

Cheat Sheet for RPCL

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Sound:

<http://www.reformedlafayette.com/sound> has all files and documentation. Documentation also on sound system computer.

There is a spare “plug in ready” computer in the storage closet next to the bottom pastor’s office where we keep all the supplies.

IT:

There are two networks. The wireless network has non-routable addresses in the 172.16.. range. The backhaul for the wireless router is 192.168.1.250. This address should be **BLOCKED** by security software by all office computers to protect sensitive data. The wireless router is located above the coffee table in the ceiling. A line runs to the apartment from the wireless router. Wireless router username and password is on the Tape Request Forms. It uses AES128. Administrator access to wireless router at 172.16.1.1 uses same password as is common here on desktop machines for the Administrator account. Username is blank.

If there are problems with the router, the most likely fix is to unplug it for 30s, then reconnect. Signal strength can be an issue due to all the concrete, but moving an antenna or computer a foot or two can make a big difference.

The main Ethernet switch for the main (office) 192.168.. network is in the boiler room on top of the shelves by the mop sink. Not all ports in the lower pastor’s office are connected, so check if you can’t get a connection. The main router is connected to the main switch, along with some other lines. There is also a switch in the closet in Dave’s office, and another switch by Marlene’s desk. The main router gets its backhaul from a DSL modem. Again, a 30s power cycle will fix most problems. Do this at the surge protector by the breaker panel on W side by mop sink. If computers can see one another and print, but cannot get on the Internet, problem is most likely the DSL provider. The DSL modem is in “bridge” mode. The main router and DSL modem administration usernames and passwords are lost, so do **NOT** factory reset or technical support from the DSL provider will likely be needed to get reconnected. This

situation is probably a result of Verizon doing something without my knowledge. Administrator access is supposed to be at 192.168.1.1. Documentation and spare stuff are on top of the same shelf. Hardwired connections go to: Sound system, Marlene's switch for her computer and printers, Dave's main desk, Dave's desk by fax machine, library E wall, outlets in lower office and wireless router.

HP printer can be used by anyone on either network. Use standard TCP/IP port on client machine. Address on sheet on door of closet in Dave's office.

See documentation and manuals at <http://www.reformedlafayette.com/sound/balcony/IT>. In particular, see [wireless_settings_netgear.pdf](#) there.

HVAC:

Notes:

Boiler Room = Maintenance and utility room at bottom of stairs from N. main front entrance by offices.

Furnace Room = Utility room at bottom of stairs from S. front entrance

Breaker locations are often unknown as all units have disconnects nearby. All breakers are either: Boiler room, panel on E. wall by outside exit, panel by mop sink on W wall, panel by entrance to men's john. This is uncertain however. Most furnace breakers are unknown. Fuses at furnace disconnects almost never blow. But watch for 24V fuses added on to furnaces inside burner compartment.

Documentation in box in furnace room for all units except balcony controller which is on wall by controller. See also <http://www.reformedlafayette.com/sound/balcony>

IMPORTANT: If you notice the lights briefly dimming at intervals, this could be evidence of a compressor trying to start, but failing and kicking out its thermal overload. This is different from the very quick dimming when a unit successfully starts. To protect the A/C unit, the offending unit should be quickly found and turned off.

Helpful hints:

Most of the time filters do not have to be changed, just checked, due to low usage rate on most furnaces.

Office has Space Guard - yearly check.

Change Honeywell tstat batteries yearly or at first low battery warning, change all.

Change of Honeywell tstat time for DST / no DST is real-time. Time should be reset at this time as well due to drifting.

Balcony controller has "change next week" option for DST. See its documentation.

The balcony mode requires a return air path from the sanctuary to the basement. This is best done by blocking open the door to the basement/outside in the SW corner.

Classroom at end of fellowship hall can get hot/cold due to being at end of line and the fact that the heat/AC serves the sanctuary during worship. Therefore, please leave the folding doors open prior to morning worship, for at least an hour.

Controller docs and files also at <http://www.reformedlafayette.com/sound/balcony>. There are two PDF files and a directory of all files used in design and creation of the pastor's office and balcony controllers, including all software.

Troubleshooting: Most common problems in order of how often (more or less) found with suggestions:

- Thermostat on "Continuous Unoccupied" - Flog culprit with cat-0-nine-tails.
- Furnace exhaust blower air port plugged preventing blower operation sensing unit from sensing blower operation - Remove hose, put small wire down hole to clean brass fitting on blower.
- Rust or debris shorting out flame sensor or igniter. - Bang on it to dislodge debris, blow off, etc.
- Furnace fan won't run - Bad fan relay.
- A/C unit freezes up - frost on refrigerant lines. - Certain climate conditions will do this, especially since systems start up in early morning. - Shut off condenser unit and let evaporator warm up.
- A/C unit freezes up - Furnace fan not running.
- A/C unit freezes up - Low on refrigerant.
- Water corrodes exhaust temperature sensor on exhaust blower. - Replace
- Lights dim when A/C tries to start. Condenser fan runs, but compressor won't start. - Blown hard start kit. Replace. If none, add one.

