Elegance™
Installation Guide

CentraLite Systems, Inc. 6420 Wall St. Mobile, AL 36695
Phone: 877-466-5483 Fax: 251-607-9119

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Elegance Installation Guide

CentraLite Systems should be installed by authorized technicians only!

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Planning

Beginning Rough-In -- PLAN! PLAN! PLAN! A few minutes spent in planning at the beginning of a project will save hours of rework at startup time. Spend the necessary time up front with the homeowner to be sure that the system is perfectly tailored to the homeowner's needs. Take the time to fill out the planning schedule documents supplied by CentraLite Systems. These include the Switch Planning Form, the Scene Planning Form and the High Voltage Load Planning Form. When installing multiple panels, be sure to fill out the multiple panel installation check list. Consult with the electrical contractor about the installation before any rough-in wiring begins.

Planning Steps:

1. **Determine the number of loads to be switched/dimmed.** Once the number of loads has been determined, determine the size and quantity of relay output boxes needed. The four sizes are 12, 24, 36, or 48 loads per box. Always allow for a few spare circuits.
2. **Determine the number of Master Control Units needed**. One MCP can handle 192 loads. If the job requires more than one MCP, contact CentraLite for information about installing more than one unit at a given job site. Remember that connecting accessories such as Fan Speed controls and LVRBs will take away from the maximum number of loads.
3. **Determine the number of switches to be installed**. Each individual pushbutton is considered a switch. Any given button may operate a load, a scene, or a special function. A four-button switch plate is counted as four switches. Each switch button must be connected to a switch input on a STAR board. This will determine the number of STAR boards needed. As a rule of thumb, plan for only 20 switches per STAR in order to leave a few for spare. Therefore, divide the number of switches by 20 to determine the number of STAR boards required.

System Components: An *Elegance* system consists of several different components:

1. **The Master Control Panel (MCP)** is the brain for the system. It consists of several microcomputers all contained on a single circuit board. This unit must be mounted somewhere inside the home in air-conditioned space. A normal location is inside a closet. The unit is powered by one or two 12-volt AC class II transformers that are normally located inside a relay output box.

2. A number of **STAR boards,** which are wired to the wall switches and back to the MCP. These are, in effect switch concentrators. They will allow up to 24 different switch inputs, which can later be assigned to operate loads or scenes. Under certain circumstances, up to 4 STAR BOARDS can be daisy-chained together with a single run back to the MCP. This series of STAR BOARDS is called a "Chain." There are 4 "Chains" on the MCP. Please consult with CentraLite before daisy-chainy 4 STARs.

3. Relay Panels may contain either 12, 24, 36, or 48 outputs. **Relay Driver Boards (RDB)** are contained inside the output boxes. A 12 or 24-output box will contain a single RDB, whereas a 36 or 48-output box will contain 2 RDBs. Each RDB is connected back to the MCP with a single 6-conductor cable. Each RDB receives its power (9-Volt AC) from a transformer contained in the output box.

4. Optional **Switch Status Terminal (SST)** wall units may be included in the system. An SST is similar to a STAR board and is used to monitor and control up to 24 loads or scenes.

5. **Wall Switches** are low voltage DC operated and may be installed at any desired location in the home. Each wall gang can contain up to 4 switches, any one of which may operate a load, a scene, or a special function. Each gang of a wall switch rough-in box is connected back to a STARs enclosure using a 6-conductor cable.

6. **Fan Speed Controller Boards(FSCB)** allow speed control of up to 4 fans per FSCB. Up to 6 FSCBs can be connected in series from one Relay Driver Output on the MCP.

7. **Low Voltage Relay Boards(LVRB)** contain 16 mechanical relays used for sending contact closure signals as well as switching low voltage loads.

Rough-In

All installation wire referenced below is 6-conductor, stranded, 22-gauge, except wiring between the MCP and STAR boards. This requires an additional 18-gauge pair of wires.

1. Install Master Control Panel (MCP) Rough-In Enclosure.
Install the supplied MCP rough-in enclosure in air-conditioned space, possible inside a closet or utility room. You may want to run an RS-232 connection from the MCP to the homeowner's computer system, if the homeowner wishes to program the unit or monitor the loads. The MCP also contains a modem for remote programming, so you may want to run a phone line directly into the MCP box, or have a phone jack available nearby. The MCP rough-in enclosure should protrude approximately ¼" in front of the all studs on the front side. The enclosure should be **securely** mounted between wall studs with either screws or nails.

2. Install SST Rough-In Enclosures if used.
If SSTs are included in the system, install the rough-in box per the homeowner's requirements in an air-conditioned space. Pull a 6-conductor cable from the SST rough-in enclosure back to the MCP.

