

DUNE Electrical Procurement Challenges

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PC Board Challenges

- ProtoDUNE quantities were small
- Small jobs don't garner much technical assistance or consistent processing
- Many quick-turn companies who may have had or used domestic factories in the past are either going out of business or sending all work overseas
- Remaining domestic producers are expensive and likely to deliver small jobs late

PC Board Challenges

- Need to re-calibrate cost expectations
- Re-working or discarding less expensive out-of-spec boards will almost certainly result in regular production shortages
- Direct communication with the factory is the only way to ensure consistency and receive early warning of production problems
- Not many domestic producers left

PC Board Challenges

- Best bargain for manufacturing speed and good communication (so far) has been Imagineering
- All of their jobs are sent to Taiwan
- Factory questions require translations
- Production quality is close to what we want dimensionally
- Solder mask and plating consistency not great

PC Board Challenges

- Advance Circuits are 3 to 5 times expensive as Imagineering
- Quality is better, delivery was late
- In larger quantities the cost would likely drop slightly but probably still 2X budgeted costs
- Other domestic producers with credible QA programs should be contacted

PC Board Challenges

- DUNE work appears to be unattractive due to requirements not aligned with industry norms
- Quantities will never rival those of large-volume buyers (\$3.5B US Sales annually)
- DUNE board production goes away eventually
- IceCube had similar problems with many suppliers (cables and electronic components)
- Finding companies that wanted challenging requirements and unique applications resulted in getting the attention and performance that sales numbers couldn't attract

Component Challenges

- Components that work great may be discontinued at any time
- Capacitors are a high-risk item
- The availability of specific model numbers depends on demand as a whole
- Pre-buying components like this should be considered if the company can't agree to a production contract