Production Status

RIKEN/RBRC

Itaru Nakagwaw

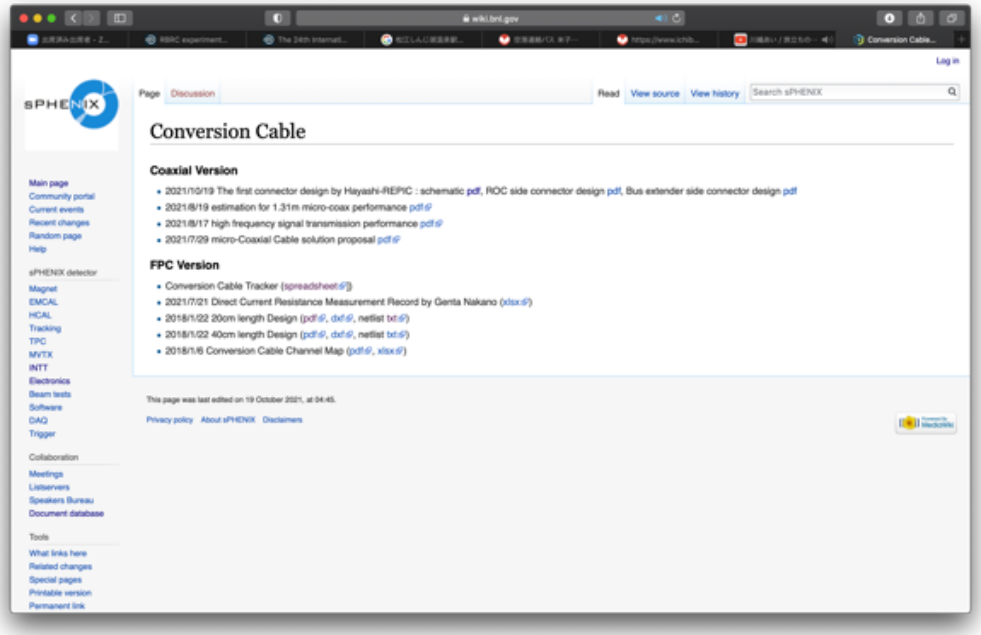
Silicon Shipping

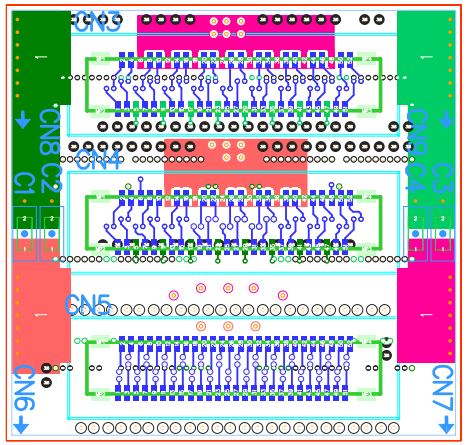
- The silicon original shipping contract was made RIKEN->Taiwan->BNL
- The contract includes
  - Shipping cost Taiwan->BNL
  - Insurance
  - Import tax will be charged to RIKEN

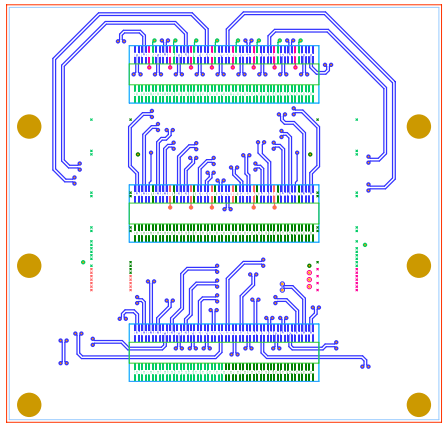
- Concern is what to do with silicon sensors assembled on ladder? Original plan was to test sensors in Taiwan and ship to BNL. Itaru has to work out with the shipping company.

