

Infiniti & Nissan 350Z Radio Button Box Installation Guide

2003-2006 G35 Sedan, 2003-2006 G35 Coupe, 2003-2006 350Z

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Thank you for purchasing the Accutach Co. Radio Button Box for the Infiniti G35 and Nissan 350Z. It is designed to allow you to repurpose the radio control buttons on your stock steering wheel to control other accessories.



WARNINGS and DISCLAIMERS:

You use this product at your own risk. Accutach Company is not responsible for personal injury or property damage resulting from the use of this product. While it is possible to use a switch in the steering wheel control wires to switch the radio control button function from radio control and back again, Accutach Company strongly recommends that users permanently change the button functions from radio control to control of your accessory. Should you choose to use a switch, you must make certain that you know what state the switch is in. If the vehicle is in accessory control mode, and you try to control your radio, your accessories will be turned on instead. Damage and accidents resulting in serious injury or death can occur. For example, if you activate a transbrake or a line-lock unit at driving speeds, very bad things can happen.

Do not touch the air bag wiring as you modify the radio control wiring near the steering column. Make sure you disconnect the battery before doing any electrical work described in this installation guide.

We strongly recommend making wire connections with solder & shrink tubing, although properly made crimp splices can also be reliable. We do not recommend using "Scotch Lock" style connections for our products. Do not use the "twist & tape" method of connecting wires.

Before you begin:

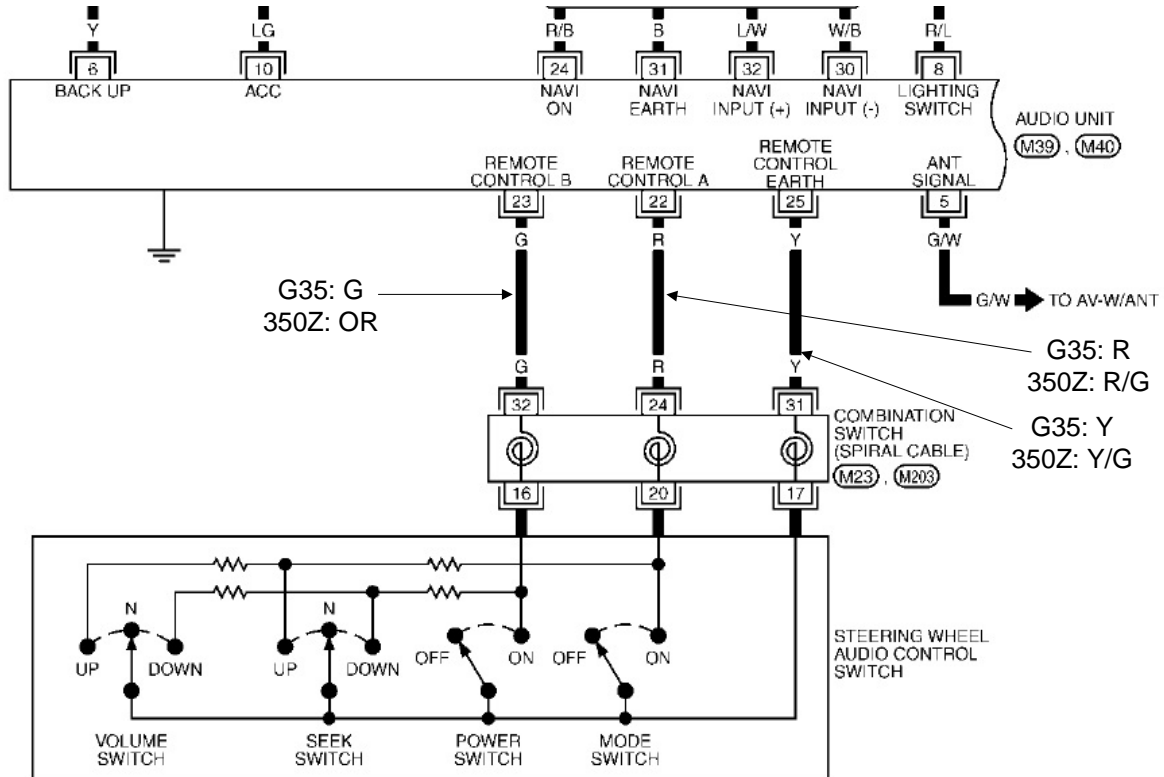
You will need to identify a switched battery voltage power supply wire to splice into for power for the Radio Button Box, and you will need a good chassis ground to ground the unit.

You will also need to locate a suitable place to install the unit inside of the vehicle's cabin, most likely under the dash or in the console near the shifter. It is not intended for use in the engine compartment or anywhere outside of the vehicle. If you wish to create a custom mounting bracket out of ABS plastic you can glue it to the ABS box with standard ABS cement from a hardware store.

