

New RX PIN Opto-pack Production & New RX Plugin Wirebonding

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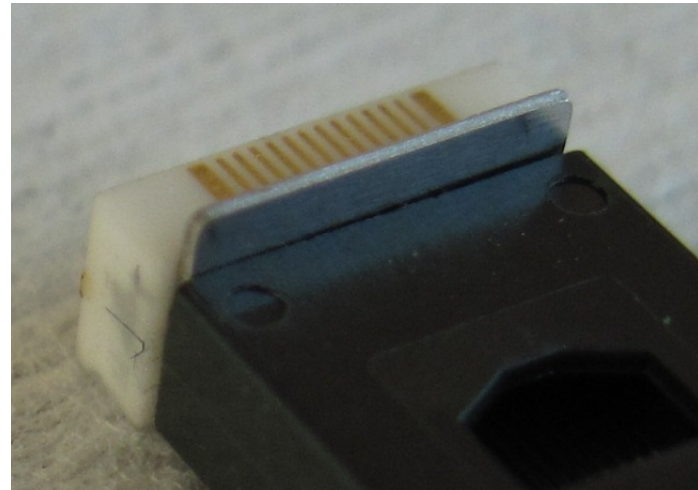
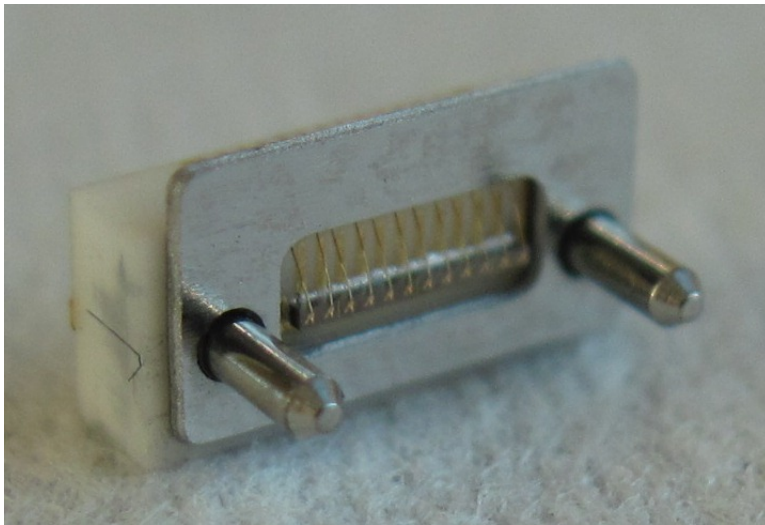
Overview

OSU's Role with the new RX production

- Produce 280 tested-good PIN opto-packs
- Mount these opto-packs on the new RX plug-ins
- Wirebond the opto-packs to the new RX plugins
- TBD - mount and wirebond the RX ASIC to the RX plugins

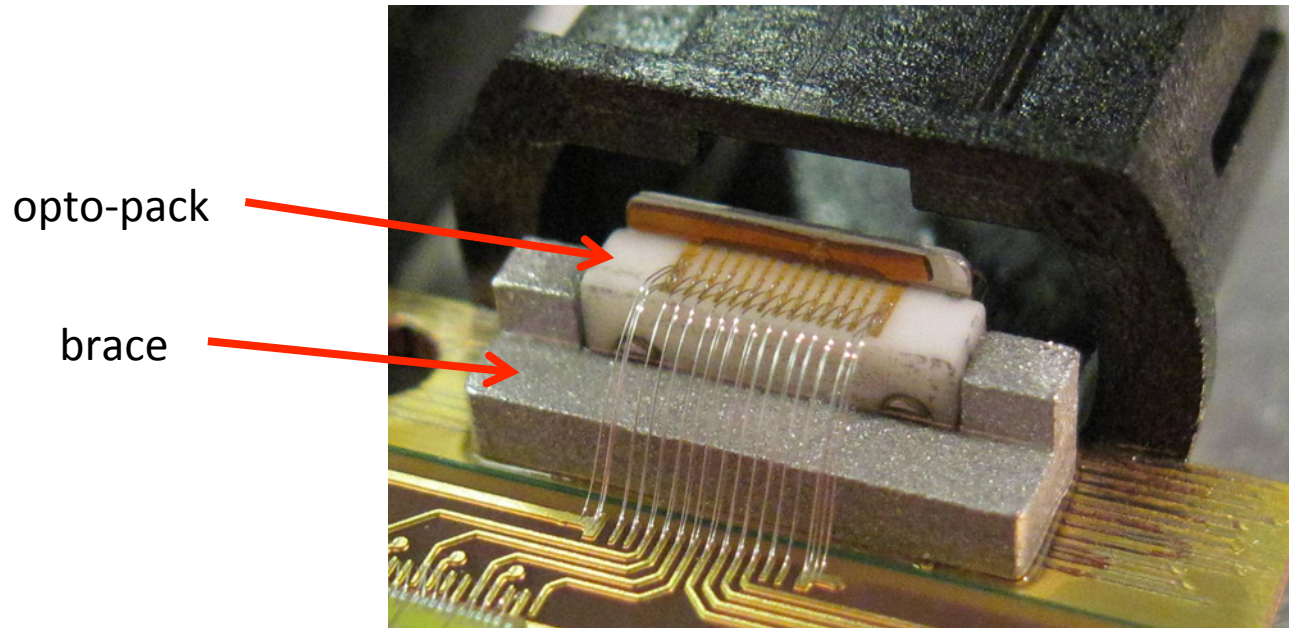
PIN Opto-pack

- Identical to nSQP / IBL
 - Use ULM Photonics ULMPIN-04-TN-U0112U
 - Mounted to alumina ceramic with Epotek H20E
 - 25 μm Au wedge wirebonds from PIN to opto-pack
- No optical epoxy covering the PIN array
 - Sealed from dust after fiber inserted



PIN Opto-pack Mounting on New RX

- “Tack” down opto-pack using 5 minute epoxy
 - Align opto-pack to board edge by eye (is this good enough?)
- Glue opto-pack and brace using Hysol EA9396
 - Same procedure used for nSQP / IBL – no detachments observed



PIN Opto-pack Bonding on New RX

- PIN opto-pack bond pads on the new RX PCB made very similar to nSQP / IBL opto-boards
 - Bonding on 6 prototype new RX boards worked great
- Plan at least 4 destructive pull tests per new RX
- Will perform a quick go / no go test after bonding
 - Test system to be delivered by Bern
- Encapsulate using Dymax 9001 V.3.1

Schedule

- All materials needed for PIN opto-pack construction in house, production underway
- Aim to produce 20 PIN opto-packs per week
 - With some contingency should complete 280 by middle June
- Mounting / Bonding new RX with no ASIC
 - 25 boards per week – 3 months
- Mounting / Bonding new RX with ASIC
 - 20 boards per week – 4 months

Summary

- OSU produced ~ 1300 PIN and VCSEL opto-packs for nSQP and IBL opto-boards
 - Same procedures will be used to produce the 280 PIN arrays for the new RX plugins
- Assembly and wirebonding procedure of the new RX is straightforward
 - Process vetted on 6 prototypes constructed in Dec.
- Expect to deliver all new RX boards by Oct. 1