3. Install Relay Panel.
Consult with the job's electrical contractor as to the most convenient location for the relay boxes. Generally, it is a good practice to install relay panels near breaker boxes. The preferable location for relay panel installation is a wall stud bay directly beside the breaker panel. The relay panels may also be installed in a closet or in a well-ventilated attic. Be sure to check local electrical codes for compliance.

4. Select locations for STAR enclosures.
A STAR enclosure is simply a 4-gang switch enclosure. These will contain the STAR boards at trim-out time, and will be covered with a blank wall plate. Therefore, they should be mounted in closets, utility rooms, mechanical rooms, or well ventilated attics. Nail the box up to a stud just as you would any other switch enclosure. Each STAR will connect up to 24 assorted switches. It is a good practice to plan for no more than 20 switches per STAR so you will have 4 spare switch inputs in case the owner wants to add switches later. Each STAR location will be designated with a letter of the alphabet A through P. Each switch will then be connected to a switch position within the STAR 1 through 24. Now, each switch will be designated by a unique combination of a letter and a number, A01 through 24, B01 through B24, etc. all the way up to P24 which is the last switch number for any given *Elegance* system. Using a permanent marker, mark each STAR rough-in box with its intended letter.

NOTE: An optional mounting method for STARs is the **GPBX-16** enclosure which contains up to 6 STARs. This mounting option leaves the STARs more accessible than the 4 gang switch box option.

5. Select locations for Switch Enclosures.
Select locations in the home where wall switches are to be installed. Remember, you can only put four switches into a single-gang box, so be sure to use a double-gang box wherever you think more than 4 switches will be installed. Be sure to put a double-gang box on either side of the master bed at a position slightly higher than the top of the bed so that the homeowners can control some load and scene switches from either side of the master bed. You may also want to do this in other bedrooms. Typical scenes to be installed beside the bed are: All On, All Off, Goodnight, Late Night Path, Outside Lights, etc. The Switch Placement Guide (Appendix E) may be helpful in selecting switch enclosure locations.

6. Pull Control Wire.
Pull a 6-conductor control wire (See CentraLite wire recommendation below.) from each gang of wall switch enclosure back to a STAR board rough-in box. Pull a 6-conductor wire from the STAR board

rough-in box back to the MCP. Remember, you can daisy chain up to 4 STAR boards together with a 6-conductor cable and an 18 gauge pair for power. It is good practice, however, to homerun STAR board boxes back to the MCP wherever possible. This adds flexibility in case you need to add other STAR boards later.
If STAR boards are daisy-chained together, or if a STAR board is located more than 100 feet from the processor, you must also run an 18-gauge pair for power.

When pulling switch wire, it is helpful to use several spools at once to minimize the required labor. We recommend using a fine-line permanent marker to label the end of the wire to be pulled and mark the number on the spool as well. When the runs are complete, come back to the spools, cut the wire, label it with the marker, scratch off the old number from the spool, and mark the spool and wire end with the next sequential number. You may want to assign a number to each wall switch box and mark the wires accordingly. Then make up a sheet showing which wire goes where.

FEATURE: *If a set (circuit) of lights is to be switched from several locations, you need only to make a home run from the MCP to the first location. Each subsequent location may be daisy-chained to the previous location. Home-running all switch wires will offer the greatest degree of flexibility. At trim-out time, be sure to maintain proper polarity (positive to positive and negative to negative) or the switch LEDs will not illuminate.*

***CAUTION*: Do not run CentraLite control wires adjacent to any high voltage wiring or parallel to them for more than two feet.**

Remember to mark both ends of ALL wires so you'll know which wires connect to which switches when you finish the installation.

7. Pull Relay Box Wire.
When all switch wiring is completed, pull a 6-conductor cable from the MCP rough-in box into the relay panels. One 6-conductor cable (22 gauge) is needed for each group of 24 outputs. In other words, if you are using 12 or 24-relay panels, run a single 6-conductor to the box. If you are using 36 or 48-relay panels, run two 6-conductors to control the relays. Also, pull a spare 6-conductor cable, and three pairs of 18-gauge conductors in order to supply 12 Volts AC class II power to the MCP and to the switch chains.

8. Pull Remote Control Wire.
Pull one six-conductor cable from a STAR board to the remote control receiver's location. In addition, pull one six-conductor cable from the remote control receiver's location to the relay enclosure fro power. The relay enclosure contains a 110-Volt receptacle to power the remote control's 9- or 12-Volt DC transformer.

