0.196 C	0.100 - 0.001 11 + 0.213 C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8	1	1		1
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCL_EXT_CSF_1V8_FC_INNER

Cell Description

BD2SCARUDQPCL_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

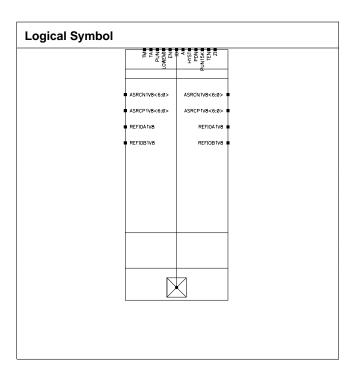
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Din Doromotor		Value	
FIII	Parameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C		
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C		
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C		
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr		
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr		
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr		
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr		
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C		
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C		
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C		
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C		
Path IO-ZI (for pins HYST)	-			
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C		
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C		
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C		
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C		
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C		
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C		
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr		
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr		
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr		
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr		
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C		
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C		
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C		
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C		
Path TM-IO (for pins EN LOWEMI TEN	1)			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr		
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr		
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr		



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Frent	Value (as a function of	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)	-	,		
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN TI	W)	,		
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Die Ovele	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd		•		
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			1	1
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCL_EXT_CSF_1V8_FC_LIN

Cell Description

BD2SCARUDQPCL_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
raiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
ГШ		best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C			
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C			
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C			
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C			
Path EN-IO (for pins LOWEMI TM)		1			
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr			
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr			
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr			
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr			
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C			
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C			
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C			
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C			
Path IO-ZI (for pins HYST)		l			
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C			
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C			
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C			
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)		1			
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C			
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C			
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C			
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C			
Path TEN-IO (for pins LOWEMI TM)		1			
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr			
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr			
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr			
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr			
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C			
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C			
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C			
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C			
Path TM-IO (for pins EN LOWEMI TEN)	1			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr			
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr			
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr			



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr		
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr		
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr		
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr		
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr		
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C		
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C		
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C		
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C		
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C		
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C		
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C		
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C		
Path TM-IO (for pins A EN LOWEMI TA TEN)				
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C		
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C		
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C		
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C		
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C		
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C		
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C		
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C		

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C			
R-010	1.213 + 0.064*C	1.147 + 0.066*C			
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C			
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C			
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C			
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C			
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C			
Path IO-ZI (for pins HYST)					
F-1	0.007 + 0.136*C	0.009 + 0.189*C			
R-1	0.006 + 0.085*C	0.009 + 0.131*C			
F-0	0.007 + 0.137*C	0.009 + 0.188*C			
R-0	0.006 + 0.086*C	0.009 + 0.130*C			
Path TA-IO (for pins LOWEMI TEN TM)					
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C			
R-101	1.212 + 0.064*C	1.147 + 0.066*C			
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C			
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.000	0.000			



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
Third 1.218 + 0.064°C	ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
Table Tabl	ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011	ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
HZ-011	ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-101 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.219*C ZH-100 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.002*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C </td <td>Path TM-IO (for pins EN LOWEMI TE</td> <td>N)</td> <td></td>	Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-110	HZ-011	0.000	0.000
LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.066*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-0110 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.216*C R-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00100 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.002*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.063*C F-00010 <td< td=""><td>LZ-110</td><td>0.000</td><td>0.000</td></td<>	LZ-110	0.000	0.000
HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	HZ-001	0.000	0.000
LZ-100	LZ-001	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	LZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
R-10100			
F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	R-00110		1.146 + 0.066*C
F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
	R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
R-00010 0.895 + 0.058*C 0.831 + 0.003*Tr + 0.063*C	F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
	R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Dia Ovala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8	1	1		1
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

Cell Description

BD2SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

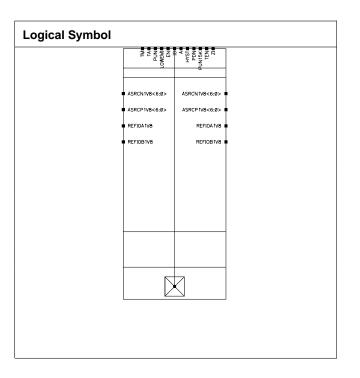
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C			
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C			
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C			
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr			
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr			
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr			
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr			
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C			
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C			
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C			
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C			
Path IO-ZI (for pins HYST)	-				
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C			
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C			
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C			
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C			
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C			
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C			
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr			
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr			
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr			
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr			
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C			
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C			
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C			
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C			
Path TM-IO (for pins EN LOWEMI TEN	1)				
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr			
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr			
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr			



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TEI	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI T	A TEN)	
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Die Ovele	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd		•		
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			1	1
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

Cell Description

BD2SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

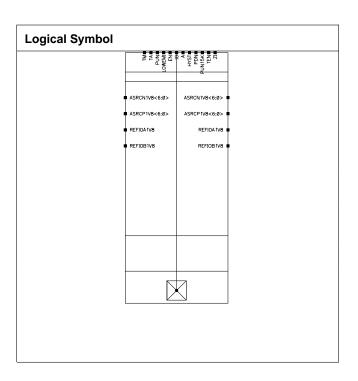
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value best 1.10 worst 0.90	
ГШ	Farameter		
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C		
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C		
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C		
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr		
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr		
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr		
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr		
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C		
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C		
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C		
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C		
Path IO-ZI (for pins HYST)		l		
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C		
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C		
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C		
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM)		1		
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C		
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C		
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C		
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C		
Path TEN-IO (for pins LOWEMI TM)		1		
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr		
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr		
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr		
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr		
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C		
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C		
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C		
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C		
Path TM-IO (for pins EN LOWEMI TEN)			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr		
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr		
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr		



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr	
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr	
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr	
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr	
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr	
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C	
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C	
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C	
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C	
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C	
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C	
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C	
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C	
Path TM-IO (for pins A EN LOWEMI TA TEN)			
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C	
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C	
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C	
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C	
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C	
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C	
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C	
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C	

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN T	М)			
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)	·			
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TEN	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI T	A TEN)	1
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8	1	1		1
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

Cell Description

BD2SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

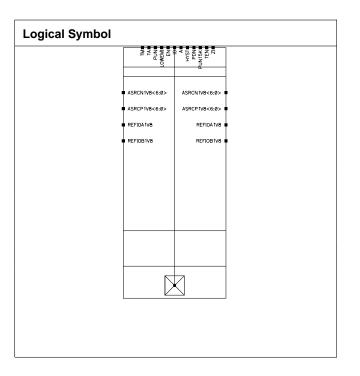
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)		
	best 1.10 125	worst 0.90 -40	



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
FIII	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C			
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C			
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C			
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C			
Path EN-IO (for pins LOWEMI TM)	1	1			
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr			
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr			
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr			
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr			
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C			
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C			
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C			
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C			
Path IO-ZI (for pins HYST)	1	1			
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C			
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C			
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C			
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM	1)	1			
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C			
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C			
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C			
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C			
Path TEN-IO (for pins LOWEMI TM)	1	1			
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr			
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr			
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr			
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr			
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C			
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C			
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C			
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C			
Path TM-IO (for pins EN LOWEMI TEN	1)	1			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr			
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr			
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr			



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)	,			
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C			
R-010	1.213 + 0.064*C	1.147 + 0.066*C			
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C			
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C			
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C			
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C			
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C			
Path IO-ZI (for pins HYST)					
F-1	0.007 + 0.136*C	0.009 + 0.189*C			
R-1	0.006 + 0.085*C	0.009 + 0.131*C			
F-0	0.007 + 0.137*C	0.009 + 0.188*C			
R-0	0.006 + 0.086*C	0.009 + 0.130*C			
Path TA-IO (for pins LOWEMI TEN T	M)				
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C			
R-101	1.212 + 0.064*C	1.147 + 0.066*C			
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C			
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.000	0.000			



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
Third 1.218 + 0.064°C	ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
Table Tabl	ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011	ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
HZ-011	ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-101 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.066*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.219*C ZH-100 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.002*Tr + 0.066*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.021*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.002*Tr + 0.216*C </td <td>Path TM-IO (for pins EN LOWEMI TE</td> <td>N)</td> <td></td>	Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-110	HZ-011	0.000	0.000
LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.066*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.219*C	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.063*C F-00010 <td< td=""><td>LZ-110</td><td>0.000</td><td>0.000</td></td<>	LZ-110	0.000	0.000
HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*Tr + 0.216*C R-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	HZ-001	0.000	0.000
LZ-100	LZ-001	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	LZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C			0.104 + 0.218*C
R-10100	Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C			1.146 + 0.002*Tr + 0.066*C
F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	R-00110		1.146 + 0.066*C
F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
		0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
R-00010 0.895 + 0.058*C 0.831 + 0.003*Tr + 0.063*C	F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
	R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			•	
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

Cell Description

BD2SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

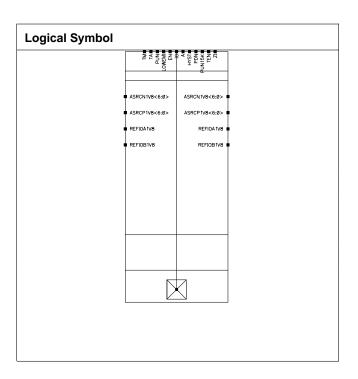
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)	
r arameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Parameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C		
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C		
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C		
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr		
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr		
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr		
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr		
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C		
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C		
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C		
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C		
Path IO-ZI (for pins HYST)		l		
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C		
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C		
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C		
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM)		1		
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C		
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C		
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C		
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C		
Path TEN-IO (for pins LOWEMI TM)		1		
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr		
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr		
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr		
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr		
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C		
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C		
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C		
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C		
Path TM-IO (for pins EN LOWEMI TEN)			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr		
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr		
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr		



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C		
R-010	1.213 + 0.064*C	1.147 + 0.066*C		
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C		
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C		
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C		
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C		
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.136*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.131*C		
F-0	0.007 + 0.137*C	0.009 + 0.188*C		
R-0	0.006 + 0.086*C	0.009 + 0.130*C		
Path TA-IO (for pins LOWEMI TEN T	М)			
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C		
R-101	1.212 + 0.064*C	1.147 + 0.066*C		
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C		
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C		
Path TEN-IO (for pins LOWEMI TM)	·			
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
ZL-100	0.123 + 0.001*Tr + 0.196*C	0.104 + 0.218*C
Path TM-IO (for pins A EN LOWEMI TA T		
F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10100	1.211 + 0.002*Tr + 0.064*C	1.146 + 0.002*Tr + 0.066*C
F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110	1.212 + 0.064*C	1.146 + 0.066*C
F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
R-10000	0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8	1	1		1
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD2SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

Cell Description

BD2SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value	e(pF)
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0350
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0331	0.0322
HYST Input Cap.	0.0326	0.0319
IO Input Cap.	1.3881	1.3262
IO Max Load	51.388	51.326
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0190	0.0189
PUN Input Cap.	0.0261	0.0261
PUN15K Input Cap.	0.0252	0.0244
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0377	0.0348
TEN Input Cap.	0.0316	0.0307
TM Input Cap.	0.0450	0.0442
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
FIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.648 + 0.201*Tr + 0.239*C	2.052 + 0.385*Tr + 0.269*C			
R-010	4.031 + 0.011*Tr + 0.141*C	5.584 + 0.246*Tr + 0.141*C			
F-000	1.122 + 0.195*Tr + 0.233*C	1.427 + 0.387*Tr + 0.265*C			
R-000	3.146 + 0.008*Tr + 0.117*C	4.189 + 0.241*Tr + 0.120*C			
Path EN-IO (for pins LOWEMI TM)	1	1			
HZ-10	0.658 + 0.136*Tr	0.739 + 0.373*Tr			
LZ-10	0.506 + 0.138*Tr	0.635 + 0.375*Tr			
HZ-00	0.658 + 0.142*Tr	0.738 + 0.376*Tr			
LZ-00	0.506 + 0.137*Tr	0.635 + 0.374*Tr			
ZH-10	4.109 + 0.171*Tr + 0.141*C	5.725 + 0.480*Tr + 0.141*C			
ZL-10	1.700 + 0.162*Tr + 0.239*C	2.148 + 0.477*Tr + 0.269*C			
ZH-00	3.199 + 0.173*Tr + 0.117*C	4.287 + 0.475*Tr + 0.120*C			
ZL-00	1.146 + 0.161*Tr + 0.233*C	1.494 + 0.477*Tr + 0.265*C			
Path IO-ZI (for pins HYST)	1	1			
F-1	0.469 + 0.224*Tr + 0.185*C	0.577 + 0.345*Tr + 0.302*C			
R-1	0.477 + 0.191*Tr + 0.124*C	0.542 + 0.324*Tr + 0.166*C			
F-0	0.426 + 0.073*Tr + 0.177*C	0.581 + 0.110*Tr + 0.265*C			
R-0	0.437 + 0.038*Tr + 0.125*C	0.572 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM	1)	1			
F-101	1.649 + 0.196*Tr + 0.239*C	2.051 + 0.392*Tr + 0.269*C			
R-101	4.030 + 0.012*Tr + 0.141*C	5.583 + 0.250*Tr + 0.141*C			
F-001	1.121 + 0.195*Tr + 0.233*C	1.428 + 0.396*Tr + 0.265*C			
R-001	3.146 + 0.012*Tr + 0.117*C	4.185 + 0.249*Tr + 0.120*C			
Path TEN-IO (for pins LOWEMI TM)	1	1			
HZ-01	0.657 + 0.135*Tr	0.737 + 0.376*Tr			
LZ-01	0.505 + 0.140*Tr	0.634 + 0.376*Tr			
HZ-11	0.656 + 0.144*Tr	0.737 + 0.375*Tr			
LZ-11	0.505 + 0.140*Tr	0.633 + 0.378*Tr			
ZH-01	3.201 + 0.168*Tr + 0.117*C	4.286 + 0.472*Tr + 0.120*C			
ZL-01	1.147 + 0.160*Tr + 0.233*C	1.496 + 0.475*Tr + 0.265*C			
ZH-11	4.110 + 0.170*Tr + 0.141*C	5.727 + 0.478*Tr + 0.141*C			
ZL-11	1.702 + 0.161*Tr + 0.239*C	2.150 + 0.472*Tr + 0.269*C			
Path TM-IO (for pins EN LOWEMI TEN	1)	1			
HZ-011	0.653 + 0.190*Tr	0.727 + 0.390*Tr			
LZ-011	0.348 + 0.050*Tr	0.397 + 0.571*Tr			
HZ-110	0.679 + 0.254*Tr	0.774 + 0.425*Tr			



LZ-110	0.351 + 0.270*Tr	0.430 + 0.574*Tr
HZ-001	0.653 + 0.189*Tr	0.727 + 0.389*Tr
LZ-001	0.329 + 0.093*Tr	0.397 + 0.569*Tr
HZ-100	0.678 + 0.258*Tr	0.774 + 0.424*Tr
LZ-100	0.351 + 0.269*Tr	0.430 + 0.572*Tr
ZH-011	4.105 + 0.205*Tr + 0.141*C	5.715 + 0.472*Tr + 0.141*C
ZL-011	1.696 + 0.200*Tr + 0.239*C	2.137 + 0.481*Tr + 0.269*C
ZH-110	4.118 - 0.031*Tr + 0.141*C	5.749 + 0.216*Tr + 0.141*C
ZL-110	1.711 - 0.023*Tr + 0.239*C	2.169 + 0.245*Tr + 0.269*C
ZH-001	3.194 + 0.213*Tr + 0.117*C	4.271 + 0.490*Tr + 0.120*C
ZL-001	1.143 + 0.201*Tr + 0.233*C	1.482 + 0.478*Tr + 0.265*C
ZH-100	3.208 - 0.032*Tr + 0.117*C	4.298 + 0.227*Tr + 0.120*C
ZL-100	1.159 - 0.025*Tr + 0.233*C	1.514 + 0.241*Tr + 0.265*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.657 - 0.021*Tr + 0.239*C	2.059 + 0.228*Tr + 0.269*C
R-10100	4.052 + 0.260*Tr + 0.141*C	5.619 + 0.441*Tr + 0.141*C
F-00110	1.642 + 0.222*Tr + 0.239*C	2.039 + 0.364*Tr + 0.269*C
R-00110	4.028 + 0.024*Tr + 0.141*C	5.577 + 0.231*Tr + 0.141*C
F-10000	1.132 - 0.028*Tr + 0.233*C	1.436 + 0.230*Tr + 0.265*C
R-10000	3.168 + 0.263*Tr + 0.117*C	4.222 + 0.442*Tr + 0.120*C
F-00010	1.116 + 0.219*Tr + 0.233*C	1.415 + 0.367*Tr + 0.265*C
R-00010	3.143 + 0.027*Tr + 0.117*C	4.181 + 0.225*Tr + 0.120*C

Transition Time

Front	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.265 + 0.194*C	0.217 - 0.002*Tr + 0.216*C	
R-010	1.213 + 0.064*C	1.147 + 0.066*C	
F-000	0.118 - 0.002*Tr + 0.196*C	0.099 + 0.002*Tr + 0.219*C	
R-000	0.896 - 0.004*Tr + 0.058*C	0.831 + 0.002*Tr + 0.063*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.000	0.000	
LZ-10	0.000	0.000	
HZ-00	0.000	0.000	
LZ-00	0.000	0.000	
ZH-10	1.217 + 0.064*C	1.152 - 0.001*Tr + 0.066*C	
ZL-10	0.274 + 0.194*C	0.221 + 0.216*C	
ZH-00	0.899 + 0.058*C	0.835 - 0.002*Tr + 0.063*C	
ZL-00	0.123 + 0.196*C	0.103 + 0.001*Tr + 0.219*C	
Path IO-ZI (for pins HYST)	·		
F-1	0.007 + 0.136*C	0.009 + 0.189*C	
R-1	0.006 + 0.085*C	0.009 + 0.131*C	
F-0	0.007 + 0.137*C	0.009 + 0.188*C	
R-0	0.006 + 0.086*C	0.009 + 0.130*C	
Path TA-IO (for pins LOWEMI TEN T	М)		
F-101	0.264 - 0.003*Tr + 0.194*C	0.217 - 0.004*Tr + 0.216*C	
R-101	1.212 + 0.064*C	1.147 + 0.066*C	
F-001	0.116 + 0.002*Tr + 0.196*C	0.099 + 0.219*C	
R-001	0.896 - 0.005*Tr + 0.058*C	0.831 + 0.063*C	
Path TEN-IO (for pins LOWEMI TM)			
HZ-01	0.000	0.000	
	-		



