

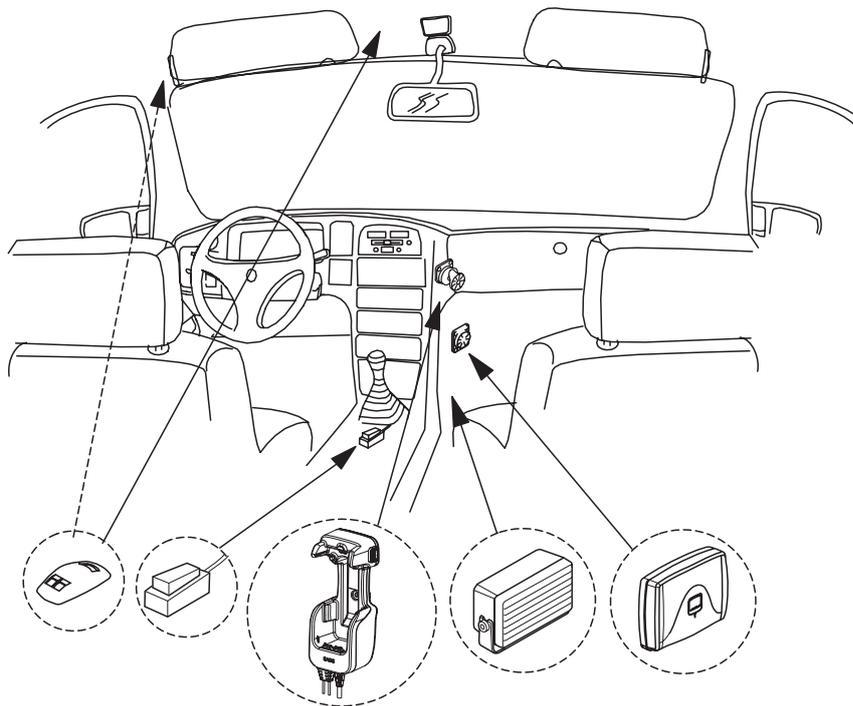
CARK-9 Installation Guide





Car Kit **CARK-9**

Installation Guide



Version 1
Part No. HR8159AA, PS11160AMLAA01
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Introduction

This installation guide has been prepared to provide the basic information necessary to install CARK-9. This guide is not intended to be definitive, because different types and models of vehicles will require different installation work. The information given is for general guidance only.

The terms of warranty demand that this car kit be installed by an experienced installer and that only specified parts are used. An end-user should never attempt to install this car kit without professional assistance as the installation requires special tools and knowledge.

Please refer to the radio's User Guide for instructions on the radio's operation, care and maintenance, including important safety information.

Note: Read the warnings below before beginning the installation procedure.

WARNINGS

1. ENSURE THAT THE VEHICLE'S BATTERY IS DISCONNECTED BEFORE YOU START THE INSTALLATION PROCEDURE, AND THAT IT REMAINS DISCONNECTED DURING THE PROCEDURE.
2. DO NOT SMOKE OR USE OPEN FLAMES WHEN WORKING NEAR THE VEHICLE'S FUEL SYSTEM.
3. ENSURE THAT THE VEHICLE'S ELECTRICAL CABLES, HYDRAULIC LINES, FUEL LINES, AND SAFETY EQUIPMENT ARE NOT DAMAGED DURING INSTALLATION.
4. ENSURE THAT NORMAL CONTROL AND OPERATION OF THE VEHICLE IS NOT IMPAIRED BY THE INSTALLATION, PARTICULARLY THE BRAKES AND STEERING. ENSURE THAT AIRBAG OPERATION IS NOT OBSTRUCTED.
5. ELECTRONIC AND OTHER SOPHISTICATED SYSTEMS (e.g. SPEED CONTROL, ABS ANTI-LOCK BRAKE, FUEL INJECTION-, NAVIGATION-, AND AIR-BAG SYSTEMS) ARE RELATIVELY IMMUNE TO MALFUNCTION CAUSED BY NEARBY RADIO TRANSMISSIONS. HOWEVER, SHOULD YOU EXPERIENCE FALSE OPERATION OF THESE SYSTEMS OR ARE IN ANY DOUBT WHATSOEVER AS TO THEIR FUNCTIONALITY, PLEASE CONSULT THE VEHICLE'S DEALER.
6. THE CAR KIT IS SUITABLE FOR USE ONLY IN VEHICLES WITH A 12 V NEGATIVE GROUNDING. USE ON OTHER SUPPLY VOLTAGES OR ALTERNATIVE POLARITY WILL DAMAGE THE EQUIPMENT.
7. THE RADIO SHOULD NOT BE LEFT SWITCHED ON FOR EXTENDED PERIODS WITHOUT RUNNING THE VEHICLE'S ENGINE. FAILURE TO COMPLY COULD DRAIN THE VEHICLE'S BATTERY.
8. SIDE CONNECTOR ACCESSORIES SHOULD BE REMOVED FROM THE TERMINAL BEFORE THE TERMINAL CAN BE USED IN THE CAR KIT INSTALLATION.