NOTE: Consider the remote control receiver's location carefully to ensure that it has an adequate range. The remote control receiver should be located near where it will be most frequently used. (Usually in the corner of the attic associated with the garage and driveway.) Be sure that it is located in an accessible place should it ever need service or repair. It will always work 100 feet from the receiver, and often as far away as 300 to 400 feet. Be careful not to mount the receiver behind a metallic roof.

9. Pull Computer Connection Wire.
In most installations, the homeowner may wish to connect the system with his/her computer. The connection will be made to a COM port using RS-232, so run the appropriate wire from the MCP location back to the owner's computer location. You may also want to connect the *Elegance* to a phone line using the available built-in modem, so think about running a phone line into the MCP box or near it.

10. Finishing Rough-In. Seal up the MCP, the STAR board boxes, and the switch boxes with duct tape, masking tape, or other materials so that all wire and labels will be protected from any construction damage.

11. Begin Trim-Out. When all sheet rock, painting, and finish work has been completed, you are ready to connect and power up the system. Be sure that power is applied to the transformer as the last step in the process. Be sure all fixtures are installed.

If temporary lighting is required prior to trim-out (for painters, etc.) several inexpensive devices are available from CentraLite to allow for this without an MCP. Contact CentraLite for more information.

Note: Mounting of Main Enclosure Panels, Master Control Panels, Monitor Boards, STAR boards, and switches should be done in the upright position.

Trim-Out

1. **Begin Trim-Out**.
   When all sheet rock, painting, and finish work has been completed, you are ready to connect and power up the system. Make sure that power is applied to the transformer as the last step in the process. Before beginning trim-out, be sure that the house has permanent power, and **be sure that all the lighting fixtures have been hung**. If something is not yet in place, have the electrician wire a temporary socket in place of the fixture so you can test it.

2. **Test All 110-Volt Circuits For Shorts.**
   Have the job electrician test all high-voltage AC circuits for shorts before applying control power. The solid-state control relays can withstand short-term overloads, **but not a series of direct shorts**. Have the electrician verify each circuit by shorting together the high voltage terminals of each relay. This is accomplished by turning off the feed breakers, providing shorts across the relays and resetting the breakers to see if the lights come on. When the terminals are shorted, the corresponding load should come on without tripping a breaker.

3. **Wiring Relay Output Box**.
   There are 8 relay plugs on the MCP board. Begin with plug # 1. You need to connect only four conductors per relay controller (24 loads). You must also connect a 9-volt transformer to the remote control unit.

   ******* Refer to the appendix for wiring diagrams and connector pin lists. *******

4. **Installing Wall switches**. Now connect and install each wall switch, being sure to observe wire polarity. Connect each switch to a STAR board connector, and mark the inside of the wall plate with the alphabetic letter of the STAR board to which it is connected and the number within that STAR board. Be sure you have a schedule of each STAR board input and what it will control.

5. **Connect 12 Volts AC power to the MCP**. You may need two separate transformers; one 1600 ma transformer can handle the MCP and the first two STAR chains. Use a second 1600 MA transformer if the second two chains are used. Each chain can handle up to 4 STAR boards for a total of 16 STAR boards per *Elegance* MCP. Do not daisy-chain incoming power pairs (J14) at points 1 and 2, 3 and 4, and 5 and 6. A single 1600 ma power supply may, however, be used for the MCP and the first half of the chains. This means that you can feed Pins 1 and 2, as well as 3 and 4, from the same transformer provided that the splitting of the transformer is done at the transformer end, not at the connector end. Connect the 12 Volt AC transformers to the receptacles in the Relay Enclosure and test the system. The green LED on the MCP should illuminate and stay on, and the red LED should illuminate for a few seconds and go off.

6. **Wire up the Remote Control.**
   You will need to use two switch inputs on a STAR board.

7. **Program the system using a P.C. or laptop.**
   Refer to the Programming Guide. (Appendix D)

8. **Congratulations, you are finished!!!!!**

Elegance LOW-VOLTAGE
ROUGH-IN
QUICK REFERENCE CHECKLIST

1. Plan locations for Relay Boxes, Master Control Panels, Switch Boxes, and Remote Control.

2. Install MCP Rough-In boxes, Switch Boxes, and Relay Boxes.

3. PULL SWITCH AND SCENE WIRE. All wire is to be copper. Minimum of one #22 conductor per switch plus a common. Be sure to label both ends of each wire. Cover boxes with duct tape to protect wires and labels from sheetrockers and painters. To provide for future expansion, it is a good idea to run a 6 conductor cable to each gang.

4. Pull relay box wire: 6-conductor cable (22-gauge) from MCP Rough-In boxes to 24-relay output box. If a 48-load panel is used, two separate 6-conductor wires must be pulled between the MCP and a 48-load box.

