T02-00064-2xxx
Remote Head Extender Upgrade Kits
Installation Instructions

Introduction

The T02-00064-2xxx remote head extender upgrade kits can be used when extended distances are required between a TM9300 or TM9400 radio body and a graphical-display control head.

This enables the control head to be installed away from the radio body, in difficult or isolated locations (up to a maximum of 750m).

The full upgrade kits include a pair of transmit/receive extender boxes to provide the necessary buffering and protection of signals for longer distances, and a control-head interface box to locally re-power the control head.

The basic upgrade kits do not include a control head interface box. The basic upgrade kits are intended for use where a control head interface box is already present or is being supplied as part of a remote head kit.

If an extended dual head is required, additional items are required:

- a T02-00062-2xxx Dual-Head Upgrade Kit
- a T02-00005-xxxx microphone

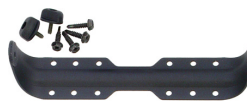The following rules apply for the installation of an extended remote head (see the diagram on page 3):

- The remote cable between the radio and first extender box can be up to 5ft (1.5m) long.
- The network cables between the remote extender boxes can be up to 2460ft (750m) long.
- The remote cable between the second extender box and the control head interface box can be up to 98ft (30m) long.
- The remote cable between the control head interface box and the remote control head can be to 20ft (6m) long.

(i) Remote cable lengths can be made up using standard remote cables (T02-00009-01xx) combined with extension cables (T02-00009-02xx), as required.

remote control head interface

remote U-bracket (incl. screws)

control head interface box
(incl. plug pack)

remote cables

remote body interface

remote control head extender
box (incl. x2 cable grommets
and mounting hardware)

The Remote Head Extender Upgrade Kits contain the following items:

Description	Part No.	T02-00064-2xxx full remote extender upgrade kits	T02-00064-2xxx basic remote extender upgrade kits
remote control head interface	T02-00083-AAAA	1	0
remote U-bracket	(comes with above)	1	0
control head interface box	T02-00088-AAAA	1	0
2ft (0.6m) remote cable[a]	T02-00009-0101	2	2
20ft (6.2m) remote cable[a]	T02-00009-0103	1	0
remote body interface	T02-00081-AAAA	1	0
remote control head extender box	T02-00088-CAAA	2	2
12V plug pack	009-0001x-00	1	1

a. Remote cables with 5ft (1.5m) (T02-00009-0102), 10ft (3m) (T02-00009-0105) and 40ft (12m) (T02-00009-0104) are also available.

In addition to the above items, you also need to fabricate two matching lengths of network cable up to 2460ft (750m) long each with the following pinouts: 1-3, 2-6, 3-1, 4-4, 5-5, 6-2, 7-7, 8-8.

Notice To prevent TDMA audio noise, the control head interface box must not be powered from a desktop power supply but from the plug pack provided in each kit.

Refer to the radio installation guide for further information such as mounting the radio body using the U-bracket, installing the antenna, and radio body power connections.
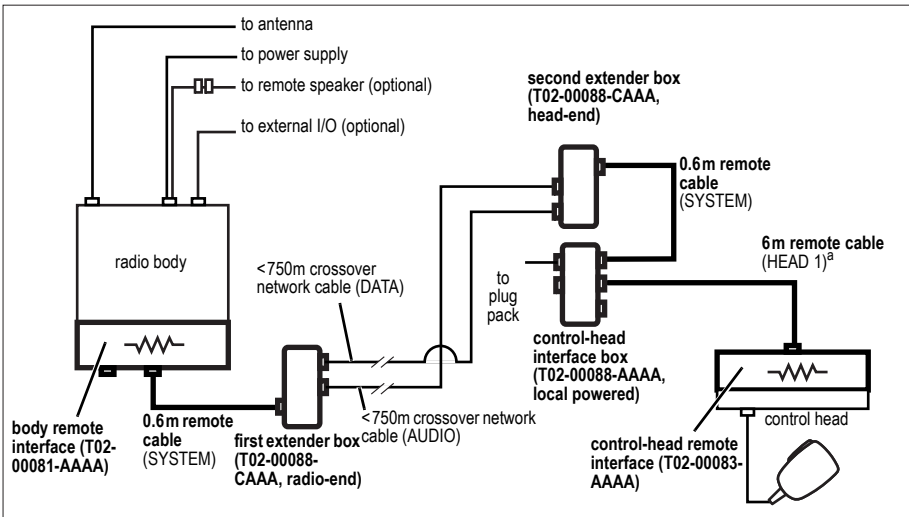
Installation Precautions

⚠️ **Warning** **Mount these products securely. Unsecured radio equipment is dangerous to radio users, and others.**

⚠️ **Warning** **When drilling holes in a vehicle, check that drilling at the selected points will not damage existing wiring, petrol tanks, fuel lines, brake pipes or battery cables.**

Notice This equipment contains devices that are susceptible to static charges. The procedures outlined in this installation guide should therefore be carried out in a static-safe environment. You can obtain information on antistatic precautions and the dangers of electrostatic discharge (ESD) from standards such as ANSI/ESD S4.1 or BS EN 61340-5. The Electrostatic Discharge Association website is http://www.esda.org/.