Locating the Radio Control Signal Wires

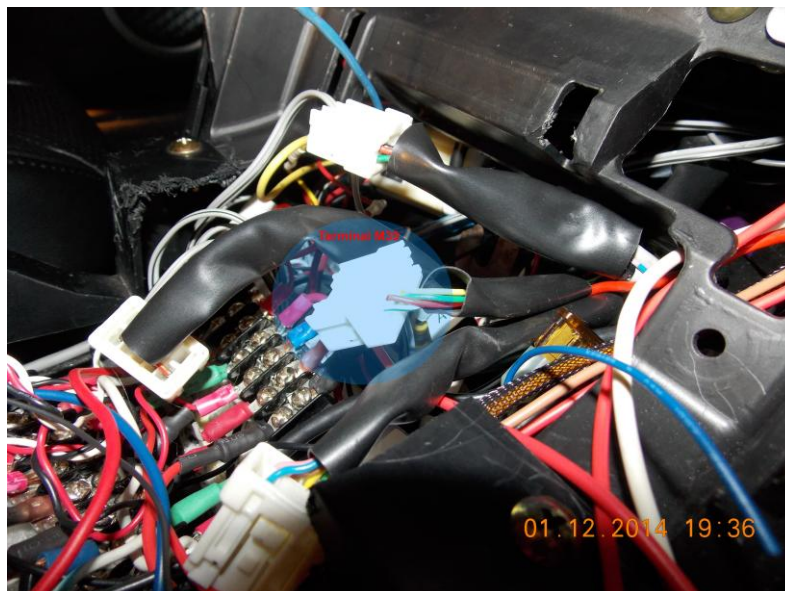
You will need to access the radio remote control wires that run from the clockspring mechanism in the steering column to the radio in the dash. Please refer to your Factory Service Manual for information on how to remove the audio unit or how to access the correct connector in the steering column to access the Remote Control wires.

Identify the Remote Control Signal A and B wires and the Ground wire. In the Infiniti G35, they are Red (Signal A), Green (Signal B) and Yellow (Ground) wires:

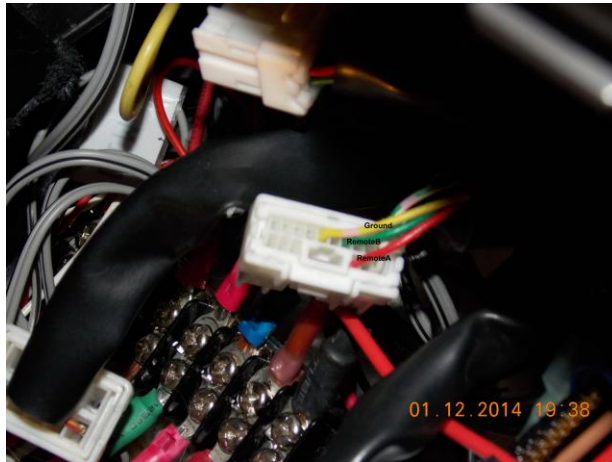


In the Nissan 350Z, the Remote Control Signal A is a Red/Green wire, the Remote Control Signal B wire is an Orange wire and the Ground wire is a Yellow/Green wire.

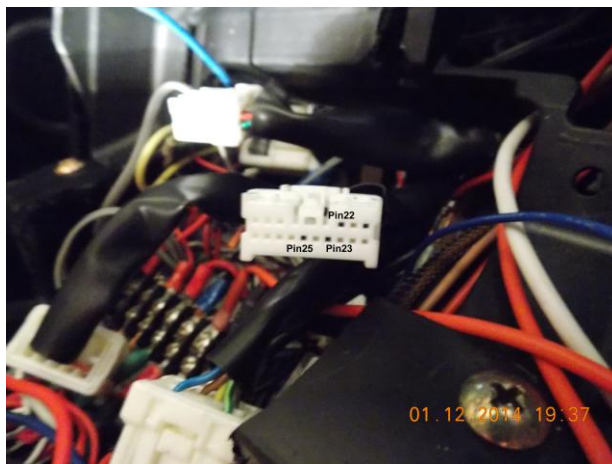
Here is a photo of the Audio Unit Connector M39 in a 2003 G35:



Here is a photo of the back of the G35 Audio Unit Connector M39:



Here is a photo of the front of the G35 Audio Unit Connector M39:



FYI, the G35 Yellow wire and the 350Z Yellow/Green wire is the Signal Return (ground) wire.

Now would be a good time to test the steering wheel switches to ensure they are working well.

Connect an ohmmeter across the Remote Control A wire and the ground wire. With no button pushed, the resistance should be infinite. With the Mode Button pressed, you should see a very low resistance, near zero Ohms. With the Seek Up button pressed, you should see a resistance around 160 to 180 Ohms. With the Volume Up Button pressed, you should see a resistance of around 650 to 700 Ohms.

Connect an ohmmeter across the Remote Control B wire and the ground wire. With no button pushed, the resistance should be infinite. With the Power Button pressed, you should see a very low resistance, near zero Ohms. With the Seek Down button pressed, you should see a resistance around 160 to 180 Ohms. With the Volume Down Button pressed, you should see a resistance of around 650 to 700 Ohms.

NOTE: The stock OEM radio supplies the signal return ground for the steering wheel buttons. If the stock OEM radio has been removed and connector M39 is no longer plugged in, you will need to connect the Ground wire (G35: Y, 350Z: YG) to a good chassis ground or the Radio Button Box will not function.