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
Third 1.218 + 0.064°C	ZH-01	0.900 - 0.001*Tr + 0.058*C	0.837 + 0.002*Tr + 0.063*C
Table Tabl	ZL-01	0.122 + 0.003*Tr + 0.196*C	0.105 - 0.001*Tr + 0.218*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011	ZH-11	1.218 + 0.064*C	1.151 - 0.003*Tr + 0.066*C
HZ-011	ZL-11	0.273 + 0.194*C	0.222 + 0.003*Tr + 0.216*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-101 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.066*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.219*C ZH-100 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.002*Tr + 0.066*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.021*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.002*Tr + 0.216*C </td <td>Path TM-IO (for pins EN LOWEMI TE</td> <td>N)</td> <td></td>	Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-110	HZ-011	0.000	0.000
LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.066*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.219*C	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.063*C F-00010 <td< td=""><td>LZ-110</td><td>0.000</td><td>0.000</td></td<>	LZ-110	0.000	0.000
HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.218 - 0.003*Tr + 0.064*C 1.150 + 0.004*Tr + 0.066*C ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*Tr + 0.216*C R-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	HZ-001	0.000	0.000
LZ-100	LZ-001	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
ZL-011 0.273 + 0.002*Tr + 0.194*C 0.223 + 0.216*C ZH-110 1.218 - 0.003*Tr + 0.064*C 1.150 - 0.002*Tr + 0.066*C ZL-110 0.273 + 0.194*C 0.224 - 0.001*Tr + 0.216*C ZH-001 0.899 - 0.002*Tr + 0.058*C 0.836 - 0.004*Tr + 0.063*C ZL-001 0.122 + 0.003*Tr + 0.196*C 0.103 + 0.001*Tr + 0.219*C ZH-100 0.899 - 0.003*Tr + 0.058*C 0.836 + 0.063*C ZL-100 0.123 + 0.001*Tr + 0.196*C 0.104 + 0.218*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.006*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	LZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-011	1.218 - 0.003*Tr + 0.064*C	1.150 + 0.004*Tr + 0.066*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-011	0.273 + 0.002*Tr + 0.194*C	0.223 + 0.216*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-110	1.218 - 0.003*Tr + 0.064*C	1.150 - 0.002*Tr + 0.066*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-110	0.273 + 0.194*C	0.224 - 0.001*Tr + 0.216*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-001	0.899 - 0.002*Tr + 0.058*C	0.836 - 0.004*Tr + 0.063*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.122 + 0.003*Tr + 0.196*C	0.103 + 0.001*Tr + 0.219*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.899 - 0.003*Tr + 0.058*C	0.836 + 0.063*C
F-10100 0.262 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-10100 1.211 + 0.002*Tr + 0.064*C 1.146 + 0.002*Tr + 0.066*C F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C			0.104 + 0.218*C
R-10100	Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-00110 0.263 + 0.003*Tr + 0.194*C 0.214 + 0.004*Tr + 0.216*C R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-10100	0.262 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-00110 1.212 + 0.064*C 1.146 + 0.066*C F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C			1.146 + 0.002*Tr + 0.066*C
F-10000 0.115 + 0.005*Tr + 0.196*C 0.098 + 0.002*Tr + 0.219*C R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-00110	0.263 + 0.003*Tr + 0.194*C	0.214 + 0.004*Tr + 0.216*C
R-10000 0.896 + 0.058*C 0.831 - 0.002*Tr + 0.063*C F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	R-00110		1.146 + 0.066*C
F-00010 0.118 + 0.002*Tr + 0.196*C 0.100 - 0.001*Tr + 0.219*C	F-10000	0.115 + 0.005*Tr + 0.196*C	0.098 + 0.002*Tr + 0.219*C
		0.896 + 0.058*C	0.831 - 0.002*Tr + 0.063*C
R-00010 0.895 + 0.058*C 0.831 + 0.003*Tr + 0.063*C	F-00010	0.118 + 0.002*Tr + 0.196*C	0.100 - 0.001*Tr + 0.219*C
	R-00010	0.895 + 0.058*C	0.831 + 0.003*Tr + 0.063*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.377e-03
worst 0.90 -40	6.622e-07	5.635e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.514 + 0.313*Tr	0.644 + 0.938*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8				
IO toggling/Output stable	5.969 + 0.029*Tr	7.029 - 0.029*Tr	3.431 + 0.027*Tr	3.956 + 0.026*Tr
ZI toggling	0.330 + 0.252*Tr	0.443 + 0.437*Tr	0.162 + 0.018*Tr	0.243 + 0.083*Tr



BD4SCARUDQPCH_EXT_CSF_1V8_CL_LIN

Cell Description

BD4SCARUDQPCH_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

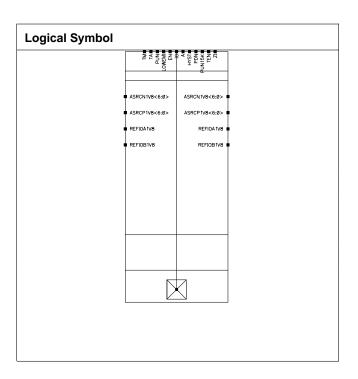
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
ГШ	Farameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C		
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C		
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C		
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr		
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr		
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr		
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr		
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C		
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C		
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C		
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C		
Path IO-ZI (for pins HYST)				
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C		
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C		
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C		
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C		
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C		
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C		
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr		
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr		
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr		
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr		
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C		
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C		
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C		
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C		
Path TM-IO (for pins EN LOWEMI TEN)			
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr		
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr		
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr		



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'			
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C		
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C		
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C		
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C		
Path EN-IO (for pins LOWEMI TM)	•			
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C		
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C		
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C		
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.137*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.190*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN TM)	·			
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C		
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C		
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C		
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cycle	Internal Energy (uW/MHz)			
Fill Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147
For vdde1v8				•
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr



BD4SCARUDQPCH_EXT_CSF_1V8_FC_INNER

Cell Description

BD4SCARUDQPCH_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)	
r arameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII		best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)	'	,			
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)	1				
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)					
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM	1)				
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C			
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C			
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN	N)	'			
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TEN)		
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Firest	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C		
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C		
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C		
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C		
Path EN-IO (for pins LOWEMI TM)	,	1		
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C		
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C		
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C		
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C		
Path IO-ZI (for pins HYST)	,	1		
F-1	0.007 + 0.137*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.190*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C		
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C		
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C		
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C		
Path TEN-IO (for pins LOWEMI TM)		,		
HZ-01	0.000	0.000		



000
000
000
6*Tr + 0.032*C
5*Tr + 0.108*C
- 0.033*C
3*Tr + 0.108*C
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- 0.033*C
1*Tr + 0.108*C
2*Tr + 0.033*C
4*Tr + 0.108*C
5*Tr + 0.032*C
5*Tr + 0.108*C
1*Tr + 0.032*C
3*Tr + 0.108*C
2*Tr + 0.108*C
1*Tr + 0.033*C
- 0.108*C
3*Tr + 0.033*C
- 0.108*C
3*Tr + 0.032*C
4*Tr + 0.108*C
2*Tr + 0.032*C
)

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Dia Occala	Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd	•	•	'		
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8			1	1	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCH_EXT_CSF_1V8_FC_LIN

Cell Description

BD4SCARUDQPCH_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Parameter	Value(pF)		
i alametei	best 1.10 125	worst 0.90 -40	



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Doromotor	Parameter Value		
PIII	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)	
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)		,	
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C	
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C	
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C	
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr	
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr	
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr	
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr	
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C	
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C	
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C	
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C	
Path IO-ZI (for pins HYST)			
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C	
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C	
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C	
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C	
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C	
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C	
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C	
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C	
Path TEN-IO (for pins LOWEMI TM)			
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr	
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr	
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr	
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr	
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C	
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C	
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C	
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C	
Path TM-IO (for pins EN LOWEMI TEN)	·)		
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr	
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr	
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr	



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.189*C
R-1	0.006 + 0.085*C	0.009 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.190*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA	(TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cyala		rgy (uW/MHz)		
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147
For vdde1v8				•
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr



BD4SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

Cell Description

BD4SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

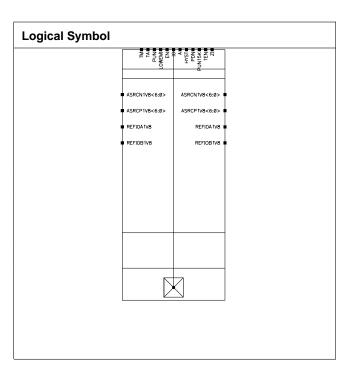
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Parameter	Va	alue
FIII	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)	'	,			
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)	1				
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)					
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM	1)				
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C			
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C			
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN	N)	'			
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



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LZ-110	0.357 + 0.270*Tr	
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TI	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.189*C
R-1	0.006 + 0.085*C	0.009 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.190*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA		
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Din Cyala	Pin Cycle Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147
For vdde1v8			•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr



BD4SCARUDQPCL_EXT_CSF_1V8_CL_LIN

Cell Description

BD4SCARUDQPCL_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Parameter	Value		
PIII	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)		,			
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)					
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)					
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C			
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C			
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN)	·)				
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Front	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C			
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C			
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C			
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C			
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C			
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C			
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C			
Path IO-ZI (for pins HYST)	'				
F-1	0.007 + 0.137*C	0.009 + 0.189*C			
R-1	0.006 + 0.085*C	0.009 + 0.129*C			
F-0	0.007 + 0.137*C	0.009 + 0.190*C			
R-0	0.006 + 0.086*C	0.009 + 0.129*C			
Path TA-IO (for pins LOWEMI TEN T	M)				
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C			
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C			
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C			
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.000	0.000			



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA T	EN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cycle	Internal Energy (uW/MHz)				
Fill Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8				•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCL_EXT_CSF_1V8_FC_INNER

Cell Description

BD4SCARUDQPCL_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Parameter	V	alue
FIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)		I .			
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)		1			
F-101	1.689 + 0.190*Tr + 0.123*C 2.151 + 0.389				
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C 5.131 + 0.472*Tr + 0.07				
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN)	1			
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr	
HZ-001	0.816 + 0.179*Tr		
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr	
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr	
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr	
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C	
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C	
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C	
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C	
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C	
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C	
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C	
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C	
Path TM-IO (for pins A EN LOWEMI TA T	EN)		
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C	
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C	
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C	
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C	
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C	
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C	
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C	
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C	
	- L	L	

Transition Time

Firest	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C			
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C			
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C			
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C			
Path EN-IO (for pins LOWEMI TM)	,	1			
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C			
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C			
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C			
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C			
Path IO-ZI (for pins HYST)	,	1			
F-1	0.007 + 0.137*C	0.009 + 0.189*C			
R-1	0.006 + 0.085*C	0.009 + 0.129*C			
F-0	0.007 + 0.137*C	0.009 + 0.190*C			
R-0	0.006 + 0.086*C	0.009 + 0.129*C			
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C			
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C			
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C			
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C			
Path TEN-IO (for pins LOWEMI TM)		,			
HZ-01	0.000	0.000			



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI 1	TA TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)		
For vdd						
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr		
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147		
For vdde1v8			•			
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr		
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr		



BD4SCARUDQPCL_EXT_CSF_1V8_FC_LIN

Cell Description

BD4SCARUDQPCL_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
raiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Din	Pin Parameter		Value		
ГШ	Farameter	best 1.10	worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375		
IO (Input)	Max Transition (ns)	12.0	12.0		
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35		



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)		,			
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)					
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)					
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C			
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C			
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN)	·)				
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)				
Event	best 1.10 125	worst 0.90 -40				
Path A-IO (for pins EN LOWEMI TM)						
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C				
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C				
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C				
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C				
Path EN-IO (for pins LOWEMI TM)						
HZ-10	0.000	0.000				
LZ-10	0.000	0.000				
HZ-00	0.000	0.000				
LZ-00	0.000	0.000				
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C				
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C				
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C				
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C				
Path IO-ZI (for pins HYST)						
F-1	0.007 + 0.137*C	0.009 + 0.189*C				
R-1	0.006 + 0.085*C	0.009 + 0.129*C				
F-0	0.007 + 0.137*C	0.009 + 0.190*C				
R-0	0.006 + 0.086*C	0.009 + 0.129*C				
Path TA-IO (for pins LOWEMI TEN TM)						
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C				
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C				
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C				
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C				
Path TEN-IO (for pins LOWEMI TM)						
HZ-01	0.000	0.000				



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA T	EN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cycle	Internal Energy (uW/MHz)				
Fill Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8				•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

Cell Description

BD4SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)		l			
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)		1			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C			
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C			
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN)	1			
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Frent	Value (as a function o	of C in pF and Tr in nS)	
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)	'	,	
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C	
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C	
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C	
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C	
Path EN-IO (for pins LOWEMI TM)	'	,	
HZ-10	0.000	0.000	
LZ-10	0.000	0.000	
HZ-00	0.000	0.000	
LZ-00	0.000	0.000	
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C	
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C	
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C	
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C	
Path IO-ZI (for pins HYST)		1	
F-1	0.007 + 0.137*C	0.009 + 0.189*C	
R-1	0.006 + 0.085*C	0.009 + 0.129*C	
F-0	0.007 + 0.137*C	0.009 + 0.190*C	
R-0	0.006 + 0.086*C	0.009 + 0.129*C	
Path TA-IO (for pins LOWEMI TEN TM)	,	
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C	
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C	
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C	
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C	
Path TEN-IO (for pins LOWEMI TM)	•	,	
HZ-01	0.000	0.000	



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Ener	gy (uW/MHz)	
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147
For vdde1v8			•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr



BD4SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

Cell Description

BD4SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF) best 1.10 125 worst 0.90 -40	
r arameter		



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Parameter	Value		
ГШ	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)	
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)		,	
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C	
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C	
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C	
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr	
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr	
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr	
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr	
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C	
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C	
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C	
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C	
Path IO-ZI (for pins HYST)			
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C	
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C	
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C	
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C	
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C	
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C	
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C	
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C	
Path TEN-IO (for pins LOWEMI TM)			
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr	
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr	
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr	
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr	
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C	
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C	
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C	
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C	
Path TM-IO (for pins EN LOWEMI TEN)	·)		
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr	
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr	
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr	



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function of C in pF and Tr in nS)				
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C			
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C			
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C			
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C			
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C			
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C			
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C			
Path IO-ZI (for pins HYST)					
F-1	0.007 + 0.137*C	0.009 + 0.189*C			
R-1	0.006 + 0.085*C	0.009 + 0.129*C			
F-0	0.007 + 0.137*C	0.009 + 0.190*C			
R-0	0.006 + 0.086*C	0.009 + 0.129*C			
Path TA-IO (for pins LOWEMI TEN TM)					
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C			
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C			
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C			
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.000	0.000			



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cycle	Internal Energy (uW/MHz)				
Fill Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8				•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

Cell Description

BD4SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

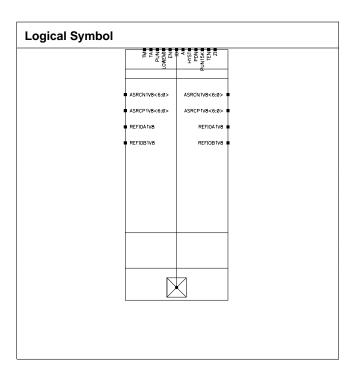
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Pin	Parameter	Value	
FIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	'	,
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C
Path EN-IO (for pins LOWEMI TM)	1	
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C
Path IO-ZI (for pins HYST)		
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C
Path TA-IO (for pins LOWEMI TEN TM	1)	
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C
Path TM-IO (for pins EN LOWEMI TEN	N)	'
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr



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LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TI	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Front	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C	
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C	
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C	
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.000	0.000	
LZ-10	0.000	0.000	
HZ-00	0.000	0.000	
LZ-00	0.000	0.000	
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C	
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C	
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C	
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C	
Path IO-ZI (for pins HYST)			
F-1	0.007 + 0.137*C	0.009 + 0.189*C	
R-1	0.006 + 0.085*C	0.009 + 0.129*C	
F-0	0.007 + 0.137*C	0.009 + 0.190*C	
R-0	0.006 + 0.086*C	0.009 + 0.129*C	
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C	
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C	
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C	
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C	
Path TEN-IO (for pins LOWEMI TM)			
HZ-01	0.000	0.000	



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEI	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI T	A TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8			•		
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

Cell Description

BD4SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

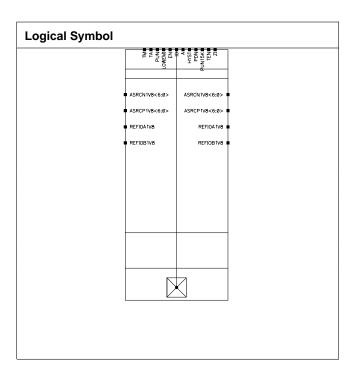
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		,
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C
Path IO-ZI (for pins HYST)		
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C
Path TA-IO (for pins LOWEMI TEN TM)		
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C
Path TM-IO (for pins EN LOWEMI TEN)	·)	
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr



0.357 + 0.270*Tr	0.448 + 0.448*Tr
0.816 + 0.179*Tr	0.846 + 0.394*Tr
0.333 + 0.043*Tr	0.403 + 0.252*Tr
0.839 + 0.261*Tr	0.894 + 0.431*Tr
0.357 + 0.269*Tr	0.437 + 0.554*Tr
3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
N)	
1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C
	0.816 + 0.179*Tr 0.333 + 0.043*Tr 0.839 + 0.261*Tr 0.357 + 0.269*Tr 3.822 + 0.207*Tr + 0.069*C 1.727 + 0.205*Tr + 0.123*C 3.835 - 0.027*Tr + 0.069*C 1.743 - 0.018*Tr + 0.123*C 3.252 + 0.212*Tr + 0.063*C 1.371 + 0.201*Tr + 0.121*C 3.267 - 0.032*Tr + 0.063*C 1.393 - 0.033*Tr + 0.121*C I.696 - 0.027*Tr + 0.123*C 3.799 + 0.262*Tr + 0.069*C 1.682 + 0.220*Tr + 0.123*C 3.774 + 0.025*Tr + 0.123*C 3.774 + 0.025*Tr + 0.120*C 3.239 + 0.261*Tr + 0.120*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM				
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C		
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C		
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C		
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C		
Path EN-IO (for pins LOWEMI TM)		,		
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C		
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C		
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C		
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C		
Path IO-ZI (for pins HYST)	'			
F-1	0.007 + 0.137*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.190*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN T	M)	,		
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C		
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C		
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C		
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C		
Path TEN-IO (for pins LOWEMI TM)	•			
HZ-01	0.000	0.000		



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
ZH-11	ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-11 0.309 + 0.001*Tr + 0.097*C 0.270 + 0.003*Tr + 0.108*C Path TM-IO (for pins EN LOWEMI TEN) HZ-011 0.000 0.000 LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 LZ-100 0.000 0.000 LZ-101 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.033*C ZH-011 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.003*Tr + 0.108*C ZH-110 1.070 + 0.031*C 1.014 + 0.002*Tr + 0.108*C ZH-110 1.070 + 0.031*C 1.014 + 0.002*Tr + 0.108*C ZH-001 0.307 + 0.005*Tr + 0.097*C 0.271 - 0.004*Tr + 0.108*C ZH-001 0.909 + 0.030*C 0.861 - 0.005*Tr + 0.032*C ZH-100 0.228 + 0.001*Tr + 0.037*C 0.202 - 0.005*Tr + 0.108*C ZH-100 0.228 + 0.001*Tr + 0.037*C 0.202 - 0.005*Tr + 0.108*C ZH-100 0.231 - 0.003*Tr + 0.009*C 0.260 - 0.002*Tr + 0.108*C Path TM-IO (fo	ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011 0.000 0.000 LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.033*C ZH-011 1.070 - 0.003*Tr + 0.097*C 0.271 + 0.001*Tr + 0.033*C ZH-110 1.070 + 0.033*Tc 1.014 + 0.002*Tr + 0.033*C ZH-110 1.070 + 0.035*Tr + 0.097*C 0.271 + 0.001*Tr + 0.033*C ZH-101 0.307 + 0.005*Tr + 0.097*C 0.271 - 0.004*Tr + 0.032*C ZH-001 0.307 + 0.005*Tr + 0.097*C 0.271 - 0.004*Tr + 0.032*C ZH-100 0.228 + 0.001*Tr + 0.097*C 0.202 - 0.005*Tr + 0.032*C ZH-100 0.228 + 0.001*Tr + 0.030*C 0.856 - 0.001*Tr + 0.032*C ZL-100 0.231 - 0.003*Tr + 0.097*C 0.203 - 0.003*Tr + 0.108*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.295 - 0.001*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C	ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
HZ-011	ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 0.000 0.000 LZ-101 0.000 0.000 ZH-011 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.033*C ZL-011 0.309 + 0.003*Tr + 0.097*C 0.271 + 0.001*Tr + 0.108*C ZH-110 1.070 + 0.031*C 1.014 - 0.002*Tr + 0.033*C ZL-110 0.307 + 0.005*Tr + 0.030*C 0.861 - 0.005*Tr + 0.108*C ZH-001 0.909 + 0.030*C 0.861 - 0.005*Tr + 0.108*C ZH-100 0.228 + 0.001*Tr + 0.097*C 0.202 - 0.005*Tr + 0.108*C ZH-100 0.909 - 0.004*Tr + 0.030*C 0.866 - 0.001*Tr + 0.032*C ZH-100 0.231 - 0.003*Tr + 0.097*C 0.266 - 0.002*Tr + 0.108*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.295 - 0.001*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C R-10100 1.067 - 0.002*Tr + 0.031*C 1.011 + 0.001*Tr + 0.033*C <	Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-110	HZ-011		0.000
LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.033*C ZL-011 0.309 + 0.003*Tr + 0.097*C 0.271 + 0.001*Tr + 0.108*C ZH-110 1.070 + 0.031*C 1.014 - 0.002*Tr + 0.033*C ZL-110 0.307 + 0.005*Tr + 0.097*C 0.271 - 0.004*Tr + 0.108*C ZH-001 0.909 + 0.030*C 0.861 - 0.005*Tr + 0.032*C ZL-001 0.228 + 0.001*Tr + 0.097*C 0.202 - 0.005*Tr + 0.108*C ZH-100 0.909 - 0.004*Tr + 0.030*C 0.856 - 0.001*Tr + 0.032*C ZL-100 0.231 - 0.003*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.295 - 0.001*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C R-10100 1.067 - 0.002*Tr + 0.031*C 1.011 + 0.001*Tr + 0.033*C F-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.296 - 0.001*Tr + 0.032*C 1.013 -	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.033*C ZL-011 0.309 + 0.003*Tr + 0.097*C 0.271 + 0.001*Tr + 0.108*C ZH-110 1.070 + 0.031*C 1.014 - 0.002*Tr + 0.003*C ZL-110 0.307 + 0.005*Tr + 0.097*C 0.271 - 0.004*Tr + 0.108*C ZH-001 0.909 + 0.030*C 0.861 - 0.005*Tr + 0.032*C ZL-001 0.228 + 0.001*Tr + 0.097*C 0.202 - 0.005*Tr + 0.108*C ZH-100 0.909 - 0.004*Tr + 0.030*C 0.856 - 0.001*Tr + 0.032*C ZL-100 0.231 - 0.003*Tr + 0.097*C 0.203 - 0.003*Tr + 0.108*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.295 - 0.001*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C R-10100 1.067 - 0.002*Tr + 0.031*C 1.011 + 0.001*Tr + 0.033*C F-00110 0.296 - 0.001*Tr + 0.097*C 0.261 + 0.108*C R-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.216 + 0.097*C 0.195 + 0.108*C F-00010 <t< td=""><td>LZ-110</td><td>0.000</td><td>0.000</td></t<>	LZ-110	0.000	0.000
HZ-100	HZ-001	0.000	0.000
LZ-100 0.000 0.000 ZH-011 1.070 - 0.002*Tr + 0.031*C 1.014 + 0.033*C ZL-011 0.309 + 0.003*Tr + 0.097*C 0.271 + 0.001*Tr + 0.108*C ZH-110 1.070 + 0.031*C 1.014 - 0.002*Tr + 0.003*C ZL-110 0.307 + 0.005*Tr + 0.097*C 0.271 - 0.004*Tr + 0.108*C ZH-001 0.909 + 0.030*C 0.861 - 0.005*Tr + 0.032*C ZL-001 0.228 + 0.001*Tr + 0.097*C 0.202 - 0.005*Tr + 0.108*C ZH-100 0.909 - 0.004*Tr + 0.030*C 0.856 - 0.001*Tr + 0.032*C ZL-100 0.231 - 0.003*Tr + 0.097*C 0.203 - 0.003*Tr + 0.108*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.295 - 0.001*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C R-10100 1.067 - 0.002*Tr + 0.031*C 1.011 + 0.001*Tr + 0.033*C F-00110 0.296 - 0.001*Tr + 0.097*C 0.261 + 0.108*C R-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.216 + 0.097*C 0.195 + 0.108*C F-00010 0.295 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C	LZ-001	0.000	0.000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
ZL-011	LZ-100	0.000	0.000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-110	ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
F-10100 0.295 - 0.001*Tr + 0.097*C 0.260 - 0.002*Tr + 0.108*C R-10100 1.067 - 0.002*Tr + 0.031*C 1.011 + 0.001*Tr + 0.033*C F-00110 0.296 - 0.001*Tr + 0.097*C 0.261 + 0.108*C R-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.216 + 0.097*C 0.195 + 0.108*C R-10000 0.905 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C			0.203 - 0.003*Tr + 0.108*C
R-10100 1.067 - 0.002*Tr + 0.031*C 1.011 + 0.001*Tr + 0.033*C F-00110 0.296 - 0.001*Tr + 0.097*C 0.261 + 0.108*C R-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.216 + 0.097*C 0.195 + 0.108*C R-10000 0.905 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C		TA TEN)	
F-00110 0.296 - 0.001*Tr + 0.097*C 0.261 + 0.108*C R-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.216 + 0.097*C 0.195 + 0.108*C R-10000 0.905 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C	F-10100		0.260 - 0.002*Tr + 0.108*C
R-00110 1.067 - 0.008*Tr + 0.032*C 1.013 - 0.003*Tr + 0.033*C F-10000 0.216 + 0.097*C 0.195 + 0.108*C R-10000 0.905 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C	R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-10000 0.216 + 0.097*C 0.195 + 0.108*C R-10000 0.905 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C	F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-10000 0.905 - 0.001*Tr + 0.030*C 0.856 - 0.003*Tr + 0.032*C F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C	R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-00010 0.215 - 0.006*Tr + 0.097*C 0.193 + 0.004*Tr + 0.108*C	F-10000	0.216 + 0.097*C	0.195 + 0.108*C
	R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
R-00010 0.905 + 0.030*C 0.855 - 0.002*Tr + 0.032*C	F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
	R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cyala	Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8				•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

Cell Description

BD4SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value	e(pF)
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'	,		
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C		
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C		
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C		
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr		
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr		
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr		
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr		
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C		
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C		
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C		
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C		
Path IO-ZI (for pins HYST)				
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C		
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C		
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C		
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM	1)			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C		
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C		
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C		
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr		
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr		
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr		
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr		
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C		
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C		
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C		
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C		
Path TM-IO (for pins EN LOWEMI TEN	N)	'		
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr		
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr		
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr		



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LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TI	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Front	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C		
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C		
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C		
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C		
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C		
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C		
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C		
Path IO-ZI (for pins HYST)	'			
F-1	0.007 + 0.137*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.190*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C		
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C		
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C		
R-001	0.906 - 0.006*Tr + 0.030*C			
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI 1	A TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Dia Ossala	Internal Energy (uW/MHz)				
Pin Cycle best 1.10 125 (Min best 1.10 125 (Max values) values)		worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)		
For vdd	•	•	'		
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8			1	1	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCZ_IL_EXT_CSF_1V8_CL_LIN

Cell Description

BD4SCARUDQPCZ_IL_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

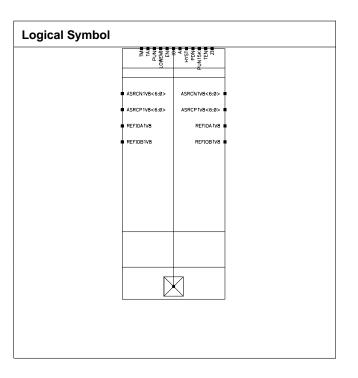
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	alue
ГШ	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		,
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C
Path IO-ZI (for pins HYST)		
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C
Path TA-IO (for pins LOWEMI TEN TM)		
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C
Path TM-IO (for pins EN LOWEMI TEN)	·)	
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr



0.357 + 0.270*Tr	0.448 + 0.448*Tr
0.816 + 0.179*Tr	0.846 + 0.394*Tr
0.333 + 0.043*Tr	0.403 + 0.252*Tr
0.839 + 0.261*Tr	0.894 + 0.431*Tr
0.357 + 0.269*Tr	0.437 + 0.554*Tr
3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
N)	
1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C
	0.816 + 0.179*Tr 0.333 + 0.043*Tr 0.839 + 0.261*Tr 0.357 + 0.269*Tr 3.822 + 0.207*Tr + 0.069*C 1.727 + 0.205*Tr + 0.123*C 3.835 - 0.027*Tr + 0.069*C 1.743 - 0.018*Tr + 0.123*C 3.252 + 0.212*Tr + 0.063*C 1.371 + 0.201*Tr + 0.121*C 3.267 - 0.032*Tr + 0.063*C 1.393 - 0.033*Tr + 0.121*C I.696 - 0.027*Tr + 0.123*C 3.799 + 0.262*Tr + 0.069*C 1.682 + 0.220*Tr + 0.123*C 3.774 + 0.025*Tr + 0.123*C 3.774 + 0.025*Tr + 0.120*C 3.239 + 0.261*Tr + 0.120*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM					
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C			
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C			
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C			
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C			
Path EN-IO (for pins LOWEMI TM)		,			
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C			
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C			
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C			
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C			
Path IO-ZI (for pins HYST)	'				
F-1	0.007 + 0.137*C	0.009 + 0.189*C			
R-1	0.006 + 0.085*C	0.009 + 0.129*C			
F-0	0.007 + 0.137*C	0.009 + 0.190*C			
R-0	0.006 + 0.086*C	0.009 + 0.129*C			
Path TA-IO (for pins LOWEMI TEN T	M)	,			
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C			
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C			
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C			
R-001	0.906 - 0.006*Tr + 0.030*C				
Path TEN-IO (for pins LOWEMI TM)	•				
HZ-01	0.000	0.000			



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA T	EN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cycle	Internal Energy (uW/MHz)					
Fill Cycle	best 1.10 125 (Min best 1.10 125 (Max values)		worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)		
For vdd						
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr		
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147		
For vdde1v8				•		
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr		
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr		



BD4SCARUDQPCZ_IL_EXT_CSF_1V8_FC_INNER

Cell Description

BD4SCARUDQPCZ_IL_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

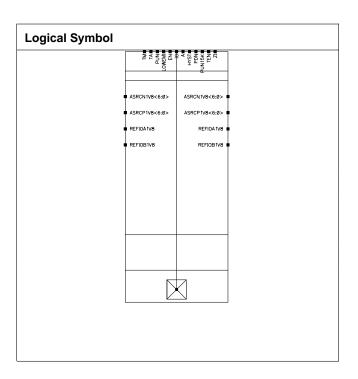
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value	e(pF)
r arameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'	,		
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C		
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C		
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C		
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C		
Path EN-IO (for pins LOWEMI TM)	1			
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr		
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr		
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr		
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr		
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C		
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C		
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C		
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C		
Path IO-ZI (for pins HYST)				
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C		
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C		
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C		
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM	1)			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C		
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C		
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C		
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr		
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr		
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr		
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr		
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C		
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C		
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C		
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C		
Path TM-IO (for pins EN LOWEMI TEN	N)	'		
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr		
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr		
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr		



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function o	of C in pF and Tr in nS)	
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C	
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C	
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C	
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.000	0.000	
LZ-10	0.000	0.000	
HZ-00	0.000	0.000	
LZ-00	0.000	0.000	
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C	
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C	
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C	
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C	
Path IO-ZI (for pins HYST)			
F-1	0.007 + 0.137*C	0.009 + 0.189*C	
R-1	0.006 + 0.085*C	0.009 + 0.129*C	
F-0	0.007 + 0.137*C	0.009 + 0.190*C	
R-0	0.006 + 0.086*C	0.009 + 0.129*C	
Path TA-IO (for pins LOWEMI TEN TM	Л)		
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C	
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C	
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C	
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C	
Path TEN-IO (for pins LOWEMI TM)	,	,	
HZ-01	0.000	0.000	



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA	A TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8			1		
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCZ_IL_EXT_CSF_1V8_FC_LIN

Cell Description

BD4SCARUDQPCZ_IL_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

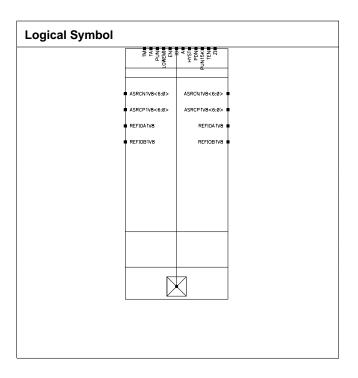
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)					
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C			
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C			
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C			
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr			
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr			
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr			
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr			
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C			
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C			
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C			
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C			
Path IO-ZI (for pins HYST)					
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C			
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C			
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C			
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C			
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C			
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C			
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C			
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr			
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr			
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr			
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr			
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C			
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C			
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C			
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C			
Path TM-IO (for pins EN LOWEMI TEN)				
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr			
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr			
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr			



0.357 + 0.270*Tr	0.448 + 0.448*Tr
0.816 + 0.179*Tr	0.846 + 0.394*Tr
0.333 + 0.043*Tr	0.403 + 0.252*Tr
0.839 + 0.261*Tr	0.894 + 0.431*Tr
0.357 + 0.269*Tr	0.437 + 0.554*Tr
3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
N)	
1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C
	0.816 + 0.179*Tr 0.333 + 0.043*Tr 0.839 + 0.261*Tr 0.357 + 0.269*Tr 3.822 + 0.207*Tr + 0.069*C 1.727 + 0.205*Tr + 0.123*C 3.835 - 0.027*Tr + 0.069*C 1.743 - 0.018*Tr + 0.123*C 3.252 + 0.212*Tr + 0.063*C 1.371 + 0.201*Tr + 0.121*C 3.267 - 0.032*Tr + 0.063*C 1.393 - 0.033*Tr + 0.121*C I.696 - 0.027*Tr + 0.123*C 3.799 + 0.262*Tr + 0.069*C 1.682 + 0.220*Tr + 0.123*C 3.774 + 0.025*Tr + 0.123*C 3.774 + 0.025*Tr + 0.120*C 3.239 + 0.261*Tr + 0.120*C

Transition Time

Event	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C		
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C		
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C		
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C		
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C		
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C		
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.137*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.190*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C		
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C		
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C		
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI TA	(TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Pin Cyala	Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8				•	
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD4SCARUDQPCZ_IL_EXT_CSF_1V8_FC_OUTER

