DIY Zoning: Parts List

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1. Introduction

A complete parts list for the project implementation will be eventually assembled on this page. Since the project is on the move right now, it may be incomplete - this is not intentional and will be fixed, probably at the same time as schematics. Non-essential parts (like $4 CAT-5 wall jacks or LEDs) are not going to be listed here, however, be aware that they may add up to a significant amount.

2. Dallas Semiconductors (a.k.a. Maxim-IC) 1-Wire® components

The following Dallas Semiconductors components were used in the project:

- DS18B20 - High Precision 1-Wire® Digital Thermometer;
- DS18S20 - High Precision 1-Wire® Digital Thermometer;
- DS2406 - Dual Addressable Switch Plus 1-kbit Memory;
- DS2408 - 8-Channel Addressable Switch;
- DS2409 - MicroLAN coupler;
- DS2890 - Digital Potentiometer;
- DS9097U Universal - 1-Wire® Serial Port Adapter.

  Warning:
  Pay attention to the "U" part - DS9097 lacks some features that are important for the scope of this project;

- LINK - a microcontroller-based replacement for the Dallas DS9097U-S09 for large or complicated 1-Wire networks;
- DS9502 or DS9503 - ESD protection diode. These are necessary to protect the network from the lightning strikes and, funny, electrostatic air filters - these will not damage the network, but will introduce noise which results in access errors.
- DS9490R USB to 1-Wire/iButton Adapter. Remember, though, that Java supports USB only on Linux. That's OK with me, your mileage may vary.

  Warning:
  This device is not natively supported by Java OWAPI, only through TMEX drivers, which are available only for Windows. Keep checking the Haywire project, the driver for this adapter is being written, albeit slowly.

- DS2438 - Smart Battery Monitor. Funny as it sounds, it has an embedded temperature sensor that is said to be much faster than DS18x20, so it may make sense to use it instead.

  Note:
  This information has not been verified, I'm currently waiting for the shipment to come.

Also, you can make a humidity sensor out of it.

> **FIXME (VT):**
> Include link to the instructions on how to do that.

Count:

- DS18S20 (or DS18B20)- one per zone plus two to measure the temperature drop across the coil;
- DS2406 - two for single-stage single-speed A/C unit, three or four for more advanced A/C units. Alternatively, one or more DS2408;
- DS2409 - one per branch - I didn't need any, you might;
- DS2890 - if you decide to control the servos with it - to be defined.
- DS9097U or DS9490R - one;
- DS9502 or DS9503 - one per network branch termination? (have to verify).

> **Note:**
> You can use 1-Wire® temperature sensors other than DS18S20 or DS18B20 - basically, any device whose software container implements `TemperatureContainer` can work as a sensor. This includes families 0x10, 0x21, 0x22, 0x26, 0x28, 0x30 and 0x41. However, not all of them will perform satisfactorily - for example, DS2438, while being extremely fast (10ms temperature conversion vs. 750ms for DS18x20), is not as accurate as DS18x20 (to be confirmed). Nevertheless, for some parts of DZ (for example, overheated equipment sensor) this will do just fine.

3. Futaba

Actually, I happen to like Futaba, but you can achieve the same results with just about any servo. You don't have to go fancy, standard Futaba S3003 will do even without metal ball bearings. However, they have been working for about two years now - not too long to tell, so there's a chance they will tear and wear, but I'm yet to see that.

You may want to ask the vendor to supply the 4-hole servo horns - this is what worked for the standard 8" high register.

Count: one per damper.

4. Phidget

PhidgetServo 3.0 or 4.0.

Count: Depending on which one you get, one per four servos (v 3.0) or one per eight servos (v 4.0).

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5. Other Manufacturers

There were some parts whose manufacturer was impossible to find out, or unreasonable to split into its own category.

- Servo buffer/booster. Make sure you order one with the same connector as your servo.

> **Note:**
> ServoCity used to sell them really cheap, but alas, no more. The one they're selling now is way too expensive, so you may want to look for alternative source (and I'd appreciate if you tell me what that source is).

  Count: one per servo.

- Surface Mount Device prototype surfboards - you better use them unless you have the PCB ready, or your eyes are really good. You want `9082CA-ND`.
- Triac Optoisolator - model number is `MOC3010M-ND`.
- Triac. Model number tentatively is `Q4015L5-ND`, but it hasn't been connected yet, so there's a chance this is not the right one.

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