5. Pick a place for the remote control receiver unit, preferably as high as possible and near the garage or home entrance. The unit will work at least 100 feet from the install spot and often as far away as 300-400 feet. Pull a 6-conductor cable from this location to the STAR rough-in box. Pull another 6-conductor from the remote control location to the relay panel (to provide DC power).

6. Install a single gang box to provide a vacation mode button.

7. For more detailed instructions refer to the Elegance Installation Guide or the installation video.

For help call CentraLite toll free at 1- 877- 466- 5483.

Elegance LOW-VOLTAGE
TRIM-OUT
QUICK REFERENCE CHECKLIST

1. Connect relay panel low-voltage controls to MCP via 6-conductor cable (only 4-conductors are used). Refer to Appendix A for connector pin lists. A 12 or 24-relay panel requires only a single 6-conductor cable. A 36 or 48-relay panel contains two relay driver boards, and requires two 6-conductor cables.

2. At each switch locations wire and install switches. Use the same color code for each switch locations. The switch grounds are internally commoned for you, so you need only use a single common ground back to the STAR board from each set of switches. We use the following color codes for CentraLite (barney) wire: Black-Common Ground; Red-Switch 1; Green-Switch 2; Blue-Switch3; White-Switch 4; Brown-Spare.

3. At the STAR board locations, connect the commons, and connect each switch wire to a valid switch input on a STAR board.

4. Connect remote-on and remote-off wires to valid switch inputs on a STAR board. Don't' forget the commons.

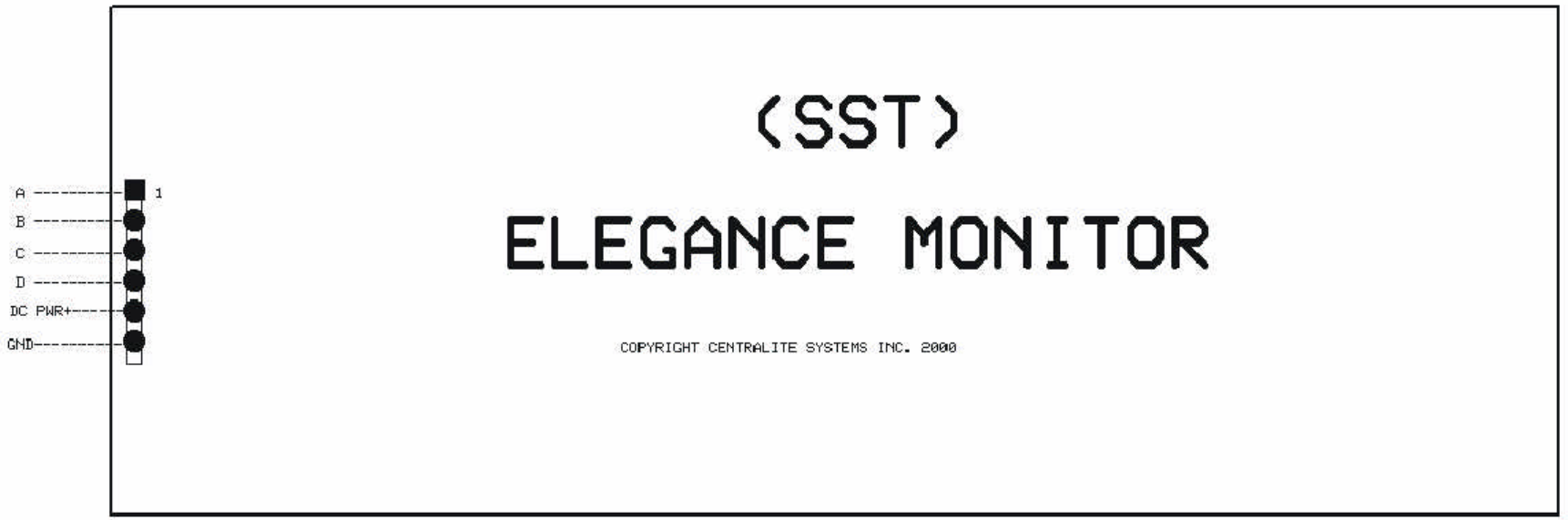
5. Connect low-voltage AC supplies. A single 1600 MA transformer can be used for the MCP and the first two chains (Pins 1 and 2 on the power connector). A separate 1600 MA transformer is required for the second set of chains (Pins 5 and 6 on the power connector.) A 9-Volt DC or 12-Volt DC supply is required for the remote control unit.