Cell Description

BD4SCARUDQPCZ_IL_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

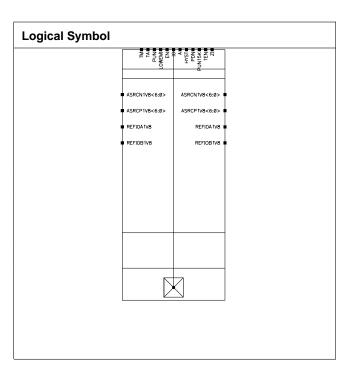
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value	e(pF)
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0378	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.4550	1.3901
IO Max Load	101.455	101.390
LOWEMI Input Cap.	0.0263	0.0263
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0253	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'	,		
F-010	1.687 + 0.196*Tr + 0.123*C	2.149 + 0.386*Tr + 0.138*C		
R-010	3.777 + 0.011*Tr + 0.069*C	5.030 + 0.250*Tr + 0.070*C		
F-000	1.355 + 0.193*Tr + 0.120*C	1.716 + 0.383*Tr + 0.136*C		
R-000	3.217 + 0.013*Tr + 0.063*C	4.251 + 0.246*Tr + 0.064*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.823 + 0.125*Tr	0.859 + 0.380*Tr		
LZ-10	0.511 + 0.139*Tr	0.640 + 0.375*Tr		
HZ-00	0.818 + 0.135*Tr	0.858 + 0.380*Tr		
LZ-00	0.511 + 0.138*Tr	0.640 + 0.374*Tr		
ZH-10	3.827 + 0.170*Tr + 0.069*C	5.123 + 0.488*Tr + 0.070*C		
ZL-10	1.732 + 0.166*Tr + 0.123*C	2.253 + 0.469*Tr + 0.138*C		
ZH-00	3.256 + 0.175*Tr + 0.063*C	4.330 + 0.483*Tr + 0.064*C		
ZL-00	1.374 + 0.166*Tr + 0.121*C	1.797 + 0.473*Tr + 0.136*C		
Path IO-ZI (for pins HYST)				
F-1	0.479 + 0.222*Tr + 0.102*C	0.579 + 0.345*Tr + 0.284*C		
R-1	0.477 + 0.190*Tr + 0.116*C	0.548 + 0.323*Tr + 0.175*C		
F-0	0.427 + 0.073*Tr + 0.177*C	0.586 + 0.109*Tr + 0.223*C		
R-0	0.435 + 0.038*Tr + 0.124*C	0.571 + 0.078*Tr + 0.168*C		
Path TA-IO (for pins LOWEMI TEN TM	1)			
F-101	1.689 + 0.190*Tr + 0.123*C	2.151 + 0.389*Tr + 0.138*C		
R-101	3.776 + 0.014*Tr + 0.069*C	5.029 + 0.254*Tr + 0.070*C		
F-001	1.353 + 0.196*Tr + 0.120*C	1.717 + 0.386*Tr + 0.136*C		
R-001	3.217 + 0.013*Tr + 0.063*C	4.248 + 0.250*Tr + 0.064*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.818 + 0.138*Tr	0.857 + 0.379*Tr		
LZ-01	0.511 + 0.139*Tr	0.639 + 0.377*Tr		
HZ-11	0.822 + 0.129*Tr	0.858 + 0.381*Tr		
LZ-11	0.511 + 0.140*Tr	0.639 + 0.377*Tr		
ZH-01	3.259 + 0.170*Tr + 0.063*C	4.331 + 0.486*Tr + 0.064*C		
ZL-01	1.377 + 0.161*Tr + 0.121*C	1.798 + 0.464*Tr + 0.136*C		
ZH-11	3.828 + 0.167*Tr + 0.069*C	5.131 + 0.472*Tr + 0.070*C		
ZL-11	1.733 + 0.167*Tr + 0.123*C	2.257 + 0.456*Tr + 0.137*C		
Path TM-IO (for pins EN LOWEMI TEN	N)	'		
HZ-011	0.820 + 0.171*Tr	0.847 + 0.393*Tr		
LZ-011	0.332 + 0.037*Tr	0.403 + 0.245*Tr		
HZ-110	0.844 + 0.256*Tr	0.896 + 0.424*Tr		



LZ-110	0.357 + 0.270*Tr	0.448 + 0.448*Tr
HZ-001	0.816 + 0.179*Tr	0.846 + 0.394*Tr
LZ-001	0.333 + 0.043*Tr	0.403 + 0.252*Tr
HZ-100	0.839 + 0.261*Tr	0.894 + 0.431*Tr
LZ-100	0.357 + 0.269*Tr	0.437 + 0.554*Tr
ZH-011	3.822 + 0.207*Tr + 0.069*C	5.111 + 0.485*Tr + 0.070*C
ZL-011	1.727 + 0.205*Tr + 0.123*C	2.240 + 0.475*Tr + 0.138*C
ZH-110	3.835 - 0.027*Tr + 0.069*C	5.146 + 0.216*Tr + 0.070*C
ZL-110	1.743 - 0.018*Tr + 0.123*C	2.274 + 0.238*Tr + 0.137*C
ZH-001	3.252 + 0.212*Tr + 0.063*C	4.317 + 0.490*Tr + 0.064*C
ZL-001	1.371 + 0.201*Tr + 0.121*C	1.783 + 0.477*Tr + 0.136*C
ZH-100	3.267 - 0.032*Tr + 0.063*C	4.351 + 0.216*Tr + 0.064*C
ZL-100	1.393 - 0.033*Tr + 0.121*C	1.816 + 0.240*Tr + 0.136*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.696 - 0.027*Tr + 0.123*C	2.159 + 0.226*Tr + 0.138*C
R-10100	3.799 + 0.262*Tr + 0.069*C	5.066 + 0.438*Tr + 0.070*C
F-00110	1.682 + 0.220*Tr + 0.123*C	2.137 + 0.367*Tr + 0.138*C
R-00110	3.774 + 0.025*Tr + 0.069*C	5.022 + 0.233*Tr + 0.070*C
F-10000	1.364 - 0.023*Tr + 0.120*C	1.723 + 0.228*Tr + 0.136*C
R-10000	3.239 + 0.261*Tr + 0.063*C	4.285 + 0.443*Tr + 0.064*C
F-00010	1.348 + 0.216*Tr + 0.120*C	1.701 + 0.369*Tr + 0.136*C
R-00010	3.215 + 0.025*Tr + 0.063*C	4.243 + 0.233*Tr + 0.064*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.296 - 0.002*Tr + 0.097*C	0.263 + 0.108*C		
R-010	1.067 - 0.007*Tr + 0.032*C	1.013 - 0.004*Tr + 0.033*C		
F-000	0.216 - 0.005*Tr + 0.097*C	0.195 - 0.001*Tr + 0.108*C		
R-000	0.904 + 0.002*Tr + 0.030*C	0.855 + 0.032*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C		
ZL-10	0.310 - 0.005*Tr + 0.097*C	0.270 + 0.004*Tr + 0.108*C		
ZH-00	0.910 - 0.001*Tr + 0.030*C	0.862 - 0.007*Tr + 0.032*C		
ZL-00	0.229 + 0.097*C	0.203 - 0.006*Tr + 0.108*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.137*C	0.009 + 0.189*C		
R-1	0.006 + 0.085*C	0.009 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.190*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.296 - 0.001*Tr + 0.097*C	0.263 - 0.005*Tr + 0.108*C		
R-101	1.066 - 0.002*Tr + 0.031*C	1.011 + 0.033*C		
F-001	0.215 + 0.097*C	0.197 - 0.005*Tr + 0.108*C		
R-001	0.906 - 0.006*Tr + 0.030*C	0.855 - 0.001*Tr + 0.032*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.909 + 0.030*C	0.862 - 0.006*Tr + 0.032*C
ZL-01	0.231 - 0.005*Tr + 0.097*C	0.204 - 0.005*Tr + 0.108*C
ZH-11	1.070 - 0.003*Tr + 0.031*C	1.013 + 0.033*C
ZL-11	0.309 + 0.001*Tr + 0.097*C	0.270 + 0.003*Tr + 0.108*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.070 - 0.002*Tr + 0.031*C	1.014 + 0.033*C
ZL-011	0.309 + 0.003*Tr + 0.097*C	0.271 + 0.001*Tr + 0.108*C
ZH-110	1.070 + 0.031*C	1.014 - 0.002*Tr + 0.033*C
ZL-110	0.307 + 0.005*Tr + 0.097*C	0.271 - 0.004*Tr + 0.108*C
ZH-001	0.909 + 0.030*C	0.861 - 0.005*Tr + 0.032*C
ZL-001	0.228 + 0.001*Tr + 0.097*C	0.202 - 0.005*Tr + 0.108*C
ZH-100	0.909 - 0.004*Tr + 0.030*C	0.856 - 0.001*Tr + 0.032*C
ZL-100	0.231 - 0.003*Tr + 0.097*C	0.203 - 0.003*Tr + 0.108*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.295 - 0.001*Tr + 0.097*C	0.260 - 0.002*Tr + 0.108*C
R-10100	1.067 - 0.002*Tr + 0.031*C	1.011 + 0.001*Tr + 0.033*C
F-00110	0.296 - 0.001*Tr + 0.097*C	0.261 + 0.108*C
R-00110	1.067 - 0.008*Tr + 0.032*C	1.013 - 0.003*Tr + 0.033*C
F-10000	0.216 + 0.097*C	0.195 + 0.108*C
R-10000	0.905 - 0.001*Tr + 0.030*C	0.856 - 0.003*Tr + 0.032*C
F-00010	0.215 - 0.006*Tr + 0.097*C	0.193 + 0.004*Tr + 0.108*C
R-00010	0.905 + 0.030*C	0.855 - 0.002*Tr + 0.032*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	3.984e-03
worst 0.90 -40	6.622e-07	5.871e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.513 + 0.312*Tr	0.643 + 0.939*Tr	0.255 + 0.007*Tr	0.334 + 0.008*Tr	
ZI toggling	0.279 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.147	
For vdde1v8					
IO toggling/Output stable	6.576 + 0.040*Tr	7.731 - 0.018*Tr	3.755 + 0.024*Tr	4.288 + 0.080*Tr	
ZI toggling	0.331 + 0.255*Tr	0.444 + 0.440*Tr	0.162 + 0.018*Tr	0.244 + 0.082*Tr	



BD6SCARUDQPCH_EXT_CSF_1V8_CL_LIN

Cell Description

BD6SCARUDQPCH_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Event	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)			
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C	
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C	
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C	
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C	
Path EN-IO (for pins LOWEMI TM)		1	
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr	
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr	
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr	
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr	
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C	
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C	
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C	
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C	
Path IO-ZI (for pins HYST)		l	
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C	
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C	
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C	
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C	
Path TA-IO (for pins LOWEMI TEN TM)		1	
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C	
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C	
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C	
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C	
Path TEN-IO (for pins LOWEMI TM)		1	
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr	
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr	
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr	
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr	
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C	
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C	
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C	
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C	
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr	
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr	
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr	



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Front	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		,
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)	·	
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	М)	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Fill Cycle	Pin Cycle best 1.10 125 (Min values) best 1.10 125 (Max values)		worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8				
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCH_EXT_CSF_1V8_FC_INNER

Cell Description

BD6SCARUDQPCH_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

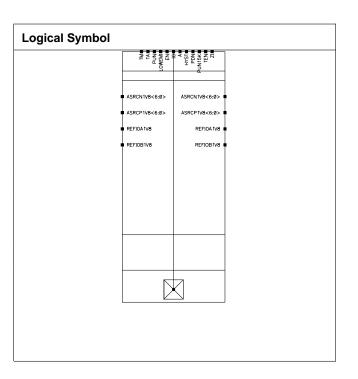
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	lue
PIII	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C		
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C		
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C		
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr		
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr		
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr		
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr		
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C		
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C		
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C		
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C		
Path IO-ZI (for pins HYST)				
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C		
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C		
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C		
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C		
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C		
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C		
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C		
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr		
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr		
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr		
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr		
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C		
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C		
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C		
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C		
Path TM-IO (for pins EN LOWEMI TEN)				
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr		
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr		
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr		



0.363 + 0.269*Tr	0.453 + 0.448*Tr
0.883 + 0.181*Tr	0.906 + 0.391*Tr
0.339 + 0.041*Tr	0.408 + 0.248*Tr
0.906 + 0.268*Tr	0.956 + 0.423*Tr
0.363 + 0.269*Tr	0.453 + 0.451*Tr
3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
N)	
1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C
	0.883 + 0.181*Tr 0.339 + 0.041*Tr 0.906 + 0.268*Tr 0.363 + 0.269*Tr 3.623 + 0.207*Tr + 0.042*C 1.976 + 0.199*Tr + 0.081*C 3.635 - 0.030*Tr + 0.042*C 1.990 - 0.022*Tr + 0.081*C 3.109 + 0.209*Tr + 0.039*C 1.540 + 0.203*Tr + 0.080*C 3.122 - 0.031*Tr + 0.039*C 1.558 - 0.023*Tr + 0.080*C EN) 1.931 - 0.016*Tr + 0.081*C 3.613 + 0.257*Tr + 0.042*C 1.918 + 0.220*Tr + 0.081*C 3.587 + 0.026*Tr + 0.080*C 1.531 - 0.024*Tr + 0.080*C 3.105 + 0.261*Tr + 0.039*C 1.516 + 0.220*Tr + 0.080*C

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)	•	
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Ener	gy (uW/MHz)	
Pin Cycle	best 1.10 125 (Min values) best 1.10 125 (Max values)		worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			•	
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCH_EXT_CSF_1V8_FC_LIN

Cell Description

BD6SCARUDQPCH_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value	e(pF)
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	lue
PIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C
Path EN-IO (for pins LOWEMI TM)		1
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C
Path IO-ZI (for pins HYST)		l
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C
Path TA-IO (for pins LOWEMI TEN TM)		1
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C
Path TEN-IO (for pins LOWEMI TM)		1
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C
Path TM-IO (for pins EN LOWEMI TEN)	1
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Front	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)	•	
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN TM)		
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
T 40000		0.000 0.000*T 0.070*O
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.240 + 0.003*Tr + 0.065*C 0.833 + 0.002*Tr + 0.021*C	0.228 - 0.008" If + 0.072"C 0.771 + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Pin Cyala		Internal Ene	rgy (uW/MHz)	
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8		1		1
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

Cell Description

BD6SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

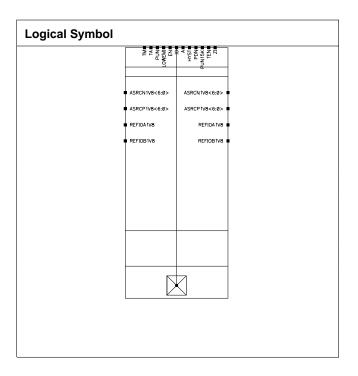
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value	
PIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	,	,
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C
Path IO-ZI (for pins HYST)	-	
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C
Path TA-IO (for pins LOWEMI TEN TM	<i>(</i> 1)	
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C
Path TM-IO (for pins EN LOWEMI TEI	N)	
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr



0.363 + 0.269*Tr	0.453 + 0.448*Tr
0.883 + 0.181*Tr	0.906 + 0.391*Tr
0.339 + 0.041*Tr	0.408 + 0.248*Tr
0.906 + 0.268*Tr	0.956 + 0.423*Tr
0.363 + 0.269*Tr	0.453 + 0.451*Tr
3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
EN)	
1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C
	0.883 + 0.181*Tr 0.339 + 0.041*Tr 0.906 + 0.268*Tr 0.363 + 0.269*Tr 3.623 + 0.207*Tr + 0.042*C 1.976 + 0.199*Tr + 0.081*C 3.635 - 0.030*Tr + 0.042*C 1.990 - 0.022*Tr + 0.081*C 3.109 + 0.209*Tr + 0.039*C 1.540 + 0.203*Tr + 0.080*C 3.122 - 0.031*Tr + 0.039*C 1.558 - 0.023*Tr + 0.080*C EN) 1.931 - 0.016*Tr + 0.081*C 3.613 + 0.257*Tr + 0.042*C 1.918 + 0.220*Tr + 0.081*C 3.587 + 0.026*Tr + 0.042*C 1.531 - 0.024*Tr + 0.080*C 3.105 + 0.261*Tr + 0.039*C 1.516 + 0.220*Tr + 0.080*C

Front	Value (as a function of	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	,	
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)	,	
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN TM)	-	-
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Ener	gy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min best 1.10 125 (Max values) values)		Dest 1.10 125 (Min		worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd						
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr		
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146		
For vdde1v8						
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr		
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr		



BD6SCARUDQPCL_EXT_CSF_1V8_CL_LIN

Cell Description

BD6SCARUDQPCL_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	alue
ГШ	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C		
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C		
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C		
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr		
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr		
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr		
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr		
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C		
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C		
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C		
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C		
Path IO-ZI (for pins HYST)		l		
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C		
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C		
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C		
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C		
Path TA-IO (for pins LOWEMI TEN TM)		1		
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C		
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C		
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C		
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C		
Path TEN-IO (for pins LOWEMI TM)		1		
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr		
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr		
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr		
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr		
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C		
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C		
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C		
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C		
Path TM-IO (for pins EN LOWEMI TEN)	1		
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr		
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr		
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr		



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Front	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM				
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C		
R-010	0.972 + 0.022*C	0.910 + 0.024*C		
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C		
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C		
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C		
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C		
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.137*C	0.009 + 0.188*C		
R-1	0.006 + 0.085*C	0.008 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.189*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.339 + 0.064*C	0.311 + 0.072*C		
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C		
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C		
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI TA T	EN)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Pin Cyala		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr	
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146	
For vdde1v8		1		1	
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr	
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr	



BD6SCARUDQPCL_EXT_CSF_1V8_FC_INNER

Cell Description

BD6SCARUDQPCL_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

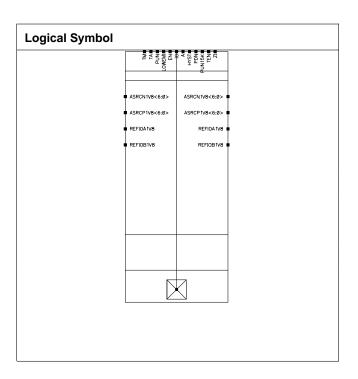
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value	
PIII	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C		
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C		
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C		
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr		
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr		
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr		
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr		
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C		
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C		
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C		
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C		
Path IO-ZI (for pins HYST)		1		
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C		
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C		
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C		
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C		
Path TA-IO (for pins LOWEMI TEN TM)		1		
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C		
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C		
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C		
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C		
Path TEN-IO (for pins LOWEMI TM)	'			
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr		
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr		
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr		
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr		
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C		
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C		
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C		
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C		
Path TM-IO (for pins EN LOWEMI TEN)	,		
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr		
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr		
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr		



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Firest	Value (as a function of	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)	·	
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	М)	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Ener	gy (uW/MHz)	
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			•	
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCL_EXT_CSF_1V8_FC_LIN

Cell Description

BD6SCARUDQPCL_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

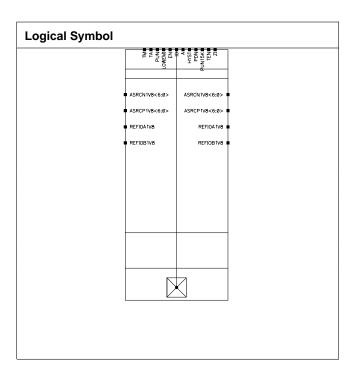
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value	
PIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C
Path EN-IO (for pins LOWEMI TM)		1
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C
Path IO-ZI (for pins HYST)		l
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C
Path TA-IO (for pins LOWEMI TEN TM)		1
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C
Path TEN-IO (for pins LOWEMI TM)		1
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C
Path TM-IO (for pins EN LOWEMI TEN)	
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Front	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI TA		
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Internal Energy (at minimum output load)

Pin Cyala		rgy (uW/MHz)		
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8		1		1
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

Cell Description

BD6SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF
- The cell has "dont_touch" attribute set in the Synopsys STF.

