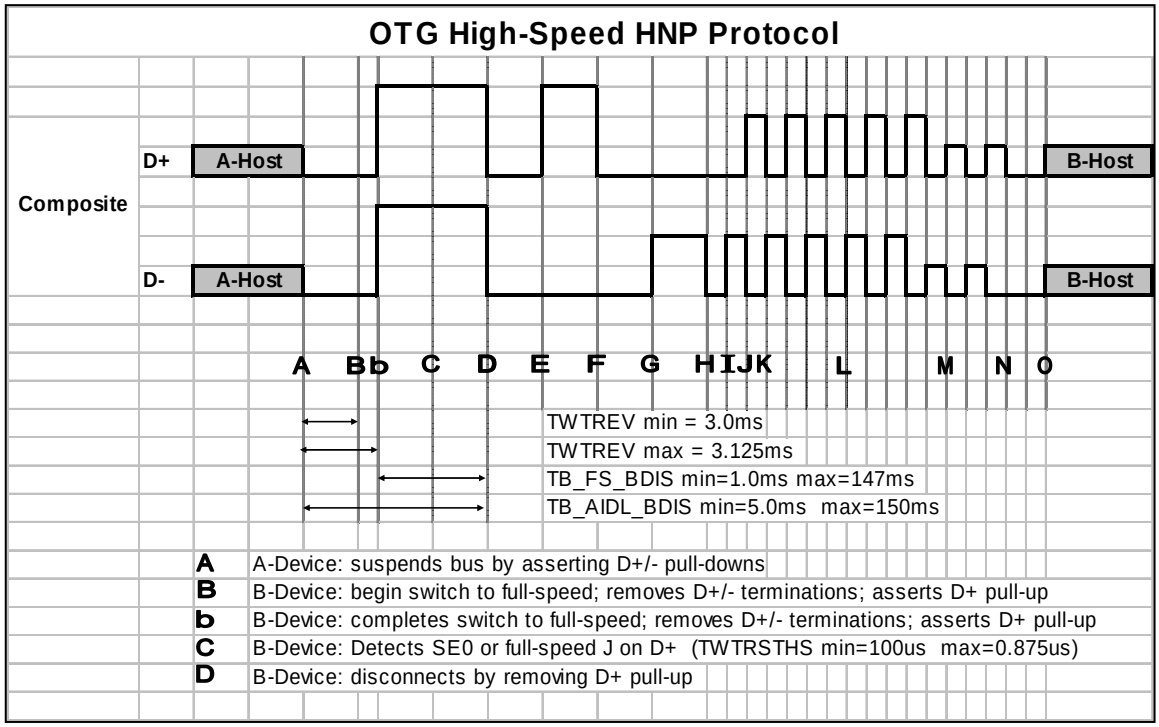
Errata for “On-The-Go Supplement to the USB 2.0 Specification,” Revision 1.0a

Errata A: HS HNP Parameter Changes

Issue: TWTREV, TB_FS_BDIS and TB_AIDL_BDIS



The parameters defined for high-speed HNP do not add up correctly. The affected parameters are TWTREV, TB_FS_BDIS and TB_AIDL_BDIS. The above timeline depicts the high-speed HNP sequence as it currently exists in the OTG Supplement Revision 1.0a.

Resolution:

Change TB_FS_BDIS max from 147.0ms to 146.875ms. This allows:

TWTREV max	+	TB_FS_BDIS max	=	TB_AIDL_BDIS max
3.125ms	+	146.875ms	=	150ms

Change TB_AIDL_BDIS min from 5.0ms to 4.0ms. This allows:

TWTREV min	+	TB_FS_BDIS min	=	TB_AIDL_BDIS min
3.0ms	+	1.0ms	=	4ms

Affected Documentation:

"On-The-Go Supplement," Revision 1.0a, June 24, 2003:

- Table 5-3 B-device Timing, page 44: Change $T_{B\_AIDL\_BDIS}$ min to 4.0ms
- Table 5-3 B-device Timing, page 44: Change $T_{B\_FS\_BDIS}$ max to 146.875ms
- Table 5-4 Device Timing Comparision, page 47: Change $T_{B\_AIDL\_BDIS}$ min to 4.0ms

"USB Compliance Checklist for On-The-Go" Revision 1.0

- Protocol Checklist Items P10 and P11

"On-The-Go Compliance Plan for the USB 2.0 Specification," Revision 1.0:

- TD.5.3: Change the failure time from 5 milliseconds to 4 in the sentence: "The B-UUT disconnects less than 5 milliseconds after the start of suspend."