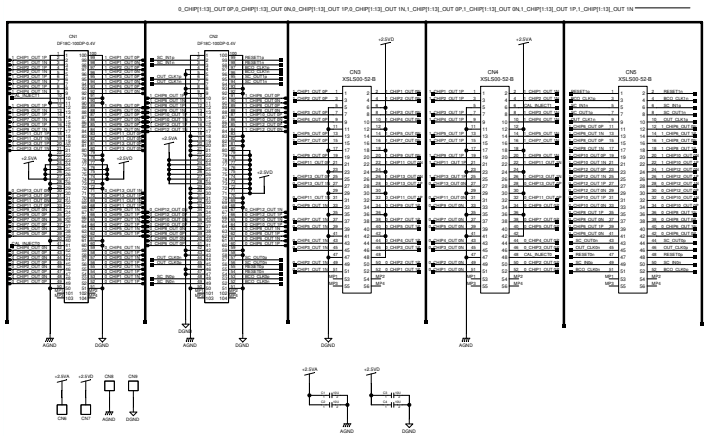
Conversion Cable

Cable Design Waiting for our feedback

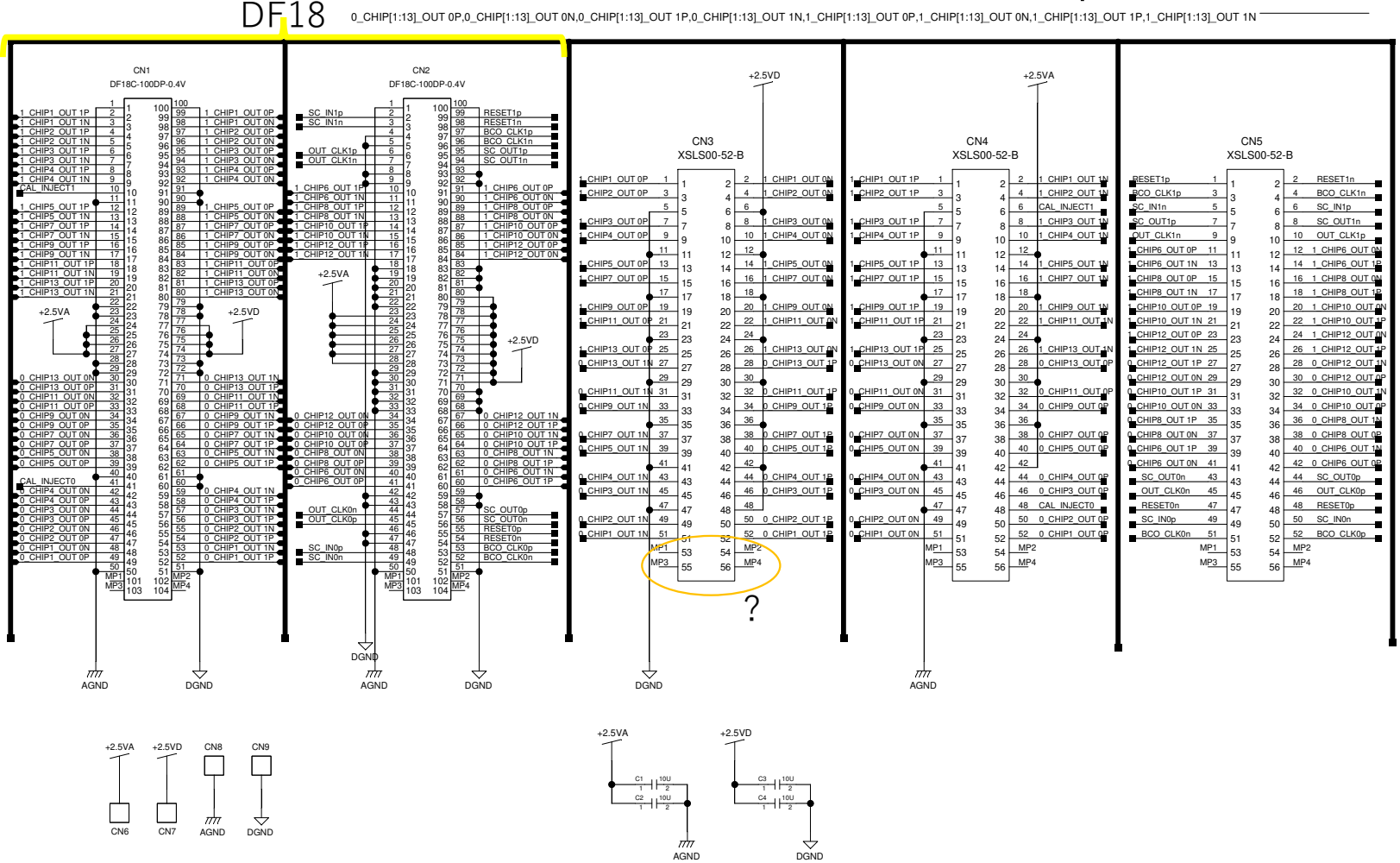


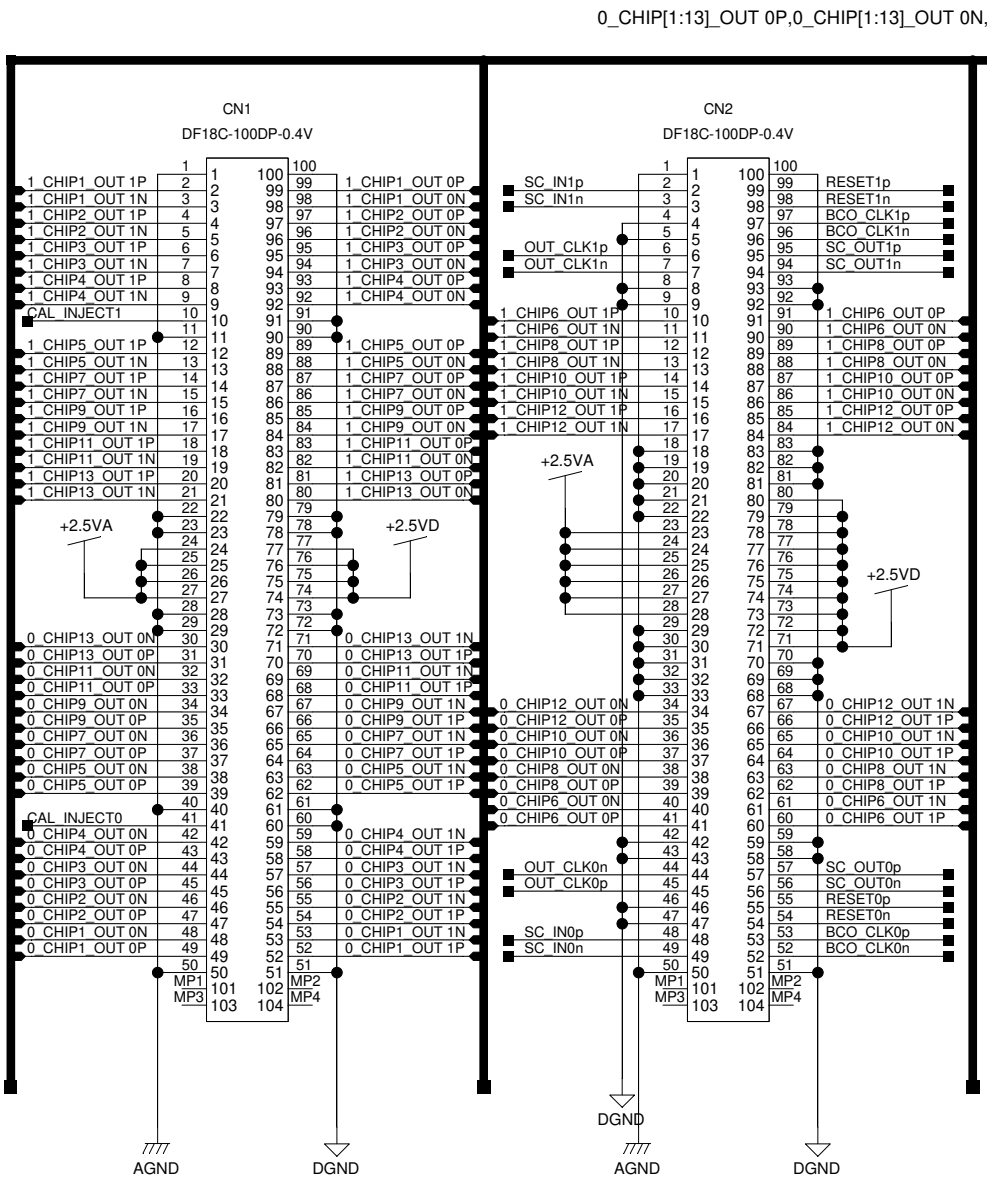






Conversion Cable Channel Map



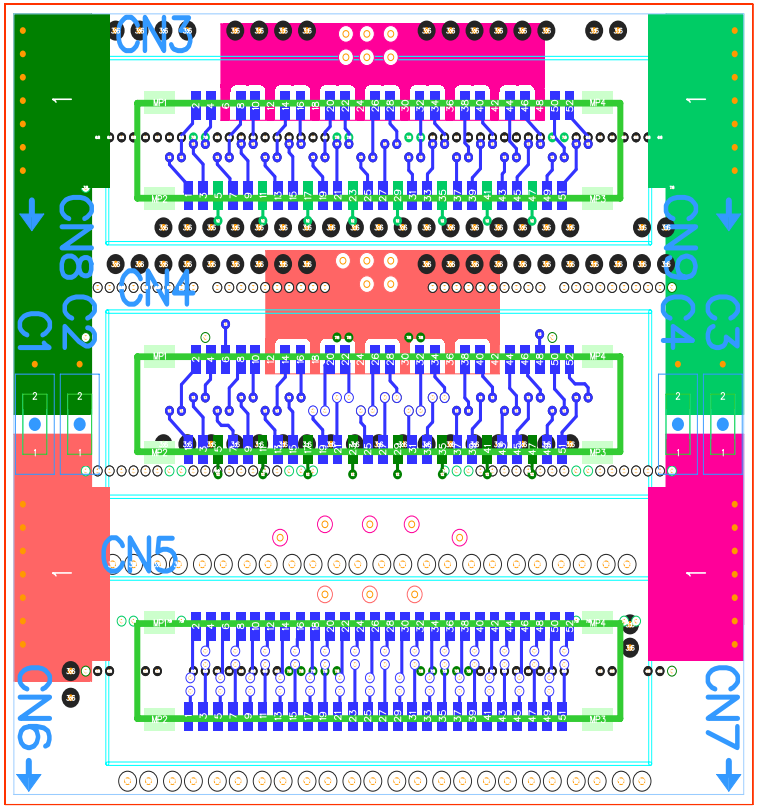


ROC							
HEADER (TOP)							
J1 (out side)				J2 (in side)			
#	name (net)	#	name (net)	#	name (net)	#	name (net)
1	AGND	100	DGND	1	AGND	100	DGND
2	DS1_CP01_OUT1N	99	DS1_CP01_OUT0P	2	SC_IN1P	99	RESET1P
3	DS1_CP01_OUT1P	98	DS1_CP01_OUT0N	3	SC_IN1N	98	RESET1N
4	DS1_CP02_OUT1N	97	DS1_CP02_OUT0P	4	DGND	97	BCO_CLK1P
5	DS1_CP02_OUT1P	96	DS1_CP02_OUT0N	5	DGND	96	BCO_CLK1N
6	DS1_CP03_OUT1N	95	DS1_CP03_OUT0P	6	OUT_CLK1P	95	SC_OUT1P
7	DS1_CP03_OUT1P	94	DS1_CP03_OUT0N	7	OUT_CLK1N	94	SC_OUT1N
8	DS1_CP04_OUT1N	93	DS1_CP04_OUT0P	8	DGND	93	DGND
9	DS1_CP04_OUT1P	92	DS1_CP04_OUT0N	9	DGND	92	DGND
10	CAL_INJECT1	91	DGND	10	DS1_CP06_OUT1N	91	DS1_CP06_OUT0P
11	AGND	90	DGND	11	DS1_CP06_OUT1P	90	DS1_CP06_OUT0N
12	DS1_CP05_OUT1N	89	DS1_CP05_OUT0P	12	DS1_CP08_OUT1N	89	DS1_CP08_OUT0P
13	DS1_CP05_OUT1P	88	DS1_CP05_OUT0N	13	DS1_CP08_OUT1P	88	DS1_CP08_OUT0N
