IBIS EVOLUTION
(IBIS, PACKAGE, ELECTRICAL BOARD DESCRIPTION)
Bob Ross, July 25, 2006

HEADER SECTION (.ibs, .pkg, .ebd)

Version 1.1	Version 2.1	Version 3.2	Version 4.2
[IBIS Ver]	[Copyright]		
[Comment Char] (re-defined anywhere in file)			
[File Name]			
[File Rev]			
[Date]			
[Source]			
[Notes]			
[Disclaimer]			

TOP-LEVEL KEYWORDS (with END Keywords)

Version 1.1	Version 2.1	Version 3.2	Version 4.2
[Component]	[Define Package Model] (.ibs, .pkg)	[Model Selector]	[External Circuit]
[Model]	[End] (.pkg)	[Submodel]	[End External Circuit]
[End]		[Begin Board Description] (.ebd)	
		[End Board Description] (.ebd)	
		[End] (.ebd)	

[Component] PINOUT AND PACKAGE SECTION

Version 1.1	Version 2.1	Version 3.2	Version 4.2
[Component]	[Pin Mapping]	[Series Pin Mapping]	[Alternate Package Models]
[Manufacturer]	[Diff Pin]	[Series Switch Groups]	[End Alternate Package Models]
[Package]	[Package Model]		[Node Declarations]
[Pin]			[End Node Declarations]
			[Circuit Call]
			[End Circuit Call]

[Model] SECTION			
Version 1.1	Version 2.1	Version 3.2	Version 4.2
[Model]	[Temperature Range]	[Model Spec]	[Receiver Thresholds]
[Voltage Range]	[Pullup Reference]	[Driver Schedule]	[External Reference]
[Pulldown]	[Pulldown Reference]	[TTgnd]	[Test Data]
[Pullup]	[POWER Clamp Reference]	[TTpower]	[Rising Waveform Near]
[GND Clamp]	[GND Clamp Reference]	[On]	[Falling Waveform Near]
[POWER Clamp]	[Rgnd]	[Off]	[Rising Waveform Far]
[Ramp]	[Rpower]	[R Series]	[Falling Waveform Far]
	[Rac]	[L Series]	[Diff Rising Waveform Near]
	[Cac]	[Rl Series]	[Diff Falling Waveform Near]
	[Rising Waveform]	[C Series]	[Diff Rising Waveform Far]
	[Falling Waveform]	[Lc Series]	[Diff Falling Waveform Far]
		[Rc Series]	[Test Load]
		[Series Current]	[External Model]
		[Series MOSFET]	[End External Model]
		[Add Submodel]	
[Submodel] SECTION			
Version 1.1	Version 2.1	Version 3.2	Version 4.2
		[Submodel]	
		[Pullup] (1.1)	
		[Pulldown] (1.1)	
		[GND Clamp] (1.1)	
		[POWER Clamp] (1.1)	
		[Ramp] (1.1)	
		[Rising Waveform] (2.1)	
		[Falling Waveform] (2.1)	
		[Submodel Spec]	
		[GND Pulse Table]	
		[POWER Pulse Table]	

PACKAGE MODEL DEFINITION (within .ibs or as .pkg)			
Version 1.1	Version 2.1	Version 3.2	Version 4.2
	[Define Package Model]	[Number Of Sections]	
	[Manufacturer] (1.1)		
	[OEM]		
	[Description]		
	[Number Of Pins]		
	[Pin Numbers]		
	[Model Data]		
	[End Model Data]		
	[Resistance Matrix]		
	[Inductance Matrix]		
	[Capacitance Matrix]		
	[Row]		
	[Bandwidth]		
	[End Package Model]		

ELECTRICAL BOARD DESCRIPTION (.ebd)			
Version 1.1	Version 2.1	Version 3.2	Version 4.2
		[Begin Board Description]	
		[Manufacturer] (1.1)	
		[Number Of Pins]	
		[Pin List]	
		[Path Description]	
		[Reference Designator Map]	
		[End Board Description]	

[Model] SUBPARAMETERS			
Version 1.1	Version 2.1	Version 3.2	Version 4.2
Polarity	Cref		C_comp_pullup
Enable	Rref		C_comp_pulldown
Model_type	Vref		C_comp_power_clamp
C_comp	Vmeas		C_comp_gnd_clamp
Vinh			Rref_diff
Vinl			Cref_diff

Model_type SELECTIONS

Version 1.1	Version 2.1	Version 3.2	Version 4.2
Input	Open_sink	3-state_ECL	Input_diff
Output	Open_source	Series	Output_diff
3-state	I/O_open_drain	Series_switch	3-state_diff
Open_drain	I/O_open_sink		I/O_diff
I/O	I/O_open_source		
	Input_ECL		
	Output_ECL		
	I/O_ECL		
	Terminator		

