

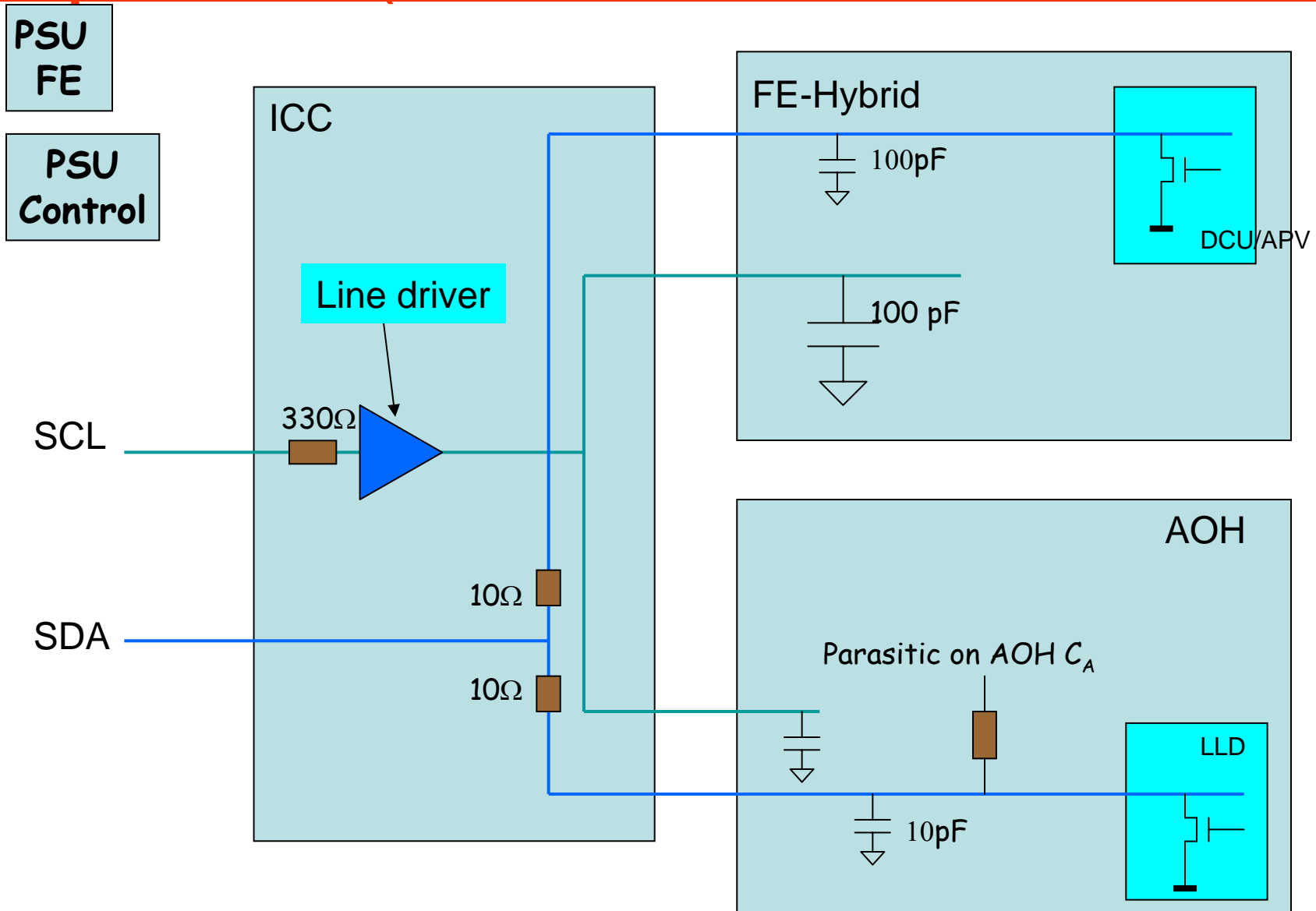
New Development: Tentative Plan for Rod Production

- As relayed to me by Joe, following the discussion at yesterday's management meeting
- As far as I understand, still tentative
 - Input from us can make a difference

Option 7

- Recall presentation from Marchioro 1-2 weeks ago had 6 options to fix the I²C problem
- They now have come up with a 7th option

Option 7 (from Marchioro's slides)



