Components of the Vehicular Charger
The box your vehicular charger is supplied in should contain:
- radio holder unit
- power cable loom
- 2 keys
- 4 M5×20 mm socket head cap screws
- 4 M5 square section spring washers
- 4 M5 nuts
- cable tie and base
- User’s Guide
- this Installation Guide.
If any of the components listed are missing or damaged, contact your dealer.

Associated Items
Depending on the vehicular charger installation, the items listed may be required but are not supplied with this kit.
- vehicle antenna, cable and BNC connector, and one of:
  - mobile microphone; or
  - visor microphone and remote PTT switch; or
  - heavy duty mobile microphone (GPM7C7R);
  - external speaker (GPLS1W). This can be used if it is necessary to boost audio volume.

Mounting Accessories
A combination of the following mounting kits are recommended for securely mounting the vehicular charger.
- universal mount adaptor kit
- single-height U-bracket kit
- double-height U-bracket kit
- triple-height U-bracket kit
- mounting plate kit.
The U-brackets are to be used in pairs, and the available sizes will allow the vehicular charger to be mounted in a suitable position in most situations. The mounting plate can be used to securely mount the two-piece U-bracket assembly to the vehicle.

If the U-brackets provided are unsuitable, a cellphone-type installation bracket can be used in conjunction with the supplied universal mount adaptor.

Recommended Installation Tools
- M3 and M4 Allen keys
- portable drill
- centre punch and hammer
- BNC crimp tool (e.g. Transradio England Duo crimp 894)
- in-line power meter
- spanner for M5 nuts.

Planning the Installation
The main requirements for the vehicle are:
- suitable mounting position, which will be established by the installation personnel and the customer;
- 13.8 V nominal supply, direct connection to battery; and
- switched accessory power for ignition sense feature.
To ensure trouble-free, efficient installation, inspect the vehicle and determine how and where:
- the antenna will be mounted;
- the vehicular charger and accessories will be mounted;
- the power cable loom will be run from the vehicle’s battery to the vehicular charger.

Recommended antenna positions are shown in Figure 1.

When selecting the mounting locations, check that:
- the chosen locations for the vehicular charger and accessories do not endanger the vehicle occupants;
- a radio can be conveniently operated when seatbelts are worn;
- the radio display is readable;
- the radio with antenna fits into the vehicular charger, particularly when the glove box is opened; and
- the mobile microphone lead is long enough.
CAUTION: To prevent interference with vehicle electronic systems such as ignition and anti-skid devices, the vehicular charger, antenna and power cable loom should be mounted away from these units and their associated cables.

Carrying Out the Installation

Using the Two-piece U-bracket
Hold the U-bracket assembly and radio holder unit (with radio inserted) to confirm that the desired position can be achieved with the chosen U-bracket assembly.

1. Once you have confirmed the feasibility of the bracket configuration, hold the mounting plate in the chosen position and use the four holes to mark where you will drill holes into the vehicle structure. Alternatively, use the vehicle kit rear view drawing (Figure 4) as a template. Check that drilling at the selected points will not damage existing wiring.

2. Indent the drilling positions with a centre punch and drill 5.5 mm holes.

3. Place the mounting plate behind the vehicle wall section.

4. Secure the mounting bracket to the mounting plate with:
   M5x20 mm socket head cap screws, and M5 square section spring washers.

5. Secure the second mounting bracket to the first using the supplied M5x8 mm socket head button screws. Check that the half shears engage, locking the bracket at the desired angle.

6. Secure the radio holder unit to the second mounting bracket at the required angle using the remaining M5x20 mm socket head cap screws, M5 square section washers and M5 nuts.

Using the Universal Mount Adaptor
Four M4x10 mm socket head cap screws and M4 spring washers are supplied to mount the universal mount adaptor to a cellphone-type installation bracket. Use four of the supplied M5x20 mm socket head cap screws and M5 spring washers to mount the radio holder unit to the universal mount adaptor.

Connecting the Power Supply
The vehicular charger is designed to operate from a 13.8 V nominal supply. The vehicular charger will tolerate a supply voltage range of 11 V to 16 V.

The recommended installation is to use the ignition sense feature. This will minimise the current used by the vehicular charger when the ignition is switched off by turning off the charger and external speaker. This does not affect the radio's internal speaker or the external microphones.

If powering the vehicular charger from a 24 V to 12 V converter, ensure that the converter maintains output regulation (12 V) with no (0 mA) load current.

1. Disconnect the vehicle’s battery unless specifically prohibited from doing so by the customer, vehicle manufacturer, agent or supplier.

CAUTION: If you cannot disconnect the vehicle’s battery, remove both fuses before beginning the installation and exercise extreme caution throughout the installation.

2. Determine the best route for the battery cable to pass through the firewall to the vehicle battery. Ensure the cable is protected from engine heat, sharp edges and from being pinched or crushed.

