



**PoSpW**

**Power over SpaceWire**








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# Context



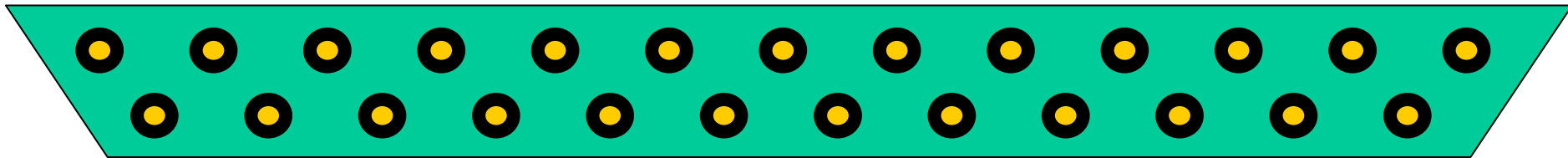
-  USB supplies power down the cable
-  FireWire supplies power down the cable
-  Ethernet supplies power down the cable (PoE)
-  IEEE 1355 supplies power down the cable
-  At least two SpaceWire users supply power down the cable
-  PnPSat and A N Other
-  Routing switches are ideal hubs for distributing power

# PnPSat



“For PnPSat the standard electrical connector is a 25-pin micro-D containing data (both SpaceWire and USB), power (up to 4.5A @ 28v), time synchronization pulse, test bypass interface, and single point ground.”

*Don Fronterhouse, AFRL, Plug-and-Play Satellite (PnPSat), presented at 1<sup>st</sup> International SpaceWire Conference, Dundee 2007*



**SpaceWire, 4.5A @28V**, USB, Time sync, Test, Single point GND


# A N Other

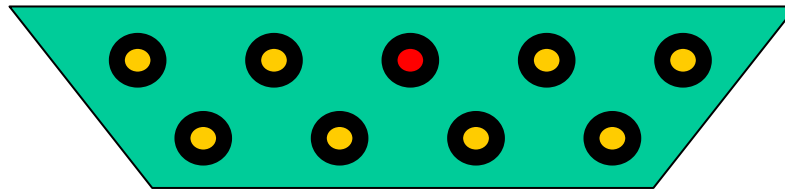


Use Pin 3 of 9-way Micro-D

 Currently not connected end-to-end




 Only needs to be AC GND

 Possible to detect whether connected, and if so whether to GND or supply and switch on supply if appropriate (Both PoE and USB do something like this)



# Should it be in Standard?



-  There may be too many different ways to do it, depending on mission constraints
-  But if there was at least a recommendation in the standard, it would be used in most cases
-  It may be possible to recommend two versions, one with 28V based on PnPSat, the other with 5V using connector pin 3