Installation

The following diagram summarizes how the components are installed. Items named or shown in **bold** are part of the upgrade kit. A ¬ʌʌʌ symbol means an RS485 terminating resistor is fitted. The cable lengths shown in this diagram represent the cables provided in the kit. The maximum cable lengths are specified .

One or more of the following steps may not be necessary depending on the type and degree of the existing installation.
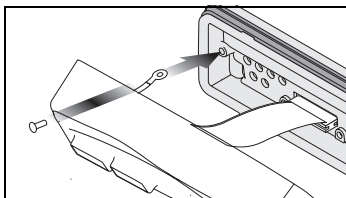
1 Uninstall the existing radio.

   a Remove the radio from its mounting position.

   b Disconnect the cables from the rear of the radio, such as the power and antenna cables.

   c If upgrading a radio with a control head mounted remotely:

      ■ Disconnect the remote cable and discard if the cable is to be replaced.

      ■ If the control-head interface is to be replaced, remove and discard.

      ■ If the body remote interface is to be replaced, remove and discard.

■ For best performance the remote cable should also be replaced when possible.

d If upgrading a radio with a control head mounted locally, remove the control head from the radio body and unplug the loom.

2 Assemble the remote interfaces.

a Assemble the body remote interface (T02-00081-AAAA) to the radio body. Ensure the earthing tag is attached as shown.

b Assemble the control-head remote interface (T02-00083-AAAA) to the control head.

For more information, refer to the remote control head kit installation instructions[a].

3 Configure the extender box and control-head interface box links.

a Remove the seals from the top of the extender and control-head interface boxes.

b Compare the link configurations with the label diagrams. Re-configure if necessary using small long-nose pliers (or similar).

■ One extender box must be configured as **RADIO**.

■ One extender box must be configured as **CONTROL HEAD**.

■ The control-head interface box must be configured as **LOCAL POWERED**.

c Mark the applicable diagrams on the extender box labels (for identification purposes during the installation), and replace the seals.

4 Install the components and prepare the network cables.

a Mount or re-mount the radio body using the preferred method, such as U-bracket, slide-in cradle, or security bracket. Refer to the relevant sections in the installation guide, or the installation instructions included with the mounting kit.

b Prepare the crossover network cables. Before crimping the RJ45 connectors, slide on the grommets provided for strain relief (recommended). Make sure the cabling has a direct path and is not interrupted by network devices such as switches or routers.

Refer to the radio service manual for connector pins and signals, and schematics.

c Lay out all cables as per the diagram . Determine the best mounting position for all components, at distances less than the length of each cable used.

Notice The extender boxes and control-head interface box do not provide IP54 protection. Choose a mounting position away from water, dust, and other environmental hazards.

d Use the washers and screws provided to mount the radio-end extender box, the head-end extender box, and the control-head interface box.

e Use the remote U-bracket and screws provided to mount the control head. Refer to the remote control head kit installation instructions[a].

5 Install the cables.

a Remove the innermost connector seal from the body remote interface.

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a. IPN 402-00088-xx, available from http://support.taitradio.com.

b Drill any holes required for the cables and install suitable grommets or bushings in the holes.

c Use a remote cable to connect the **SYSTEM** socket of the radio-end extender box to the innermost RJ45 socket of the body remote interface.

d Use crossover network cable to connect the **AUDIO** socket of the radio-end extender box to the **AUDIO** socket of the head-end extender box.

e Use crossover network cable to connect the **DATA** socket of the radio-end extender box to the **DATA** socket of the head-end extender box.

f Use a remote cable to connect the **SYSTEM** socket of the head-end extender box to the **SYSTEM** socket of the control-head interface box.

g Use a remote cable to connect the **HEAD 1** socket of the control-head interface box to the rear RJ45 socket of the control head.

h Install all cable grommets. Ensure each grommet is seated correctly.

6 Connect power to the control-head interface box.

The control head, when installed over extended distances, must be powered locally using the control-head interface box. Use the supplied power adaptor to connect the 2.5 mm DC jack to a power source.

ⓘ Power can be permanently applied to the interface box without affecting current drain. The control head will only power on when power is applied to the radio system via the radio body.

7 Check the installation.

Apply power to the control-head interface box, then the radio body. If the radio does not power on, press the On/Off key on the control head. Check that the control head sounds the power-up tone and the display is operating as expected.

More Information

Refer to your radio provider for more information about this product.