

**Appendix E3**  
**Used with permission of 3Com**  
**Simulation Model Request Form**

**Requester Name** -----

**Component 3Com Part # (if known)** -----

**Supplier's Part # (required)** -----

**Phone # of Supplier** -----

**Submittal Date** ----- **Start Date** -----

**Type of Model Required:** \_\_\_\_ **IBIS** \_\_\_\_ **SPICE** \_\_\_\_ **S-Parameter** \_\_\_\_ **Other** (2-port, etc.)

For non-IBIS models attach your requirements:

**IBIS Model:**

Refer to 3Com IBIS Model Standard (E0173) and IBIS Model Standard 3.2

3Com Minimum Standard IBIS Model (required)<sup>1</sup> \_\_\_\_\_  
 (requestor's comments)

**IBIS Model "Add-Ons" You Can Request (Optional):**

V-T Curves<sup>2</sup> \_\_\_\_\_ Signal\_name(s)<sup>3</sup> \_\_\_\_\_

Buffer switching test fixture parameters<sup>4</sup> \_\_\_\_\_ Individual pin R-L-C parasitics<sup>5</sup> \_\_\_\_\_

Differential pin properties: vdiff<sup>6</sup> \_\_\_\_\_ tdelay<sup>7</sup> \_\_\_\_\_

Large package Pin Mapping<sup>8</sup> \_\_\_\_\_

<sup>1</sup> The "3Com IBIS Model Standard (E0173)" defines a minimum acceptable model as containing V-I curves, slew rates, pin (list) connections, package parasitics, voltage and temperature ranges, model name and type, input and output threshold voltages, die capacitance, all necessary "boiler plate" such as IBIS version, file revision, etc., and any "if present in device" elements.

<sup>2</sup> Voltage Vs time rise and fall waveform data for parts difficult to model with simple slew rates such as those with soft turnon/turnoff characteristics.

<sup>3</sup> Optional signal names by pin number.

<sup>4</sup> Switching test fixture data when different than 50 ohms. Buffer delay can be adjusted (recalculated) for different loads when test fixture is specified.

<sup>5</sup> Individual pin R-L-C parasitics override default package parasitics when supplied.

<sup>6</sup> Heads-up that differential pin-pairs will be modeled. You can request data on voltage threshold (output or input) and launch delay offsets.

<sup>7</sup> Ibid.

<sup>8</sup> Used when ground and power bussing for individual/groups of pins is employed.

Large package voltage bussing<sup>9</sup>: Pullup Reference \_\_\_\_ Pulldown Reference \_\_\_\_  
 Power Clamp Reference \_\_\_\_ GND Clamp Reference \_\_\_\_

Package Model<sup>10</sup> \_\_\_\_\_ (R-L-C matrices, mutually coupled pins, etc.)

Model Selector<sup>11</sup> \_\_\_\_\_ (required for programmable devices)

Driver Schedule<sup>12</sup> \_\_\_\_\_ (for multi-stage drivers, soft turn-on, etc.)

Model Spec<sup>13</sup> \_\_\_\_\_ (for hysteresis)

Add Submodel & Submodel Spec<sup>14</sup> \_\_\_\_\_

(special purpose functionality, i.e., dynamic clamp, bus hold, etc.)

Series Pin Mapping \_\_\_\_\_ & Series Switch Groups<sup>15</sup> \_\_\_\_\_

(Diode) Transit Time parameters<sup>16</sup> \_\_\_\_\_

Board (abstracted) Description (model)<sup>17</sup> \_\_\_\_\_

### Model Verification Options<sup>18</sup>:

Level 4 \_\_\_\_ Level 3 \_\_\_\_ Level 2 \_\_\_\_ Level 1 \_\_\_\_

Refer to 3Com IBIS Model Standard (Xxxxx)

<sup>9</sup> Can define reference voltages different than assumed high rail of Vcc and low rail of zero.

<sup>10</sup> Used for defining RLC matrices describing pin parasitics. You can use this data to for mutual coupling between pins and high frequency effects. Overrides individual pin parasitics.

<sup>11</sup> Used to pick a Model from a list of Models for pins with programmable buffers.

<sup>12</sup> Describes the relative model switching sequence for referenced models to produce a multi-stage driver.

<sup>13</sup> Used for defining refinements in threshold voltages that describe input switching hysteresis effects.

<sup>14</sup> Adds special purpose functionality such as dynamic clamping or bus hold to an existing model.

<sup>15</sup> Used to associate two pins joined by a series model and allowable state combinations of series switches.

<sup>16</sup> Diode transit time parameters for power and ground clamps used for estimating diode capacitance.

<sup>17</sup> Used to describe a "board level component" for an additional level of abstraction for ease of use in board - board simulations.

<sup>18</sup> The "3Com IBIS Model Standard (E0173)" defines the four approval levels as:

Level 1: By direct measurement: High level of approval.

Level 2: By correlation with a correlated SPICE model.

Level 3: By correlation with the device data sheet.

Level 4: No parametric verification - will run in simulator: Low level of approval IBIS model file checked for correct syntax with IBIS Golden Parser.