6. When power is applied to the MCP, the green light should come on, and the red light should come on for no more than 30 seconds and then go off. If the red light is blinking, one or more switches are stuck closed. You can trouble shoot the location by running the Elegance programming software and selecting TOOLS from the main page. The press the "Find Stuck Switches" button.

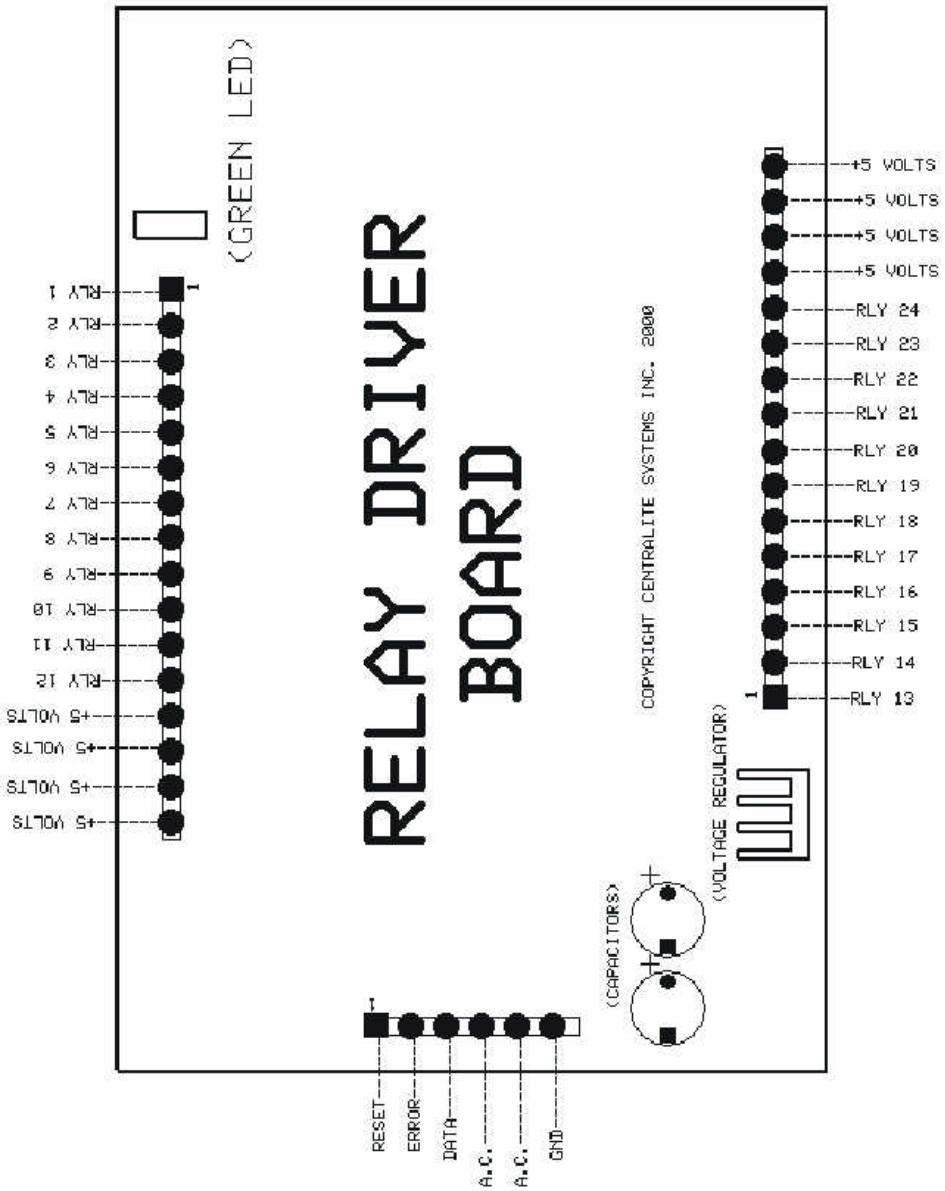
7. Now you must use a P.C. or laptop to program the system. Refer to the Programming Guide or use the help function in the CentraLite programming software.