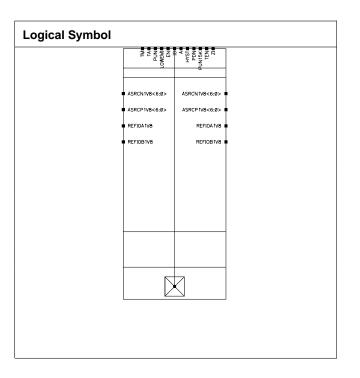
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	lue
PIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'	,		
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C		
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C		
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C		
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr		
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr		
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr		
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr		
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C		
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C		
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C		
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C		
Path IO-ZI (for pins HYST)				
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C		
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C		
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C		
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C		
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C		
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C		
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C		
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr		
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr		
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr		
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr		
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C		
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C		
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C		
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C		
Path TM-IO (for pins EN LOWEMI TEN)	·)			
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr		
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr		
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr		



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA TI	EN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM		1		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C		
R-010	0.972 + 0.022*C	0.910 + 0.024*C		
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C		
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C		
Path EN-IO (for pins LOWEMI TM)	'			
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C		
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C		
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C		
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C		
Path IO-ZI (for pins HYST)				
F-1	0.007 + 0.137*C	0.009 + 0.188*C		
R-1	0.006 + 0.085*C	0.008 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.189*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.339 + 0.064*C	0.311 + 0.072*C		
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C		
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C		
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI		
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Die Ovele		Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)		
For vdd	•	•	'			
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr		
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146		
For vdde1v8			1	1		
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr		
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr		



BD6SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

Cell Description

BD6SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

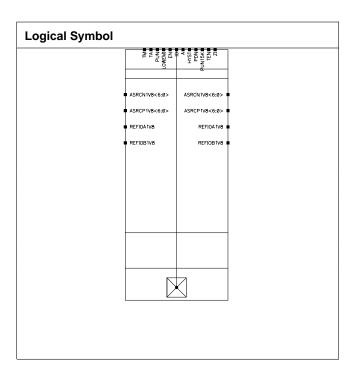
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
А	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value	e(pF)
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function of C in pF and Tr in nS)		
Eveni	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)	,		
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C	
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C	
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C	
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr	
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr	
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr	
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr	
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C	
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C	
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C	
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C	
Path IO-ZI (for pins HYST)			
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C	
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C	
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C	
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C	
Path TA-IO (for pins LOWEMI TEN TM)			
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C	
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C	
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C	
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C	
Path TEN-IO (for pins LOWEMI TM)			
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr	
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr	
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr	
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr	
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C	
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C	
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C	
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C	
Path TM-IO (for pins EN LOWEMI TEN)	,	1	
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr	
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr	
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr	



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Transition Time

Front	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN TM))	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI TA		
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Pin Cyala		Internal Ene	rgy (uW/MHz)	
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8		1		1
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

Cell Description

BD6SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value	
PIII	Parameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C
Path IO-ZI (for pins HYST)		
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C
Path TA-IO (for pins LOWEMI TEN TM)		
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Transition Time

Frank	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
ZH-11	ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
Table Tabl	ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011 0.000 0.000 LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 0.977 + 0.022°C 0.910 + 0.003*Tr + 0.024*C ZH-011 0.357 - 0.010*Tr + 0.064*C 0.321 + 0.005*Tr + 0.072*C ZH-110 0.357 - 0.010*Tr + 0.064*C 0.321 + 0.005*Tr + 0.072*C ZH-110 0.355 - 0.008*Tr + 0.064*C 0.326 - 0.014*Tr + 0.072*C ZH-001 0.840 - 0.003*Tr + 0.021*C 0.775 + 0.009*Tr + 0.024*C ZL-100 0.256 + 0.007*Tr + 0.065*C 0.233 + 0.003*Tr + 0.024*C ZL-100 0.839 - 0.003*Tr + 0.021*C 0.775 - 0.003*Tr + 0.024*C ZL-100 0.839 - 0.003*Tr + 0.021*C 0.775 - 0.003*Tr + 0.024*C ZL-100 0.839 - 0.003*Tr + 0.021*C 0.775 - 0.003*Tr + 0.024*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.259 + 0.065*C 0.311 + 0.001*Tr + 0.024*C	ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
HZ-011	ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 0.977 + 0.022*C 0.910 + 0.003*Tr + 0.024*C ZL-011 0.357 - 0.010*Tr + 0.064*C 0.321 + 0.005*Tr + 0.072*C ZH-110 0.977 + 0.022*C 0.911 + 0.024*C ZL-101 0.355 - 0.008*Tr + 0.064*C 0.326 - 0.014*Tr + 0.072*C ZH-001 0.840 - 0.003*Tr + 0.021*C 0.775 + 0.009*Tr + 0.024*C ZL-001 0.256 + 0.007*Tr + 0.065*C 0.233 + 0.003*Tr + 0.024*C ZH-100 0.839 - 0.003*Tr + 0.021*C 0.775 - 0.003*Tr + 0.024*C ZH-100 0.839 - 0.005*Tr + 0.021*C 0.775 - 0.003*Tr + 0.024*C ZL-100 0.259 + 0.065*C 0.233 + 0.003*Tr + 0.024*C ZL-100 0.259 + 0.065*C 0.311 + 0.001*Tr + 0.024*C R-10100 0.339 - 0.001*Tr + 0.064*C 0.311 + 0.001*Tr + 0.024*C R-00110	Path TM-IO (for pins EN LOWEMI TEN	1)	
HZ-110	HZ-011	0.000	0.000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	LZ-110	0.000	0.000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	HZ-001	0.000	0.000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	LZ-001	0.000	0.000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	LZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
F-10100 0.339 - 0.001*Tr + 0.064*C 0.311 + 0.001*Tr + 0.072*C R-10100 0.972 - 0.003*Tr + 0.022*C 0.909 - 0.003*Tr + 0.024*C F-00110 0.340 - 0.007*Tr + 0.064*C 0.313 - 0.001*Tr + 0.072*C R-00110 0.971 + 0.004*Tr + 0.022*C 0.909 - 0.001*Tr + 0.024*C F-10000 0.240 + 0.003*Tr + 0.065*C 0.228 - 0.008*Tr + 0.072*C R-10000 0.833 + 0.002*Tr + 0.021*C 0.771 + 0.024*C F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C			0.233 + 0.072*C
R-10100 0.972 - 0.003*Tr + 0.022*C 0.909 - 0.003*Tr + 0.024*C F-00110 0.340 - 0.007*Tr + 0.064*C 0.313 - 0.001*Tr + 0.072*C R-00110 0.971 + 0.004*Tr + 0.022*C 0.909 - 0.001*Tr + 0.024*C F-10000 0.240 + 0.003*Tr + 0.065*C 0.228 - 0.008*Tr + 0.072*C R-10000 0.833 + 0.002*Tr + 0.021*C 0.771 + 0.024*C F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C	Path TM-IO (for pins A EN LOWEMI TA	A TEN)	
F-00110 0.340 - 0.007*Tr + 0.064*C 0.313 - 0.001*Tr + 0.072*C R-00110 0.971 + 0.004*Tr + 0.022*C 0.909 - 0.001*Tr + 0.024*C F-10000 0.240 + 0.003*Tr + 0.065*C 0.228 - 0.008*Tr + 0.072*C R-10000 0.833 + 0.002*Tr + 0.021*C 0.771 + 0.024*C F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C	F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-00110 0.971 + 0.004*Tr + 0.022*C 0.909 - 0.001*Tr + 0.024*C F-10000 0.240 + 0.003*Tr + 0.065*C 0.228 - 0.008*Tr + 0.072*C R-10000 0.833 + 0.002*Tr + 0.021*C 0.771 + 0.024*C F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C	R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-10000 0.240 + 0.003*Tr + 0.065*C 0.228 - 0.008*Tr + 0.072*C R-10000 0.833 + 0.002*Tr + 0.021*C 0.771 + 0.024*C F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C	F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-10000 0.833 + 0.002*Tr + 0.021*C 0.771 + 0.024*C F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C	R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-00010 0.243 - 0.004*Tr + 0.065*C 0.227 + 0.072*C	F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
		0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
R-00010 0.835 - 0.002*Tr + 0.021*C 0.772 - 0.003*Tr + 0.024*C	F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
	R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8			•	
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

Cell Description

BD6SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

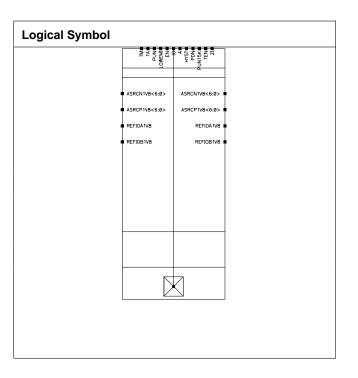
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	alue
ГШ	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C		
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C		
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C		
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C		
Path EN-IO (for pins LOWEMI TM)		1		
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr		
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr		
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr		
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr		
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C		
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C		
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C		
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C		
Path IO-ZI (for pins HYST)		l		
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C		
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C		
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C		
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C		
Path TA-IO (for pins LOWEMI TEN TM)		1		
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C		
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C		
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C		
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C		
Path TEN-IO (for pins LOWEMI TM)		1		
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr		
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr		
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr		
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr		
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C		
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C		
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C		
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C		
Path TM-IO (for pins EN LOWEMI TEN)	1		
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr		
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr		
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr		



LZ-110	0.363 + 0.269*Tr	0.453 + 0.448*Tr
HZ-001	0.883 + 0.181*Tr	0.906 + 0.391*Tr
LZ-001	0.339 + 0.041*Tr	0.408 + 0.248*Tr
HZ-100	0.906 + 0.268*Tr	0.956 + 0.423*Tr
LZ-100	0.363 + 0.269*Tr	0.453 + 0.451*Tr
ZH-011	3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
ZL-011	1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
ZH-110	3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
ZL-110	1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
ZH-001	3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
ZL-001	1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
ZH-100	3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
ZL-100	1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
R-10100	3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
F-00110	1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
R-00110	3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
F-10000	1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
R-10000	3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
F-00010	1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
R-00010	3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C

Transition Time

Front	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM		
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C
R-010	0.972 + 0.022*C	0.910 + 0.024*C
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C
Path EN-IO (for pins LOWEMI TM)	'	,
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C
Path IO-ZI (for pins HYST)		
F-1	0.007 + 0.137*C	0.009 + 0.188*C
R-1	0.006 + 0.085*C	0.008 + 0.129*C
F-0	0.007 + 0.137*C	0.009 + 0.189*C
R-0	0.006 + 0.086*C	0.009 + 0.129*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.339 + 0.064*C	0.311 + 0.072*C
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI TA		
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Pin Cycle	Internal Energy (uW/MHz)			
Fill Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146
For vdde1v8				•
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr



BD6SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

Cell Description

BD6SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	rameter Value(pF) best 1.10 125 worst 0.90 -40	
r arameter		



A Input Cap.	0.0377	0.0349
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0329	0.0320
HYST Input Cap.	0.0325	0.0318
IO Input Cap.	1.5045	1.4378
IO Max Load	201.505	201.438
LOWEMI Input Cap.	0.0265	0.0265
PDN Input Cap.	0.0189	0.0189
PUN Input Cap.	0.0260	0.0260
PUN15K Input Cap.	0.0252	0.0245
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0381	0.0352
TEN Input Cap.	0.0315	0.0306
TM Input Cap.	0.0448	0.0440
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter -	Value	
PIII		best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	,	,		
F-010	1.924 + 0.198*Tr + 0.081*C	2.487 + 0.385*Tr + 0.091*C		
R-010	3.591 + 0.011*Tr + 0.042*C	4.631 + 0.243*Tr + 0.044*C		
F-000	1.523 + 0.196*Tr + 0.080*C	1.930 + 0.386*Tr + 0.090*C		
R-000	3.084 + 0.011*Tr + 0.039*C	3.958 + 0.243*Tr + 0.041*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.887 + 0.141*Tr	0.921 + 0.369*Tr		
LZ-10	0.518 + 0.136*Tr	0.646 + 0.374*Tr		
HZ-00	0.884 + 0.153*Tr	0.919 + 0.375*Tr		
LZ-00	0.518 + 0.136*Tr	0.646 + 0.375*Tr		
ZH-10	3.627 + 0.171*Tr + 0.042*C	4.709 + 0.474*Tr + 0.044*C		
ZL-10	1.977 + 0.166*Tr + 0.081*C	2.593 + 0.477*Tr + 0.091*C		
ZH-00	3.113 + 0.173*Tr + 0.039*C	4.024 + 0.470*Tr + 0.041*C		
ZL-00	1.543 + 0.166*Tr + 0.080*C	2.015 + 0.475*Tr + 0.090*C		
Path IO-ZI (for pins HYST)	-			
F-1	0.470 + 0.223*Tr + 0.194*C	0.583 + 0.345*Tr + 0.195*C		
R-1	0.476 + 0.191*Tr + 0.129*C	0.553 + 0.323*Tr + 0.134*C		
F-0	0.427 + 0.073*Tr + 0.176*C	0.579 + 0.111*Tr + 0.275*C		
R-0	0.437 + 0.038*Tr + 0.124*C	0.574 + 0.078*Tr + 0.167*C		
Path TA-IO (for pins LOWEMI TEN TM	<i>(</i> 1)			
F-101	1.925 + 0.196*Tr + 0.081*C	2.486 + 0.395*Tr + 0.091*C		
R-101	3.590 + 0.010*Tr + 0.042*C	4.628 + 0.249*Tr + 0.044*C		
F-001	1.523 + 0.196*Tr + 0.080*C	1.932 + 0.389*Tr + 0.090*C		
R-001	3.082 + 0.011*Tr + 0.039*C	3.955 + 0.251*Tr + 0.041*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.887 + 0.148*Tr	0.916 + 0.377*Tr		
LZ-01	0.517 + 0.139*Tr	0.644 + 0.377*Tr		
HZ-11	0.883 + 0.155*Tr	0.920 + 0.375*Tr		
LZ-11	0.517 + 0.140*Tr	0.644 + 0.376*Tr		
ZH-01	3.112 + 0.173*Tr + 0.039*C	4.028 + 0.465*Tr + 0.041*C		
ZL-01	1.545 + 0.164*Tr + 0.080*C	2.018 + 0.471*Tr + 0.090*C		
ZH-11	3.626 + 0.169*Tr + 0.042*C	4.711 + 0.475*Tr + 0.044*C		
ZL-11	1.977 + 0.171*Tr + 0.081*C	2.592 + 0.479*Tr + 0.091*C		
Path TM-IO (for pins EN LOWEMI TEI	N)			
HZ-011	0.886 + 0.179*Tr	0.909 + 0.388*Tr		
LZ-011	0.339 + 0.037*Tr	0.408 + 0.244*Tr		
HZ-110	0.907 + 0.272*Tr	0.953 + 0.428*Tr		



0.363 + 0.269*Tr	0.453 + 0.448*Tr
0.883 + 0.181*Tr	0.906 + 0.391*Tr
0.339 + 0.041*Tr	0.408 + 0.248*Tr
0.906 + 0.268*Tr	0.956 + 0.423*Tr
0.363 + 0.269*Tr	0.453 + 0.451*Tr
3.623 + 0.207*Tr + 0.042*C	4.696 + 0.483*Tr + 0.044*C
1.976 + 0.199*Tr + 0.081*C	2.578 + 0.488*Tr + 0.091*C
3.635 - 0.030*Tr + 0.042*C	4.729 + 0.214*Tr + 0.044*C
1.990 - 0.022*Tr + 0.081*C	2.613 + 0.248*Tr + 0.091*C
3.109 + 0.209*Tr + 0.039*C	4.013 + 0.478*Tr + 0.041*C
1.540 + 0.203*Tr + 0.080*C	2.002 + 0.486*Tr + 0.090*C
3.122 - 0.031*Tr + 0.039*C	4.042 + 0.224*Tr + 0.041*C
1.558 - 0.023*Tr + 0.080*C	2.034 + 0.246*Tr + 0.090*C
EN)	
1.931 - 0.016*Tr + 0.081*C	2.493 + 0.235*Tr + 0.091*C
3.613 + 0.257*Tr + 0.042*C	4.665 + 0.440*Tr + 0.044*C
1.918 + 0.220*Tr + 0.081*C	2.473 + 0.367*Tr + 0.091*C
3.587 + 0.026*Tr + 0.042*C	4.623 + 0.227*Tr + 0.044*C
1.531 - 0.024*Tr + 0.080*C	1.940 + 0.229*Tr + 0.090*C
3.105 + 0.261*Tr + 0.039*C	3.992 + 0.436*Tr + 0.041*C
1.516 + 0.220*Tr + 0.080*C	1.918 + 0.368*Tr + 0.090*C
3.081 + 0.026*Tr + 0.039*C	3.950 + 0.227*Tr + 0.041*C
	0.883 + 0.181*Tr 0.339 + 0.041*Tr 0.906 + 0.268*Tr 0.363 + 0.269*Tr 3.623 + 0.207*Tr + 0.042*C 1.976 + 0.199*Tr + 0.081*C 3.635 - 0.030*Tr + 0.042*C 1.990 - 0.022*Tr + 0.081*C 3.109 + 0.209*Tr + 0.039*C 1.540 + 0.203*Tr + 0.080*C 3.122 - 0.031*Tr + 0.039*C 1.558 - 0.023*Tr + 0.080*C EN) 1.931 - 0.016*Tr + 0.081*C 3.613 + 0.257*Tr + 0.042*C 1.918 + 0.220*Tr + 0.081*C 3.587 + 0.026*Tr + 0.042*C 1.531 - 0.024*Tr + 0.080*C 3.105 + 0.261*Tr + 0.039*C 1.516 + 0.220*Tr + 0.080*C

