GippsTech 2016

A Speech Synthesiser for the Yaesu FT-817

By

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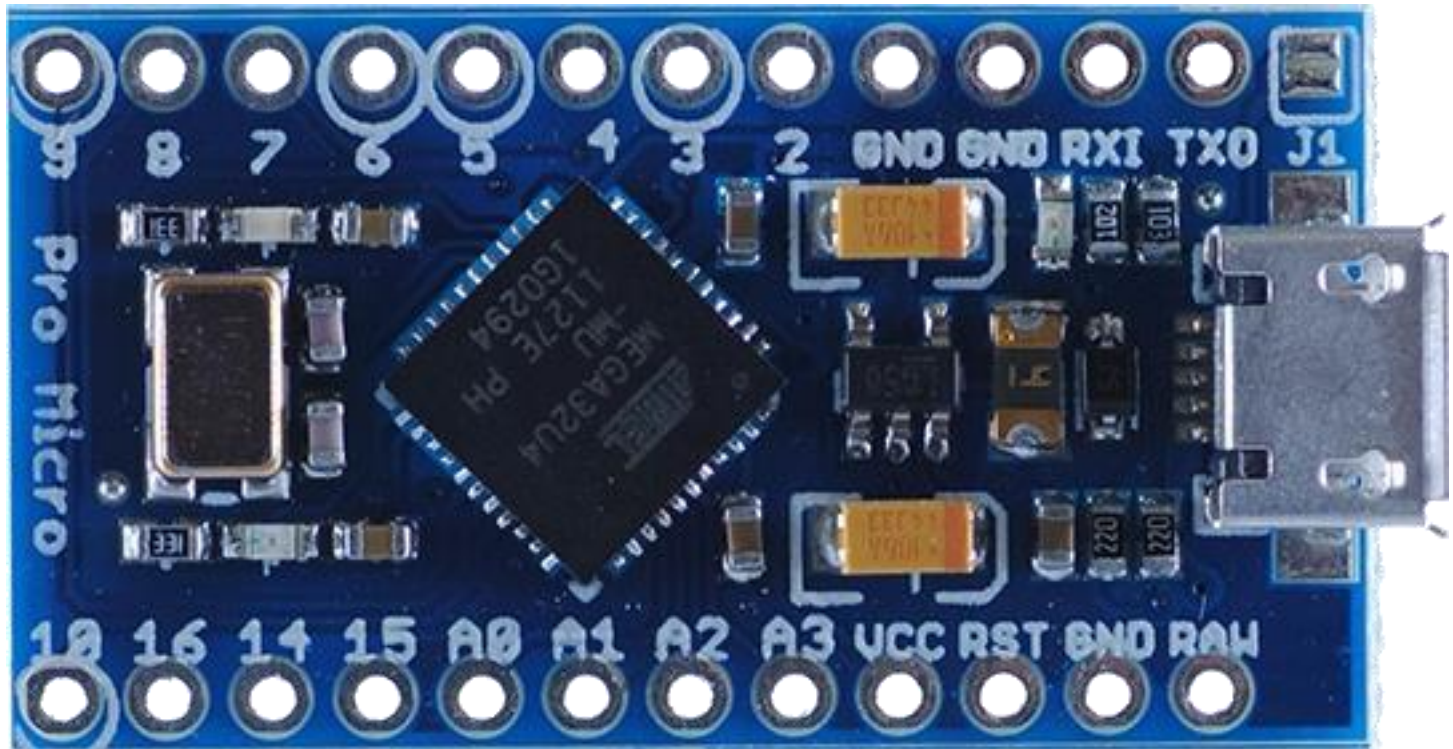
EFFIE AND RACHEL