14	DS1_CP07_OUT1N	87	DS1_CP07_OUT0P	14	DS1_CP10_OUT1N	87	DS1_CP10_OUT0N
15	DS1_CP07_OUT1P	86	DS1_CP07_OUT0N	15	DS1_CP10_OUT1P	86	DS1_CP10_OUT0P
16	DS1_CP09_OUT1N	85	DS1_CP09_OUT0P	16	DS1_CP12_OUT1N	85	DS1_CP12_OUT0P
17	DS1_CP09_OUT1P	84	DS1_CP09_OUT0N	17	DS1_CP12_OUT1P	84	DS1_CP12_OUT0N
18	DS1_CP11_OUT1N	83	DS1_CP11_OUT0P	18	AGND	83	DGND
19	DS1_CP11_OUT1P	82	DS1_CP11_OUT0N	19	AGND	82	DGND
20	DS1_CP13_OUT1N	81	DS1_CP13_OUT0P	20	AGND	81	DGND
21	DS1_CP13_OUT1P	80	DS1_CP13_OUT0N	21	AGND	80	VDD(+2.5V)
22	AGND	79	DGND	22	AGND	79	VDD(+2.5V)
23	AGND	78	DGND	23	VA(+2.5V)	78	VDD(+2.5V)
24	VA(+2.5V)	77	VDD(+2.5V)	24	VA(+2.5V)	77	VDD(+2.5V)
25	VA(+2.5V)	76	VDD(+2.5V)	25	VA(+2.5V)	76	VDD(+2.5V)
26	VA(+2.5V)	75	VDD(+2.5V)	26	VA(+2.5V)	75	VDD(+2.5V)
27	VA(+2.5V)	74	VDD(+2.5V)	27	VA(+2.5V)	74	VDD(+2.5V)
28	AGND	73	DGND	28	VA(+2.5V)	73	VDD(+2.5V)
29	AGND	72	DGND	29	AGND	72	VDD(+2.5V)
30	DS0_CP13_OUT0N	71	DS0_CP13_OUT1N	30	AGND	71	VDD(+2.5V)
31	DS0_CP13_OUT0P	70	DS0_CP13_OUT1P	31	AGND	70	DGND
32	DS0_CP11_OUT0N	69	DS0_CP11_OUT1N	32	AGND	69	DGND