Affected Tools

On-The-Go Protocol Tester (OPT)

- TD.5.3

Errata B: SRP Parameter Changes

Issue: TA_SRP_RSPNS

A race condition between an SRP capable B-device and an OTG A-device exists. Should a B-device initiate SRP, it currently must wait TB_SRP_FAIL min = 5 seconds before displaying an error message to the user that the A-device failed to respond (OTG Section 6.8.2.2 b_srp_init). However, the A-device is permitted to respond to SRP within TA_SRP_RSPNS max = 30 seconds (OTG Section 5.3.10 Response Time of A-device). Thus, it is possible for the B-device to indicate a failure to the user before the A-device legally responds to SRP.

Resolution:

Change TA_SRP_RSPNS max value from 30 seconds to 4.9 seconds.

Affected Documentation:

"On-The-Go Supplement," Revision 1.0a:

- Table 5-2 A-device Timing, page 43: Change TA_SRP_RSPNS max to 4.9 sec
- Table 5-4 Device Timing Comparision, page 47: Change TA_SRP_RSPNS max to 4.9 sec

Issue: TB_SRP_FAIL

The preceding change of TA_SRP_RSPNS max to 4.9 seconds requires the A-device to respond to SRP before the minimum time the B-device must wait to report an error to the user. By shortening the maximum time an SRP capable B-device must wait for a connected OTG A-device to respond to SRP shortens the time that a B-device must wait before reporting an error to the user that the A-device failed to respond to its SRP (OTG Section 6.8.2.2 b_srp_init). This improves the user experience.

Resolution:

Change TB_SRP_FAIL max value from 30 seconds to 6 seconds.

Affected Documentation:

"On-The-Go Supplement," Revision 1.0a:

- Table 5-3 B-device Timing, page 44: Change TB_SRP_FAIL max value to 6 sec.
- Table 5-4 Device Timing Comparision, page 47: Change TB_SRP_FAIL max value to 6 sec.

Errata C: OTG Host Remote Wake-up Clarification

Issue: OTG Hosts Must Support Remote Wake-up.

Looking at the Dual Role A-Device State Diagram (Figure 6-2), when **a_host** goes to **a_suspend**, it returns to **a_host** on **b_bus_resume**. OTG Section 6.6.1.10 **b_bus_resume** specifically states that Section 7.1.7.7 Resume of the USB 2.0 Specification must be followed on any downstream non-idle activity if **b_hnp_enable** was not set on the B-device.

OTG Section 6.8.1.5 **a_suspend** states that the A-device transitions to the **a_host** state if the B-device signals a resume even if the remote wakeup feature [of the B-device] has not been enabled.

Affected Documentation:

"On-The-Go Compliance Plan for the USB 2.0 Specification," Revision 1.0:

- TD.4.8 A-UUT Response to Remote Wakeup before HNP Handoff: This test is required. Remove the paragraph that states: "Note: This test is only run if the A-UUT supports remote wakeup. The test software must prompt to discover whether the test needs to be run."

Affected Tools

On-The-Go Protocol Tester (OPT)

Errata D: TA_WAIT_BCON Value Correction

Issue: TA_WAIT_BCON inconsistent definition.

TA_WAIT_BCON is assigned two different values in the "On-The-Go Supplement," Revision 1.0a, June 24, 2003. Table 5-2 defines TA_WAIT_BCON as 1 second minimum, whereas, Table 5-4 has TA_WAIT_BCON as 1.2 seconds minimum.

Resolution:

The correct value for TA_WAIT_BCON is 1 second minimum. After reaching 4.4V, the A-device must hold VBus above 4.4V for at least one second to allow the B-device to connect.

Affected Documentation:

"On-The-Go Supplement," Revision 1.0a:

- Table 5-4 Device Timing Comparison, page 47: Change TA_WAIT_BCON min value to 1 sec.