PyFly Applications

These are character drawing of possible applications, not complete schematics.
3/9/2017: Notes added about the Raspberry Pi Zero W adding WiFi and Bluetooth.
3/26/2017: Added high altitude weather balloon
9/16/2017: Added new audio pinout to PiFly.
8/14/2018: Changed name to PyFly
Rocket Flight Data Collection and Recovery System

Features:
- 1.0GHz 32 bit processing power
- Telemetry downlink transmitter
- Large data logging storage with USB flash drive
- Data includes GPS, pressure, board and remote temperature, humidity, magnetometer, audio, & video
- Parachute release based on altitude and/or time
- Telemetry/Log can be date & time stamped
- Audio and/for original confirmation of readiness
- Uses on board super capacitor for GPS and time of day clock

Uses on board super capacitor for GPS and time of day clock

The Raspberry Pi Zero W adds WiFi and Bluetooth.

HAM Radio Smart Transceiver

Features:
- 1.0GHz 32 bit processing power
- Supports audio, video (DVBT), and APRS
- 16 key keypad
- Optional Fan for cooling Raspberry Pi

See http://www.deleaner.org/?f=wine_keyboard.html for keyboard software

Remote Data Acquisition System for Packet Radio

Features:
- 1.0GHz 32 bit processing power
- Telemetry transmitter
- Large data logging storage with USB flash drive
- Data includes Solar voltage, GPS, pressure, board and remote temperature, humidity, magnetometer, audio, & video
- Telemetry/Log can be date & time stamped
- Can use either onboard super capacitor for GPS and time of day clock or external/backup battery
- Servo for solar panel pointing to maximize charging current.

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Quadcopter Data Collection

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Data logging on SD card

Telemetry

includes

1.0GHz

Features:

- 1.0GHz 32 bit processing power
- Telemetry downlink transmitter
- Data logging on SD card
- Large data logging storage with USB Flash drive
- Data includes motor current, motor temperature, RPM, GPS, pressure, temperature, humidity, magnetometer, audio, & video
- Telemetry/Log can be date & time stamped
- Uses on-board super capacitor for GPS and time of day clock
- True anemometer with differential pressure sensor and Pitot tube

High altitude HAM weather balloon

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Features:

1.0GHz 32 bit processing power
Telemetry transmitter
Large data logging storage with USB Flash drive
Data includes solar voltage, GPS, pressure altitude, board and remote temperature, humidity, magnetometer, audio, & video
Telemetry/Log can be date & time stamped
Can use either on-board super capacitor for GPS and time of day clock or external backup battery
Servo for de-spin of antennas can always have north pointing up.

The Raspberry Pi Zero W adds WiFi and Bluetooth.
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Features:
- 1.0GHz 32 bit processing power
- Microphone could monitor snoring for health report
- SDR receiver for AM and FM radio
- When not listening to AM or FM, SDR could tune into time standard (like WWV) to keep clock accurate.
- Power supply can add mini weather station
- LCD for time, weather, and health report
- Fire output could drive solid state relay to turn on bed side lamp as alarm.
- 12 key keypad
- See http://raspberrypi.org/1-wire_keyboard.html for keypad software

Weather Station

Clock Radio

Features:
- 1.0GHz 32 bit processing power
- Microphone could monitor snoring for health report
- SDR receiver for AM and FM radio
- When not listening to AM or FM, SDR could tune into time standard (like WWV) to keep clock accurate.
- Power supply can add mini weather station
- LCD for time, weather, and health report
- Fire output could drive solid state relay to turn on bed side lamp as alarm.
- 12 key keypad
- See http://raspberrypi.org/1-wire_keyboard.html for keypad software

The Raspberry Pi Zero W adds WiFi and Bluetooth.