
Goin' Mobile!

Mobile Radio Installations

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Who is W4KYW?

- Grew up around cars
 - 6 Years, Chevrolet Dealerships
 - General Motors-Certified Automotive Technician
 - Corvette Specialist
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Why Go Mobile?

- Ability To Communicate While Traveling
 - Pass Time Commuting
 - Backup Station (Emergencies, No Commercial Power)
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Key Planning

- Power
 - Routing (Power Harness, Coax, Optional Head Unit)
 - Trimwork
 - Radio Mounting
 - Antenna Selection & Mounting
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Planning the Installation

- Finding *Your* Best Location for Radio
 - Factory Mounting Bracket, Aftermarket Mounts
 - Where's My Battery?
 - Trunk
 - Engine Bay
 - Rear Floorboard, Under Rear Bench Seat
 - Locate "Pass-thru" in Firewall
 - Grommet, Wiring Harness
 - Antenna Mounting
 - Trunk/Hood Lip
 - Roof/Rack
 - Truck Bed
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What Types of Radios?

- VHF/UHF Mobile Radio
 - HF Mobile Radio
 - HT with External Antenna
 - HT *without* External Antenna
 - Faraday Cage Effect
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What Types of Antennas?

- Dual-band 2m/70cm
 - Diamond Antenna NR or SG Series
 - Monoband
 - Magnetic Mount (Avoid, if possible...)
 - Damages paint over time
 - *Could* be blown-off at high-speeds , passing oncoming trucks
 - Not the best ground coupling
 - Coax Length
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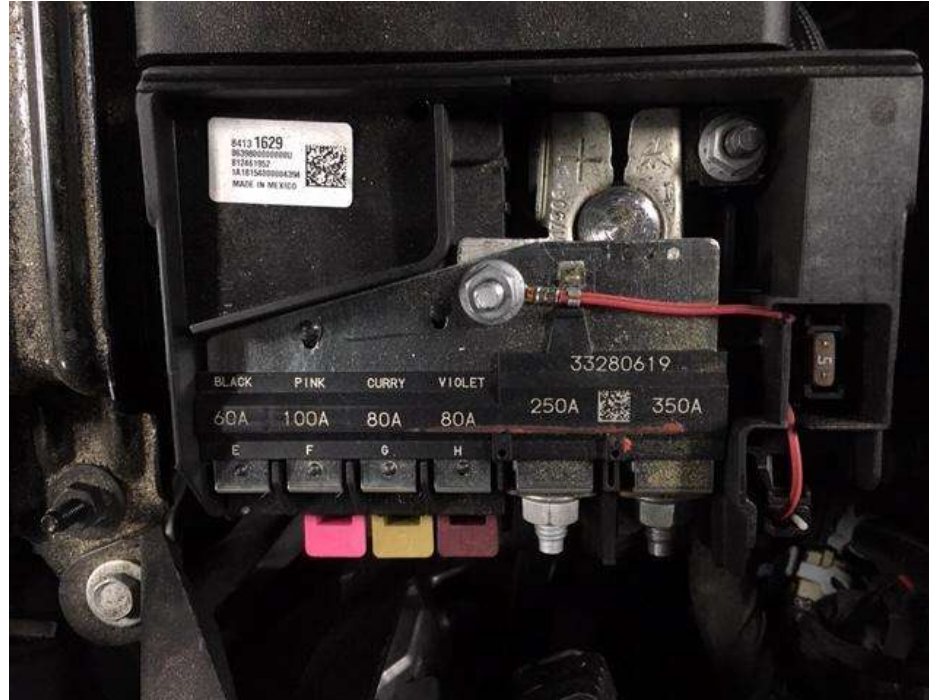
Battery Connections

- Disconnect Ground (-) Cable First
 - Use Chassis Ground (-) if possible!
 - Negative Current Monitor Sensor on Negative Battery Cable
 - Easy to find - should be a short cable run to chassis
 - Radio current could trick alternator to run too often, setting DTCs
 - 12V Battery Positive (B+) Terminal
 - USE ONLY Fused Ground (-) and Positive (B+) Power Harness
 - “If it *looks* good, it *is* good.”
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Negative (-) Chassis Ground



Battery Positive (+) Fuse Block



Firewalls

- Search for harness pass-through grommet from engine bay first.
 - Search under instrument panel for same harness.
 - Make a slit in the pass-through grommet for harness.
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Firewall / Engine Bay



Instrument Panel Area



Radio Mounts

- Mount Control Head/Radio In Most Ergonomic Area
- Utilize OEM Bracket
- Use A Mounting System For Multiple Radios
- External Speaker

Mount Suppliers

- Havis
 - Lido Radio (No Holes!)
 - Walcott Radio
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Coaxial Cable Routing

- No more than 15-20'
 - Utilize the *least* used door or find a stress-free exit area to route
 - Depending on antenna mount, RG-316 jumper over weatherstripping
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Antenna Mounts

- Diamond Antenna Mounts - Trunk Lid, Luggage Rack
- Comet Antenna Mounts
- Laird Mobile Mounts

If drilling for antenna mount, use body-seam sealer to weatherproof mounting location.

Trimwork

- Easier than you may think - but consider vehicle age...
 - Plastic trim becomes brittle over time - especially in colder weather
 - Trim retainers are somewhat one-time use ...
- Tucking coax, power harness
- Plastic Trim Tools
 - Available at any parts store



Radio Frequency Interference (RFI)

- 20+ modules with power, data, and wireless RF
 - Bluetooth, Enhanced Cell Phone Connectivity, Tire Pressure Monitoring System (TPMS), Wireless Charging, Vehicle Proximity Sensors, Lane Departure Systems, A/C Power Sockets, etc...
 - Improve the ground-plane and maintain antenna resonance
 - $\frac{1}{2} \lambda$ or $\frac{5}{8} \lambda$
 - Don't seek out an (electrically) short antenna, if possible.
 - Common Mode Chokes
 - Bonding Exhaust Tailpipe
 - Shotgun-blast approach rather than endless trial and error.
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Radio Mounting Examples

N4GYN



W3DJS



W3WWT



Antenna Mounting Examples

Antenna Mounting Options



Thank you!
73 DE W4KYW
