Al Conrad <aconrad@lbto.org>

Fwd: USB3 & Fibers - Next Steps

1 message

Jonathan Crass <j.crass@nd.edu> Wed, Oct 19, 2022 at 6:21 AM
To: Al Conrad <aconrad@lbto.org>

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---------- Forwarded message ---------
From: **Jonathan Crass** <j.crass@nd.edu>
Date: Tue, 15 Feb 2022 at 13:18
Subject: Re: USB3 & Fibers - Next Steps
To: fernando pedichini <fernando.pedichini@inaf.it>
Cc: Matthieu Bec <mbec@lbto.org>, Stephen Hooper <shooper@lbto.org>, Leroy Durham <ldurham@lbto.org>, Gustavo Rahmer <grahmer@lbto.org>, Roberto Piazzesi <roberto.piazzesi@inaf.it>

Hi Fernando,
We're using this single-mode extender (duplex model), however it's end of life:

https://www.freshdigit.com/fdt/product/usb3-fiber-extender/

The vendor recommends this one as the replacement:

https://www.freshdigit.com/fdt/product/usb-3-1-gen1-fiber-extender/

I'm attaching the most recent quote and spec sheet I have for the new model (regular and wider temperature versions).

Thanks
Jonathan

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On Tue, 15 Feb 2022 at 06:42, fernando pedichini <fernando.pedichini@inaf.it> wrote:

> Hi Jonathan,
>
> can you please recap me the specification of the optical transceiver are you currently using for USB 3 to SM fibres to activate its purchase.
>
> Thanks and cheers
>
> fernando
>
> On 31/01/2022 14:45, Jonathan Crass wrote:
>
> > Hi All,
> > Thanks for taking the time to chat on Friday. A quick summary of the discussion and next steps:
> >
> > 1. Testing at INAF shows old versions of ANDOR software worked with 200m fiber but new versions don't. This is consistent with results from Notre Dame. Likely something to do with handshaking specifically with the ANDOR camera.
> > 2. Testing at INAF shows that new versions of ANDOR software work at 150m. This sets a nominal maximum length (end-to-end) for any future LBT fiber.
> > 3. Testing at INAF is using OM3 fiber. Testing at ND is using OS1 fiber. LBT prefers a move to single-mode.
> > 4. USB3 fiber extenders are already in use at the telescope through the existing cable wrap - LMIRCam. However, this is not high bandwidth/real-time like the ANDOR camera setups.
> >
> > Next steps:
> >
> > 1. ND to test their system at ND with older SOLIS software over single-mode fibers.
> > 2. If successful, ND to test hardware at LBT using existing SMF in cable wrap - if successful this will allow interim solution for existing hardware at the telescope.
> > 3. INAF to test their working 150m setup with single-mode fiber extenders rather than multimode.
> > 4. If ND and INAF have reliable, repeatable performance over 150m of fiber (including appropriate breaks for telescope runs), this would allow a serious consideration of computers to be located in CRB using a new

fiber run through the center of the pier to minimize distance. If not reliable, computers will need to be located closer - potentially on the gallery (electronics racks/treehouses).

Next discussion - mid March after ND LBT visit and INAF single-mode testing results.

Any questions/comments, please let me know.

Thanks
Jonathan

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2 attachments

FDQ-021120 University of Notre Dame USB31-S.pdf
138K

USB31 Spec v1_1.pdf
260K