

XScope performance figures

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Data transferred from the xCORE device to the debug adapter is lossless, but data transferred from the debug adapter to your host PC may be lossy, depending on the speed of your PC.

1 Transfer rates between the xCORE Tile and XTAG-2

The recommended xConnect Link speed for most target hardware is 10ns between transitions (10MByte/sec). This can be achieved by setting the link interbit gap to 5 cycles (see [XM-000929-PC](#)). The latencies and maximum call rates for the probe functions using an xConnect Link at this speed are given in Figure 1.

Figure 1: XScope performance figures for xConnect Link with 5-cycle interbit gap	Probe function	Latency (core cycles)	Max calls/sec
	<code>xscope_probe_data_pred</code>	15 (always)	666,000
	<code>xscope_probe</code>	20 (with no contention)	999,000
	<code>xscope_probe_cpu</code>	27 (with no contention)	666,000
	<code>xscope_probe_data</code>	22 (with no contention)	666,000
	<code>xscope_probe_cpu_data</code>	28 (with no contention)	555,000

If two subsequent calls are made, the second call may be delayed in line with the maximum frequency. For example, if `xscope_probe_data_pred` is called twice, the second call is delayed by approximately 1.5µs.

The maximum call rates can be increased by speeding up the link and reducing the interbit gap (see [XM-000929-PC](#)). A small interbit gap requires careful layout of the link, since it increases link frequency.

The UART interface executes at a rate of 2MB/s.

2 Transfer rates between the XTAG-2 and Host PC

Many PCs are limited to inputting trace data from the XTAG-2 at a rate of 500,000 trace records/sec or less. If your PC is unable to keep up it will drop records, reducing the granularity of the trace data. The XDE Scope view marks the loss of data on the timeline.



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