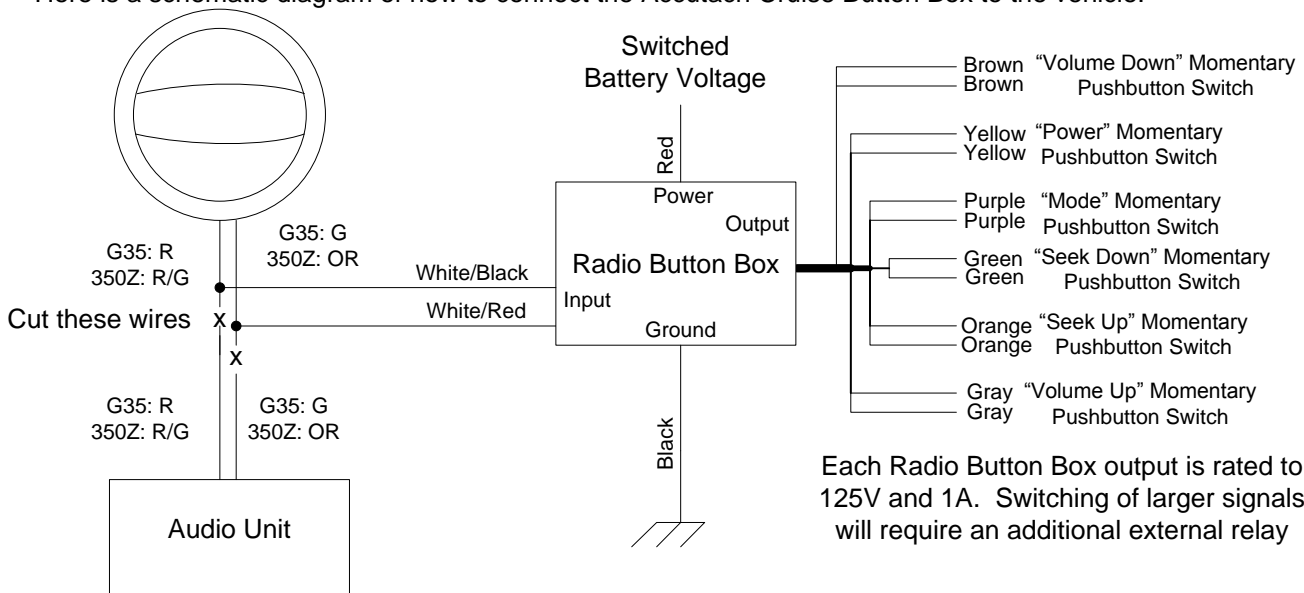
Installing the Radio Button Box

Cut the Remote Control Signal A wire (G35: R, 350Z: R/G), and locate the side of that wire that runs up into the steering wheel clockspring mechanism. Splice the White/Black wire from the Accutach Radio Button Box to that wire. Cut the Remote Control Signal B wire (G35: G, 350Z: OR), and locate the side of that wire that runs up into the steering wheel clockspring mechanism. Splice the White/Red wire from the Accutach Radio Button Box to that wire. Use shrink tubing to insulate each of the other side of the wires that go to the audio unit. Do not leave the OEM audio unit in the circuit or the Radio Button Box will not work.

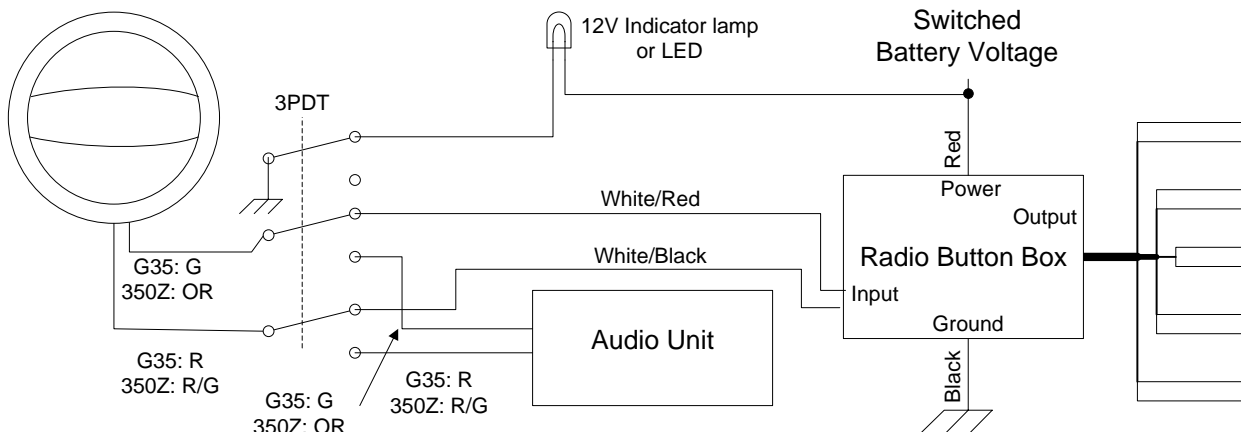
If you choose to use a 3PDT (Triple Pole, Double Throw) switch to retain the use of the radio control function of your vehicle (against our recommendations), then wire a 3PDT common connection to the Remote Control Signal A wire going to the steering wheel, and run the Remote Control Signal A wire going to the audio unit to one side of the 3PDT switch and the Accutach Cruise Button Box White/Black wire to the other. Wire another 3PDT common connection to the Remote Control Signal B wire going to the steering wheel, and run the Remote Control Signal B wire going to the audio unit to one side of the 3PDT switch and the Accutach Cruise Button Box White/Red wire to the other. This will allow you to switch between using the steering wheel buttons for radio control or accessory control. Use the third pole of the 3PDT switch to turn on an indicator light or LED when the switch is set to control the accessories. This will help the driver to not be confused as to the current function of the buttons.

