

Out of band signalling



Out Of Band Signaling There shall be three Out Of Band (OOB) signals used/detected by the Phy: COMRESET, COMINIT, and COMWAKE. COMINIT, COMRESET and COMWAKE OOB signaling shall be achieved by transmission of either a burst of four Gen1 ALIGNP primitives or a burst composed of four Gen1 Dwords with each Dword composed of four D24. 3 characters, each burst having a duration of 160 UIOOB. Each burst is followed by idle periods (at common-mode levels), having durations as depicted in Figure 180 and Table 49.

Previous versions of Serial ATA allow only for the ALIGN sequence as legitimate OOB signal content. The alternate OOB sequence defined in this section has different characteristics than the ALIGN sequence in both the time and frequency domains. The use of alternate OOB signal content may lead to backwards incompatibility with Gen1 Phys designed to previous Serial ATA specification versions.

Interoperability issues with Gen1 Phys designed to the earlier SATA specification arising from the use of alternate OOB signal content are the sole responsibility of the Phy transmitting this alternate content. During OOB signaling transmissions, the differential and common mode levels of the signal lines shall comply with the same electrical specifications as for normal data transmission, specified in section 7. 2. In Figure 180 below, COMRESET, COMINIT, and COMWAKE are shown.

OOB signals are observed by detecting the temporal spacing between adjacent bursts of activity, on the differential pair. It is not required for a receiver to check the duration of an OOB burst. Even though they are

transmitted with apparent Gen1 timings, the OOB burst transmissions may be transmitted using Gen2 rise / fall times. Any spacing less than or greater than the COMWAKE detector off threshold in Table 34 shall negate the COMWAKE detector output.

The COMWAKE OOB signaling is used to bring the Phy out of a power-down state (Partial or Slumber) as described in section 8. 4. 3. 2. The interface shall be held inactive for at least the maximum COMWAKE detector off threshold in Table 34 after the last burst to ensure far-end detector detects the negation properly. The device shall hold the interface inactive no more than the maximum COMWAKE detector off threshold plus two Gen1 Dwords (approximately 228. 3 ns) at the end of a COMWAKE to prevent susceptibility to crosstalk.