

Production Status

Itaru Nakagawa

RIKEN/RBRC

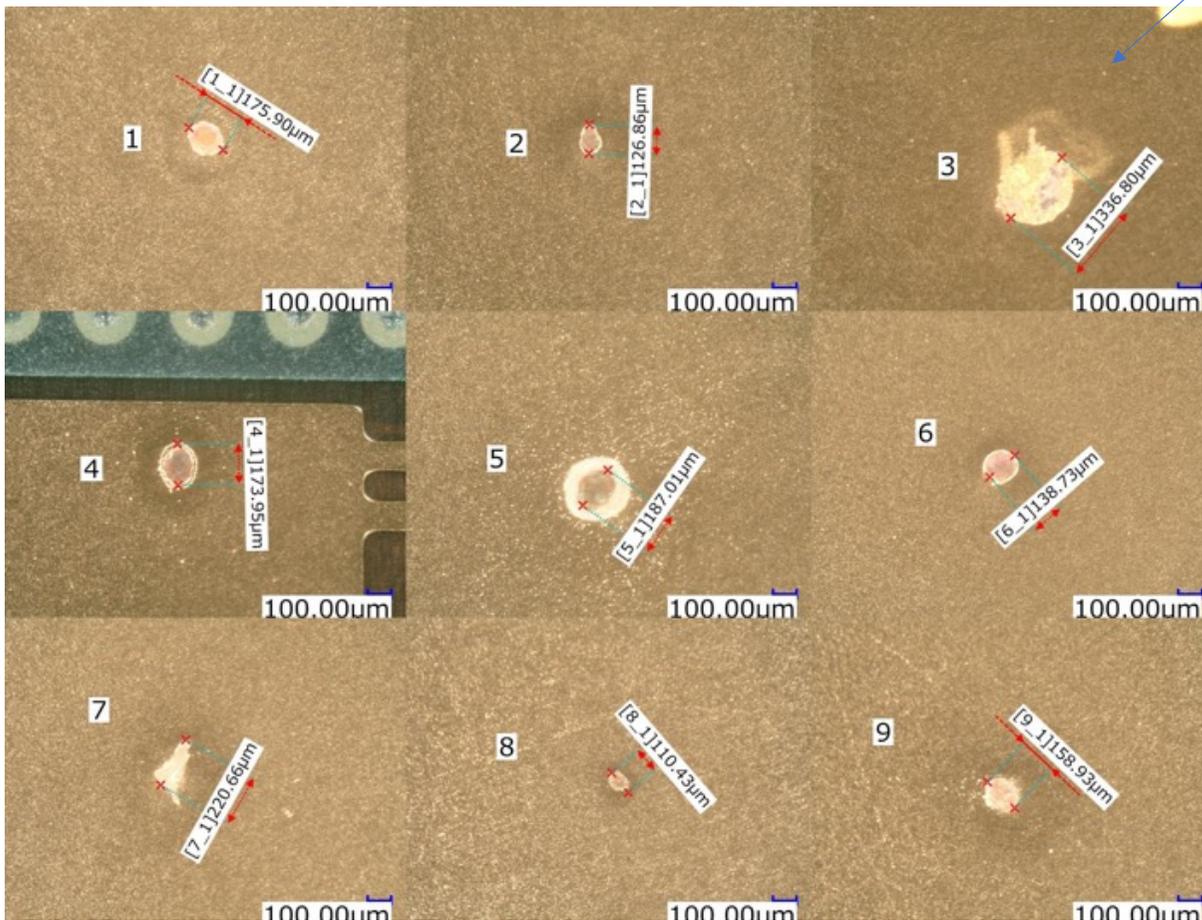
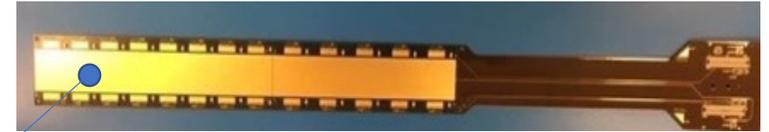
3rd batch HDI