Connect the red wire from the Accutach Radio Button Box to your switched power source, and connect the black wire from the Accutach Radio Button Box to your chassis ground. At this point it is a good idea to test your unit. Please see the testing procedure at the end of this document.

Here is a schematic diagram of how to connect the Accutach Cruise Button Box to the vehicle:



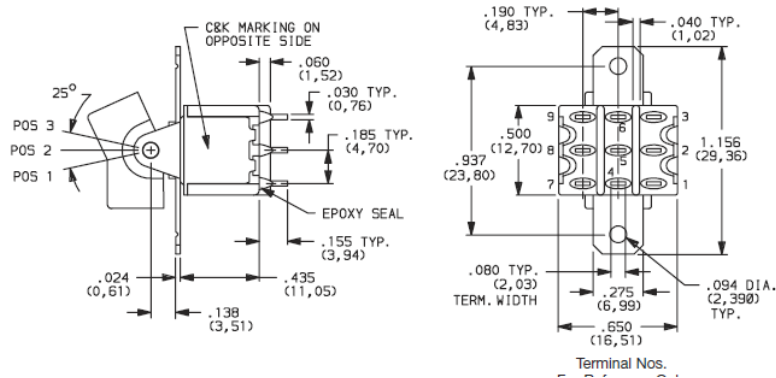
If you choose to go against our recommendations and install a switch to select use between radio control and an accessory for the cruise control buttons, you should wire it this way:



Here is how you would wire a C&K 7301 3PDT rocker switch. You can buy this switch from Digikey. Search for Digikey part number CKN2044-ND or C&K part number 7301J11ZQE22

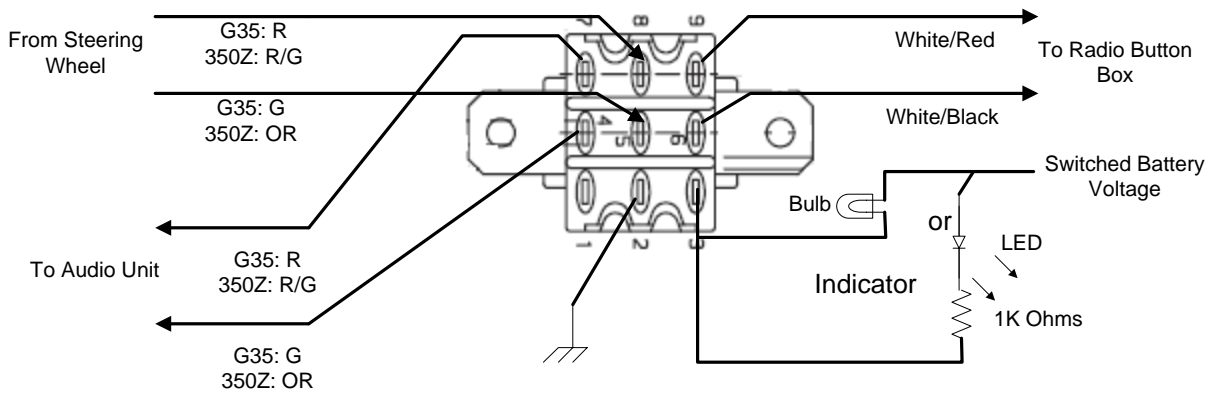
SWITCH FUNCTION									
NO. POLES	MODEL NO.	UL/CSA** MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
			POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
3P	7301	U31	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	<p>3PDT</p>

3PDT



Part number shown: 7301J1ZQE2

If you choose to go against our recommendations and install a switch to select use between radio control and an accessory for the cruise control buttons, you should wire it this way:



The indicator will light when the steering wheel radio buttons will control race accessories rather than the audio unit.

Connect any of the colored wire pairs to whatever accessory you want controlled by the corresponding radio control momentary pushbutton switch.

Each momentary pushbutton switch output is rated to 120V and 1A. Higher rated signals must be controlled by an external automotive relay.

The Radio Button Box typically draws less than 20mA quiescent and less than 70mA when a button is pressed.

