

B-Low Power

“D1” Low-Power State Round Two

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“D1” Characteristics

- 1) No bus reset when enabling or restoring from “D1”
- 2) Parent node to Leaf always sends “self-Id” packet to Leaf as Leaf restores from “D1” to “D0”
 - a) “Self-ID” packet always contains correct Node-ID for the Leaf
- 3) Only a Leaf node and the port in its parent node may transition from “D0” to “D1”

“D1” Characteristics, Cont’d.

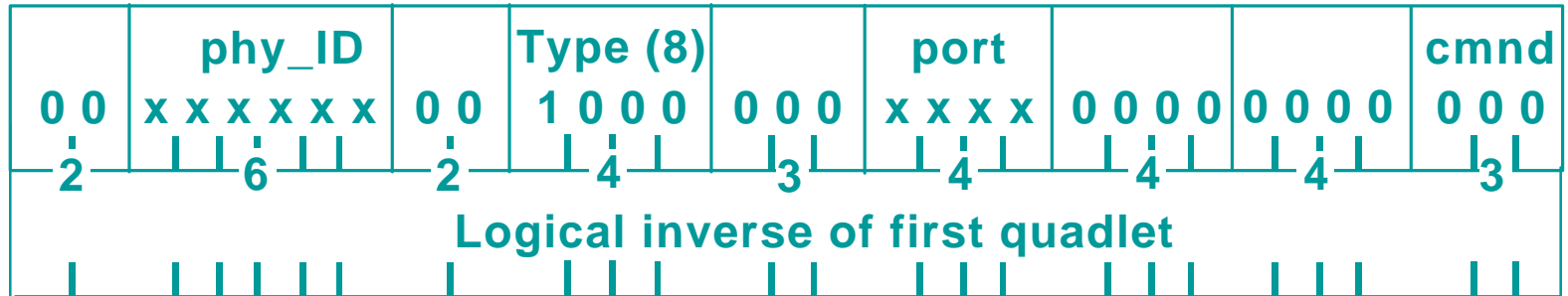
- 4) Power Providers which are Leaf nodes shall not enter into “D1”
- 5) That which selects a port to initiate “D1” shall be the Power Policy Owner for the Leaf which is being placed into “D1”
- 6) “D1” to “D0” latency shall be approximately 3 milliseconds
- 7) Restore to “D0” may be initiated by the Leaf or its parent via continuous “resume” tone

“D1” Characteristics, Cont’d.

- 7) A bus reset shall not restore a port in “D1” to a “D0” state
- 8) Parent node of Leaf in “D1” synthesizes (proxies) a self ID packet for the Leaf during self-ID phase subsequent to a bus reset.
- 9) Parent of Leaf stores initial self-ID of Leaf, updating node-ID subsequent to a bus topology change (bus reset) which would cause the Leaf to have a new node-ID.