FEATURES

- Powered by the radio
- Built-in speaker/amplifier
- Speaks frequencies and modes as they change
- Speaks PWR, ALC, MOD SWR and S-Meter
- Speaks function key menu items and values
- Speaks configuration menu items and values
- Monitors any FT-817 EEPROM changes
- Interrogates band registers
- Uses over 180 pre-recorded MP3 files
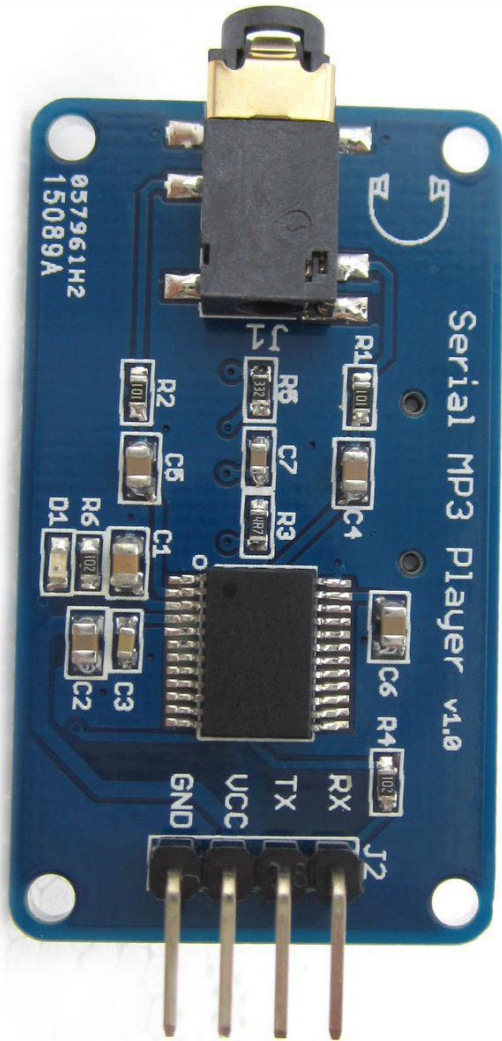- Costs under $35 to build

OPERATION

- Connect Rachel to Effie's ACC port
- Press METER on RX for S-METER
- Press METER on TX for PWR, ALC, MOD, SWR
- Press CONFIG for entire radio configuration
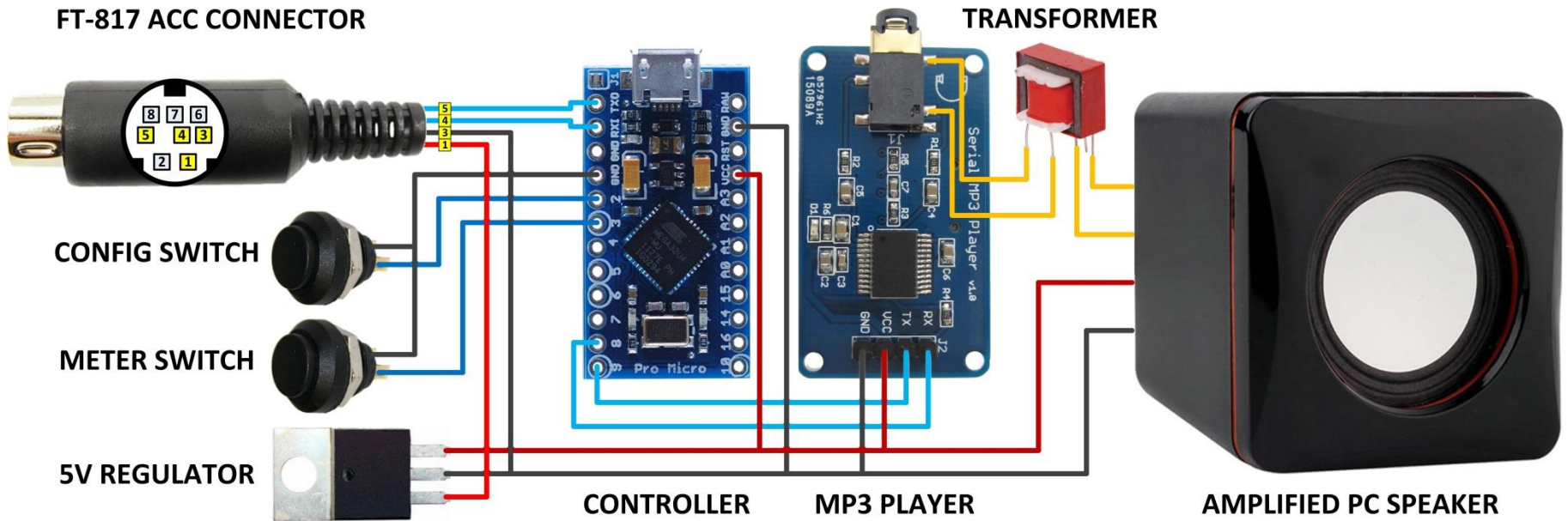- Press METER to cancel CONFIG (5½ mins)

