USB Type-C ENGINEERING CHANGE NOTICE

Title: Active Cable Max Skin Temperature
Applied to: USB Type-C Specification Release 2.1, May 2021

Brief description of the functional changes proposed:
Provide the Host/Device conditions when the Active Cable Temperature specification Clearly define the Active Cable Skin temperature and the Active Cable Thermal Shutdown Temperature in Table 6-15

Benefits as a result of the proposed changes:
Remove confusion between the actual max skin temperature vs. the thermal shutdown temperature.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
N/A

An analysis of the hardware implications:
N/A

An analysis of the software implications:
N/A

An analysis of the compliance testing implications:
N/A

Actual Change Requested

(a). Section 6.5.1.2, Page 311

From Text:

6.5.1.2 Maximum Skin Temperature

Active cable plug's skin temperature shall not exceed a maximum operating temperature of 30 °C above the ambient temperature for a plastic/rubber housing and 15 °C for a metal housing in any operating mode.

To Text:

6.5.1.2 Maximum Skin Temperature

Active cable plug's skin temperature shall not exceed a maximum operating temperature of 30 °C above the ambient temperature for a plastic/rubber housing and 15 °C for a metal housing in any operating mode, when measured at an ambient temperature of 25° C.

The active cable shall meet this requirement when tested connected to a port with a motherboard temperature of (ambient + 25°C).

(b). Section 6.5.1.3, Table/Figure 6-15 (if applicable), Page 312

From Text:

Table 6-15 Cable Temperature Requirements

Temperature Requirements	
Maximum Internal to Skin Temperature Offset	Design Specific
Maximum Internal Operating Temperature	Design Specific
Maximum Skin Temperature Plastic/Rubber[1]	80 °C
Maximum Skin Temperature Metal[1]	55 °C

Note 1: IEC 60950-1 reduced by 5 °C

To Text:

Table 6-15 Cable Temperature Requirements

Temperature Requirements	
Maximum Internal to Skin Temperature Offset	Design Specific
Maximum Internal Operating Temperature	Design Specific
Maximum Skin Temperature Plastic/Rubber[1]	Ambient + 30 °C
Maximum Skin Temperature Metal[1]	Ambient + 15 °C

Thermal Shutdown Skin Temperature Plastic/Rubber[2]	77°C
Thermal Shutdown Skin Temperature Metal[2]	60°C

Note 1: When connected to a port with a motherboard temperature that this set to ambient + 25C.

Note 2: Based on IEC 62368-1