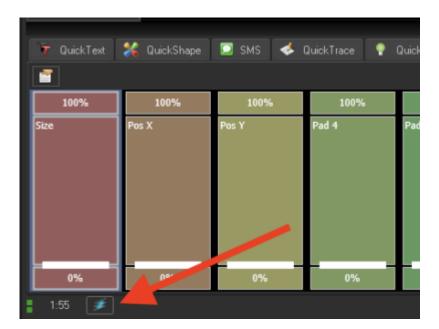
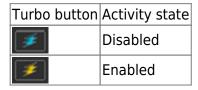
## **Turbo Streaming**

BEYOND 5.5 and up, will be able to use a new communication model aimed at large amount of FB4 laser controllers. You can enable this mode by clicking the Turbo button.

The Turbo button can be found in the bottom bar.





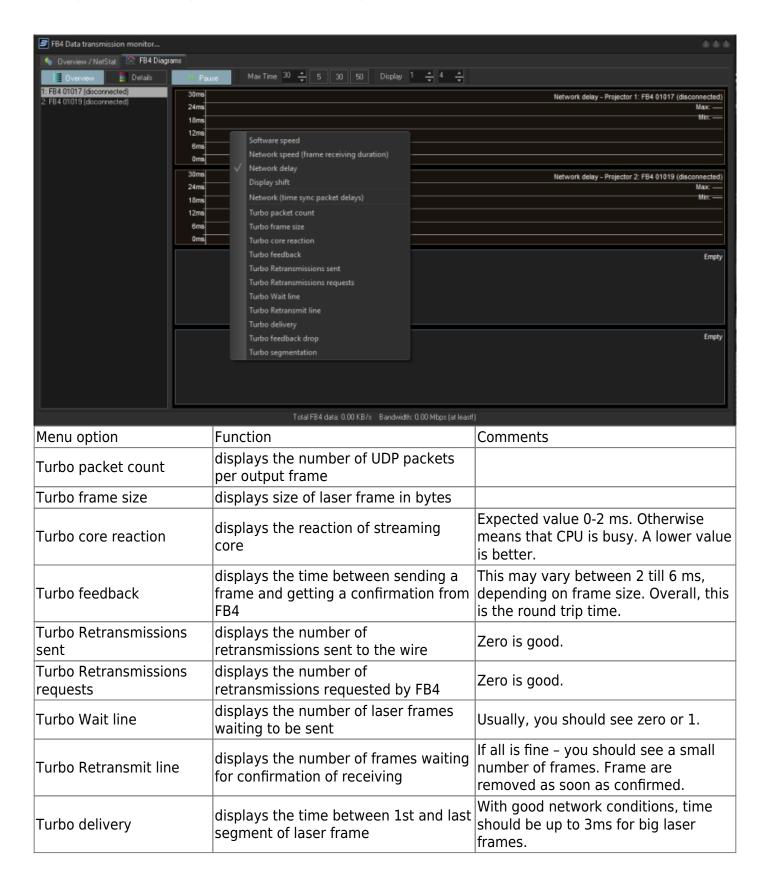
## The Classic Model

The classic streaming model is the default communication mode. The Classic model is exclusively based on TCP/IP communication. The TCP protocol takes care about data delivery. TCP waits for confirmation to make sure that the data is delivered. TCP communication is recognized as reliable because it will always deliver data but this also has its downsides. TCP does not consider that data might be outdated and will use high segmentation and multiple internal messages for delivery confirmation. In a less ideal situation, this can cause for delays in laser output as it can increase delivery time. Time is a critical thing!

## The Turbo mode model

It is not a secret that ArNET and ANN are based on UDP (User Datagram Protocol) communication. UDP is less depended on delivery notifications. What we did in turbo mode is use the best of both worlds. The turbo mode protocol is based on both TCP and UDP.

Monitoring of communication between FB4 and BEYOND can be done through the FB4 data transmission monitor Diagrams. The FB4 data transmission monitor has been expanded with the following graphs. which you can access by right clicking on the graphs.



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Turbo feedback drop	displays the number of laser frames where feedback did not arrive.	
Turbo segmentation	displays the graph of packets per laser frame	One pixel is one packet. Normally you should see green dots. If all green – data flows well. If some red – signal of lost packet. Most of parameters are statistics. Keep an eye on the main parameters in case if problems
Turbo Core reaction	displays the core reaction time.	Normally this should be around 1ms
Turbo Retransmission requests	displays the retransmission requests.	If all is well, then should be zero
Turbo feedback drop	displays drops in feedback.	The laser frame may still look correct; however, the confirmation which is send from FB4 to BEYOND is lost.

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