

MR compatibility status update

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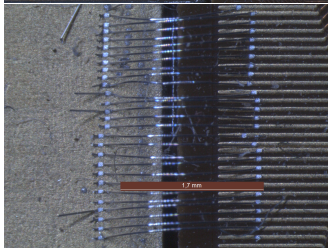
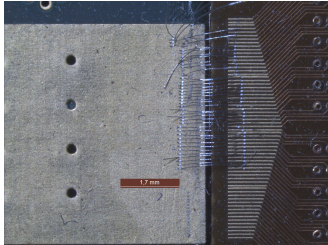
March 13, 2014

Introduction

- Encapsulation needed for protecting bonds in B field of MRI.
- Dymax suggested by Harris Kagan
- Contacted Dymax
- Received samples of Dymax 9001-E-V3.5 and Dymax 9008
- Viscosity of 4500 mPa·s
- Light curing (10-30 s at UV light w/ proposed dedicated lamp)

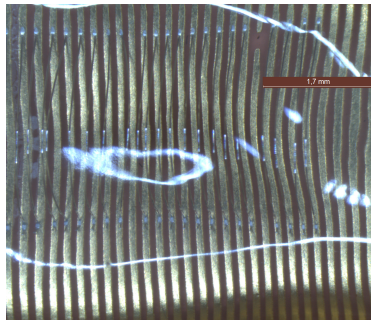
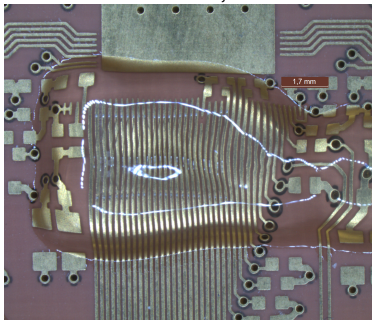
Tests on throw-away boards

Dymax 9001-E-V3.5, cured under consumer halogen lamp (50 W, 20 cm) for 1/2 to 1 h:



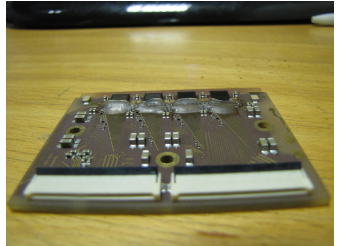
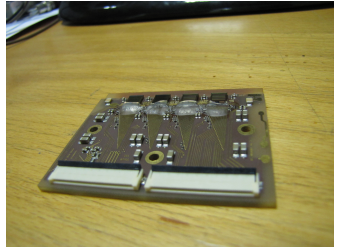
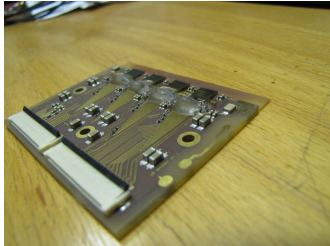
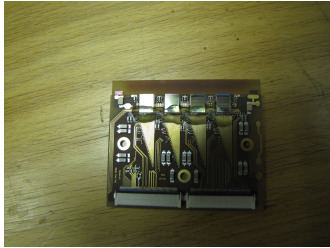
Tests on throw-away boards II

Dymax 9001-E-V3.5, cured on a window shelf (north facing window, clear skies, 24 h).
Tested for shorts, none found.



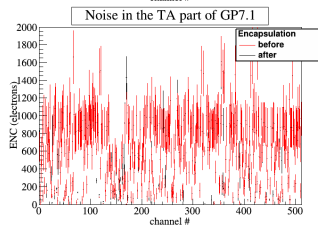
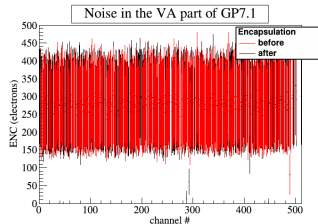
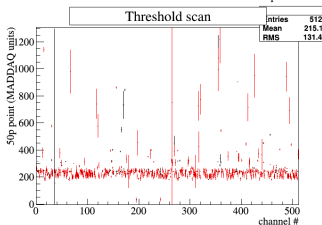
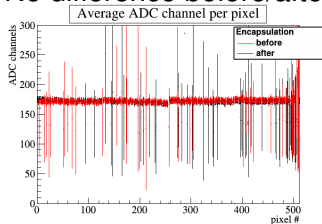
Module encapsulation

Dymax 9001-E-V3.5, cured on a window shelf (north facing window, clear skies, 24-48 h).



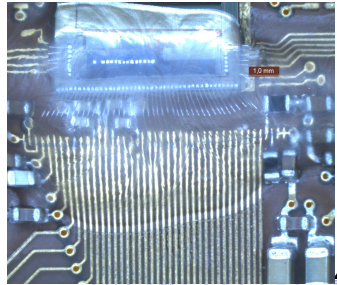
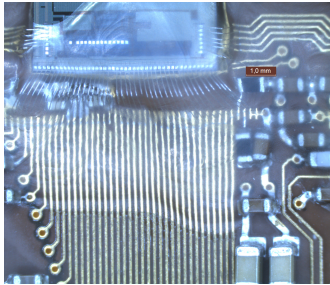
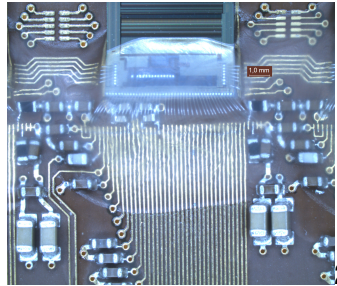
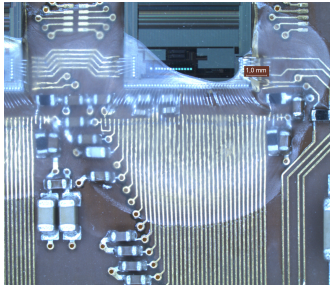
Functional performance

No difference before/after.



Zoom of the pictures

Small errors in sealant deposition



Conclusion/Problems

- Dymax glues are simple to handle (although toxic, but not more than other glues...)
- No problems with quick curing, at least 1/2 hour of work time if light not too strong
- Seems to flow between bonds (viscosity/surface tension)?
- Dispensing is an issue; the electronics assembly platform is nice, but not perfect
- The glue is slightly opaque after curing (not a problem, just a note).
- No functional degradation.
- Next: reapplication to cover open areas. MR tests.