8. If engraving has not already been done, fax or mail an engraving request to CentraLite.

APPENDIX A - CONNECTOR PIN LISTS

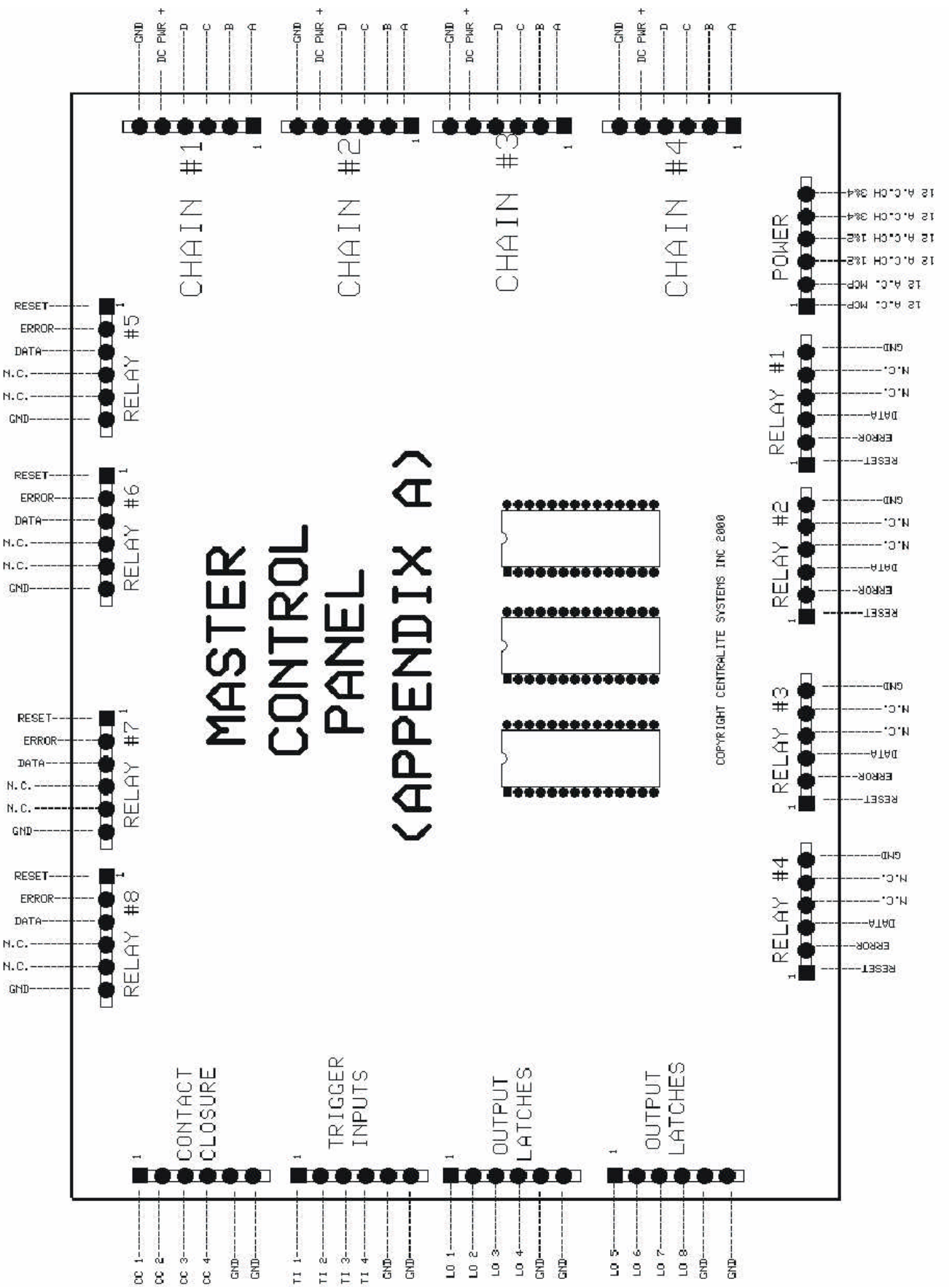


APPENDIX A


RELAY DRIVER BOARD
(GREEN LED)
COPYRIGHT CENTRALITE SYSTEMS INC. 2000
(CAPACITORS)
(VOLTAGE REGULATOR)
RESET
ERROR
DATA
A.C.
A.C.
GND
RLY 1
RLY 2
RLY 3
RLY 4
RLY 5
RLY 6
RLY 7
RLY 8
RLY 9
RLY 10
RLY 11
RLY 12
+5 VOLTS
+5 VOLTS
+5 VOLTS
+5 VOLTS
+5 VOLTS
+5 VOLTS
+5 VOLTS
+5 VOLTS
RLY 24
RLY 23
RLY 22
RLY 21
RLY 20
RLY 19
RLY 18
RLY 17
RLY 16
RLY 15
RLY 14
RLY 13

APPENDIX A

STAR BOARD
COPYRIGHT CENTRALITE SYSTEMS INC. 2000
A
B
C
D
DC PWR+
GND
SW13
SW14
SW15
SW16
SW17
SW18
SW19
SW20
SW21
SW22
SW23
SW24
GND
GND
GND
GND
GND
GND
GND
SW12
SW11
SW10
SW 9
SW 8
SW 7
SW 6
SW 5
SW 4
SW 3
SW 2
SW 1