Components of CARK-9

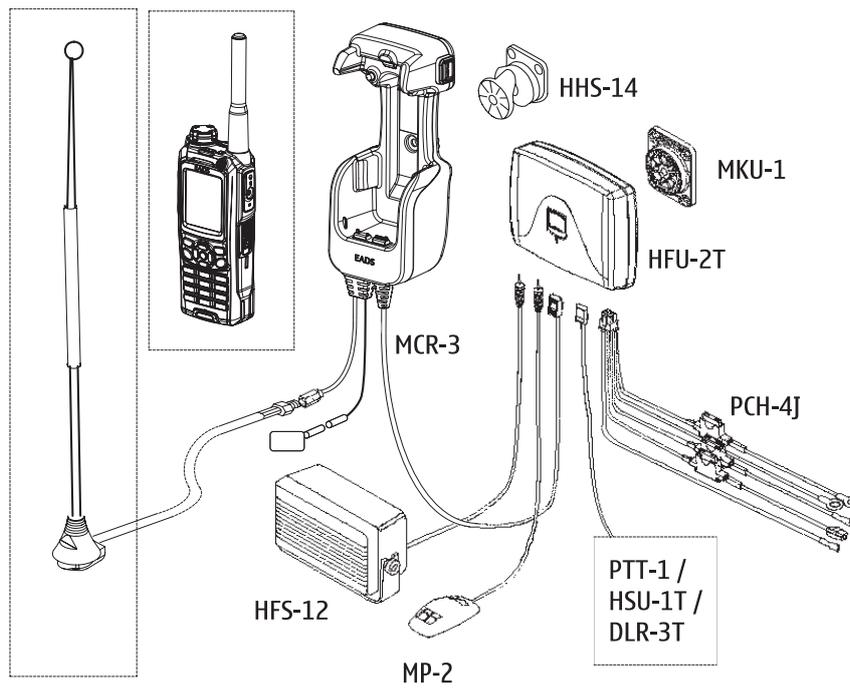


Fig. 1. Installation without the DTC-1 Adapter Cable

The CARK-9 includes the above parts. Please note that the items enclosed within broken lines are not supplied with CARK-9.