- A/C condenser unit won't run - Blown fuse. Replace with 60A fuse. Spares in boiler room. Oversized fuses no problem due to breaker protection. 40A and 50A also work if that is all you have.
- A/C condenser unit won't run - Bad delay unit. Replace.
- A/C condenser unit won't run - Bad temperature safety switch. - Bang on side of unit opposite switch to make it trip, then replace switch later.
- Water on Floor - Condensate pump failure - Clean or replace.
- Water on Floor - Condensate line plugged. - Ream out.
- Water on Floor - A Coil bottom leaks - fix with sheet metal and good grade silicone - major job.
- A/C won't cool - Large refrigerant leak.
- A/C won't cool - Bad compressor.
- Furnace dead - blown fuse, tripped breaker, switched off, blown 24V fuse.
- Bad Tstat - Use one on sanctuary wall, rear (E), S side. They are still available from Honeywell, but expensive. Try eBay.
- Bad breaker - On some old panels, breakers are officially not available, but may be had by third party vendors. Ask at electrical, plumbing and HVAC supply houses or eBay.
- Exhaust fan not running or stalled. - These cannot be repaired except for occasionally tightening motor thru bolts. Replace. Spare with noise and limited remaining life on hand.

Furnace & A/C Units Chart

| Furnace Number | Location | Zone Served | Outdoor Unit Location | Thermostat Location | Breaker Location | Notes |
|----------------|---|--|----------------------------------|---|-----------------------------|--|
| 1 | By Hot H2O Heater Boiler Room | Narthex | E. Side of building at NE corner | On breaker closet wall in narthex | Boiler Room, E. panel | High side schraeder bad. Threads may be bad. Could not be replaced with schraeder service tool under pressure. Port capped successfully. Be sure to carefully wrench tighten after service. Undersized return air system. |
| 2 | Boiler Room by mop sink | Upper office Lower office Main Foyer | N. Side of building | Main: Upper office brick wall. Secondary: Upper - bookshelf , Lower - E wall. NOTE: Main stat has bogus settings by design. See docs. | Boiler Room, E. Panel (???) | Has controller on side to boost air to upper or lower and two extra thermostats. Main thermostat must have bogus settings for this to work. Additional control on boiler room wall by door to switch between Heat/Cool based on outdoor temperature. Documentation with rest of documentation + copy on controller itself. Some relays are inside furnace by burner area. On web see http://www.reformedlafayette.com/sound/balcony/PASTORSOFFICEHEAT.pdf |
| 3 | Fellowship hall S. furnace closet, E furnace. | Normal: Fellowship hall Balcony Mode: Balcony and Sanctuary | W. Unit on S. side of sanctuary. | Basement: W. Side of N. Furnace closet. Balcony: S. Side of sound system cabinet. | Boiler Room, W. Panel (??) | This furnace is controlled by custom controller in W. end of N furnace closet. Documentation on wall. Controller switches between “basement” and “balcony” modes. Total failure of controller will disable both modes. It is helpful to remove bottom access door on furnace when changing filter due to tight space. |

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|-----------------------|--|-------------------------------|-------------------------------------|---|----------------------------|--|
| 4 | N. furnace closet, W unit in fellowship hall | Sanctuary (N.) | Middle unit on S. side of sanctuary | None. Controlled by Sanctuary S. Furnace T-stat. Relays in burner compartment of furnace. | Boiler Room, W. Panel (??) | N. rear sanctuary wall has wired thermostat NOT IN USE. Can be used for spare at other locations. This unit has a long, undersized lineset throwing off superheat when charging. |
| 5 | S. furnace closet in fellowship hall | Sanctuary (S.) | E. unit on S. side of sanctuary. | S. rear (E.) wall of sanctuary. | Boiler Room, W. Panel (??) | Controls system #4. Return air starved. |
| 6 | Furnace room, N. furnace (# not on furnace) | Apartment, upper women's john | E. Unit on S side of library | Apartment living room | ? | |
| 7 | Middle (E) furnace in furnace room | Library | Middle unit on S side of library | W. Library wall by door. | ? | |
| 8 | S. furnace in furnace room | Nursery, lower johns (?) | W. Unit S of library in corner | N wall by entrance to nursery | ? | |