33	DS0_CP11_OUT0P	68	DS0_CP11_OUT1P	33	AGND	68	DGND
34	DS0_CP09_OUT0N	67	DS0_CP09_OUT1N	34	DS0_CP12_OUT0N	67	DS0_CP12_OUT1N
35	DS0_CP09_OUT0P	66	DS0_CP09_OUT1P	35	DS0_CP12_OUT0P	66	DS0_CP12_OUT1P
36	DS0_CP07_OUT0N	65	DS0_CP07_OUT1N	36	DS0_CP10_OUT0N	65	DS0_CP10_OUT1N
37	DS0_CP07_OUT0P	64	DS0_CP07_OUT1P	37	DS0_CP10_OUT0P	64	DS0_CP10_OUT1P
38	DS0_CP05_OUT0N	63	DS0_CP05_OUT1N	38	DS0_CP08_OUT0N	63	DS0_CP08_OUT1N
39	DS0_CP05_OUT0P	62	DS0_CP05_OUT1P	39	DS0_CP08_OUT0P	62	DS0_CP08_OUT1P
40	AGND	61	DGND	40	DS0_CP06_OUT0N	61	DS0_CP06_OUT1N
41	CAL_INJECT0	60	DGND	41	DS0_CP06_OUT0P	60	DS0_CP06_OUT1P
42	DS0_CP04_OUT0N	59	DS0_CP04_OUT1N	42	DGND	59	DGND
43	DS0_CP04_OUT0P	58	DS0_CP04_OUT1P	43	DGND	58	DGND
44	DS0_CP03_OUT0N	57	DS0_CP03_OUT1N	44	OUT_CLK0N	57	SC_OUT0P
45	DS0_CP03_OUT0P	56	DS0_CP03_OUT1P	45	OUT_CLK0P	56	SC_OUT0N
46	DS0_CP02_OUT0N	55	DS0_CP02_OUT1N	46	DGND	55	RESET0P
47	DS0_CP02_OUT0P	54	DS0_CP02_OUT1P	47	DGND	54	RESET0N
48	DS0_CP01_OUT0N	53	DS0_CP01_OUT1N	48	SC_IN0P	53	BCO_CLK0P
49	DS0_CP01_OUT0P	52	DS0_CP01_OUT1P	49	SC_IN0N	52	BCO_CLK0N
50	AGND	51	DGND	50	AGND	51	DGND