6/23/2005

Claudio Campagnari, weekly US rod meeting

The buffer: CRT245

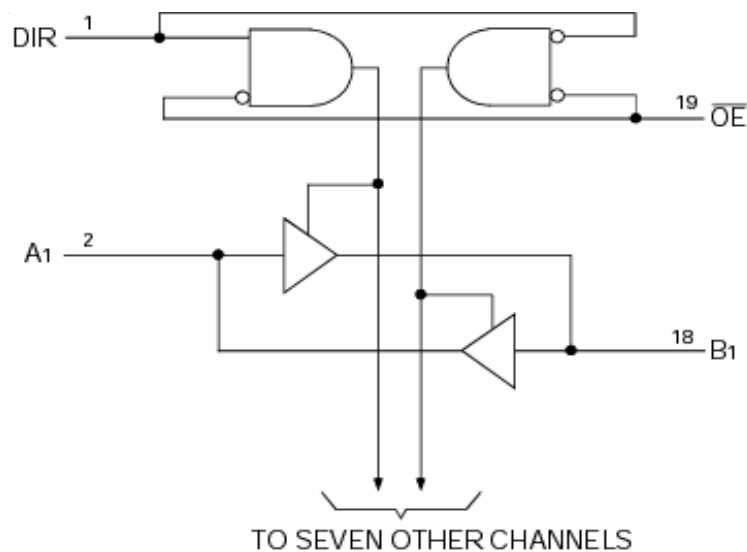
Description:

The CRT245 is a bi-directional octal 2.5 V driver realized in a radiation tolerant technology. The part is pin compatible with the family of commercial '245 devices. The typical rise time on a capacitive load of 10pF is 3 ns.

Features

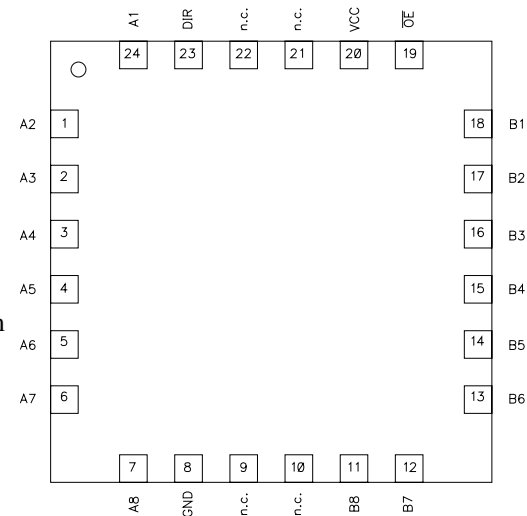
- Rad Tolerant 0.25µm CMOS (2.5V)
- Package: LPCC-24 (4 x 4mm)
- Slew Rate Controlled CMOS Buffer

Block diagram



Package and pinout (LPCC24)

CRT245
Package: LPCC-24
Size: 4.00 x 4.00mm
Pitch: 0.50mm



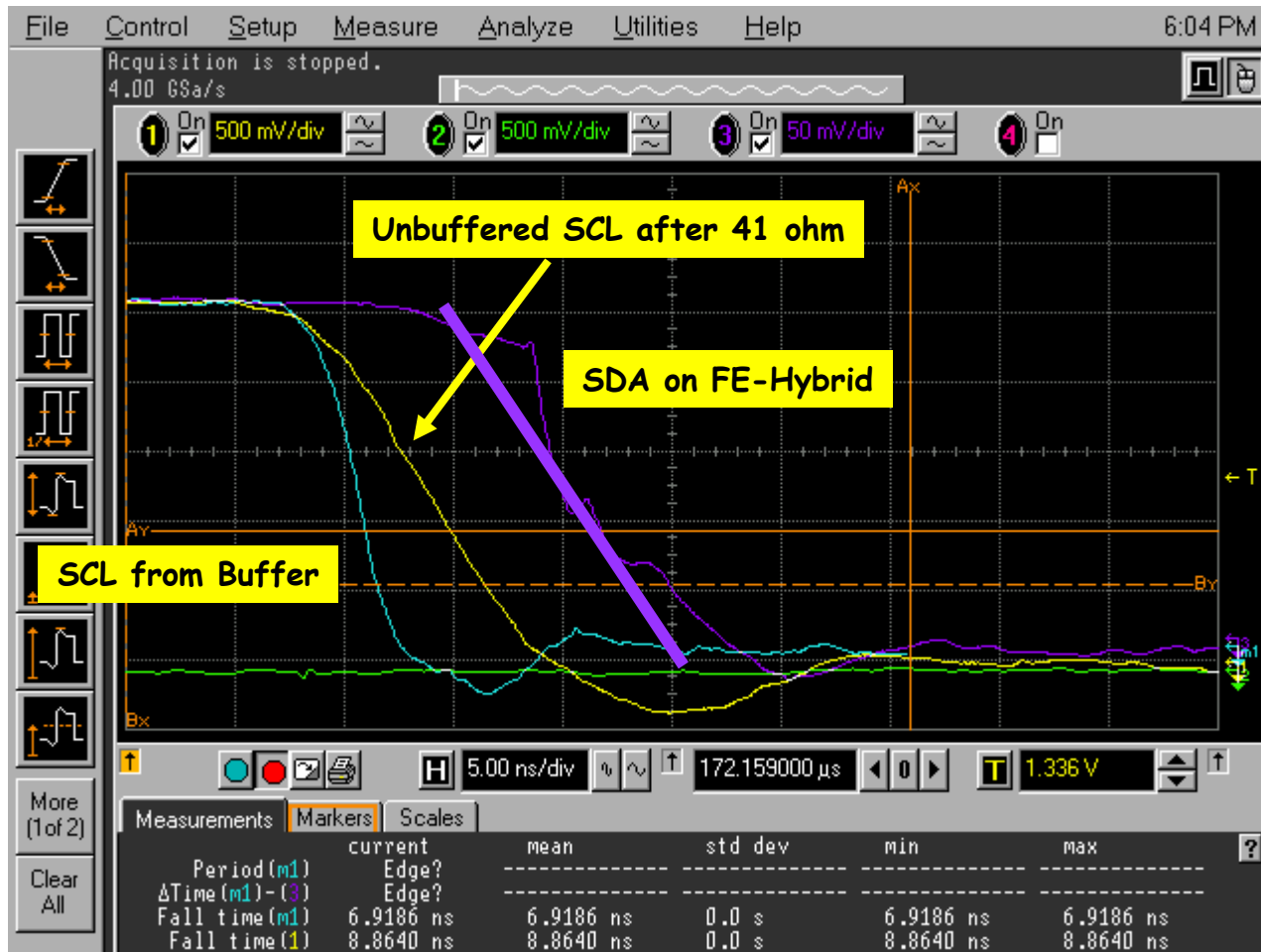
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Option 7 (cont.)

