Issues on Event Rate of Readout Electronics





- Even though the data length has been reduced to 120 ns, when the data transmission rate has not yet reached the upper limit of the optical port's capacity, there is still event loss.
- Limited by FPGA, NIC, PC or software?

- We should quickly identify which stage is causing the data loss. I can start by checking if the issue lies in the PC or the host software:
 - Change data storage location: from D drive (HDD) to C drive (SSD)
 - Further reduce event length:
 - 120 ns ~ 100Mbps to 2Gbps
 - Reduce the event length to keep the data transfer rate within Gbps and check if there's still data loss
 - Operate on a Linux system: Write data directly to memory while running on Linux, avoiding interference from other processes during data transfer.
 - Try different host software: Test alternative host software as well as our own custom-written host software.

Three Host Software to be Further Test



SiTCP Utility – Current software

eral C	Control(UDP) Data(TCP)	SOY-RS232C	SOY-GPIB		
rget Devid	ce		Written Con	text	
Address	192.168.10.16		IP Address	192.168.10.16	
P Port	24	Read	TCP Port	24	Write
UDP Port	4660		UDP Port	4660	
EPROM/	Access				
EPROM /	Access				
EPROM/	Access				
PROM /	Access				

本ソフトウェアの通信性能を以下に示します。なおこれらの値はテスト時のものであり、環境により変動が

性能

50us

45µs

650Mbps

460.8Kbps

SiTCP Python Library

GitHub - BeeBeansTechnologies/sitcpy

양 master → 양 2 Branches ♡ 2 Tags		Q Go to file		<> Code -
masahiro-koyanagi Merge pull request #3 from Bee	BeansTechnologies/develop		9c13cd9 · 5 years ago	🕚 5 Commits
docs/images	Added v0.1.0 files.			6 years ago
🖿 sitcpy	fixed issue #2.			5 years ago
🖿 tests	Added v0.1.0 files.			6 years ago
🗅 .gitignore	Added v0.1.0 files.			6 years ago
	Added v0.1.0 files.			6 years ago
MANIFEST.in	Added v0.1.0 files.			6 years ago
🗋 README.ja.md	Added v0.1.0 files.			6 years ago
C README.md	Added v0.1.0 files.			6 years ago
🗅 setup.cfg	Added v0.1.0 files.			6 years ago
🗅 setup.py	fixed issue #2.			5 years ago
🗅 tox.ini	Added v0.1.0 files.			6 years ago

bytes:10269379600 bytes
duration:0:00:05.259201
MBps:1952.650145906193
Gbps:15.621201167249545
Mbps:15621.201167249545
Whiting for now data writi

以天之语 解物之道

<mark>Own design</mark>

			Waveform	Acquisition	n System				_ 🗆 🗙
nnection			Waveform Display						
P Address:	192.168.1.3		Waveform Display						
JDP Port:	12345		110						
ICP Port:	12345								
	Conr	nect	100						
IC Paramete	ers								
Event Lengt	h (0-255):								
Offset (0-25	5):		90						
Threshold (0-1023):								
	Set ADC	Params	80						
stem Contro	ol		e						
	System	Reset	70 19						
	Read S	Status	Am						
	Read Tem	perature	60						
ta Handling	1								
	Start Data	Acquisition	50						
	Stop Data	Acquisition							
	Start Writi	ing to File							
ata process	ing initialized	with connected device	40						
aca process uccessfully	connected!	a with connected device.							
			30						
			. 0			15			
			A Manualasen Disa	Jaux Onen		10110			



RBCP 最小ターンアラウンドタイム TCP 最大通信速度

3. 性能

あります。

項目

SOY-RS232c 最大通信速度 SOY-GPIB 最小ターンアラウンドタイム

TSUNG-DAO LEE INSTITUTE