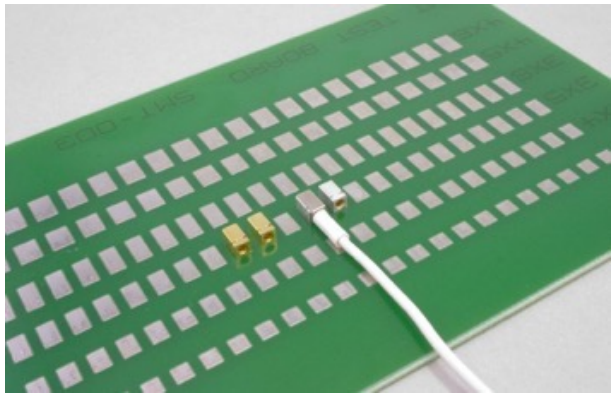
Seems to be consistent

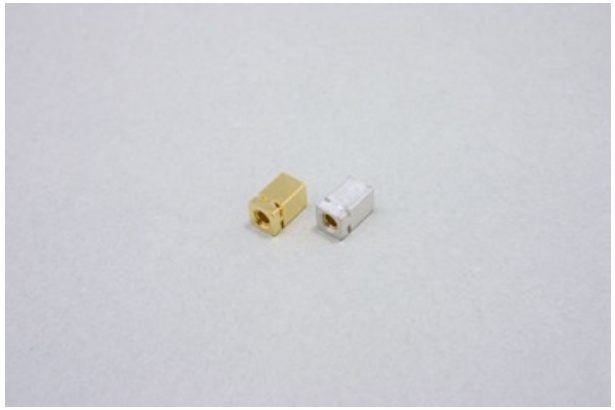
ROC DF18 Channel Map

ROC Side Connector Design



HH-1-G (AWG26) -> HH-3-G (AWG24)

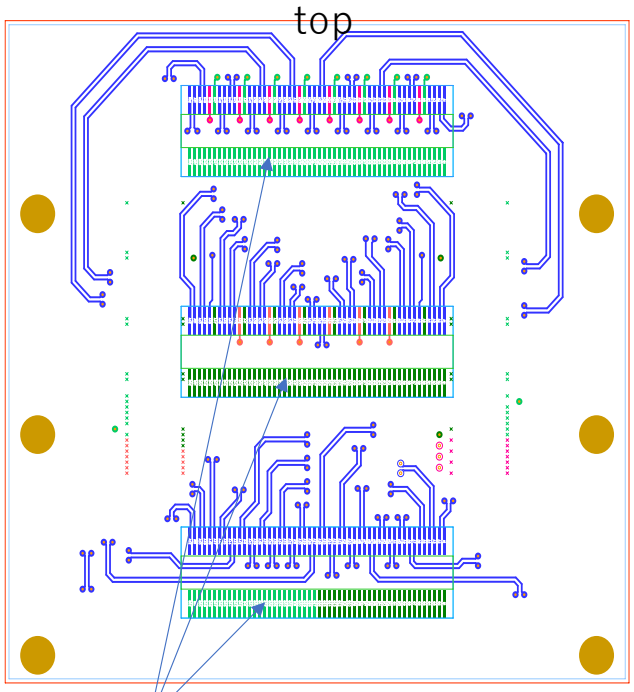


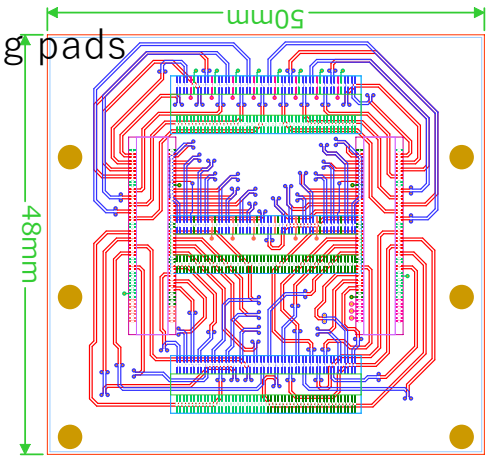


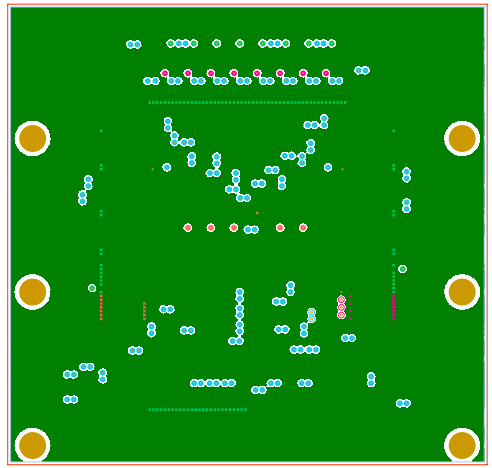
Ground/Power Lines

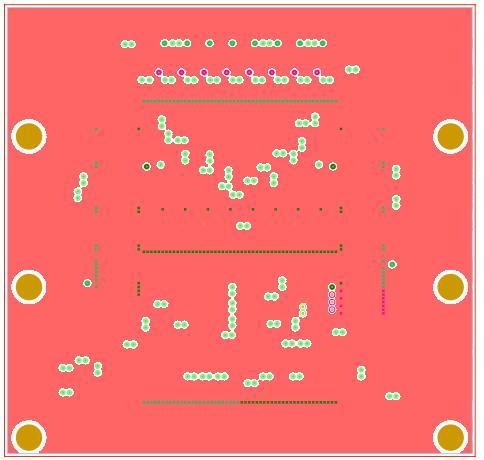
1. Analogue Ground
2. Digital Ground
3. Analogue Power
4. Digital Power

