USB 3.1 ENGINEERING CHANGE NOTICE

Title: SLC IS SDS
Applied to: USB_3_1r1.0_07_31_2013

Brief description of the functional changes:
1. The SLC symbol is the same as IS. It is 5A. In the case with EPF corruption LCSTART OS will lose single symbol error tolerance. 2. There are two different symbol definitions for SDS, one newly defined, the other from PCIe3. Both are DC balanced, but need to eliminate one.

Benefits as a result of the changes:
The changes: 1. Change SLC symbol from 5AH to 4BH. The criteria for SLC change are, (1). Tolerate to single symbol error with LCSTART OS; (2). DC balance 2. Use E1h as SDS identifier to make it consistent with PCIe3.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
Design change needed

An analysis of the hardware implications:
Design change needed

An analysis of the software implications:
None

An analysis of the compliance testing implications:
Change needed

Actual Change

Section 6.3.3

From Text:

Symbol	Name	Gen 1 Symbol	Gen 2 Symbol	Description
SKP	Skip	K28.1	CCh	Compensates for different bit rates between two communicating ports. SKPs may be dynamically inserted or removed from the data stream. For SuperSpeedPlus operation, unscrambled
SKPEND	Skip End	Not applicable	33h	Marks the boundary between SKP symbols and the remainder of the SKP OS. Unscrambled.
SDP	Start Data Packet	K28.2	96h	Marks the start of a Data Packet Payload. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
EDB	End Bad	K28.3	69h	Marks the end of a nullified Packet. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
SUB	Decode Error Substitution	K28.4	Not applicable	Symbol substituted by the 8b/10b decoder when a Decode error is detected.
COM	Comma	K28.5	Not applicable	Used for symbol alignment.
-----	-----	K28.6	Not applicable	Reserved
SHP	Start Header Packet	K27.7	9Ah	Marks the start of a Data Packet (Gen 1 operation only), Transaction Packet or Link Management Packet. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
DPHP	Start Data Packet Header	Not applicable	95h	Marks the start of a Data Packet (SuperSpeedPlus only). Scrambled and transmitted only in data block.
END	End	K29.7	65h	Marks the end of a packet. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
SLC	Start Link Command	K30.7	5Ah	Marks the start of a Link Command. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
EPF	End Packet Framing	K23.7	36h	Marks the end of a packet framing. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
SDS	Start of Data Stream	Not applicable	63h	Marks the start of an SDS Ordered Set. Unscrambled.

To Text:

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DPHP	Start Data Packet Header	Not applicable	95h	Marks the start of a Data Packet (SuperSpeedPlus only). Scrambled and transmitted only in data block.
END	End	K29.7	65h	Marks the end of a packet. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
SLC	Start Link Command	K30.7	4Bh	Marks the start of a Link Command. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
EPF	End Packet Framing	K23.7	36h	Marks the end of a packet framing. For SuperSpeedPlus operation, scrambled and transmitted only in data block.
SDS	Start of Data Stream	Not applicable	E1h	Marks the start of an SDS Ordered Set. Unscrambled.

Section 6.4.1.2.2.

From:

Table 6-1. SDS Ordered Set

Symbol Number	Symbol	Description
0	E1h	SDS Ordered Set Identifier
2 through 15	55h	Body of SDS Ordered Set

To:

Table 6-2. SDS Ordered Set

Symbol Number	Symbol	Description
0 through 3	E1h	SDS Ordered Set Identifier
4 through 15	55h	Body of SDS Ordered Set