Current PHY Command Packet

transmitted first

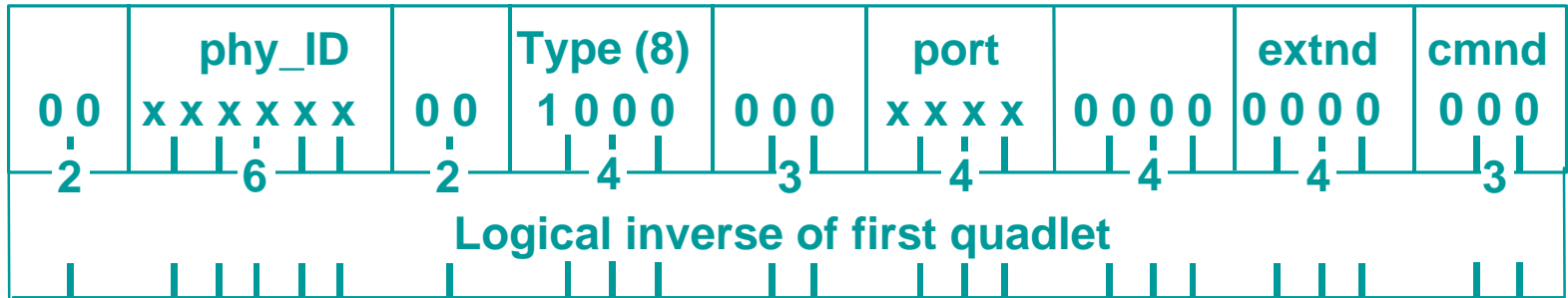


transmitted last

Field	Comment
phy_id	Physical node identifier of the destination of this packet
type	Extended PHY packet type (8 indicates command packet)
port	This field selects one of the PHY's ports
cmnd	Command: <ul style="list-style-type: none"> 0 NOP 1 Transmit TX_DISABLE_NOTIFY then disable port 2 Initiate Suspend (become a suspend initiator) 3 Reserved 4 Clear the port's fault bit to zero 5 Enable port 6 Resume Port 7 Reserved

New “Standby” Command

transmitted first

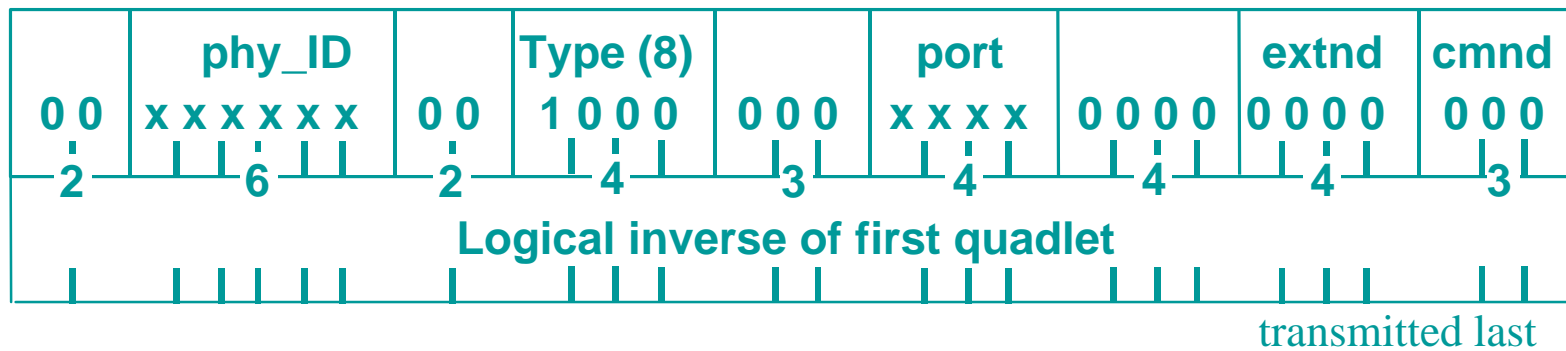


transmitted last

Field	Comment
phy_id	Physical node identifier of the destination of this packet
type	Extended PHY packet type (8 indicates command packet)
port	This field selects one of the PHY's ports
cmnd	Command: <ul style="list-style-type: none"> 0 NOP 1 Transmit TX_DISABLE_NOTIFY then disable port 2 Initiate Suspend (become a suspend initiator) 3 Reserved 4 Clear the port's fault bit to zero 5 Enable port 6 Resume Port 7 Extended Command

“Standby” Command, (Cont’d)

transmitted first



Field	Comment
extnd	Command:
	0 NOP
	1 Initiate Standby with Connected Peer Port
	2 Restore from Standby with Connected Peer Port
	3-F Reserved

Issues

- 1) Precluding a parent node (port) from initiating “D1” to inappropriate child ports
- 2) How and where to save the initial Leaf Self-ID
- 3) How to update the node-ID of the stored Leaf Self-ID subsequent to a bus reset while Leaf is in “Standby”
- 4) How does the parent node synthesize the self-ID of a Leaf node in “Standby”
- 5) Determining parent ports in a node which have child Leaf nodes in “Standby”

Issues, (Cont'd)

- 6) "Something Similar to a Leaf" (only one port of multi-port connected) allowed to be placed into "Standby"?
- 7) If "1" above allowed, shall a new connection cause "leaf" port to restore from "D1" to "D0"?
- 8) Further, would multi-port nodes with only one active port and all other ports suspended "qualify" for "D1" state? (the suspended ports do not require a self-ID to be proxied).