Transition Time

Frent	Value (as a function of	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.338 + 0.064*C	0.312 + 0.001*Tr + 0.072*C		
R-010	0.972 + 0.022*C	0.910 + 0.024*C		
F-000	0.243 + 0.065*C	0.225 + 0.004*Tr + 0.072*C		
R-000	0.835 - 0.001*Tr + 0.021*C	0.771 + 0.024*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	0.978 + 0.022*C	0.910 + 0.024*C		
ZL-10	0.357 - 0.009*Tr + 0.064*C	0.323 - 0.008*Tr + 0.072*C		
ZH-00	0.839 + 0.021*C	0.775 + 0.011*Tr + 0.024*C		
ZL-00	0.257 + 0.005*Tr + 0.065*C	0.233 + 0.001*Tr + 0.072*C		
Path IO-ZI (for pins HYST)	·			
F-1	0.007 + 0.137*C	0.009 + 0.188*C		
R-1	0.006 + 0.085*C	0.008 + 0.129*C		
F-0	0.007 + 0.137*C	0.009 + 0.189*C		
R-0	0.006 + 0.086*C	0.009 + 0.129*C		
Path TA-IO (for pins LOWEMI TEN TI	M)			
F-101	0.339 + 0.064*C	0.311 + 0.072*C		
R-101	0.971 - 0.001*Tr + 0.022*C	0.909 + 0.024*C		
F-001	0.241 + 0.006*Tr + 0.065*C	0.226 + 0.002*Tr + 0.072*C		
R-001	0.834 - 0.001*Tr + 0.021*C	0.771 - 0.003*Tr + 0.024*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.840 - 0.001*Tr + 0.021*C	0.778 + 0.003*Tr + 0.024*C
ZL-01	0.259 + 0.065*C	0.235 - 0.002*Tr + 0.072*C
ZH-11	0.979 - 0.006*Tr + 0.022*C	0.912 - 0.003*Tr + 0.024*C
ZL-11	0.352 - 0.003*Tr + 0.064*C	0.320 + 0.003*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	0.977 + 0.022*C	0.910 + 0.003*Tr + 0.024*C
ZL-011	0.357 - 0.010*Tr + 0.064*C	0.321 + 0.005*Tr + 0.072*C
ZH-110	0.977 + 0.022*C	0.911 + 0.024*C
ZL-110	0.355 - 0.008*Tr + 0.064*C	0.326 - 0.014*Tr + 0.072*C
ZH-001	0.840 - 0.003*Tr + 0.021*C	0.775 + 0.009*Tr + 0.024*C
ZL-001	0.256 + 0.007*Tr + 0.065*C	0.233 + 0.003*Tr + 0.072*C
ZH-100	0.839 - 0.003*Tr + 0.021*C	0.775 - 0.003*Tr + 0.024*C
ZL-100	0.259 + 0.065*C	0.233 + 0.072*C
Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-10100	0.339 - 0.001*Tr + 0.064*C	0.311 + 0.001*Tr + 0.072*C
R-10100	0.972 - 0.003*Tr + 0.022*C	0.909 - 0.003*Tr + 0.024*C
F-00110	0.340 - 0.007*Tr + 0.064*C	0.313 - 0.001*Tr + 0.072*C
R-00110	0.971 + 0.004*Tr + 0.022*C	0.909 - 0.001*Tr + 0.024*C
F-10000	0.240 + 0.003*Tr + 0.065*C	0.228 - 0.008*Tr + 0.072*C
R-10000	0.833 + 0.002*Tr + 0.021*C	0.771 + 0.024*C
F-00010	0.243 - 0.004*Tr + 0.065*C	0.227 + 0.072*C
R-00010	0.835 - 0.002*Tr + 0.021*C	0.772 - 0.003*Tr + 0.024*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.394e-03
worst 0.90 -40	6.622e-07	5.942e-07

Die Ovele		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd		•	'		
IO toggling/Output stable	0.512 + 0.312*Tr	0.642 + 0.940*Tr	0.255 + 0.006*Tr	0.333 + 0.008*Tr	
ZI toggling	0.280 + 0.001*Tr	0.282 + 0.007*Tr	0.146	0.146	
For vdde1v8	1	1	1	1	
IO toggling/Output stable	6.933 + 0.078*Tr	8.219 + 0.073*Tr	4.009	4.545 - 0.027*Tr	
ZI toggling	0.334 + 0.256*Tr	0.449 + 0.441*Tr	0.162 + 0.018*Tr	0.244 + 0.083*Tr	



BD8SCARUDQPCH_EXT_CSF_1V8_CL_LIN

Cell Description

BD8SCARUDQPCH_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value	e(pF)
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Doromotor	Value		
	Parameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C		
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C		
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C		
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr		
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr		
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr		
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr		
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C		
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C		
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C		
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C		
Path IO-ZI (for pins HYST)				
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C		
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C		
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C		
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C		
Path TA-IO (for pins LOWEMI TEN TM)	1			
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C		
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C		
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C		
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr		
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr		
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr		
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr		
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C		
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C		
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C		
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C		
Path TM-IO (for pins EN LOWEMI TEN)) 	1		
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr		
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr		
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr		



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Event	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C		
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C		
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C		
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C		
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C		
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C		
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C		
Path IO-ZI (for pins HYST)				
F-1	0.005 + 0.137*C	0.006 + 0.188*C		
R-1	0.005 + 0.085*C	0.006 + 0.131*C		
F-0	0.005 + 0.137*C	0.006 + 0.188*C		
R-0	0.005 + 0.085*C	0.006 + 0.128*C		
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C		
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C		
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C		
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



0.000 0.760 + 0.007*Tr + 0.018*C 0.271 - 0.003*Tr + 0.054*C 1.169 + 0.004*Tr + 0.020*C 0.435 + 0.053*C 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1.167 - 0.002*Tr + 0.020*C
0.760 + 0.007*Tr + 0.018*C 0.271 - 0.003*Tr + 0.054*C 1.169 + 0.004*Tr + 0.020*C 0.435 + 0.053*C 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.271 - 0.003*Tr + 0.054*C 1.169 + 0.004*Tr + 0.020*C 0.435 + 0.053*C 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
1.169 + 0.004*Tr + 0.020*C 0.435 + 0.053*C 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.435 + 0.053*C 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000
0.000 0.000 0.000
0.000 0.000
0.000
4.407 0.000*T _* . 0.000*C
1.167 - 0.002" If + 0.020"C
0.431 - 0.005*Tr + 0.053*C
1.168 + 0.020*C
0.433 - 0.006*Tr + 0.053*C
0.758 + 0.003*Tr + 0.018*C
0.270 - 0.004*Tr + 0.054*C
0.758 + 0.018*C
0.271 + 0.054*C
0.421 + 0.002*Tr + 0.053*C
1.163 - 0.001*Tr + 0.020*C
0.419 + 0.011*Tr + 0.053*C
1.163 - 0.002*Tr + 0.020*C
0.262 - 0.005*Tr + 0.054*C
0.752 + 0.001*Tr + 0.018*C
0.260 + 0.001*Tr + 0.054*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Pin Cyala		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr	
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131	
For vdde1v8			1		
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr	
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr	



BD8SCARUDQPCH_EXT_CSF_1V8_FC_INNER

Cell Description

BD8SCARUDQPCH_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

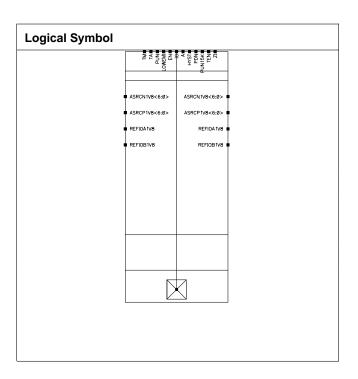
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF) best 1.10 125 worst 0.90 -40	
r arameter		



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	lue
FIII	Farameter	best 1.10 worst 0	
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C		
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C		
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C		
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr		
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr		
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr		
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr		
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C		
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C		
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C		
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C		
Path IO-ZI (for pins HYST)				
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C		
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C		
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C		
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C		
Path TA-IO (for pins LOWEMI TEN TM)	1			
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C		
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C		
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C		
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr		
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr		
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr		
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr		
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C		
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C		
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C		
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C		
Path TM-IO (for pins EN LOWEMI TEN)) 	1		
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr		
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr		
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr		



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI TA 1	TEN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Firest	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C
Path IO-ZI (for pins HYST)	'	
F-1	0.005 + 0.137*C	0.006 + 0.188*C
R-1	0.005 + 0.085*C	0.006 + 0.131*C
F-0	0.005 + 0.137*C	0.006 + 0.188*C
R-0	0.005 + 0.085*C	0.006 + 0.128*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C
Path TEN-IO (for pins LOWEMI TM)	,	
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
11-10000	0.000 + 0.017 C	0.702 1 0.001 11 1 0.010 0
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Din Cyala		Internal Ener	gy (uW/MHz)	
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8				
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCH_EXT_CSF_1V8_FC_LIN

Cell Description

BD8SCARUDQPCH_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

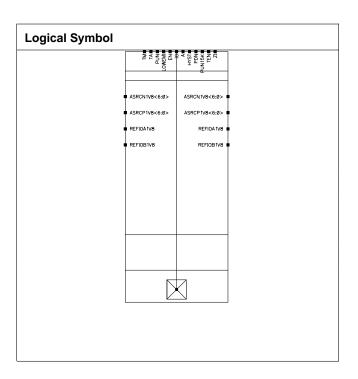
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
r arameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	alue
ГШ	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C		
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C		
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C		
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr		
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr		
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr		
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr		
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C		
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C		
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C		
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C		
Path IO-ZI (for pins HYST)				
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C		
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C		
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C		
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C		
Path TA-IO (for pins LOWEMI TEN TM)	1			
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C		
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C		
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C		
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr		
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr		
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr		
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr		
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C		
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C		
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C		
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C		
Path TM-IO (for pins EN LOWEMI TEN)) 	1		
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr		
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr		
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr		



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI TA T	EN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM		
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C
Path EN-IO (for pins LOWEMI TM)	'	
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C
Path IO-ZI (for pins HYST)		
F-1	0.005 + 0.137*C	0.006 + 0.188*C
R-1	0.005 + 0.085*C	0.006 + 0.131*C
F-0	0.005 + 0.137*C	0.006 + 0.188*C
R-0	0.005 + 0.085*C	0.006 + 0.128*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000				
HZ-11	0.000	0.000				
LZ-11	0.000	0.000				
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C				
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C				
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C				
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C				
Path TM-IO (for pins EN LOWEMI TEN)						
HZ-011	0.000	0.000				
LZ-011	0.000	0.000				
HZ-110	0.000	0.000				
LZ-110	0.000	0.000				
HZ-001	0.000	0.000				
LZ-001	0.000	0.000				
HZ-100	0.000	0.000				
LZ-100	0.000	0.000				
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C				
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C				
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C				
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C				
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C				
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C				
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C				
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C				
Path TM-IO (for pins A EN LOWEMI TA TEN)						
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C				
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C				
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C				
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C				
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C				
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C				
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C				
R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C				

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8			•	
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

Cell Description

BD8SCARUDQPCH_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

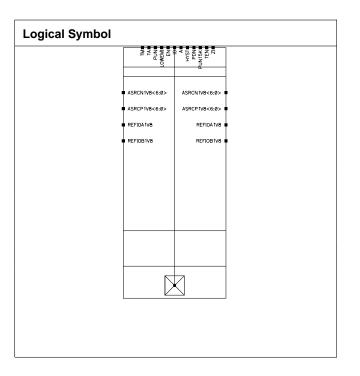
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)		
i alametei	best 1.10 125	worst 0.90 -40	



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value best 1.10 worst 0.90		
	Parameter			
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C		
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C		
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C		
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr		
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr		
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr		
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr		
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C		
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C		
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C		
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C		
Path IO-ZI (for pins HYST)				
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C		
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C		
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C		
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C		
Path TA-IO (for pins LOWEMI TEN TM)	1			
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C		
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C		
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C		
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr		
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr		
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr		
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr		
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C		
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C		
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C		
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C		
Path TM-IO (for pins EN LOWEMI TEN)) 	1		
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr		
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr		
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr		



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Frant	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C		
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C		
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C		
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C		
Path EN-IO (for pins LOWEMI TM)	•			
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C		
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C		
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C		
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C		
Path IO-ZI (for pins HYST)	'			
F-1	0.005 + 0.137*C	0.006 + 0.188*C		
R-1	0.005 + 0.085*C	0.006 + 0.131*C		
F-0	0.005 + 0.137*C	0.006 + 0.188*C		
R-0	0.005 + 0.085*C	0.006 + 0.128*C		
Path TA-IO (for pins LOWEMI TEN T	M)			
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C		
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C		
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C		
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C		
Path TEN-IO (for pins LOWEMI TM)	•			
HZ-01	0.000	0.000		
	•			



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cycle	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8				
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCL_EXT_CSF_1V8_CL_LIN

Cell Description

BD8SCARUDQPCL_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
FIII	Farameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)		,		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C		
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C		
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C		
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C		
Path EN-IO (for pins LOWEMI TM)				
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr		
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr		
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr		
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr		
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C		
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C		
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C		
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C		
Path IO-ZI (for pins HYST)				
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C		
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C		
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C		
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C		
Path TA-IO (for pins LOWEMI TEN TM)	1			
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C		
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C		
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C		
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr		
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr		
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr		
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr		
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C		
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C		
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C		
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C		
Path TM-IO (for pins EN LOWEMI TEN)) 	1		
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr		
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr		
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr		



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr			
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr			
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr			
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr			
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr			
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C			
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C			
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C			
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C			
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C			
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C			
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C			
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C			
Path TM-IO (for pins A EN LOWEMI TA TE	Path TM-IO (for pins A EN LOWEMI TA TEN)				
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C			
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C			
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C			
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C			
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C			
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C			
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C			
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C			

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Eveni	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'			
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C		
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C		
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C		
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C		
Path EN-IO (for pins LOWEMI TM)	•			
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C		
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C		
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C		
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C		
Path IO-ZI (for pins HYST)				
F-1	0.005 + 0.137*C	0.006 + 0.188*C		
R-1	0.005 + 0.085*C	0.006 + 0.131*C		
F-0	0.005 + 0.137*C	0.006 + 0.188*C		
R-0	0.005 + 0.085*C	0.006 + 0.128*C		
Path TA-IO (for pins LOWEMI TEN TM)				
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C		
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C		
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C		
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI	TA TEN)	
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8			1	
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCL_EXT_CSF_1V8_FC_INNER

Cell Description

BD8SCARUDQPCL_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

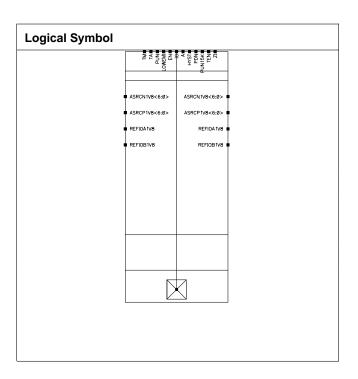
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)		
	best 1.10 125	worst 0.90 -40	



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Parameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C
Path IO-ZI (for pins HYST)		I .
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C
Path TA-IO (for pins LOWEMI TEN TM)	1
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C
Path TEN-IO (for pins LOWEMI TM)		1
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN	1)	
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr



0.368 + 0.270*Tr	0.457 + 0.448*Tr
1.002 + 0.194*Tr	1.003 + 0.389*Tr
0.344 + 0.042*Tr	0.412 + 0.250*Tr
1.027 + 0.267*Tr	1.046 + 0.431*Tr
0.367 + 0.269*Tr	0.457 + 0.449*Tr
4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
EN)	
2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C
	1.002 + 0.194*Tr 0.344 + 0.042*Tr 1.027 + 0.267*Tr 0.367 + 0.269*Tr 4.230 + 0.202*Tr + 0.042*C 2.088 + 0.211*Tr + 0.065*C 4.245 - 0.039*Tr + 0.042*C 2.103 - 0.014*Tr + 0.065*C 2.902 + 0.207*Tr + 0.033*C 1.489 + 0.203*Tr + 0.062*C 2.917 - 0.033*Tr + 0.062*C 2.917 - 0.021*Tr + 0.062*C EN) 2.065 - 0.021*Tr + 0.065*C 4.215 + 0.255*Tr + 0.042*C 2.051 + 0.218*Tr + 0.065*C 4.189 + 0.027*Tr + 0.065*C 4.189 + 0.027*Tr + 0.062*C 2.906 + 0.260*Tr + 0.033*C 1.507 + 0.217*Tr + 0.062*C

