

CS260 - Buses.

Note Title

12/1/2008

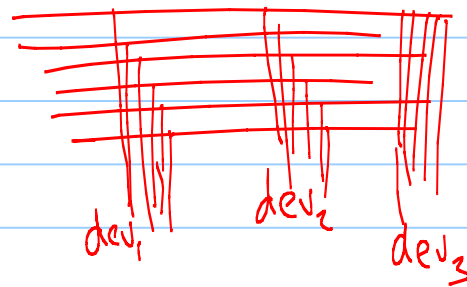
Bus -

Electrical connection arrangement allowing multiple devices to be attached to 1 set of wires.

Wires

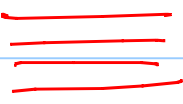
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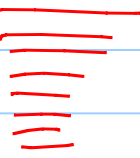
Rules for
using them.



How do devices share
on the bus: ⁽¹⁾ addressing
(2) negotiation

Typical (parallel) bus has several subsets of wires.
one rule is the rule for addressing

control { 

data { 

addresses { 

Negotiation

in control wires have some request wires:

req₀ 

req₁ 

req₂ 

req₃ 

Once bus is seized, we continue with a

Bus transaction

bus transaction

Dev.
refo

Addr

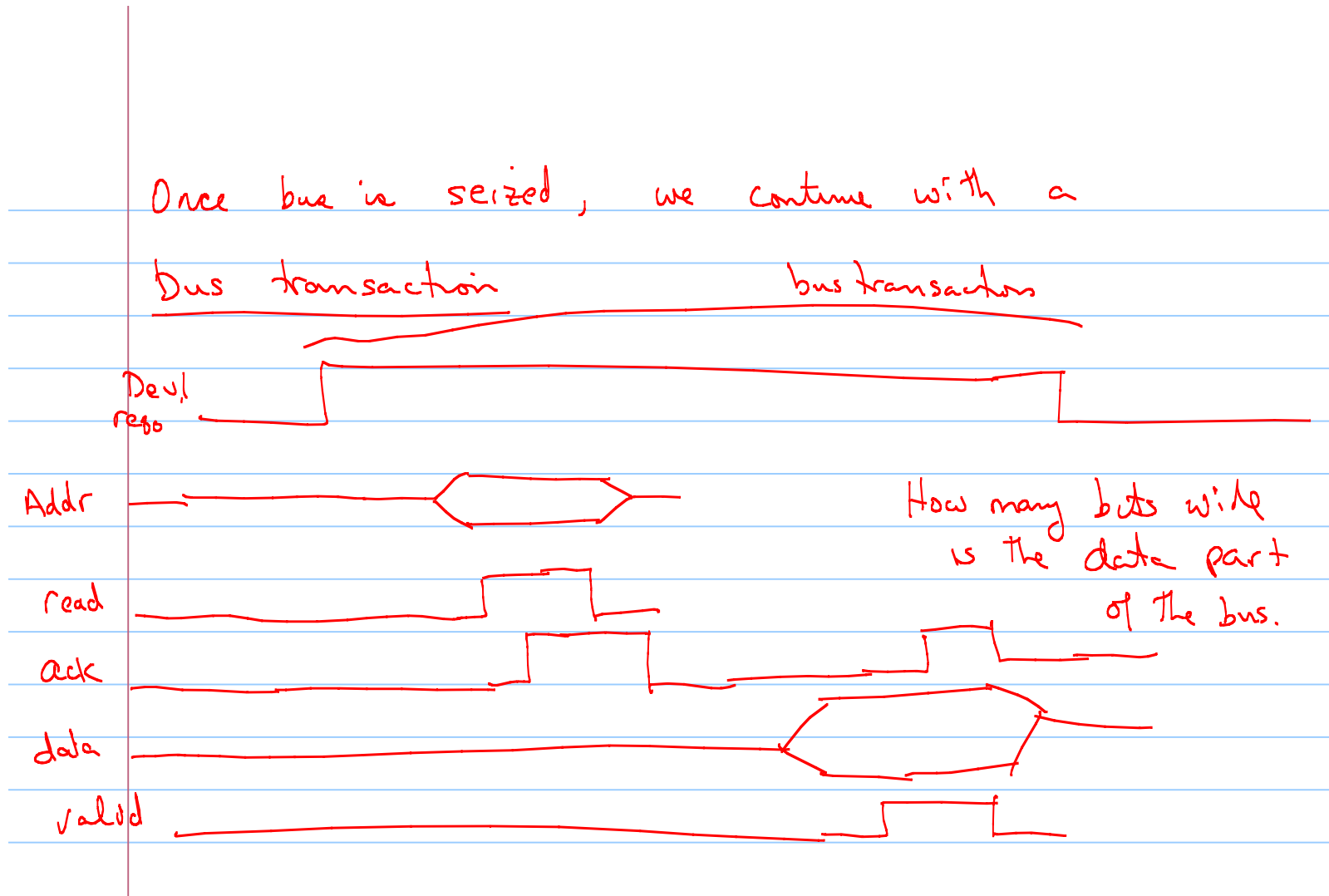
read

ack

data

valid

How many bits wide
is the data part
of the bus.



Some buses to be familiar with:

USB - universal serial bus - 480 Mbit/sec.

SATA - serial ATA - connecting disks, cd/dvd internally
150 MByte/sec. x 2

Memory bus - multi GByte/sec.

PCI

AGP $\leadsto$ PCI Express

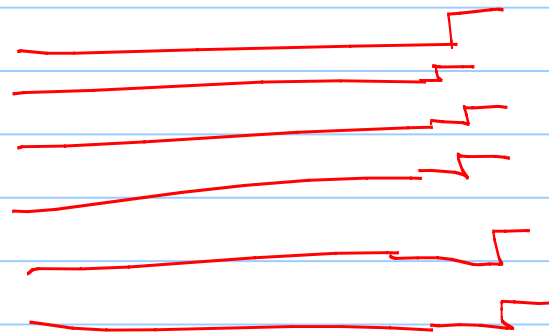
Ethernet

Small Parallel

IDE $\sim$ ATA

SCSI (disks
scanners)

Modern trend to serial buses —
very few wires —
USB — 4 wires



Cross talk.

skew