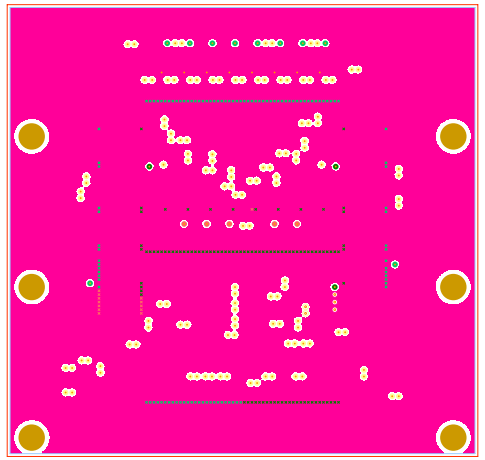
Bus Extender Side Connector

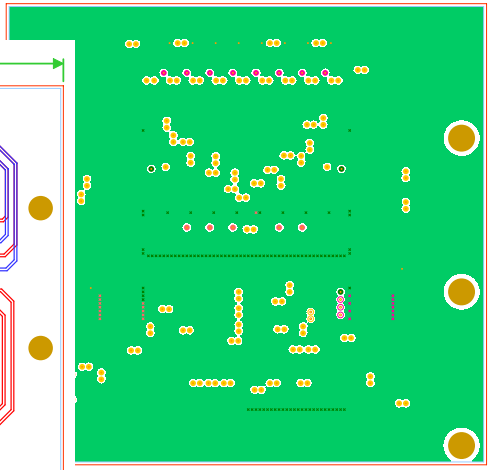


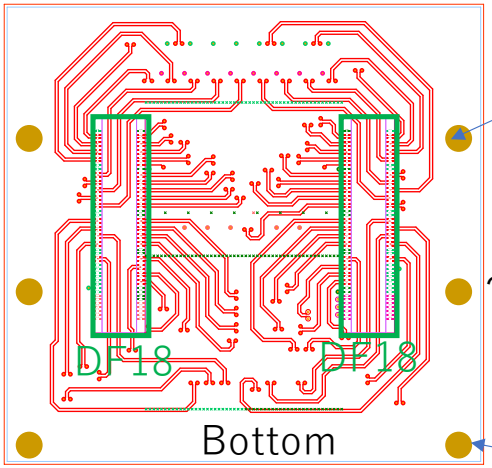




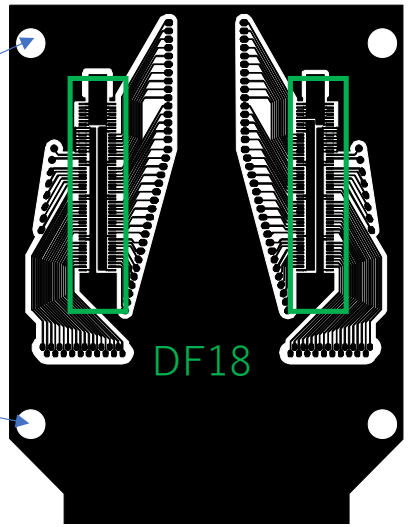








Bus Extender



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?

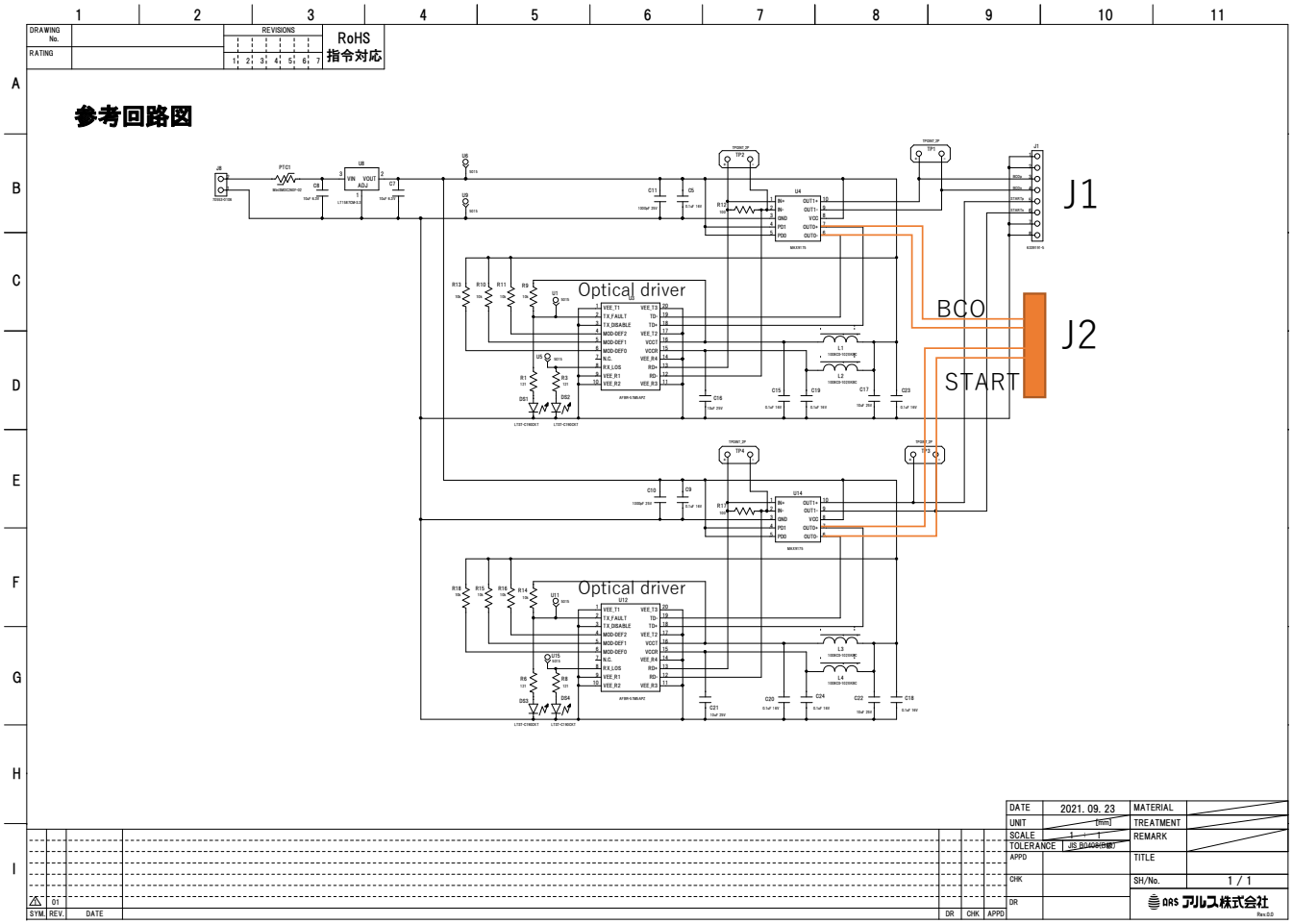
screw hole?