Transition Time

Firest	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)			
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C	
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C	
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C	
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C	
Path EN-IO (for pins LOWEMI TM)			
HZ-10	0.000	0.000	
LZ-10	0.000	0.000	
HZ-00	0.000	0.000	
LZ-00	0.000	0.000	
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C	
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C	
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C	
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C	
Path IO-ZI (for pins HYST)	'		
F-1	0.005 + 0.137*C	0.006 + 0.188*C	
R-1	0.005 + 0.085*C	0.006 + 0.131*C	
F-0	0.005 + 0.137*C	0.006 + 0.188*C	
R-0	0.005 + 0.085*C	0.006 + 0.128*C	
Path TA-IO (for pins LOWEMI TEN T	M)		
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C	
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C	
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C	
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C	
Path TEN-IO (for pins LOWEMI TM)	,		
HZ-01	0.000	0.000	



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI 7	TA TEN)	
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr	
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131	
For vdde1v8					
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr	
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr	



BD8SCARUDQPCL_EXT_CSF_1V8_FC_LIN

Cell Description

BD8SCARUDQPCL_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

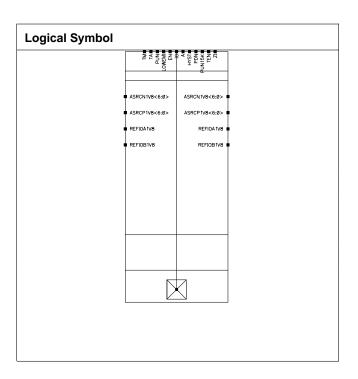
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i aiametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
ГШ		best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)		,			
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C			
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C			
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C			
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr			
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr			
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr			
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr			
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C			
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C			
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C			
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C			
Path IO-ZI (for pins HYST)					
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C			
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C			
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C			
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C			
Path TA-IO (for pins LOWEMI TEN TM)	1				
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C			
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C			
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C			
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr			
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr			
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr			
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr			
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C			
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C			
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C			
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C			
Path TM-IO (for pins EN LOWEMI TEN)) 	1			
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr			
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr			
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr			



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI TA	TEN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)				
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C			
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C			
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C			
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	0.000	0.000			
LZ-10	0.000	0.000			
HZ-00	0.000	0.000			
LZ-00	0.000	0.000			
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C			
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C			
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C			
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C			
Path IO-ZI (for pins HYST)					
F-1	0.005 + 0.137*C	0.006 + 0.188*C			
R-1	0.005 + 0.085*C	0.006 + 0.131*C			
F-0	0.005 + 0.137*C	0.006 + 0.188*C			
R-0	0.005 + 0.085*C	0.006 + 0.128*C			
Path TA-IO (for pins LOWEMI TEN T	M)				
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C			
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C			
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C			
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	0.000	0.000			



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
ZH-11	ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
Table Tabl	ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011 0.000 0.000 LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 1.224 · 0.004*Tr + 0.019*C 1.167 · 0.002*Tr + 0.020*C ZH-011 1.224 · 0.004*Tr + 0.019*C 0.431 · 0.005*Tr + 0.053*C ZH-110 1.223 · 0.003*Tr + 0.019*C 1.168 + 0.020*C ZH-110 1.223 · 0.003*Tr + 0.019*C 1.168 + 0.020*C ZH-101 1.223 · 0.003*Tr + 0.048*C 0.433 · 0.006*Tr + 0.053*C ZH-001 0.465 + 0.002*Tr + 0.048*C 0.433 · 0.006*Tr + 0.053*C ZH-100 0.806 · 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-101 0.804 · 0.001*Tr + 0.017*C 0.758 + 0.003*Tr + 0.054*C ZH-100 0.804 · 0.001*Tr + 0.017*C 0.758 + 0.001*Tr + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.299 · 0.002*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C	ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
HZ-011			0.435 + 0.053*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-101 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.053*C<	Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-110	HZ-011	0.000	0.000
LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.004*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.053*C R-00110 0.240 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00100 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.005*Tr + 0.005*C	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.053*C R-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.005*Tr + 0.005*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.005*Tr + 0.018*C	LZ-110	0.000	0.000
HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.020*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C	HZ-001	0.000	0.000
LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.020*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.005*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.001*Tr + 0.018*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C	LZ-001	0.000	0.000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.018*C	LZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-110	0.465 + 0.002*Tr + 0.048*C	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C		I	0.271 + 0.054*C
R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C			
F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	F-10100	0.440 - 0.001*Tr + 0.048*C	
R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
	R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
R-00010 0.800 + 0.017*C 0.753 + 0.003*Tr + 0.018*C	F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
	R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd	•	•	'	
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8			1	1
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

Cell Description

BD8SCARUDQPCL_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

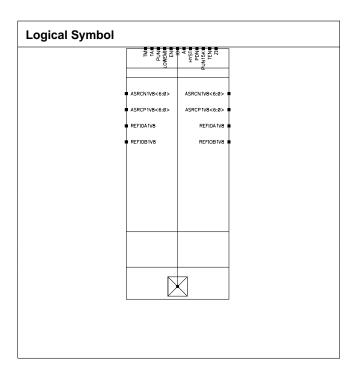
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Parameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	f C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C
Path IO-ZI (for pins HYST)		I .
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C
Path TA-IO (for pins LOWEMI TEN TM)	1
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C
Path TEN-IO (for pins LOWEMI TM)		1
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN	1)	
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr



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0.368 + 0.270*Tr	0.457 + 0.448*Tr
1.002 + 0.194*Tr	1.003 + 0.389*Tr
0.344 + 0.042*Tr	0.412 + 0.250*Tr
1.027 + 0.267*Tr	1.046 + 0.431*Tr
0.367 + 0.269*Tr	0.457 + 0.449*Tr
4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
EN)	
2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C
	1.002 + 0.194*Tr 0.344 + 0.042*Tr 1.027 + 0.267*Tr 0.367 + 0.269*Tr 4.230 + 0.202*Tr + 0.042*C 2.088 + 0.211*Tr + 0.065*C 4.245 - 0.039*Tr + 0.042*C 2.103 - 0.014*Tr + 0.065*C 2.902 + 0.207*Tr + 0.033*C 1.489 + 0.203*Tr + 0.062*C 2.917 - 0.033*Tr + 0.062*C 2.917 - 0.021*Tr + 0.062*C EN) 2.065 - 0.021*Tr + 0.065*C 4.215 + 0.255*Tr + 0.042*C 2.051 + 0.218*Tr + 0.065*C 4.189 + 0.027*Tr + 0.065*C 4.189 + 0.027*Tr + 0.062*C 2.906 + 0.260*Tr + 0.033*C 1.507 + 0.217*Tr + 0.062*C

Transition Time

Frant	Event Value (as a function of C in pF and Tr in nS)		
	best 1.10 125	worst 0.90 -40	
Path A-IO (for pins EN LOWEMI TM)		,	
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C	
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C	
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C	
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C	
Path EN-IO (for pins LOWEMI TM)	•		
HZ-10	0.000	0.000	
LZ-10	0.000	0.000	
HZ-00	0.000	0.000	
LZ-00	0.000	0.000	
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C	
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C	
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C	
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C	
Path IO-ZI (for pins HYST)	'		
F-1	0.005 + 0.137*C	0.006 + 0.188*C	
R-1	0.005 + 0.085*C	0.006 + 0.131*C	
F-0	0.005 + 0.137*C	0.006 + 0.188*C	
R-0	0.005 + 0.085*C	0.006 + 0.128*C	
Path TA-IO (for pins LOWEMI TEN T	M)		
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C	
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C	
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C	
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C	
Path TEN-IO (for pins LOWEMI TM)	•		
HZ-01	0.000	0.000	
	•		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
11-10000	0.000 + 0.017 C	0.702 1 0.001 11 1 0.010 0
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Energy (uW/MHz)				
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)		
For vdd						
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr		
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131		
For vdde1v8	For vdde1v8					
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr		
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr		



BD8SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

Cell Description

BD8SCARUDQPCZ_EXT_CSF_1V8_CL_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

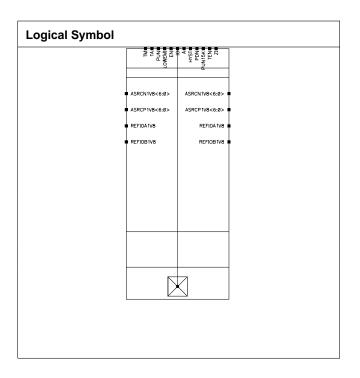
Physical Dimensions

Area(um2): 4252.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value	
ГШ	Farameter	best 1.10	worst 0.90
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		,
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C
Path IO-ZI (for pins HYST)		
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C
Path TA-IO (for pins LOWEMI TEN TM)	1	
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN)) 	1
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI TA TE	EN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'			
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C		
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C		
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C		
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C		
Path EN-IO (for pins LOWEMI TM)	·			
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C		
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C		
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C		
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C		
Path IO-ZI (for pins HYST)	·			
F-1	0.005 + 0.137*C	0.006 + 0.188*C		
R-1	0.005 + 0.085*C	0.006 + 0.131*C		
F-0	0.005 + 0.137*C	0.006 + 0.188*C		
R-0	0.005 + 0.085*C	0.006 + 0.128*C		
Path TA-IO (for pins LOWEMI TEN TM)	·			
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C		
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C		
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C		
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI TA T		
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8			1	
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

Cell Description

BD8SCARUDQPCZ_EXT_CSF_1V8_FC_INNER

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	А
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
i alametei	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
FIII	Farameter	best 1.10 worst 0.90		
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		,
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C
Path IO-ZI (for pins HYST)		
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C
Path TA-IO (for pins LOWEMI TEN TM)	
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN	1)	'
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
Path TM-IO (for pins A EN LOWEMI T	A TEN)	
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C

Transition Time

Value (as a function of C in pF and Tr in nS)		
best 1.10 125	worst 0.90 -40	
0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C	
1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C	
0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C	
0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C	
0.000	0.000	
0.000	0.000	
0.000	0.000	
0.000	0.000	
1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C	
0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C	
0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C	
0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C	
0.005 + 0.137*C	0.006 + 0.188*C	
0.005 + 0.085*C	0.006 + 0.131*C	
0.005 + 0.137*C	0.006 + 0.188*C	
0.005 + 0.085*C	0.006 + 0.128*C	
0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C	
1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C	
0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C	
0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C	
0.000	0.000	
	0.440 + 0.001*Tr + 0.048*C 1.216 + 0.019*C 0.270 - 0.003*Tr + 0.049*C 0.798 + 0.002*Tr + 0.017*C 0.000 0.000 0.000 0.000 1.222 + 0.002*Tr + 0.019*C 0.466 + 0.003*Tr + 0.048*C 0.804 + 0.017*C 0.298 + 0.003*Tr + 0.048*C 0.005 + 0.137*C 0.005 + 0.085*C 0.005 + 0.137*C 0.005 + 0.085*C 0.005 + 0.085*C 0.441 - 0.004*Tr + 0.048*C 1.217 - 0.007*Tr + 0.019*C 0.268 + 0.049*C 0.798 + 0.003*Tr + 0.017*C	



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI TA TE		
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Die Ovele		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd		•			
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr	
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131	
For vdde1v8				1	
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr	
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr	



BD8SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

Cell Description

BD8SCARUDQPCZ_EXT_CSF_1V8_FC_LIN

- The cell has "dont_use" attribute set in the Synopsys STF.
- The cell has "dont_touch" attribute set in the Synopsys STF.

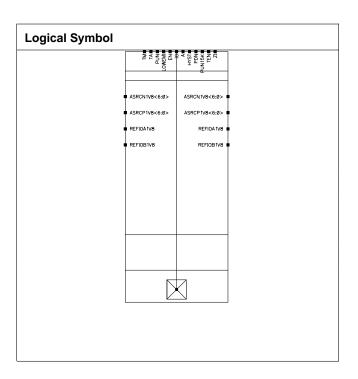
Physical Dimensions

Area(um2): 3632.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

Ю	ZI
10	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	Α
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
Parameter	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Value		
PIII	Farameter	best 1.10	worst 0.90	
IO (Input)	Min Transition (ns)	0.375	0.375	
IO (Input)	Max Transition (ns)	12.0	12.0	
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35	



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)			
Event	best 1.10 125	worst 0.90 -40			
Path A-IO (for pins EN LOWEMI TM)		,			
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C			
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C			
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C			
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C			
Path EN-IO (for pins LOWEMI TM)					
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr			
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr			
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr			
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr			
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C			
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C			
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C			
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C			
Path IO-ZI (for pins HYST)					
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C			
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C			
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C			
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C			
Path TA-IO (for pins LOWEMI TEN TM)	1				
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C			
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C			
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C			
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C			
Path TEN-IO (for pins LOWEMI TM)					
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr			
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr			
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr			
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr			
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C			
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C			
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C			
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C			
Path TM-IO (for pins EN LOWEMI TEN)) 	1			
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr			
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr			
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr			



LZ-110	0.368 + 0.270*Tr	0.457 + 0.448*Tr			
HZ-001	1.002 + 0.194*Tr	1.003 + 0.389*Tr			
LZ-001	0.344 + 0.042*Tr	0.412 + 0.250*Tr			
HZ-100	1.027 + 0.267*Tr	1.046 + 0.431*Tr			
LZ-100	0.367 + 0.269*Tr	0.457 + 0.449*Tr			
ZH-011	4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C			
ZL-011	2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C			
ZH-110	4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C			
ZL-110	2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C			
ZH-001	2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C			
ZL-001	1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C			
ZH-100	2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C			
ZL-100	1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C			
Path TM-IO (for pins A EN LOWEMI TA T	Path TM-IO (for pins A EN LOWEMI TA TEN)				
F-10100	2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C			
R-10100	4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C			
F-00110	2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C			
R-00110	4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C			
F-10000	1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C			
R-10000	2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C			
F-00010	1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C			
R-00010	2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C			

Transition Time

Event	Value (as a function o	Value (as a function of C in pF and Tr in nS)		
Event	best 1.10 125	worst 0.90 -40		
Path A-IO (for pins EN LOWEMI TM)	'			
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C		
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C		
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C		
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C		
Path EN-IO (for pins LOWEMI TM)	·			
HZ-10	0.000	0.000		
LZ-10	0.000	0.000		
HZ-00	0.000	0.000		
LZ-00	0.000	0.000		
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C		
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C		
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C		
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C		
Path IO-ZI (for pins HYST)	·			
F-1	0.005 + 0.137*C	0.006 + 0.188*C		
R-1	0.005 + 0.085*C	0.006 + 0.131*C		
F-0	0.005 + 0.137*C	0.006 + 0.188*C		
R-0	0.005 + 0.085*C	0.006 + 0.128*C		
Path TA-IO (for pins LOWEMI TEN TM)	·			
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C		
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C		
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C		
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C		
Path TEN-IO (for pins LOWEMI TM)				
HZ-01	0.000	0.000		



HZ-11	LZ-01	0.000	0.000
ZH-01	HZ-11	0.000	0.000
ZL-01	LZ-11	0.000	0.000
ZH-11	ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
Table Tabl	ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
Path TM-IO (for pins EN LOWEMI TEN) HZ-011 0.000 0.000 LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 1.224 · 0.004*Tr + 0.019*C 1.167 · 0.002*Tr + 0.020*C ZH-011 1.224 · 0.004*Tr + 0.019*C 0.431 · 0.005*Tr + 0.053*C ZH-110 1.223 · 0.003*Tr + 0.019*C 1.168 + 0.020*C ZH-110 1.223 · 0.003*Tr + 0.019*C 1.168 + 0.020*C ZH-101 1.223 · 0.003*Tr + 0.048*C 0.433 · 0.006*Tr + 0.053*C ZH-001 0.465 + 0.002*Tr + 0.048*C 0.433 · 0.006*Tr + 0.053*C ZH-100 0.806 · 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-101 0.804 · 0.001*Tr + 0.017*C 0.758 + 0.003*Tr + 0.054*C ZH-100 0.804 · 0.001*Tr + 0.017*C 0.758 + 0.001*Tr + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) 0.299 · 0.002*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C	ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
HZ-011			0.435 + 0.053*C
LZ-011 0.000 0.000 HZ-110 0.000 0.000 LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-101 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-101 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.053*C<	Path TM-IO (for pins EN LOWEMI TE	N)	
HZ-110	HZ-011	0.000	0.000
LZ-110 0.000 0.000 HZ-001 0.000 0.000 LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.004*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.053*C R-00110 0.240 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00100 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.005*Tr + 0.005*C	LZ-011	0.000	0.000
HZ-001	HZ-110	0.000	0.000
LZ-001 0.000 0.000 HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.053*C R-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.005*Tr + 0.005*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.005*Tr + 0.018*C	LZ-110	0.000	0.000
HZ-100 0.000 0.000 LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.020*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C	HZ-001	0.000	0.000
LZ-100 0.000 0.000 ZH-011 1.224 - 0.004*Tr + 0.019*C 1.167 - 0.002*Tr + 0.020*C ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.020*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.005*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.001*Tr + 0.018*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C	LZ-001	0.000	0.000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	HZ-100	0.000	0.000
ZL-011 0.467 + 0.048*C 0.431 - 0.005*Tr + 0.053*C ZH-110 1.223 - 0.003*Tr + 0.019*C 1.168 + 0.020*C ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.018*C	LZ-100	0.000	0.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-110 0.465 + 0.002*Tr + 0.048*C 0.433 - 0.006*Tr + 0.053*C ZH-001 0.806 - 0.004*Tr + 0.017*C 0.758 + 0.003*Tr + 0.018*C ZL-001 0.297 + 0.048*C 0.270 - 0.004*Tr + 0.054*C ZH-100 0.804 - 0.001*Tr + 0.017*C 0.758 + 0.018*C ZL-100 0.299 - 0.002*Tr + 0.048*C 0.271 + 0.054*C Path TM-IO (for pins A EN LOWEMI TA TEN) F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-110	0.465 + 0.002*Tr + 0.048*C	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
F-10100 0.440 - 0.001*Tr + 0.048*C 0.421 + 0.002*Tr + 0.053*C R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C		I	0.271 + 0.054*C
R-10100 1.216 - 0.005*Tr + 0.019*C 1.163 - 0.001*Tr + 0.020*C F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C			
F-00110 0.440 + 0.048*C 0.419 + 0.011*Tr + 0.053*C R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	F-10100	0.440 - 0.001*Tr + 0.048*C	
R-00110 1.216 + 0.019*C 1.163 - 0.002*Tr + 0.020*C F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-10000 0.269 + 0.049*C 0.262 - 0.005*Tr + 0.054*C R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-10000 0.800 + 0.017*C 0.752 + 0.001*Tr + 0.018*C F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-00010 0.270 - 0.005*Tr + 0.049*C 0.260 + 0.001*Tr + 0.054*C	F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
	R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
R-00010 0.800 + 0.017*C 0.753 + 0.003*Tr + 0.018*C	F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
	R-00010	0.800 + 0.017*C	0.753 + 0.003*Tr + 0.018*C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala	Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)
For vdd				
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131
For vdde1v8			1	
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr



BD8SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

Cell Description

BD8SCARUDQPCZ_EXT_CSF_1V8_FC_OUTER

- The cell has "dont_use" attribute set in the Synopsys STE.
- The cell has "dont_touch" attribute set in the Synopsys STF.

