PXD(Stefan)

I would like to come back to your question regarding the electrical services for the PXD. I have summarized the cables for our baseline solution without copper to fiber converter. The decision to use it has not been made up to now. If this solution is adopted the Infiniband cable from the Dock box to DHE will be replaced by optical fibers. The Infiniband cables from the PP to the Dockbox will still be present in this case.

Data cables: “Infiniband Cable” 10GBaseCX4, Vendor Meritec, Diameter 9.4mm, Flame retardant, halogen free, low smoke (LSZH), Jacket is made of Polyolefin Copolymer.

CAT 7 cable, diameter 5.9mm, vendor has not been decided yet.

Power cable (PS-Dockbox): Diameter 12.6mm, nonstandard (application specific from “SAB Brockskes” ), Insulator and jacket Polyolefin Copolymer (“SABIX”), Flame retardant, halogen free according to acc. to DIN VDE 0472 part 815 and IEC 60754.

SVD(Markus)

FRONT-END >> DOCK

1. Standard name = 3M 79992-25P-270A (obsolete, but was in stock at CERN store)

2. Cable diameter = 32 x 1 mm2

3. Flame retardance = unknown (but CERN is quite strict with those things)

4. Halogen contents = none (halogen-free)

DOCK >> FADC (datasheet is attached) -- page 12

1. Standard name = Amphenol 125-3097-998

2. Cable diameter = 44 x 1 mm2

3. Flame retardance = UL AWM Style 20744, CSA AWM

4. Halogen contents = none (halogen-free)

POWER SUPPLY >> DOCK (datasheets are attached) -- page 17

LV power

1. Standard name = Leoni LEHC 002054

2. Cable diameter = 12.5mm

3. Flame retardance = UL1581 VW-1, CSA C22.2 FT-1, IEC 60332-1-2

4. Halogen contents = none (halogen-free)

HV power

1. Standard name = 3M HF659/10

2. Cable diameter = 6.4mm

3. Flame retardance = VW-1, FT-1

4. Halogen contents = none (halogen-free)

Power cable: Dock box ? PP: Vendor: Glenair “MWDMIL-51GS-6K7-80M”. Diameter 1.05mm per Wire, Number of wires 51, Insulator Tefzel.

I asked for more detailed datasheets however I did not receive them up to now.

Monitor(Lorenzo)

Radiation FRONT-END >> DOCK (aka “Thin Coaxial", see attached specs -- pages 2-4)

1. Standard name = SUCOFORM\_47\_CU\_LSFH from Huber+Suhner

2. Cable diameter = 1.7 mm

3. Flame retardance = not specified

4. Halogen contents = none (halogen-free)

Radiation DOCK >> E-HUT (aka “Double Screened Coaxial", see attached specs -- pages 5-8)

1. Standard name = S\_04162-B60 from Huber+Suhner

2. Cable diameter = 5.5 mm

3. Flame retardance = not specified

4. Halogen contents = none (halogen-free)

In the attached file the specs also for the connectors.

For the NTC the cables are the same twisted flat from CERN as in the email from Markus,

the unknown values are specified in the attached document E\_IS23.pdf pag 23.

1. Standard name = 3M 79992-17P-270A (CERN store, SCEM code 04.21.334.5)

2. Cable diameter (dimensions) = 21.5 x 0.7 mm2

3. Flame retardance = as from CERN regulations IS23

4. Halogen contents = as from CERN regulations IS23

For the Fibers FRONT-END >> DOCK:

no jacket for the fibers, only the coating tube with 900um diameter

1. Standard name = SM-28C (acrylate coating)

2. Cable diameter = 0.9 mm (0.25 mm in the Airex)

3. Flame retardance = not specified

4. Halogen contents = none (halogen-free)

Two important comments:

1) the “flame retardance” requirement according to CERN document E\_IS23.pdf is needed only

for safety cable systems.

2) For the fibers DOCK to E-HUT, in the test we performed, we used standard patch cables with 30 m length.

The yellow jacket of these long fibers is made in PVC which is neither HF nor Flame retardant,

but we plan to use halogen-free jackets, for the materials see the attached table AvailableJackets.png from

http://literature.hubersuhner.com/Technologies/Fiberoptics/FOCablesEN/