# H3C’s Product design



First of All, H3C don’t want to see any packet dropping in hardware including FPGA and CN7360’s coprocessors (BGX/PKO). If there will be traffic congestion, the software on CN7360 needs to know it beforehand. Then software can determine what kinds of packets to drop. So our DQ traffic shaping feature is very important.

In the diagram, 2 gig of traffic are from port37 and port 0. And they need be routed to port x. As there is 1000Mbps traffic limit on DQx, no packet dropping will occur on FPGA.

As FPGA has 38 GE ports for the down link, H3C need to use 38 DQs for one CN7360’s XLAUI port.

# H3C’s test case

Currently, H3C is testing the performance of this system. So the traffic flows change like below.



The Tester has 38 GE ports. What H3C reported is:

If they sent 38x1Gbps@1024byte, they only observer 98% of 38Gbps was received on tester.

If they sent 38x1Gbps@1280byte, they only observer 98% of 38Gbps was received on tester.

If they sent 38x1Gbps@1400byte, they only observer 98% of 38Gbps was received on tester.

# EVB test case1

As we don’t have 38 GE ports on EVB. I changed the topology like this.

   
Please refer to the test code, passthrough\_o3\_xlaui\_38DQs.zip on the ticket[180103-000022].

Comments about the testing code.  
1.configure QLM3 in XLAUI mode, DLM5/6 in XFI mode  
2.configure internal loopback on bgx1(QLM3)  
3.traffic flow:  
traffic (1Gbps)(MAC 00:0f:b7:00:81:e4) in bgx2, change mac to 00:0f:b7:01:81:e4), send packets out to bgx1 DQ0  
traffic (with MAC 00:0f:b7:01:81:e4) in bgx1, change mac to 00:0f:b7:02:81:e4), send packets out to bgx1 DQ1  
traffic (with MAC 00:0f:b7:02:81:e4) in bgx1, change mac to 00:0f:b7:02:81:e4), send packets out to bgx1 DQ2  
...  
traffic (with MAC 00:0f:b7:25:81:e4) in bgx1, change mac to 00:0f:b7:26:81:e4), send packets out to bgx1 DQ37  
traffic (with MAC 00:0f:b7:26:81:e4) in bgx1, out to bgx2(observer the result)  
  
the performance results:  
if packet.size is 1000byte -- output on bgx2 1000Mbps@122070pps  
if packet.size is 1020 -- output on bgx2 980Mbps @117325pps  
if packet.size is 1024 -- output on bgx2 984Mbps  
if packet.size is 1025 -- output on bgx2 943Mbps  
if packet.size is 1026 -- output on bgx2 944Mbps @112369pps  
if packet.size is 1027 -- output on bgx2 945Mbps  
if packet.size is 1028 -- output on bgx2 946Mbps  
if packet.size is 1029 -- output on bgx2 947Mbps @112369pps  
if packet.size is 1100 -- output on bgx2 1000Mbps@111210pps  
if packet.size is 1280 -- output on bgx2 979Mbps @93850pps  
if packet.size is 1400 -- output on bgx2 972Mbps @85315pps  
if packet.size is 1500 -- output on bgx2 1000Mbps@82024pps

# EVB test case2

Based on EVB test case1.



In traffic-gen:

tx.size 0xb00 1280

tx.percent 0xb00 100

In passthrought\_o3: In initialization, allocate 80DQs for XLAUI port.

1. DQ index for port 0x900 is from 0x11 to 0x36 -- 38DQs

Result: 979Mbps@ 93850 pps.

1. DQ index for port 0x900 is from 0x11 to 0x30 --32DQs

Result: 1000Mbps@ 95858 pps.

1. DQ index for port 0x900 is from 0x11 to 0x33 --35DQs

Result: 1000Mbps@ 95858 pps.

1. DQ index for port 0x900 is from 0x11 to 0x34 --36DQs

Result: 1000Mbps@ 95858 pps.

1. DQ index for port 0x900 is from 0x11 to 0x35 --37DQs

Result: 1000Mbps@ 95858 pps.

1. DQ index for port 0x900 is from 0x11 to 0x37 --39DQs

Result: 954Mbps@ 91447 pps

1. DQ index for port 0x900 is from 0x11 to 0x38 --40DQs

Result: 930Mbps@ 89163 pps

1. DQ index for port 0x900 is from 0x12 to 0x36 --37DQs

Result: 1000Mbps@ 95858 pps .

1. DQ index for port 0x900 is from 0x12 to 0x37 --38DQs

Result: 979Mbps@ 93850 pps. .

1. DQ index for port 0x900 is from 0x37 to 0x5c --38DQs

Result: 979Mbps@ 93850 pps.

1. DQ index for port 0x900 is from 0x37 to 0x5b --37DQs

Result: 1000Mbps@ 95858 pps.