3. For optimum performance, connect both positive (red) and negative (black) battery leads directly to the battery terminals.

4. Ensure the fuses are fitted close to the battery so that they are easily accessible.

5. Connect the blue ignition sense lead to a switched accessory power terminal.

6. Plug the other end of the power cable loom into the vehicular charger (refer to Figure 2).

NOTE: If ignition sense must be disabled, connect the ignition sense lead to permanent power.

Connecting Accessories
Check that the chosen locations for accessories do not endanger the vehicle occupants, and that they can be operated when seatbelts are worn.
Refer to Figure 2 for the location of the different connectors. Use the supplied cable tie to ensure that cables remain firmly connected to the radio holder unit.

**Vehicle-mounted Antenna**
Fit the antenna, cable and coaxial (BNC) connector following the supplier’s instructions. Tune the antenna using the directional power meter. Reflected power should be less than 0.1 W for 5 W forward power.

**Mobile Microphone**
Install the mobile microphone clip in an accessible place, and connect the cord to the vehicular charger.

**External Speaker**
The external speaker is recommended in vehicles where excessive noise is a problem. It is only required if the volume from the radio speaker is insufficient. The bracket can be used to permanently mount the speaker while allowing the speaker to be tilted to a desirable angle.

**NOTE:** If a siren or other loud audio source is nearby, it is recommended that the speaker be located near the operator’s ear. With the speaker in close proximity, one volume setting will be appropriate in most situations. For example, the volume would not need to be changed if the siren was on.

**Visor Microphone and Remote PTT Switch**
Install the visor microphone and remote PTT switch in an appropriate place and connect the cords to the vehicular charger. Ensure the cords are held securely out of the way of the vehicle operator. The remote PTT socket can support programmable function buttons. Consult the Service Manual for more information.

**Accessory/Data Connector**
Consult the Service Manual for more information regarding this connector.

**Installation Checks**
- Make a call to another party. Is the transmission clear?
- From another radio, make a call to the radio while it is mounted in the vehicular charger. Is the transmission clear? If the external speaker has been installed, does it work?
- If ignition sense was connected and a radio is in the vehicular charger, does the charger light go off when the ignition is off?
- Check that the operation of the radio is not affected by and does not interfere with the operation of the vehicle.

![Figure 2: Rear view of the radio holder unit showing points of connection](image-url)
Vehicular Charger Installation Report

Please forward a copy of this Installation Report to your local dealer.

Installer __________________ Report Number ____________
Name and number ___________________________

Customer Details
Name: ______________________________________
Address _____________________________________
____________________________________________
Contact name _______________________________
Contact telephone number ____________________
Order number _______________________________
Appointment date/time _______________________
Vehicular Charger model number _______________
Vehicular charger serial number ________________

Accessories Installed
❑ Mobile Microphone
❑ External Speaker
❑ Visor Microphone
❑ Remote PTT Switch
❑ Heavy Duty Mobile Microphone
Ignition sense disabled?
❑ Yes  ❑ No
VSWR reading ___________________
Test call completed: ❑ Tx  ❑ Rx

Type of Installation
❑ New install  ❑ De-install
❑ Re-install  ❑ De/re-install

Vehicle Details
❑ Onsite  ❑ Offsite

Installation
Vehicle registration number _______________________
Make __________________ Model _______________________

De-installation
Vehicle registration number _______________________
Make __________________ Model _______________________

Equipment Locations
Vehicular charger _____________________________
Mobile microphone ____________________________
External speaker ______________________________
Visor microphone ______________________________
Remote PTT switch ______________________________
Fuses _______________________________________
Antenna _____________________________________
Installer’s comments __________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

I accept the details as entered above and authorise the installation to proceed.
Signature of customer ____________________________________________ Date __________________

I hereby accept that the equipment has been installed and works to my complete satisfaction. This acceptance does not remove or alter any of my statutory rights. The basic operation of this vehicular charger has been explained to me.
Signature of customer ________________________ Date __________________
Print name ________________________________

NOTE: Before signing below, I have fully inspected the work carried out on my vehicle.
Signature of customer ________________________ Signature of installer ________________________
Date __________________ Date __________________
Print name ____________________________

I hereby certify that the equipment above has been installed in accordance with the guidelines laid down by AS/NZS 4346 and that the pre- and post-installation checks have been carried out.
Signature of installer ________________________ Date __________________
Print name ____________________________
This page may be used as a template to mark out placement, without having the kit available.

**NOTE:** Before using this page as a template, verify that it has been printed at the correct size. Using a ruler, measure the appropriate sides of the test block shown in Figure 3.

**TIP:** If this page was printed with Adobe Acrobat Reader but it is not to scale, turn off the "Fit to page" option in the Print dialog box. If that does not work, the printer might have a graphic scaling option (normally found on the printer’s Properties or Advanced Options dialog box) that needs to be reset to 100%.