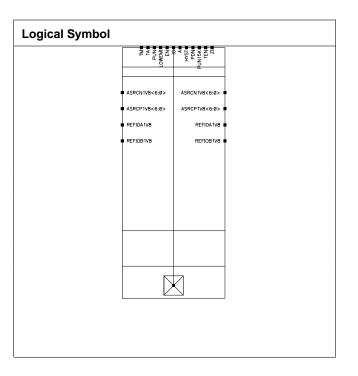
Physical Dimensions

Area(um2): 8307.000

Glossary

Tr : Input Transition time C : Output (capacitive) load

R : Rising edge F : Falling edge



Truth Table

IO	ZI
IO	10

Α	EN	TA	TEN	TM	PUN	PDN	PUN15K	Ю
Α	0	-	-	0	-	-	-	A
-	-	TA	0	1	-	-	-	TA
-	1	-	-	0	-	1	0	Н
-	1	-	-	0	0	1	-	Н
-	-	-	1	1	-	1	0	Н
-	-	-	1	1	0	1	-	Н
-	-	-	1	1	1	0	1	L
-	1	-	-	0	1	0	1	L
-	1	-	-	0	0	0	-	W
-	1	-	-	0	-	0	0	W
-	-	-	1	1	0	0	-	W
-	-	-	1	1	-	0	0	W
-	-	-	1	1	1	1	1	Z
-	1	-	-	0	1	1	1	Z

Cell Capacitance

Parameter	Value(pF)	
	best 1.10 125	worst 0.90 -40



A Input Cap.	0.0261	0.0233
ASRCN1V8[0] Input Cap.	0.0100	0.0100
ASRCN1V8[0] Max Load	10000.000	10000.000
ASRCN1V8[1] Input Cap.	0.0100	0.0100
ASRCN1V8[1] Max Load	10000.000	10000.000
ASRCN1V8[2] Input Cap.	0.0100	0.0100
ASRCN1V8[2] Max Load	10000.000	10000.000
ASRCN1V8[3] Input Cap.	0.0100	0.0100
ASRCN1V8[3] Max Load	10000.000	10000.000
ASRCN1V8[4] Input Cap.	0.0100	0.0100
ASRCN1V8[4] Max Load	10000.000	10000.000
ASRCN1V8[5] Input Cap.	0.0100	0.0100
ASRCN1V8[5] Max Load	10000.000	10000.000
ASRCN1V8[6] Input Cap.	0.0100	0.0100
ASRCN1V8[6] Max Load	10000.000	10000.000
ASRCP1V8[0] Input Cap.	0.0100	0.0100
ASRCP1V8[0] Max Load	10000.000	10000.000
ASRCP1V8[1] Input Cap.	0.0100	0.0100
ASRCP1V8[1] Max Load	10000.000	10000.000
ASRCP1V8[2] Input Cap.	0.0100	0.0100
ASRCP1V8[2] Max Load	10000.000	10000.000
ASRCP1V8[3] Input Cap.	0.0100	0.0100
ASRCP1V8[3] Max Load	10000.000	10000.000
ASRCP1V8[4] Input Cap.	0.0100	0.0100
ASRCP1V8[4] Max Load	10000.000	10000.000
ASRCP1V8[5] Input Cap.	0.0100	0.0100
ASRCP1V8[5] Max Load	10000.000	10000.000
ASRCP1V8[6] Input Cap.	0.0100	0.0100
ASRCP1V8[6] Max Load	10000.000	10000.000
EN Input Cap.	0.0197	0.0188
HYST Input Cap.	0.0146	0.0139
IO Input Cap.	1.5759	1.5072
IO Max Load	201.576	201.507
LOWEMI Input Cap.	0.0107	0.0107
PDN Input Cap.	0.0057	0.0057
PUN Input Cap.	0.0114	0.0114
PUN15K Input Cap.	0.0101	0.0094
REFIOA1V8 Input Cap.	0.0100	0.0100
REFIOA1V8 Max Load	10000.000	10000.000
REFIOB1V8 Input Cap.	0.0100	0.0100
REFIOB1V8 Max Load	10000.000	10000.000
TA Input Cap.	0.0272	0.0243
TEN Input Cap.	0.0185	0.0176
TM Input Cap.	0.0332	0.0324
ZI Max Load	0.200	0.200

Special Pin Properties

Pin	Parameter	Va	lue
	Parameter	best 1.10 worst 0.90 0.375 0.375 12.0 12.0	
IO (Input)	Min Transition (ns)	0.375	0.375
IO (Input)	Max Transition (ns)	12.0	12.0
IO (Input)	Swing (V)	0.0 - 1.65	0.0 - 1.35



IO (Input)	Delay thres. rising (V)	0.825	0.675
IO (Input)	Delay thres. falling (V)	0.825	0.675
IO (Input)	Slope thres. low (V)	-	-
IO (Input)	Slope thres. high (V)	-	-
IO (Output)	Min Transition (ns)	-	-
IO (Output)	Max Transition (ns)	-	-
IO (Output)	Swing (V)	0.0 - 1.65	0.0 - 1.35
IO (Output)	Delay thres. rising (V)	0.825	0.675
IO (Output)	Delay thres. falling (V)	0.825	0.675
IO (Output)	Slope thres. low (V)	0.495	0.405
IO (Output)	Slope thres. high (V)	1.155	0.945

Propagation Delay

Event	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)		,
F-010	2.056 + 0.199*Tr + 0.065*C	2.691 + 0.384*Tr + 0.072*C
R-010	4.193 + 0.011*Tr + 0.042*C	5.615 + 0.246*Tr + 0.043*C
F-000	1.512 + 0.196*Tr + 0.062*C	1.893 + 0.388*Tr + 0.069*C
R-000	2.883 + 0.017*Tr + 0.033*C	3.751 + 0.245*Tr + 0.035*C
Path EN-IO (for pins LOWEMI TM)		
HZ-10	1.009 + 0.127*Tr	1.012 + 0.373*Tr
LZ-10	0.522 + 0.139*Tr	0.649 + 0.373*Tr
HZ-00	1.009 + 0.128*Tr	1.016 + 0.370*Tr
LZ-00	0.521 + 0.139*Tr	0.649 + 0.373*Tr
ZH-10	4.236 + 0.168*Tr + 0.042*C	5.698 + 0.468*Tr + 0.043*C
ZL-10	2.091 + 0.176*Tr + 0.065*C	2.797 + 0.481*Tr + 0.072*C
ZH-00	2.907 + 0.169*Tr + 0.033*C	3.803 + 0.472*Tr + 0.035*C
ZL-00	1.492 + 0.166*Tr + 0.062*C	1.966 + 0.473*Tr + 0.069*C
Path IO-ZI (for pins HYST)		
F-1	0.466 + 0.223*Tr + 0.185*C	0.581 + 0.344*Tr + 0.187*C
R-1	0.471 + 0.191*Tr + 0.136*C	0.539 + 0.323*Tr + 0.209*C
F-0	0.423 + 0.073*Tr + 0.182*C	0.579 + 0.110*Tr + 0.232*C
R-0	0.431 + 0.038*Tr + 0.131*C	0.568 + 0.078*Tr + 0.177*C
Path TA-IO (for pins LOWEMI TEN TM)	
F-101	2.056 + 0.197*Tr + 0.065*C	2.688 + 0.395*Tr + 0.072*C
R-101	4.193 + 0.008*Tr + 0.042*C	5.613 + 0.252*Tr + 0.043*C
F-001	1.511 + 0.199*Tr + 0.062*C	1.895 + 0.387*Tr + 0.069*C
R-001	2.884 + 0.016*Tr + 0.033*C	3.750 + 0.247*Tr + 0.035*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	1.008 + 0.131*Tr	1.012 + 0.375*Tr
LZ-01	0.522 + 0.138*Tr	0.648 + 0.375*Tr
HZ-11	1.006 + 0.132*Tr	1.013 + 0.371*Tr
LZ-11	0.521 + 0.138*Tr	0.648 + 0.375*Tr
ZH-01	2.908 + 0.169*Tr + 0.033*C	3.809 + 0.467*Tr + 0.035*C
ZL-01	1.493 + 0.168*Tr + 0.062*C	1.967 + 0.479*Tr + 0.069*C
ZH-11	4.236 + 0.166*Tr + 0.042*C	5.698 + 0.466*Tr + 0.043*C
ZL-11	2.093 + 0.167*Tr + 0.065*C	2.800 + 0.481*Tr + 0.072*C
Path TM-IO (for pins EN LOWEMI TEN	1)	'
HZ-011	1.003 + 0.193*Tr	1.002 + 0.391*Tr
LZ-011	0.343 + 0.038*Tr	0.413 + 0.246*Tr
HZ-110	1.028 + 0.266*Tr	1.048 + 0.429*Tr



0.368 + 0.270*Tr	0.457 + 0.448*Tr
1.002 + 0.194*Tr	1.003 + 0.389*Tr
0.344 + 0.042*Tr	0.412 + 0.250*Tr
1.027 + 0.267*Tr	1.046 + 0.431*Tr
0.367 + 0.269*Tr	0.457 + 0.449*Tr
4.230 + 0.202*Tr + 0.042*C	5.685 + 0.486*Tr + 0.043*C
2.088 + 0.211*Tr + 0.065*C	2.786 + 0.484*Tr + 0.072*C
4.245 - 0.039*Tr + 0.042*C	5.711 + 0.222*Tr + 0.043*C
2.103 - 0.014*Tr + 0.065*C	2.816 + 0.251*Tr + 0.072*C
2.902 + 0.207*Tr + 0.033*C	3.796 + 0.479*Tr + 0.035*C
1.489 + 0.203*Tr + 0.062*C	1.954 + 0.480*Tr + 0.069*C
2.917 - 0.033*Tr + 0.033*C	3.824 + 0.219*Tr + 0.035*C
1.507 - 0.021*Tr + 0.062*C	1.985 + 0.243*Tr + 0.069*C
EN)	
2.065 - 0.021*Tr + 0.065*C	2.697 + 0.232*Tr + 0.072*C
4.215 + 0.255*Tr + 0.042*C	5.651 + 0.440*Tr + 0.043*C
2.051 + 0.218*Tr + 0.065*C	2.676 + 0.374*Tr + 0.072*C
4.189 + 0.027*Tr + 0.042*C	5.607 + 0.233*Tr + 0.043*C
1.523 - 0.027*Tr + 0.062*C	1.900 + 0.228*Tr + 0.069*C
2.906 + 0.260*Tr + 0.033*C	3.787 + 0.439*Tr + 0.035*C
1.507 + 0.217*Tr + 0.062*C	1.880 + 0.367*Tr + 0.069*C
2.882 + 0.026*Tr + 0.033*C	3.744 + 0.232*Tr + 0.035*C
	1.002 + 0.194*Tr 0.344 + 0.042*Tr 1.027 + 0.267*Tr 0.367 + 0.269*Tr 4.230 + 0.202*Tr + 0.042*C 2.088 + 0.211*Tr + 0.065*C 4.245 - 0.039*Tr + 0.042*C 2.103 - 0.014*Tr + 0.065*C 2.902 + 0.207*Tr + 0.033*C 1.489 + 0.203*Tr + 0.062*C 2.917 - 0.033*Tr + 0.062*C 2.917 - 0.021*Tr + 0.062*C EN) 2.065 - 0.021*Tr + 0.065*C 4.215 + 0.255*Tr + 0.042*C 2.051 + 0.218*Tr + 0.065*C 4.189 + 0.027*Tr + 0.065*C 4.189 + 0.027*Tr + 0.062*C 2.906 + 0.260*Tr + 0.033*C 1.507 + 0.217*Tr + 0.062*C

Transition Time

Front	Value (as a function o	of C in pF and Tr in nS)
Event	best 1.10 125	worst 0.90 -40
Path A-IO (for pins EN LOWEMI TM)	
F-010	0.440 + 0.001*Tr + 0.048*C	0.420 + 0.053*C
R-010	1.216 + 0.019*C	1.164 - 0.004*Tr + 0.020*C
F-000	0.270 - 0.003*Tr + 0.049*C	0.260 + 0.054*C
R-000	0.798 + 0.002*Tr + 0.017*C	0.753 + 0.002*Tr + 0.018*C
Path EN-IO (for pins LOWEMI TM)	,	,
HZ-10	0.000	0.000
LZ-10	0.000	0.000
HZ-00	0.000	0.000
LZ-00	0.000	0.000
ZH-10	1.222 + 0.002*Tr + 0.019*C	1.168 - 0.001*Tr + 0.020*C
ZL-10	0.466 + 0.003*Tr + 0.048*C	0.432 - 0.005*Tr + 0.053*C
ZH-00	0.804 + 0.017*C	0.763 + 0.003*Tr + 0.018*C
ZL-00	0.298 + 0.003*Tr + 0.048*C	0.270 - 0.007*Tr + 0.054*C
Path IO-ZI (for pins HYST)	,	
F-1	0.005 + 0.137*C	0.006 + 0.188*C
R-1	0.005 + 0.085*C	0.006 + 0.131*C
F-0	0.005 + 0.137*C	0.006 + 0.188*C
R-0	0.005 + 0.085*C	0.006 + 0.128*C
Path TA-IO (for pins LOWEMI TEN T	M)	
F-101	0.441 - 0.004*Tr + 0.048*C	0.421 + 0.004*Tr + 0.053*C
R-101	1.217 - 0.007*Tr + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-001	0.268 + 0.049*C	0.258 + 0.007*Tr + 0.054*C
R-001	0.798 + 0.003*Tr + 0.017*C	0.752 + 0.003*Tr + 0.018*C
Path TEN-IO (for pins LOWEMI TM)		
HZ-01	0.000	0.000



LZ-01	0.000	0.000
HZ-11	0.000	0.000
LZ-11	0.000	0.000
ZH-01	0.806 - 0.003*Tr + 0.017*C	0.760 + 0.007*Tr + 0.018*C
ZL-01	0.298 + 0.002*Tr + 0.048*C	0.271 - 0.003*Tr + 0.054*C
ZH-11	1.223 + 0.019*C	1.169 + 0.004*Tr + 0.020*C
ZL-11	0.467 - 0.003*Tr + 0.048*C	0.435 + 0.053*C
Path TM-IO (for pins EN LOWEMI TEN)		
HZ-011	0.000	0.000
LZ-011	0.000	0.000
HZ-110	0.000	0.000
LZ-110	0.000	0.000
HZ-001	0.000	0.000
LZ-001	0.000	0.000
HZ-100	0.000	0.000
LZ-100	0.000	0.000
ZH-011	1.224 - 0.004*Tr + 0.019*C	1.167 - 0.002*Tr + 0.020*C
ZL-011	0.467 + 0.048*C	0.431 - 0.005*Tr + 0.053*C
ZH-110	1.223 - 0.003*Tr + 0.019*C	1.168 + 0.020*C
ZL-110	0.465 + 0.002*Tr + 0.048*C	0.433 - 0.006*Tr + 0.053*C
ZH-001	0.806 - 0.004*Tr + 0.017*C	0.758 + 0.003*Tr + 0.018*C
ZL-001	0.297 + 0.048*C	0.270 - 0.004*Tr + 0.054*C
ZH-100	0.804 - 0.001*Tr + 0.017*C	0.758 + 0.018*C
ZL-100	0.299 - 0.002*Tr + 0.048*C	0.271 + 0.054*C
Path TM-IO (for pins A EN LOWEMI TA TE	N)	
F-10100	0.440 - 0.001*Tr + 0.048*C	0.421 + 0.002*Tr + 0.053*C
R-10100	1.216 - 0.005*Tr + 0.019*C	1.163 - 0.001*Tr + 0.020*C
F-00110	0.440 + 0.048*C	0.419 + 0.011*Tr + 0.053*C
R-00110	1.216 + 0.019*C	1.163 - 0.002*Tr + 0.020*C
F-10000	0.269 + 0.049*C	0.262 - 0.005*Tr + 0.054*C
R-10000	0.800 + 0.017*C	0.752 + 0.001*Tr + 0.018*C
F-00010	0.270 - 0.005*Tr + 0.049*C	0.260 + 0.001*Tr + 0.054*C
F-00010	0.270 - 0.003 II + 0.049 C	0.200 + 0.001 11 + 0.034 C

Default Leakage Power

Default Leakage Power (mW)	vdd	vdde1v8
best 1.10 125	3.138e-03	4.927e-03
worst 0.90 -40	6.623e-07	5.966e-07

Internal Energy (at minimum output load)

Din Cyala		Internal Energy (uW/MHz)			
Pin Cycle	best 1.10 125 (Min values)	best 1.10 125 (Max values)	worst 0.90 -40 (Min values)	worst 0.90 -40 (Max values)	
For vdd					
IO toggling/Output stable	0.494 + 0.313*Tr	0.622 + 0.937*Tr	0.243	0.318 + 0.006*Tr	
ZI toggling	0.260 + 0.001*Tr	0.263 + 0.006*Tr	0.131	0.131	
For vdde1v8			•		
IO toggling/Output stable	7.515 + 0.036*Tr	9.418 + 0.041*Tr	4.297 - 0.034*Tr	4.905 - 0.036*Tr	
ZI toggling	0.337 + 0.258*Tr	0.447 + 0.443*Tr	0.161 + 0.018*Tr	0.242 + 0.082*Tr	





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