**Draft 2**

*Keyword:* [Buffer Rail Mapping]

*Required:* No

*Description:* Used to indicate the signal\_name to which a given driver, receiver or terminator is connected.

*Sub-Params:* pulldown\_ref, pullup\_ref, gnd\_clamp\_ref, power\_clamp\_ref, ext\_ref

*Usage Rules:* The [Buffer Rail Mapping] defines the connections between POWER and/or GND pins and buffer and/or terminator voltage supply references using signal\_name. When [Buffer Rail Mapping] is present, then the signal\_name field (second column of [Pin] records) shall indicate that all POWER and GND pins with the same signal\_name are connected.

Each line must contain either three, five or six entries. Use the reserved word NC for columns where a connection is not made.

The first column contains a pin name. Each pin name must match one of the pin names declared in the [Pin] section of the [Component] as a buffer or terminator.

The remaining columns correspond to the voltage supply references for the named pin. Each [Model] supply reference is connected to a signal\_name in the corresponding column.

The second column, pulldown\_ref, designates the ground (GND) signal\_name for the buffer or termination associated with that pin. The signal\_name under pulldown\_ref is associated with the [Pulldown] I-V table for non-ECL [Model]s. This is also the signal\_name associated with the [GND Clamp] I-V table and the [Rgnd] model unless overridden by a label in the gnd\_clamp\_ref column.

The third column, pullup\_ref, designates the power (POWER) signal\_name for the buffer or termination. The signal\_name under pullup\_ref is associated with the [Pullup] table for non-ECL [Model]s (for ECL models, this bus is associated with the [Pulldown] table). This is also the signal\_name associated with the [POWER Clamp] I-V table and the [Rpower] model unless overridden by a label in the power\_clamp\_ref column.

The fourth and fifth columns, gnd\_clamp\_ref and power\_clamp\_ref, contain entries, if needed, to specify additional ground signal\_name and power signal\_name connections for clamps. Finally, the sixth column, ext\_ref, contains entries to specify external reference supply signal\_name connections.

There shall be no entries for pins listed under the [Pin] keyword with model\_name GND, POWER and NC.

If the [Buffer Rail Mapping] keyword is present, then the supply reference connections for every pin listed under the [Pin] keyword (except POWER, GND and NC pins) must be given.

The column length limits are:

[Pin Mapping] 5 characters max

pulldown\_ref 40 characters max

pullup\_ref 40 characters max

gnd\_clamp\_ref 40 characters max

power\_clamp\_ref 40 characters max

ext\_ref 40 characters max

*Example:*

[Buffer Rail Mapping] pulldown\_ref pullup\_ref gnd\_clamp\_ref power\_clamp\_ref ext\_ref

|

1 VSS1 VCC1 | Signal pins and their associated

2 VSS2 VCC2 | ground, power and external

| | reference connections

3 VSS1 VCC1 VSSCLAMP VCCCLAMP

4 VSS2 VCC2 VSSCLAMP VCCCLAMP

5 VSS2 VCC2 NC VCCCLAMP V\_EXTREF1

6 VSS2 VCC2 NC VCCCLAMP

7 VSS2 VCC2 NC VCCCLAMP V\_EXTREF2

8 VSSCLAMP VCCCLAMP | Note that normal Input, Output and I/O

| buffers will need only three columns

| | Some possible clamping

| | connections are shown above

| | for illustration purposes

|

| The following [Pin] list corresponds to the [Pin Mapping] shown above.

|

[Pin] signal\_name model\_name R\_pin L\_pin C\_pin

|

1 OUT1 output\_buffer1 | Output buffers

2 OUT2 output\_buffer2 |

3 IO3 io\_buffer1 | Input/output buffers

4 IO4 io\_buffer2 |

5 SPECIAL1 ref\_buffer1 | Buffers with POWER CLAMP but no

6 SPECIAL2 io\_buffer\_term1 | GND CLAMP I-V tables; two use

7 SPECIAL3 ref\_buffer2 | external reference voltages

8 IN1 input\_buffer

11 VSS1 GND

12 VSS1 GND

13 VSS1 GND

21 VSS2 GND

22 VSS2 GND

23 VSS2 GND

31 VCC1 POWER

32 VCC1 POWER

33 VCC1 POWER

41 VCC2 POWER

42 VCC2 POWER

43 VCC2 POWER

51 VSSCLAMP GND | Power connections for clamps

52 VCCCLAMP POWER |

71 V\_EXTREF1 POWER | External reference voltage pins

72 V\_EXTREF2 POWER |