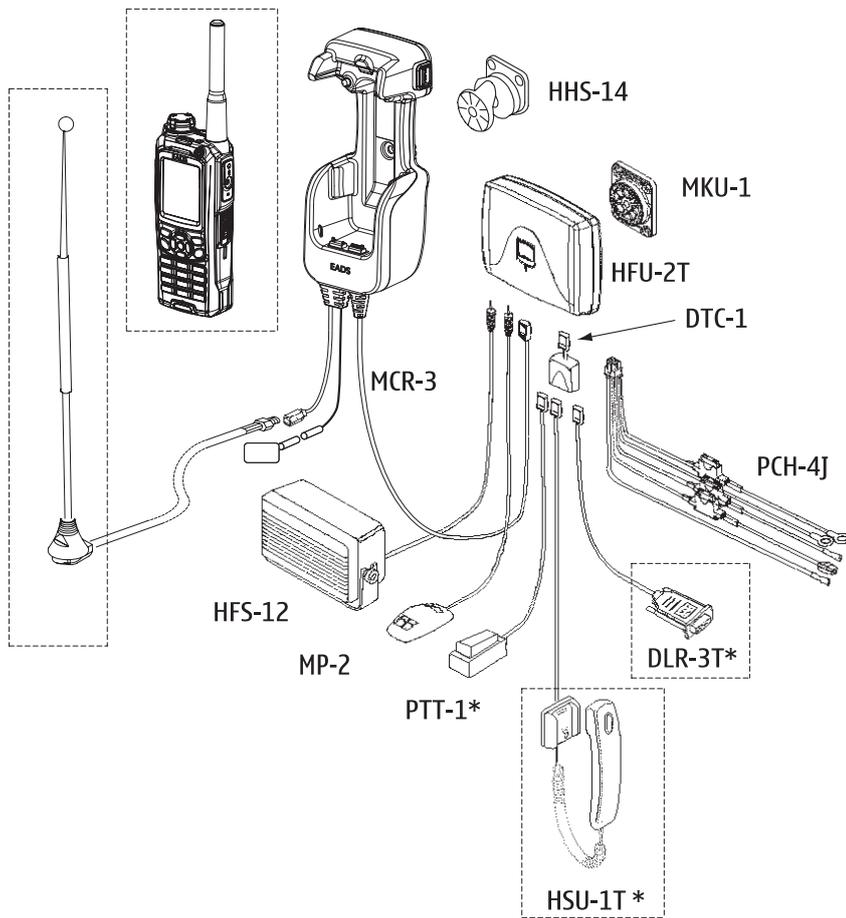


Fig. 2. Installation using the DTC-1 Adapter Cable

Please note that all items shown above are included in CARK-9 except those enclosed within broken lines.

*Two of these accessories can be connected simultaneously.

Warning

Side connector accessories should be removed from the terminal before the terminal can be used in the carkit installation.

Component Parts

Advanced Active Holder MCR-4

The holder for the radio is attached to the vehicle's interior in a convenient position using the swivel mount HHS-14. The mounting is secured with a screw (included with HHS-14). The screw recess is covered with the rubber plate.

The cable with the plug-in connector from MCR-4 connects to the **PHONE** socket in HFU-2T. (The other cables from MCR-4 connects to the external TETRA and GPS antennas.)

Swivel Mount HHS-14 and Mounting Plate MKU-1

HHS-14 is a swivel mount which allows for adjustable fixing. MKU-1 is a fixed position mounting plate.

Advanced HF Unit HFU-2T

The handsfree unit HFU-2T is attached to the vehicle interior using the mounting plate MKU-1. The mounting is secured with a screw (included with MKU-1).

Power Cable PCH-4J

The power cable connects to the **DC** socket in HFU-2T and to the vehicle's power supply. See the "Installation" section for more information.

HF Microphone MP-2

The HF microphone connects to the **MIC** socket in HFU-2T. Twist the plug clockwise to lock it firmly in place.

HF Speaker HFS-12

The HF speaker connects to the **SPEAKER** socket in HFU-2T. Twist the plug clockwise to lock it firmly in place.

Adapter Cable DTC-1

The DTC-1 adapter cable connects to the HFU-2T DATA/HANDSET socket. It provides for the possibility of connecting to two out of three possible accessories: PTT-1, HSU-1T and DLR-3T. It comprises specified sockets for DATA and HANDSET connection.

Note that if only one of these three accessories is used, it must be connected directly to the HFU-2T without using the DTC-1!

External Push to Talk Key PTT-1

The external push to talk key is to be used during a one-way call. The key connects directly to the HFU-2T DATA/HANDSET socket or to either socket in the DTC-1 Adapter cable (please refer to DTC-1).

Note that the external push to talk key is not allowed to be installed to a vehicle control device!

Data Adapter Cable DLR-3T (not supplied)

The data adapter cable enables RS232 data connection to the radio. The cable connects directly to the HFU-2T DATA/HANDSET socket or to the DTC-1 adapter cable DATA socket (please refer to DTC-1). For more information, please refer to the user guide for the data adapter cable.

External Mobile Antenna (not supplied)

An external TETRA-band antenna is recommended for the car kit. It connects to MCR-4.

External GPS Antenna (not supplied)

An external GPS-band antenna is recommended for the car kit. It connects to MCR-4.

Handset HSU-1T (not supplied)

The handset HSU-1T offers more privacy during a call. During a one-way call the PTT key must be used. It connects to the **DATA/HANDSET** socket of HFU-2T or to the DTC-1 adapter cable HANDSET socket (please refer to DTC-1). For more information, please refer to the user guide for the handset.

Installation

For an example of installation locations, please see the cover.

Note: Ensure that the battery of the vehicle is disconnected before you start the installation or start making changes to the installations, and that it remains disconnected during the installation procedure.