	Delivery Day	Batch	Order #	LOT #	Quantity	HDI Serial No.	Incremented Quantity	Inspection	Result	Shipped to Taiwan		
2	2019/1/23		349670	302382	6							
3	2019/2/6	Preproduction	349670	302725	4							
4	2019/9/11		350963	306716	20							
5	2019/11/20		Exchanged	307469	1							
6	2020/4/2	Batch-1A	352075	310184	9	1	9	9		181 Batc		
7	2020/4/2		352075	310185_1	7	10	16	16				
8	2020/4/2		352075	310185_2	13	17	29	29				
9	2020/4/2		352075	310186	29	30	59	59	50	Good?	70	
10	2020/4/28	Batch-1B	352075	310188	17	60	76	76	70	bad		
11	2020/4/28		352075	310189	24	77	100	100	80, 84	bad		
12	2020/6/8		352075	311139	2	101	102	102				
13	2020/6/8		352075	311587_1	7	103	109	109	105		6	
14	2020/6/17		352075	311587_2	2	110	111	111		1 bad		
15	2020/6/17		352075	311614	15	112	126	126	122		14	
16	2020/6/24		352075	311615	21	127	147	147	127		20	
17	2020/7/9		352075	312095	20	148	167	167		3 bad		
18	2020/7/9		352075	312096_1	6	168	173	173				
19	2020/7/21		352075	312096_2_1	7	174	180	180				
20	2020/7/28	Batch-1A	Exchanged	312096_2_2	1	24	24	180				
21	2020/9/28	Batch-2	353110	312532	20	181	200	200		1 bad	90 Batc	
22	2020/9/28		353110	312533	16	201	216	216				
23	2020/9/29		353110	312534	7	217	223	223				
24	2020/9/29		353110	312535	14	224	237	237				
25	2020/9/29		353110	312536	7	238	244	244				
26	2020/10/27	353110	313304	24	245	268	268	265		3		
27	2020/11/27	353110	313673	2	269	270	270			2		
28	2021/6/28	Batch-3		317333_2_2	11	271	281	281				
29	2021/7/5				317338	14	282	295	295		1 bad	
30	2021/7/19				317341	23	296	319	319			
31	2021/8/6				318459	22	319	340	342			
32	2021/8/6				31860	13	341	353	353			
33					17	354	371	371				
34					83				Total	354		

- Gave up using batch-1 HDIs (180 pieces)
- HDI's will be running short in BNL within a week or so.
- It is urgent to have additional 21 HDIs to complete 80 ladders assembly in BNL.

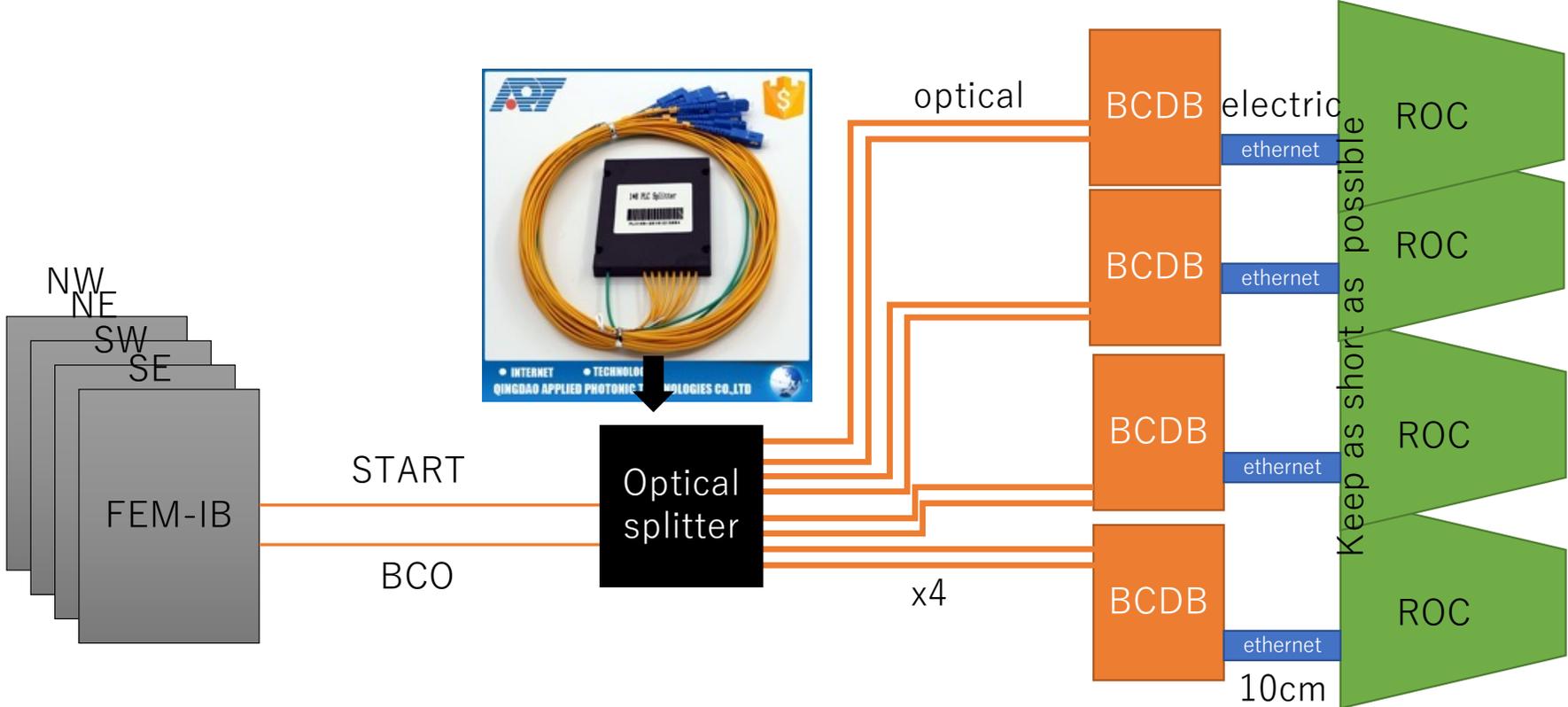
- Yamashita suppose to produce another 17HDI's as batch-3, but the fabrication hasn't even started yet due to the frozen supply chain of polyamide material.
- No estimate when.