Pressing Multiple Buttons at Once

The radio buttons are grouped into groups of three that correspond with the Remote Control A and B signals:

Group A:

Mode Button - Purple

Seek Up Button - Orange

Volume Up Button - Gray

Group B:

Power Button - Yellow

Seek Down Button - Green

Volume Down Button - Brown

You can push one button from either group at any time, but you shouldn't press two buttons from the same group at the same time. If you push the Mode Button along with the Seek Up and/or Volume Up Buttons, only the Purple pair will be closed, (the Mode button takes precedence.) If you push both the Seek Up and Volume Up buttons at the same time, only the Orange pair will be closed, (the Seek Up button takes precedence.)

If you push the Power Button along with the Seek Down and/or Volume Down Buttons, only the Yellow pair will be closed, (the Power Button takes precedence.) If you push both the Seek Down and Volume Down Buttons at the same time, only the Green pair will be closed, (the Seek Down Button takes precedence.)

Auxiliary Switch Units

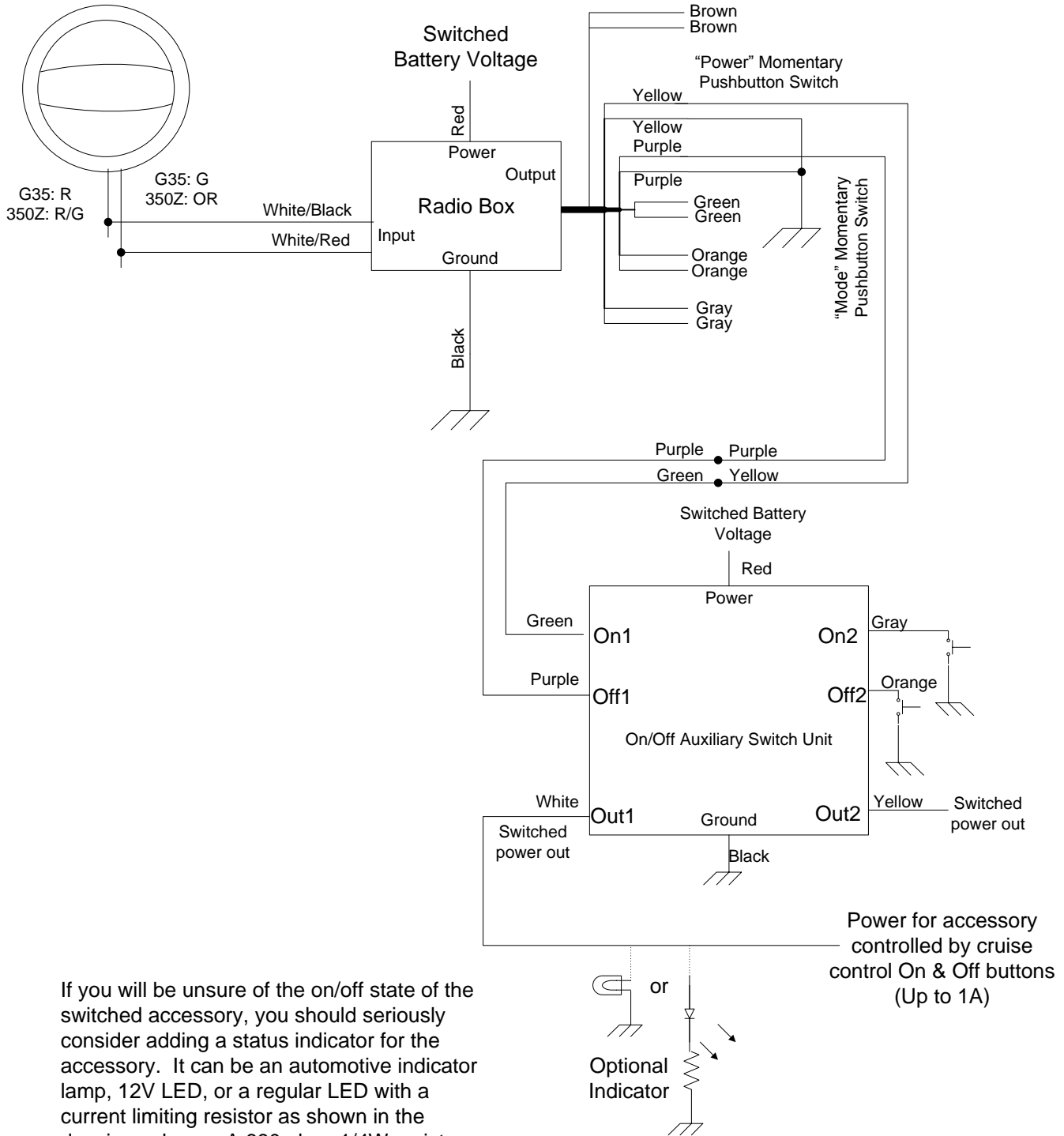
All of the radio control buttons function as momentary on pushbutton switches. Some applications require switches that function as a toggle rather than ones that are only momentarily on. Accutach Co. has developed two different auxiliary switch units which can be used in conjunction with any momentary switch (ideal for use with Accutach's Radio Button Box) to operate devices which normally use a toggle switch (typical on/off function). These two different devices cover just about any application. The Accutach Co. auxiliary switch units can switch circuits up to 120V, 1A. Switching higher voltage and/or current signals will require the use of an external relay. The Accutach Co. "On/Off Auxiliary Switch Unit" and the "Toggle Auxiliary Switch Unit" are described below.