- Introduction of line driver (buffer), presumably powered from front end, decouples the front end from the CCU
- Prevents problems at power up
- It also gives more margin w.r.t. jumper solution
 - Like $R=0 \Omega$ solution, I think

Safety Margin (from Marchioro's slides)



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Main drawback of Option 7

- Need to re-design and re-fabricate all ICC cards
- This has been discussed at yesterday's meeting
- There is a 1st order plan

Schedule (from Marchioro's slides)

	26-juin	3-juil.	10-juil.	17-juil.	24-juil.	31-juil.	7-août	14-août	21-août	28-août	4-sept.	11-sept.	18-sept.	25-sept.	2-oct.	9-oct.	16-oct.	23-oct.	30-oct.	6-nov.	
Week	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
New layout of cards	■																				
Film fabrication		■																			
Proto series 10 cards			■																		
Mounting of proto series				■																	
Testing of proto series					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Components acquisition		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
PCB Production				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Assembly entire lot								■	■	■	■	■	■	■	■	■	■	■	■	■	■
Test entire lot											■	■	■	■	■	■	■	■	■	■	■
Replace ICC cards on RODs												■	■	■	■	■	■	■	■	■	■
	■	MIN																			
	■	MAX																			

Tentative Plan

1. Each of FNAL and UCSB will build ~ 30 rods now with jumpers, ship to CERN
 - To be used for integration practice
 - We will add the jumpers in US
 - Manpower question
2. If everything goes well, will build more rods like this to complete L6, then stop
 - L6 is ~ 150 rods
 - Who does the modifications?
 - Joe (and I) suggests CERN.
 - Means that we ship empty rod frames back

Tentative Plan (cont.)

3. In the meantime, prototype solution 7 ICC boards are fabricated
4. If OK, then fabricate more, and equip all rods
 - Rod production would then re-start in Septmeber or October
5. L6 rods would then be pulled and retrofitted to
 - Although there will be pressure to keep as-is
 - Question of re-test of retrofitted L6 rods

Other questions/issues

- What about header errors?
 - Building more rods and shipping them to CERN will give more statistics and allow them to study these in more detail
 - Personal opinion: we know that header errors are there. The tracker group should tackle them ASAP and not hope that they will go away.
- What about I²C errors 64 & 68 at FNAL
 - Same as above
 - Although, still do not understand (AFAIK) why UCSB does not see them

Other questions/issues (part 2)

- My opinion: Before restart of production need a well defined testing protocol for digital problems
 - To be defined by experts (CERN)
 - I think we have many of the pieces, but it should be looked at again
 - Storage of modules
 - Bookkeeping
 - We have modified rods and unmodified rods
 - With several flavors of modifications
 - We will ship rods with jumpers, and later rods with "solution 7" ICC cards
 - We still have (I think) rods that have not been "cleaned" and/or rods with switched thermistor lines
- need to take stock of where we are in the two labs
- need to see if existing database can be of help

Should we start with this program now?

- Probably not quite yet, but should be ready for it
- Do we see any other problems with this?
- Not sure when the decision will be made, what the decision mechanism is