[Model Spec] SUBPARAMETERS

Version 1.1	Version 2.1	Version 3.2	Version 4.2
		Vinh	Cref
		Vinl	Rref
		Vinh+	Cref_rising
		Vinh-	Cref_falling
		Vinl+	Rref_rising
		Vinl-	Rref_falling
		S_overshoot_high	Vref_rising
		S_overshoot_low	Vref_falling
		D_overshoot_high	Vmeas_rising
		D_overshoot_low	Vmeas_falling
		D_overshoot_time	Rref_diff
		Pulse_high	Cref_diff
		Pulse_low	
		Pulse_time	
		V_meas	

[Submodel] SUBPARMETER

Version 1.1	Version 2.1	Version 3.2	Version 4.2
		Submodel_type	

Submodel_type SELECTIONS

Version 1.1	Version 2.1	Version 3.2	Version 4.2
		Dynamic_clamp	Fall_back
		Bus_hold	

		[Submodel Spec] SUBPARAMETERS	
		V_trigger_r	
		V_trigger_f	
		Off_delay	
		(SUBPARAMETERS) FOR OTHER KEYWORDS	
Version 1.1	Version 2.1	Version 3.2	Version 4.2
[Component]		[Component] (Si_location, Timing_location)	
[Package] (R_pkg, L_pkg, C_pkg)			
[Pin] (signal_name, model_name, R_pin, L_pin, C_pin)			
	[Pin Mapping] (pulldown_ref, pullup_ref, gnd_clamp_ref, power_clamp_ref)		[Pin Mapping] (ext_ref)
	[Diff Pin] (inv_pin, vdiff, t_delay, tdelay_min, tdelay_max)		
		[Series Pin Mapping] (pin_2, model_name, function_table_group)	
		[Series Switch Groups] (On, Off)	
			[Circuit Call] (Signal_pin, Diff_signal_pins, Series_pins, Port_map)

			[Receiver Thresholds] (Vth, Vth_min, Vth_max, Vinh_ac,Vinh_dc, Vinl_ac, Vinl_dc, Threshold_sensitivity, Reference_supply, Vcross_low, V_cross_high, Vdiff_ac, Tslew_ac, Tdiffslew_ac)
		[Series MOSFET] (Vds)	
[Ramp] (dV/dt_r, dV/dt_f)	[Ramp] (R_load)		
	[Rising Waveform] (R_fixture, V_fixture, V_fixture_min, V_fixture_max, C_fixture, L_fixture, R_dut, L_dut, C_dut)		
	[Falling Waveform] (R_fixture, V_fixture, V_fixture_min, V_fixture_max, C_fixture, L_fixture, R_dut, L_dut, C_dut)		
			[Test Data] (Test_data_type, Driver_model, Driver_model_inv, Test_load)
			[Test Load] (Test_load_type, C1_near, Rs_near, Ls_near, C2_near, Rpl_near, Rp2_near, Td, Zo, Rpl_far, Rp2_far, C1_far, Ls_far, Rs_far, V_term1, V_term2, Receiver_model, Receiver_model_inv, R_diff_near, R_diff_far)
			[External Model] (Language, Corner, Parameters, Ports, D_to_A, A_to_D)
			[External Circuit] (Language, Corner, Parameters, Ports, D_to_A, A_to_D)

	[Pin Numbers]	[Pin Numbers] (Len, L, C, R, Fork, Endfork)	
	[Resistance Matrix] (Banded_matrix, Sparce_matrix, Full_matrix)		
	[Inductance Matrix] (Banded_matrix, Sparce_matrix, Full_matrix)		
	[Capacitance Matrix] (Banded_matrix, Sparce_matrix, Full_matrix)		
		[Pin List] (signal_name)	
		[Begin Board Description] (Len, L, C, R, Fork, Endfork, Node, Pin)	

OTHER NOTABLE CHANGES

Version 1.1	Version 2.1	Version 3.2	Version 4.2
File width = 80			File width=120
Filename length = 8		Filename length = 20	Filename length = 40
Model name length = 20			Model name length = 40
		Submodel name length = 20	Submodel name length = 40
	[Rising Waveform], [Falling Waveform] rows = 100		[Rising Waveform], [Falling Waveform] rows = 1000
Vinh, Vinl optional for Input and I/O	Vinh, Vinl required for Input and I/O		
Reserved words NC POWER, GND, NA			Added reserved word CIRCUITCALL
Fixed keyword space and underbar convention	Space and underbar equivalent in keywords		
Original comment characters	+, - removed as comment characters		
Multipliers M, k, m, u, n, p	Multipliers T, G and f added		
Buffers by extraction		By construction added	By language linkage added