The HFU-2T and the different parts are connected as mentioned in the "Component Parts" section.

There are some important aspects that require special attention in positioning car kit accessories.

The location of the holder should be selected so that the radio's display is easily visible and that the driver's attention is not distracted. The location of the holder should allow the driver to easily reach the keypad. Under no circumstances should the holder in any way prevent the driver from controlling or operating the vehicle.

The HF microphone should be installed according to the directions in the separate microphone installation guide. Ensure that the microphone is as close to the driver's mouth as possible, and attached to a surface that is mechanically quiet. The microphone should be mounted at least 3 ft/1 m away from the handsfree unit speaker to avoid acoustic feedback.

Ensure that the cables are routed as far away as possible from the vehicle's electronic systems. This is to prevent interference. Also, ensure that the cables are not subjected to undue mechanical stress e.g. under seats or against sharp edges.

PCH-4J

The cables from PCH-4J are colour coded. They are listed in the following table in column A and each cable should be connected to the corresponding item listed in column B.

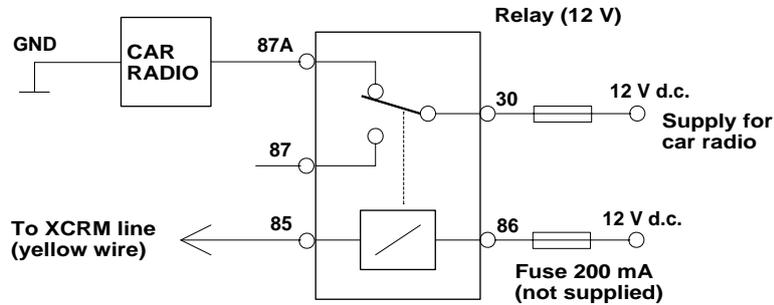
A	B
Red cable (with 2 amp fuse)	The + voltage on the vehicle's power supply.
Black cable	The negative GND connection.
Blue cable (with 1 amp fuse)	The +12 V voltage controlled by the vehicle's ignition key. (See section "Ignition Sense IGNS".)
Yellow cable	Used for car radio muting (XCRM) and is connected to the car radio. The line goes down to 0 volts during a call. See section "Car Radio Muting CRM".
Green cable (with 1 amp fuse)	The motor antenna (AMC). The voltage in this output is +12 V whenever the phone is on. See section "Antenna Motor Control AMC".

Ignition Sense IGNS

The ignition sense feature prevents your car kit from draining the car battery by executing an auto power off 20 seconds after the ignition key has been turned off. The blue cable from PCH-4J is used for the ignition sense feature. The use of ignition sense is recommended to prevent accidental draining of the car's battery. The cable is connected via a 1-A fuse to a 12-V supply that is controlled by the ignition key. Do not connect it directly to the high voltage sections of the ignition circuit.

Car Radio Muting CRM

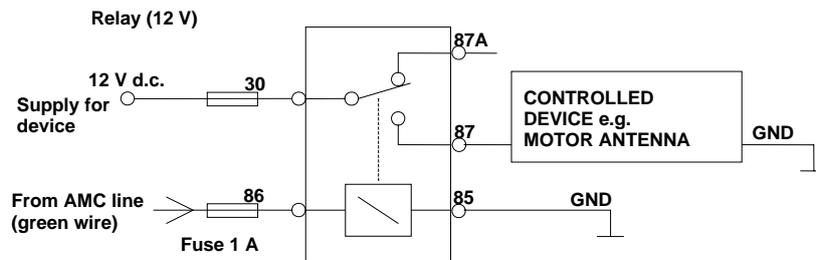
The car kit offers a feature that can mute the car radio automatically during a conversation. The following is the circuit diagram for CRM.



Another possibility is to use a special muting unit, which mutes the radio by connecting load resistors to the speaker lines of the car radio.

Antenna Motor Control AMC

The antenna motor control may be used to turn different devices on and off. The maximum output current is 200 mA; therefore, for example, a motorized antenna must be controlled via a relay, see diagram below.



All installations should take into account any special requirements of the customer. However, should the customer require an installation that is illegal or unsafe these facts must be pointed out to the customer and a policy of non-compliance adopted.

Testing

Once installed, the equipment should be tested to ensure that it is operating satisfactorily and that the position of the units does not in any way impair the driver's ability to control and operate the vehicle.