Towards Finalization of Design

- Itaru needs to see Hayashi-REPIC engineer to complete understanding of the design perhaps next week.

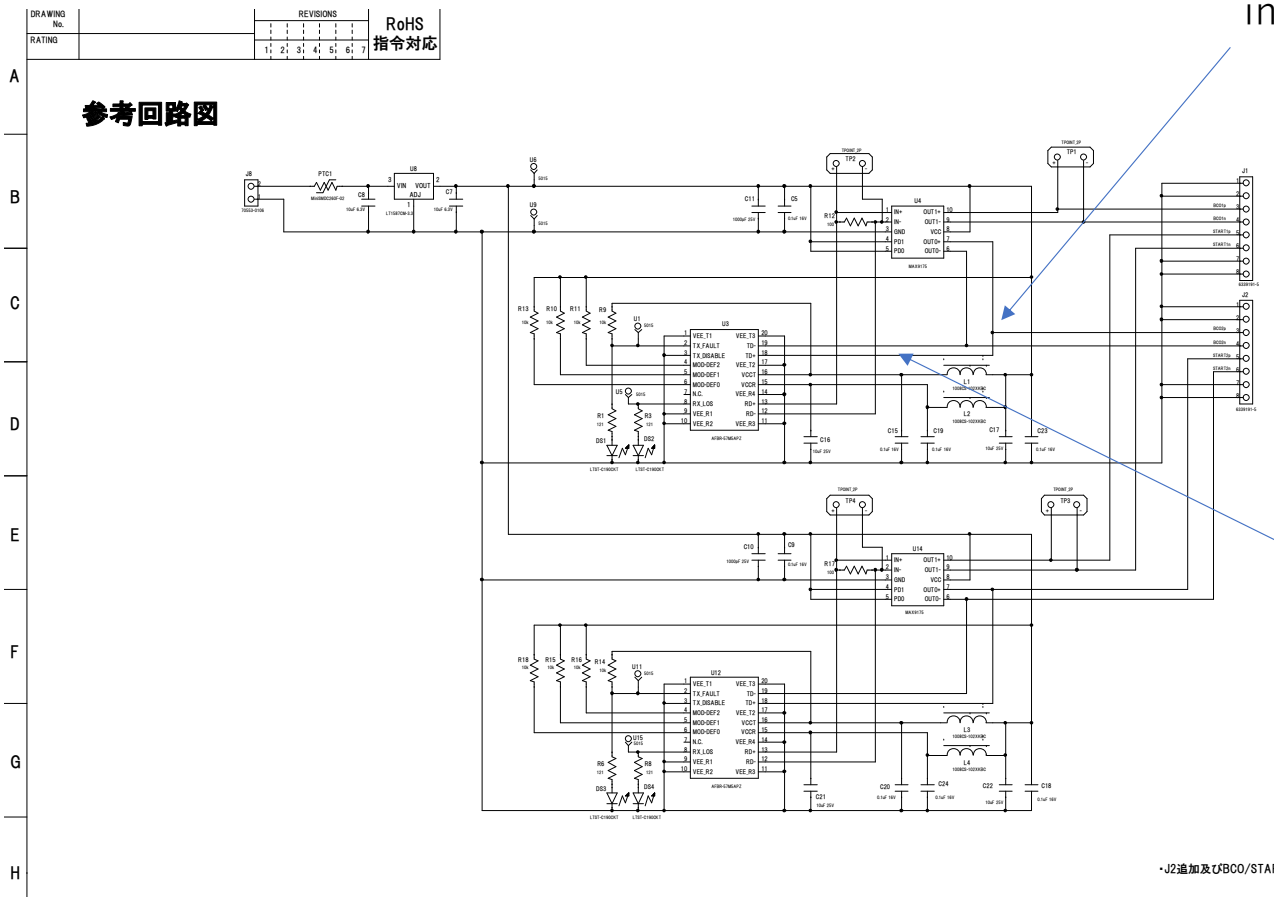
Beam Clock Distribution Board

Beam Clock Distribution Board



- Design work by ARS co.
- Waiting for my review.

