FIX FOR MISSING DISABLE TRANSITIONS
98-014R0
by Dave Scott

Summary:

In reviewing draft 1.4, Figure 7-20, transition All:P6; I noticed that the only transition that would occur is P2:P6 (not considering a strapped disable bit or an LREQ setting the disable bit). The variable “signaled” must be TRUE for this transition, but signaled is only set if the port is active. This is done in start_tx_packet(), Table 7-21. The other condition is for disabled[i] being TRUE, but the only place it is set is in disabled_actions(), Table 7-32 and this is after the transistion to P6: Disabled. Present code does not allow an All:P6 transition through a remote command packet. It only allows the A2:P6 transition.

Also, if a PHY receives a command to disable a non-active port , the ok bit will equal one in the confirmation packet, but no bus reset should be issued. (There has been no change in bus topology.)

1)Change remote_command(), Table 7-31

From:
```
  if (cmnd == 1)       // Transmit TX_DISABLE_NOTIFY then disable
    disable_notify[port] = TRUE;
```

To:
```
  if (cmnd == 1) {     // Disable the port
    if (active[port]) // Transmit TX_DISABLE_NOTIFY then disable
      if (receive[port])  // Don't disable a receiving port
        phy_resp_pkt.ok = FALSE;
      else
        disable_notify[port] = TRUE;
    else if (!disabled[port])      // Disable the non-active port immediately
      disabled[port] = TRUE;
  }
```

Plus two editorial changes:

From
!active[i] and !suspended[i]
To
!active[port] and !suspended[port].

2) To avoid reseting the bus when disabling a non-active port, change phy_response_actions(), Table 7-31:

From:

```
if (  phy_resp_pkt.ext_type == 0x0A
  && (phy_resp_pkt.cmnd == 1 || phy_resp_pkt.cmnd == 2)
  && phy_resp_pkt.ok)
```

To:

```
int port = phy_resp_pkt.port;
if (  phy_resp_pkt.ext_type == 0x0A
  && (disable_notify[port] || phy_resp_pkt.cmnd == 2)
  && phy_resp_pkt.ok)
```

3) To avoid disable_notify[port] being sticky through the next remote command sequence, change disabled_actions(), Table 7-32.

From:

```
activate_connect_detect(i, 0);   // Enable the connect detect circuit
disable_notify[i] = signaled = FALSE;
disabled[i] = TRUE;
```

To:

```
disable_notify[i] = signaled = FALSE;
disabled[i] = TRUE;
activate_connect_detect(i, 0);   // Enable the connect detect circuit
```