Boss TU-15 Teardown

Reverse Engineering (SE4920) Final Project

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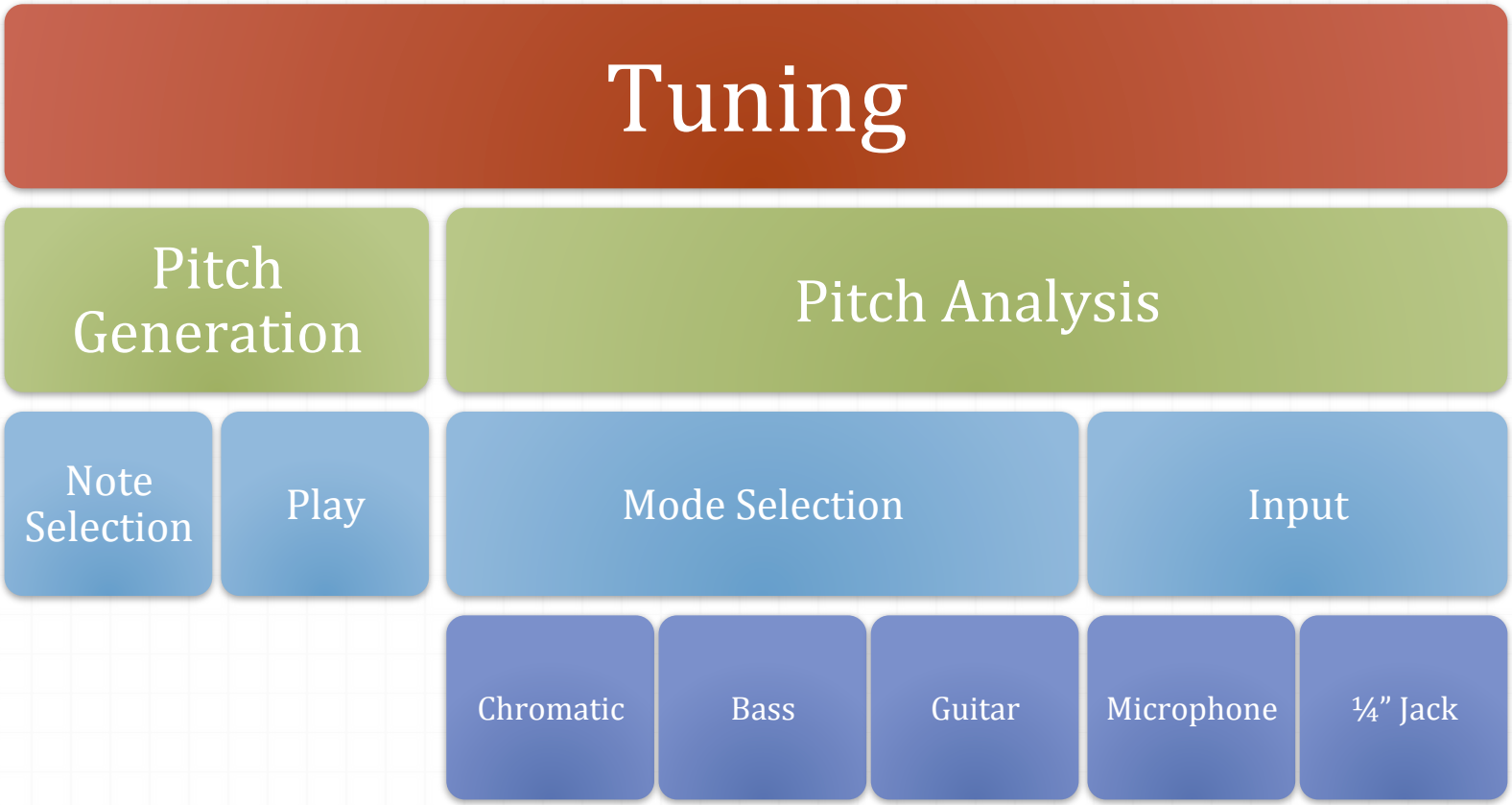
What Do I Know?



What Do I Think I Will Learn?

I hoped to learn by what magic the device decoded the complex harmonics of the input and represented it as a highly accurate discrete pitch.

After Questions

What do I wish I'd known before I started that I know now?

- I wish I knew that I would not learn anything about my initial primary question.

What did I do wrong?

- I disassembled the analog meter too quickly and it fell apart into pieces.
- I failed to make registration marks on the flexible connector to the LCD.

If I did this again, what would I do differently?

- I would adjust my expectations for the outcome of the disassembly.

Outstanding Questions

What is the largest chip on the board which is labeled TUN0281?

Who manufactures this chip?

Are all of the system's functions contained in this chip?

What other commercially available devices use this (or a similar) chip?

Lessons Learned

It is efficient and safe for a manufacturer to encode almost all of an appliance's intelligence into a single integrated circuit. This effectively black boxes the capability, lowering manufacturing costs and protects the company's intellectual property.