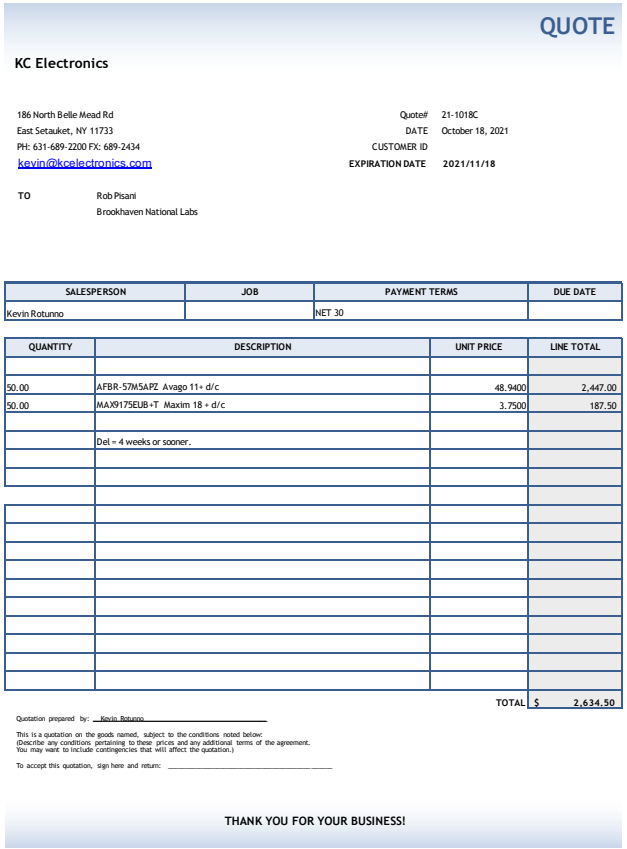
Modified Design



Output currents are divided into two. Is this OK?

This signal won't be used anyway

Cost Reduction



QUOTE

KC Electronics

186 North Belle Mead Rd
East Setauket, NY 11733
PH: 631-689-2200 FX: 689-2434
kevin@kcelectronics.com

Quote# 21-1018C
DATE October 18, 2021
CUSTOMER ID
EXPIRATION DATE 2021/11/18

TO Rob Pisani
Brookhaven National Labs

SALESPERSON	JOB	PAYMENT TERMS	DUE DATE
Kevin Rotunno		NET 30	

QUANTITY	DESCRIPTION	UNIT PRICE	LINE TOTAL
50.00	AFBR-57M5APZ Avago 11+ d/c	48.9400	2,447.00
50.00	MAX9175EUB+T Maxim 18 + d/c	3.7500	187.50
	Del = 4 weeks or sooner.		

TOTAL $ 2,634.50

Quotation prepared by: Kevin Rotunno

This is a quotation on the goods named, subject to the conditions noted below:
(Describe any conditions pertaining to these prices and any additional terms of the agreement.
You may want to include contingencies that will affect the quotation.)

To accept this quotation, sign here and return: _____

THANK YOU FOR YOUR BUSINESS!

Total Cost Estimate as of October 6th

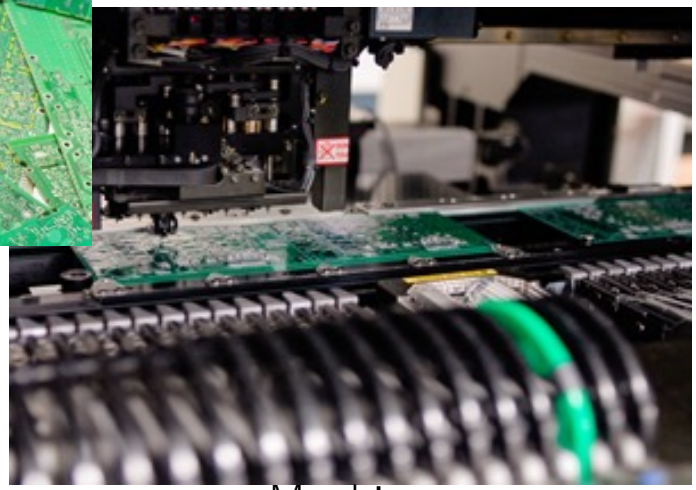
Item	Quantity	Unit Price	Price
Board Initial	1式	¥150,000	¥150,000
Layout Design	1	¥200,000	¥200,000
Item	**Quantity**	**Unit Price**	**Price**
Components	20/LOT	¥158,000	¥3,160,000
Prototype Fabrication *Manual component mounting*	2	¥50,000	¥100,000
Production *Auto component mounting*	18	¥50,000	¥900,000
			¥4,160,000

Quote	ARS co.	Rob
AFBR-57M5APZ Avago 11+ d/c	$4,000 (170pcs)	$2,447 (50pcs)
MAX9175EUB+T Maxim 18 + d/c	$11,000 (2,400pcs)	$187 (50pcs)

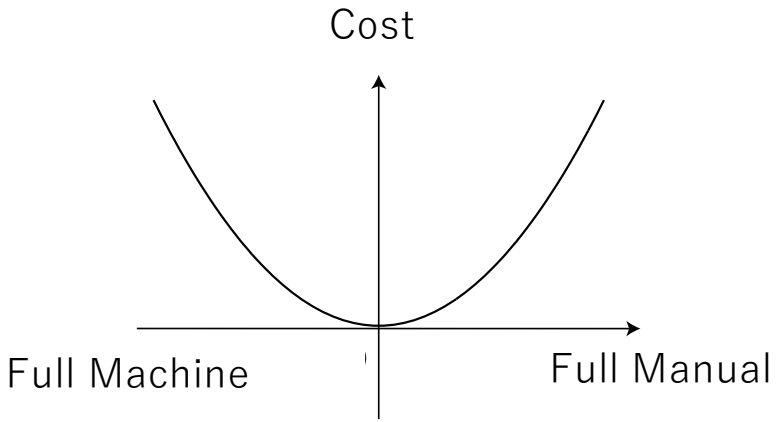
Thanks to Rob/Cheng-Wei for your help.

Cost Balance

Reel



Machine



Component Mount	Machine	Manual
Component Procurement	Reel	Individual

manual