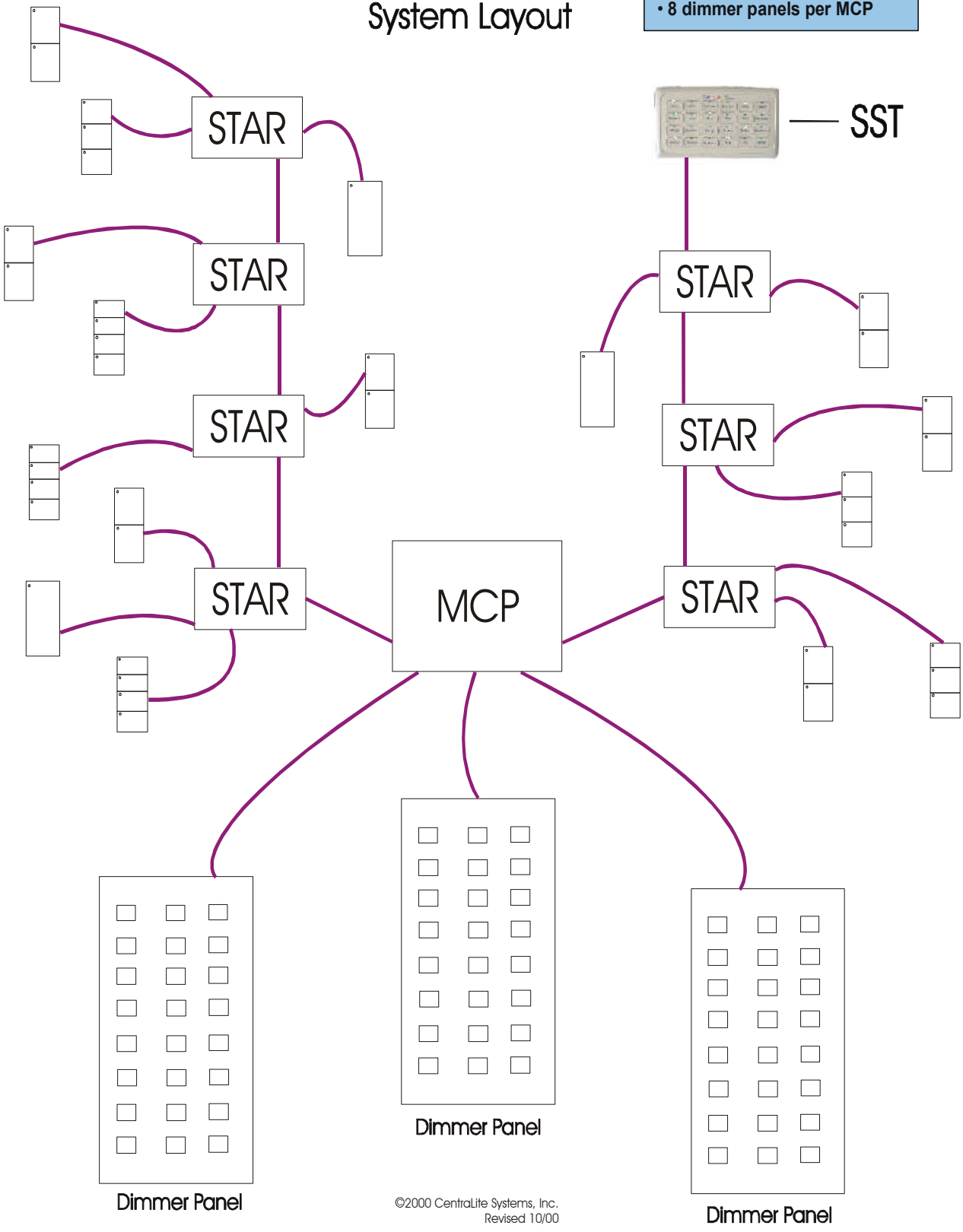

MASTER CONTROL PANEL (APPENDIX A)
COPYRIGHT CENTRALITE SYSTEMS INC 2000
CHAIN #1
CHAIN #2
CHAIN #3
CHAIN #4
GND
DC PWR +
D
C
B
A
POWER
12 A.C. MCP
12 A.C.CH 1&2
12 A.C.CH 3&4
RELAY #1
RELAY #2
RELAY #3
RELAY #4
RELAY #5
RELAY #6
RELAY #7
RELAY #8
RESET
ERROR
DATA
N.C.
CONTACT CLOSURE
CC 1
CC 2
CC 3
CC 4
TRIGGER INPUTS
TI 1
TI 2
TI 3
TI 4
OUTPUT LATCHES
LO 1
LO 2
LO 3
LO 4
LO 5
LO 6
LO 7
LO 8