What to do?



- There are 80 yielded HDI's in Yamashita.
- Large fraction of the yielded HDI's were rejected due to unplated spot size was $> 100\mu\text{m}$.
- Itaru will visit Yamashita on Sept. 9th (this Thursday) to inspect if these yielded HDI's are useful or not.
- If some of them can be used, I let them proceed to the components implementation (+2weeks).

Proposed Beam Clock Distribution Config.



Keep the electric section as short as possible.
Employ high class ethernet cables for the better noise shielding performance



Choice of Optical Splitter

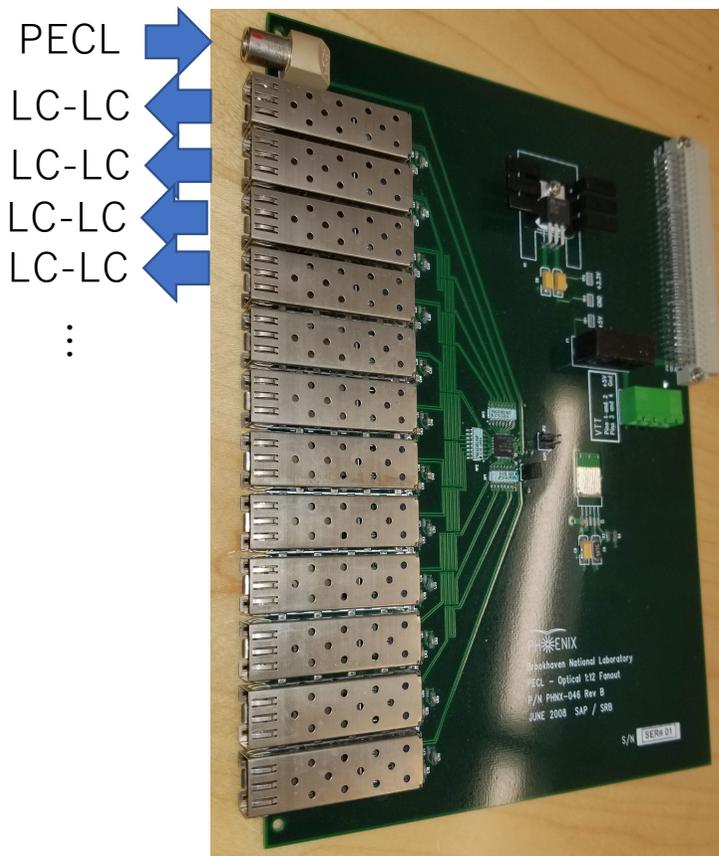


- No power input.
- Simply fan out the copy of the input signal, but less intensity
- The output intensity will be $1/8$ for 8 channel optical splitter.

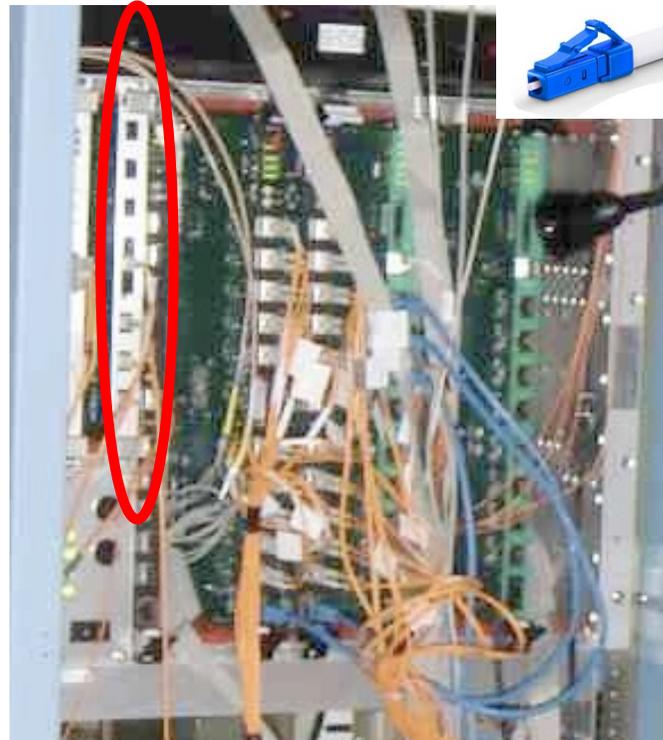
Our requirement is 4 channel fan out, so the intensity will be $1/4$. This may be not too bad and we can try. However, it is preferable to make BCLK copies without losing intensity.

PHENIX Resources

PHNX-046B



Input : SC
Output : SC x6



Beam Clock Fan Out Board
Used for the Muon Trigger



Duplex LC Fiber connector
vs
Simplex LC Fiber Connector



Duplex SC Fiber connector
vs
Simplex SC Fiber Connector



Strategy

- Try a commercial optical splitter and see if it works even the light intensity becomes $1/4$.
- Possible redesign ex-PHENIX beam clock fan out boards to meet with our demand.