



# LHCb Upgrade Electronics

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A few words on the common components we will all use

Production is underway (14k already delivered)  
Distribution to clients starting now



Prototypes

Production



**Comprehensive user manual now available:**

**PLEASE READ IT!**

**PCB design rules & recommendations available:**

**PLEASE READ THEM!**

**VLDB is a good PCB template & test vehicle**

# GBTX – points to consider

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## How do you want to configure them?

Read manual

Use GBTX configuration website to generate your config file (<https://www.cern.ch/gbtx-configuration>)

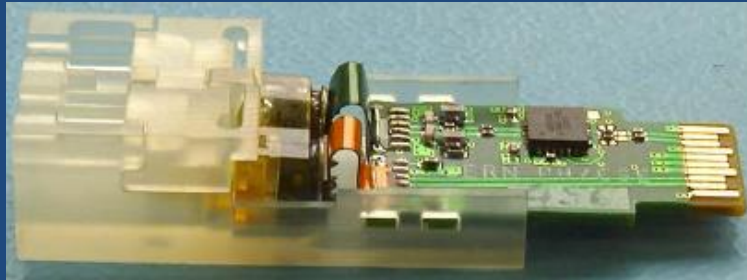
## GBTXs will be delivered unfused

In our LHCb architecture:

- **‘Master GBTXs’** must be fused so they work on power-up (these are for the TFC/ECS links)
  - > sub-detectors should decide how to do this fusing
- **‘Data GBTXs’** can be fused or configured through ECS
  - > sub-detectors to choose their preference
- Fusing is irreversible

# VTTx/VTRx

Production is underway. Distribution to clients starting now



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Please familiarize yourselves with handling optical components (eg ESD precautions, avoiding dirt....).  
Testing & debugging high-speed signals is tricky:  
Good equipment  
Learn tools like BERT, eye-diagrams

## IMPORTANT NOTE:

These are NOT commodity components.

One-time order only.

Take care of them!!!!

We cannot afford big-scale accidents.

Typical accidents:

ESD, wrong reflow temperature profile, over-voltage.....

Everyone has ordered spares & there is a small stock of common spares



# Power supplies

Discussions now starting on extending maintenance contracts beyond 2019

## CAEN

Note that the SY1527 mainframe is discontinued  
Long-term maintenance is not clear.....

New model is SY4527

## Wiener Maratons

Baseline model for upgrade is 0M42.0003 (except Calo)  
New model number with improved water fixtures

Delivery times are currently ~ 6 months !

Probably lots of orders for LS2, so why not order now?