On/Off Auxiliary Switch Unit

Some people will prefer to turn an accessory on with one momentary pushbutton switch and off with another momentary pushbutton switch. The Accutach Co. On/Off Auxiliary Switch Unit provides two such circuits in one small box. For example, the radio Volume Up and Down buttons could be used to turn one accessory on and off and the radio Seek Up and Down buttons could be used to turn another accessory on and off.

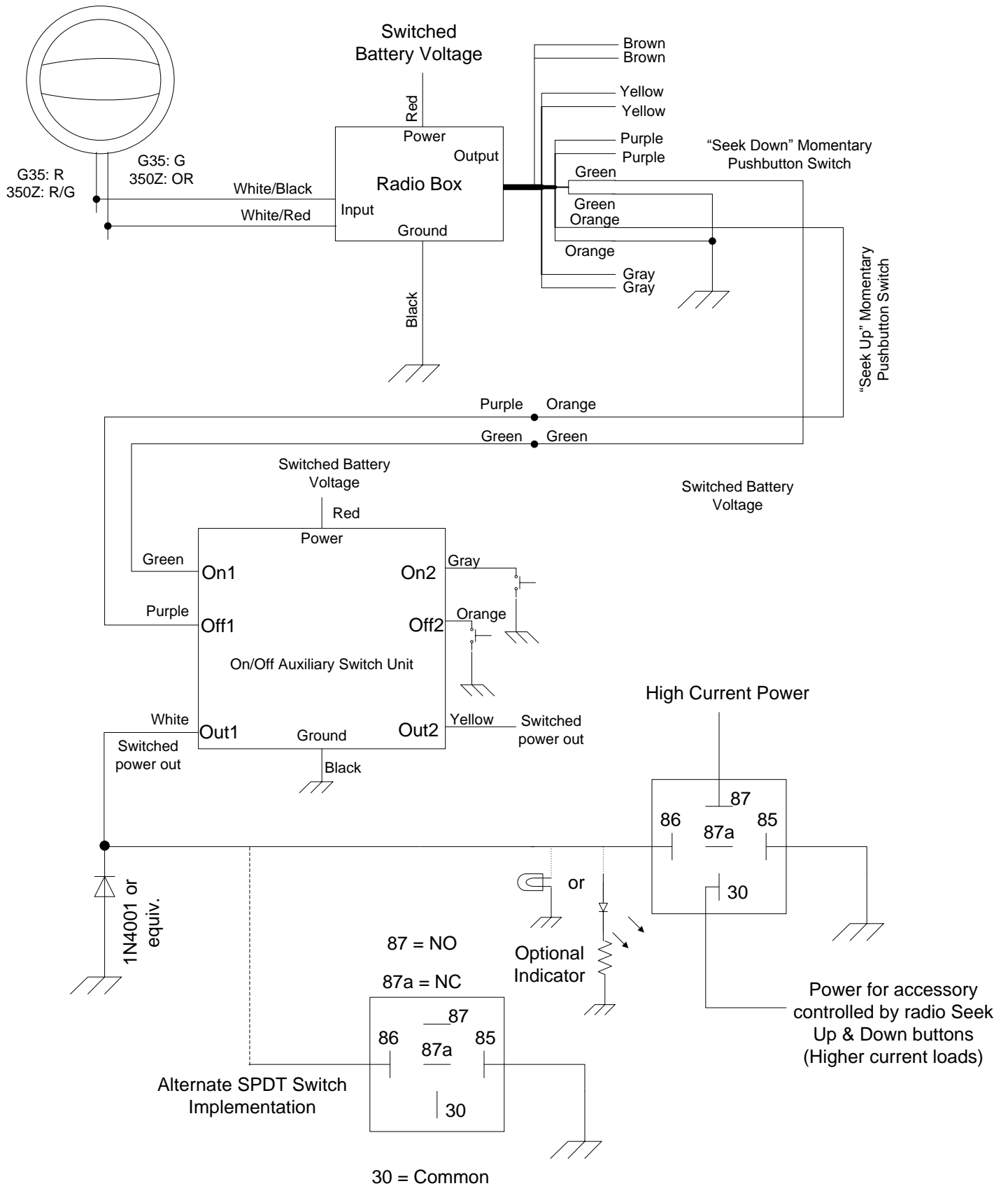
For example, the radio Volume Up button could be used to arm a nitrous system and the Volume Down button could be used to disarm it. The radio Seek Up button could be used to turn on a bottle warmer and the Seek Down button could be used to turn the bottle warmer off. That leaves the Radio Mode or Power button to be used as a purge pushbutton.

