From: Orlosky, Mark
Sent: Wednesday, June 18, 2014 12:55 PM MDT
To: Brigham Steele - C21902
Subject: RE: CarPlay and forced DCP to external ports

Brigham

I understand what you say about the big picture. USB will support multiple streams from the data lanes but with one and only one Host. In the discussed scenario a nonmusic app is running on CarPlay and that allows another media stream to also play except the Apple device is one to one with H/U at that point with all other lanes ignored. I think the disconnect is the difference between multiport reversal and CarPlay non CarPlay reversal will still be only as capable as the new Host. If it had the capability to see the other ports fine and the processing power to handle the audio codec required then the port might be serviced by the Host in the manner Dave wants to see. One of the competitors is rolling a solution to bypass this issue. It is obviously a software intensive implementation and when you twist the specs to suit bad things may happen. If I've interpreted any of this incorrectly please let me know. I started working on these products a little over a year ago and am self taught no one existed in this position (guy quit and was not engaged) and the SMSC/Microchip guys have been outstanding in helping me learn the technologies and make the right product decisions. We will continue down this road and I'm sure there will be further discussion.

Best Regards
Mark Orlosky

From: Brigham.Steele@microchip.com [mailto:Brigham.Steele@microchip.com]
Sent: Wednesday, June 18, 2014 2:33 PM
To: Orlosky, Mark
Cc: Chris.Behal@microchip.com
Subject: RE: CarPlay and forced DCP to external ports

Mark,

Just to be clear, we need to make sure that the message is consistent to Dave from his vendors. Dave likes to look at the big picture, so I love his ideas, but some items may be physically outside the capabilities of ANY USB system, and I think he needs to understand the capabilities of USB and some of the low level details. This is how I would break it down, let me know if you disagree with my analysis or if you have other questions.

1. With USB, you are only allowed 1 Host and multiple devices on a bus. This message is critical, so we need to make sure Dave understands this fact.
2. CarPlay passes the Host role from the HU to the Phone itself.
3. Once the HU has given up the Host role, it will not see any of the other ports. If the iPhone doesn't want to see the other ports, it will ignore them.
   a. In our initial development we would plug in USB speakers and thumb drives into the other Hub ports. The iPhone would display a message that the speakers and thumb drive were not authenticated devices, so it would not support them.
   b. To avoid these annoying messages displayed on the phone, the HU can disable those ports when entering Carplay.

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4. If Dave wants to have data capability, he will have to require 2 USB lanes to the Head Unit. We can still do the switching matrix, but it will be to two different Hubs. That way the HU can have data capabilities on all the non CarPlay ports. This is a trade off, more cables with data, or one cable with dedicated charging ports. He needs to make the decision based on those options.

We need to emphasize that you cannot do Carplay AND own the other ports with one USB data lane. Anybody who states this is doing things with the USB Bus that grossly violates the USB protocol and could introduce many errors that would likely impact Carplay execution, and the normal data exchange on the other ports. No bus can serve two masters.

Brigham

From: Orlosky, Mark [mailto:mark.orlosky@delphi.com]
Sent: Wednesday, June 18, 2014 11:17 AM
To: Brigham Steele - C21902
Cc: Chris Behal - C12678
Subject: CarPlay and forced DCP to external ports

Hi Brigham

Just ended a multiparty meeting with Chrysler and Harman. You were at Chrysler on the 18th for a demo. Dave Diovardi does not want to lose data capability on the other ports not tied to the Apple device. Is this an Apple CarPlay spec requirement?

Best regards
Mark Orlosky
Delphi

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