CentraLite

Elegance

System Layout

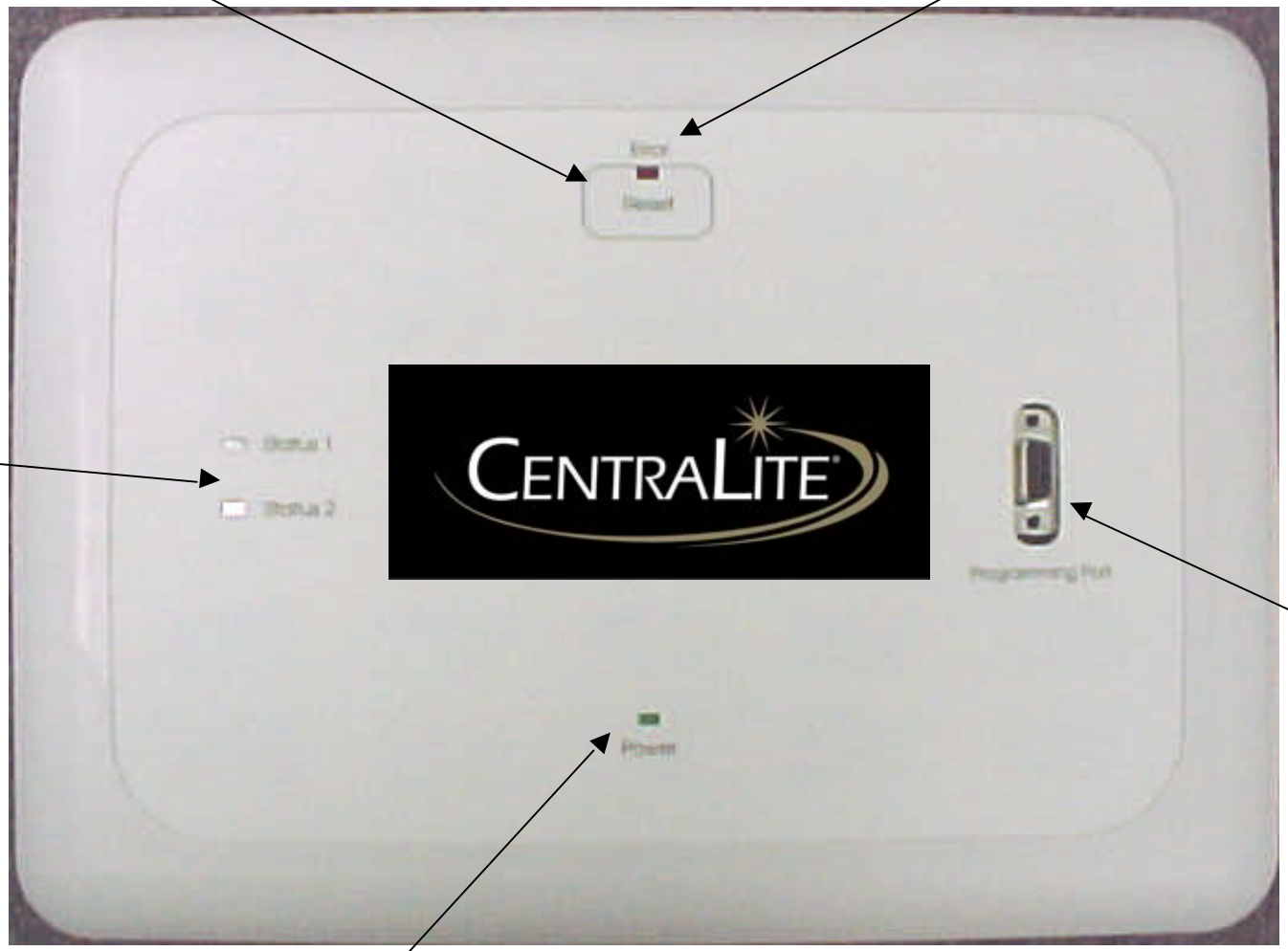
Up to:
- **16 STARs per MCP in 4 chains**
- **24 switches per STAR**
- **8 dimmer panels per MCP**



Appendix C – *Elegance* Master Panel Description

System Master Reset

Error Light:
Solid Red – System error
Blinking Red – Stuck Switch



System Status

RS-232
Programming Port

Green Light on if AC power available

6420 Wall Street Mobile, AL 36695
Toll Free: 877.466.5483 Telephone 251.607.9119 Fax: 251.607.9117

www.centralite.com

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