Here is an example of how to use the radio Mode and Power buttons to power an accessory that uses up to 1A of current:



If you will be unsure of the on/off state of the switched accessory, you should seriously consider adding a status indicator for the accessory. It can be an automotive indicator lamp, 12V LED, or a regular LED with a current limiting resistor as shown in the drawings above. A 680 ohm, 1/4W resistor is a good value for a 20mA LED

Here is an example of how to use the radio Seek Up and Seek Down buttons to power an accessory that uses over 1A of current (or alternatively, an SPDT implementation):

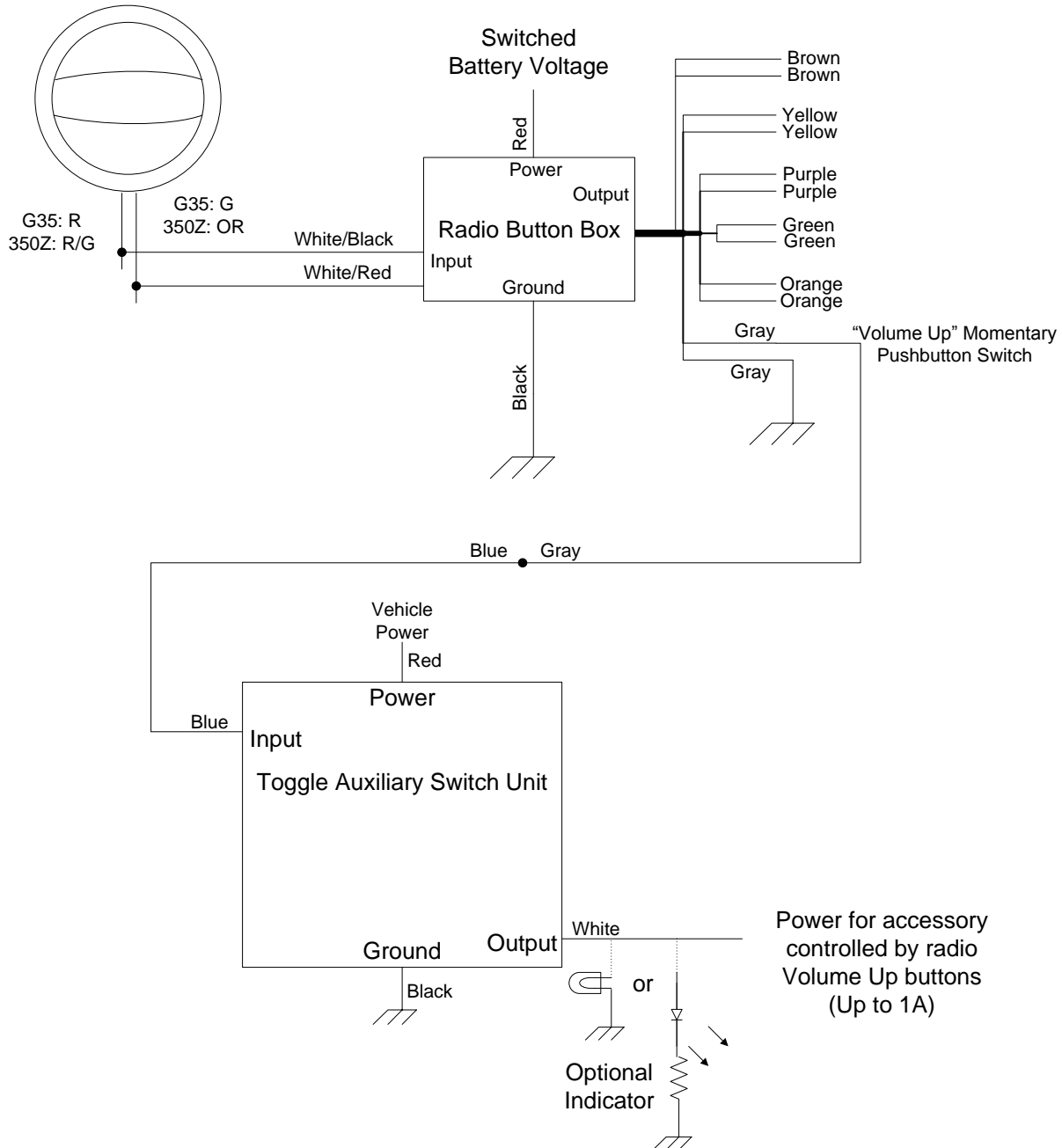


Toggle Auxiliary Switch Unit

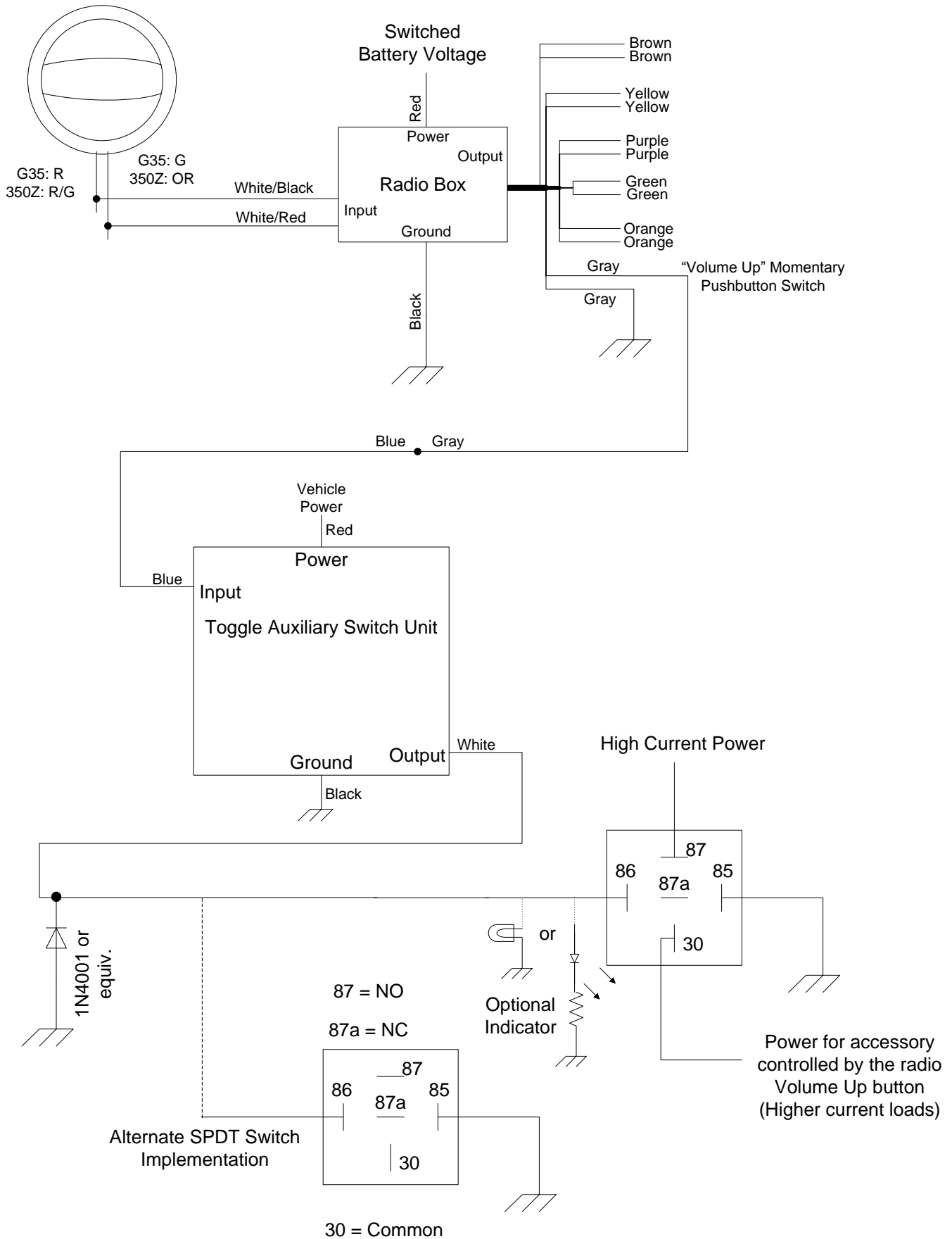
Some people will prefer to turn an accessory on with one momentary pushbutton switch and then off again with the same momentary pushbutton switch. The Accutach Co. Toggle Auxiliary Switch Unit provides one such unit in a small box. One of these boxes will be required for each pushbutton that is to be turned into a toggle switch.

For example, one of the radio buttons could be used in conjunction with a Toggle Auxiliary Switch Unit to power a brake line-lock unit during a tire-heating burnout.

Here is an example of how to use the Radio Volume Up button to power an accessory that uses up to 1A of current:



Here is an example of how to use the radio Volume Up button to power an accessory that uses over 1A of current (or alternatively, an SPDT implementation):



Troubleshooting:

