GLIB Modules & Functionalities

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This document describes how to interact with the GLIB modules.

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# OptoHybrid Forward

This module forwards all the requests to the OptoHybrid.

## Addressing

Module ID 4

Address 0x4ZYXXXXX

0b 0100 ZZZZ YYYY XXXX XXXX XXXX XXXX XXXX

## Description

All the requests made to this module are forwarded to the OptoHybrid n°Y of the GLIB. The Z parameter indicates which module on the OptoHybrid will handle the request (see *OptoHybrid Modules & Functionalities* for more information).

# Tracking Data Readout

This module stores the tracking data coming from the OptoHybrid into a buffer and allows to readout the data through IPBus.

## Addressing

Module ID 5

Address 0x50Y00000

0b 0101 0000 YYYY 0000 0000 0000 0000 0000

## Description

To read out data, the software must operate a FIFO read on the register. It then has to form the data packets by regrouping the 32-bits words. Writing to the register will empty the buffer which is recommended after flashing the firmware onto the GLIB or OptoHybrid.

# Counters

This module holds all the counters of the GLIB. Writing to a given register will reset its value.

## Addressing

Module ID 6

Address 0x600000YY

0b 0110 0000 0000 0000 0000 0000 YYYY YYYY

|  |  |  |
| --- | --- | --- |
| Y register | Mode | Function |
| IPBus | | |
| 0 - 4 | Read | *IPBus strobes*  Order: OptoHybrid 0, OptoHybrid 1, Tracking data 0, Tracking data 1, Counters |
| 5 - 9 | Read | *IPBus acknowledgments* |
| T1 commands | | |
| 10 - 13 | Read | *T1 from AMC13*  Order: LV1A, Calpulse, Resync, BC0 |
| GTX | | |
| 100 - 101 | Read | *Tracking links error* |
| 102 - 103 | Read | *Trigger links error* |