ARDUINO PRO MICRO 5V/16MHz

CALATEX MP3 PLAYER

PICTORIAL SCHEMATIC

FT-817 ACC CONNECTOR

TRANSFORMER

CONFIG SWITCH

METER SWITCH

5V REGULATOR

CONTROLLER

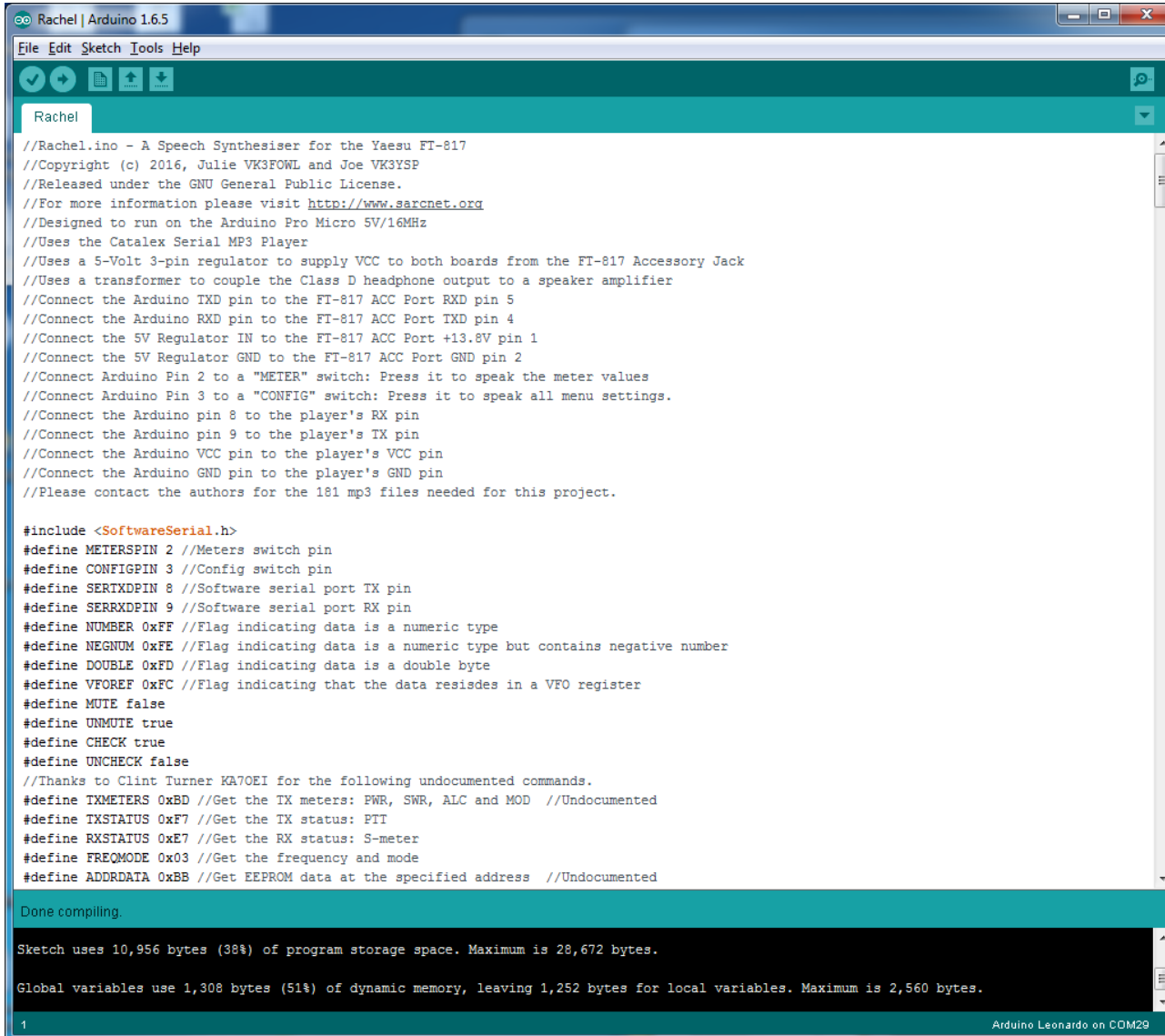**MP3 PLAYER**

AMPLIFIED PC SPEAKER

HOW IT WORKS

- 5V Regulator to power:
  - Speaker amplifier
  - Controller
  - MP3 Player
- Hardware Serial Port monitors EEPROM @ 34k8 baud
- Software Serial Port controls MP3 Player @ 9k6 baud
- Undocumented CAT commands to scan EEPROM
- Does not modify the EPROM or control the rig
- Text-To-Speech app used to create MP3 files

PARTS LIST

- Mini, USB powered, amplified PC speaker ($8)
- Arduino Pro Micro 5V/16MHz ($7)
- Press-button Switches ($5)
- 3kΩ:3kΩ Audio transformer ($5)
- Calatex Serial MP3 player board ($4)
- Rig interface cable ($2)
- 2GB Micro SD card ($1)
- LM7805 5V Regulator IC ($1)

ARDUINO SOFTWARE

SOURCES/LINKS

- http://www.sarcnet.org/projects.html
- Clint Turner, KA7OEI : www.KA7OEI.com