To test your Radio button box, connect the power and ground wires and connect the White/Black input wire to the OEM Remote Control A wire as specified previously in this document. Connect the White/Red input wire to the OEM Remote Control B wire as specified previously in this document. Do not connect any of the colored wire pairs. Turn the key on. With an Ohm meter, test all of the colored wire pairs coming from the unit. With no button pressed, all of the wire pairs should show infinite resistance. With the press of each button, the one wire pair listed below should show a near zero resistance. All of the other wires should show infinite resistance.

Pressed Button	Near 0 Ohms
-Mode	Purple pair
-Power	Yellow pair
-Seek Up	Orange pair
-Seek Down	Green pair
-Volume Up	Gray Pair
-Volume down	Brown Pair

If you do not get these results, make sure that the Remote Control A & B wires to the steering column are cut, and the Radio Button Box input wires have good connections to the Remote Control wire that goes up to the steering wheel, not down to the audio system. If the Remote Control wires are not cut, the audio system will load the wire so the Radio Button Box will not work.

Make sure the steering wheel button ground wire (G35: Y, 350Z: Y/G) has a good connection to chassis ground through the audio unit, or directly if connector M39 is not connected to an Audio unit.

If the input wires are wired correctly, make sure that the voltage on the red wire is very close to battery voltage. If it is not very close to battery voltage, make sure the connection to power is a good connection. Also, make sure that you have a very good ground connection.

Feel free to contact Accutach company if you have any questions or issues with the Radio Button Box