

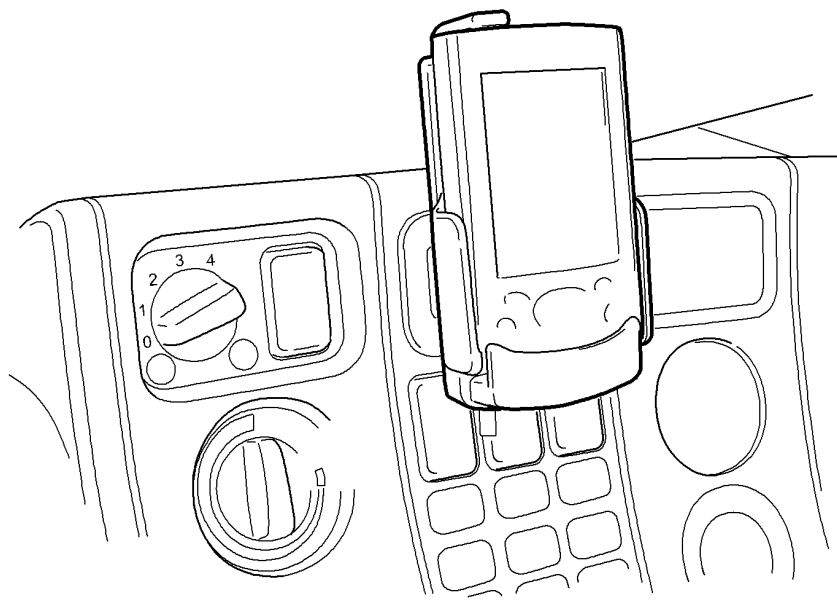
SCANIA

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Issue 1 en

Fleet Analysis System 2

Retrofitting and troubleshooting



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General

The Fleet Analysis System 2, FAS 2, is supplied complete with cradle and hand-held computer.

It may be easier to carry out some procedures with two people.

These instructions describe retrofitting in a left-hand drive vehicle.

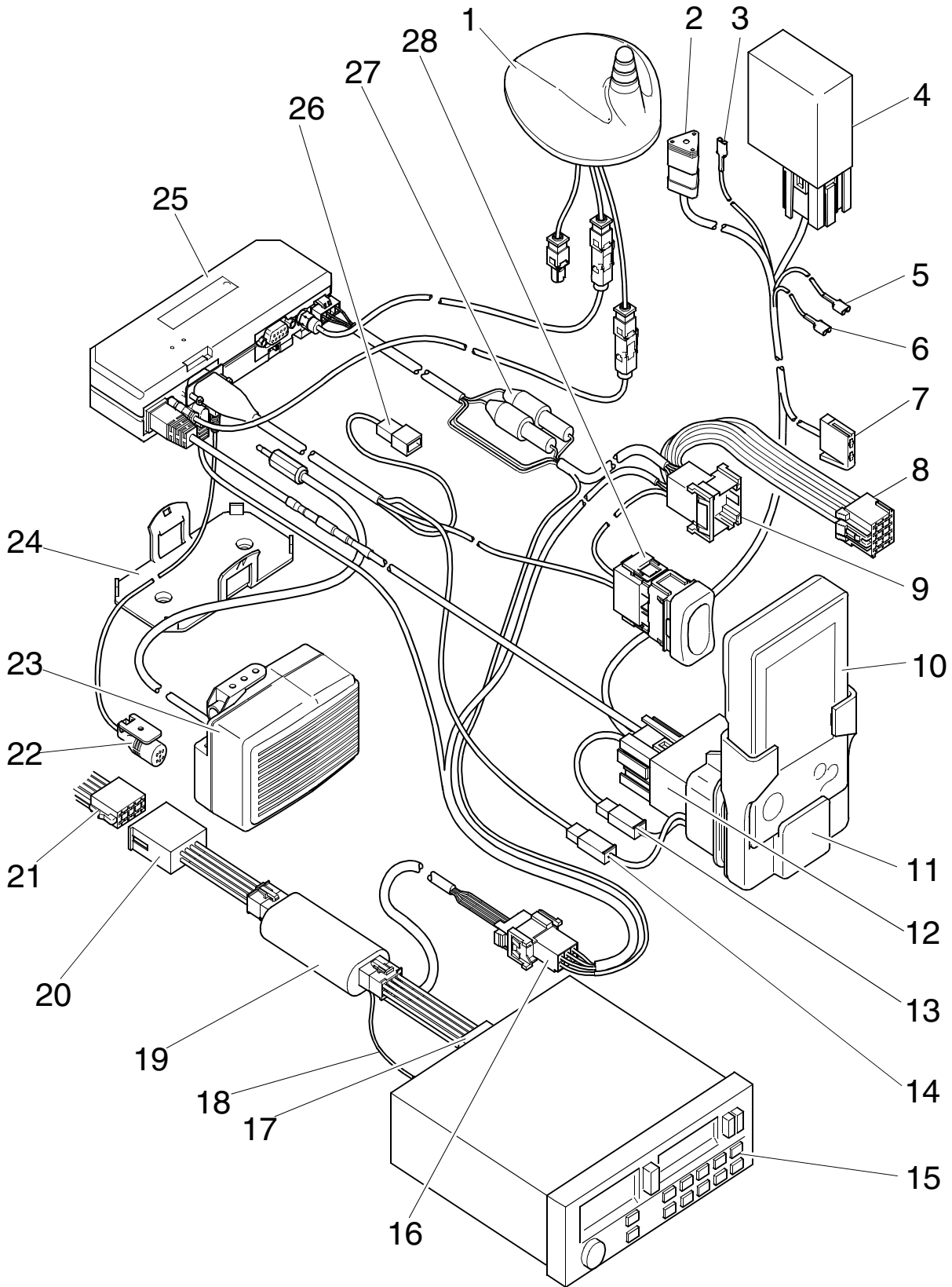
Function

FAS 2 allows:

- one and two-way communication via the GSM network. This enables the use of e-mail, SMS and telephone.
- positioning via GPS.

Component parts

FAS 2 comprises:

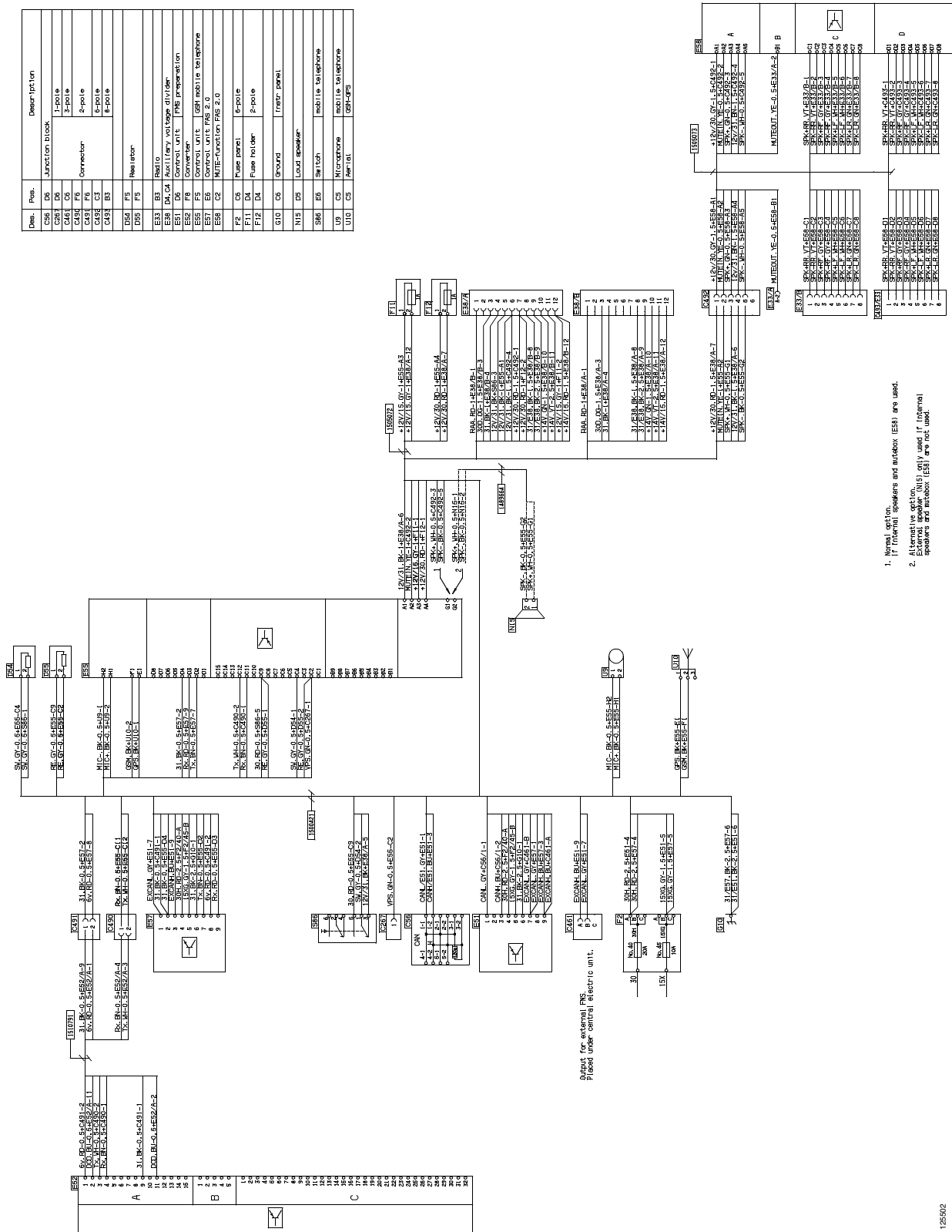


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- 1 *Aerial U10*
- 2 *Connector C461*
- 3 *Earth, black G10*
- 4 *FMS control unit E51*
- 5 *Battery voltage plus, red F2/40*
- 6 *Ignition voltage, grey F2/45*
- 7 *C56/CAN*
- 8 *Connector which is connected to voltage converter E38B*
- 9 *Connector which is connected to voltage converter wiring E38A*
- 10 *Hand-held computer*
- 11 *Cradle E52*
- 12 *Adapter E57*
- 13 *Connector C491*
- 14 *Connector C490*
- 15 *Radio*
- 16 *Connector C492*
- 17 *Radio cable E33-B*
- 18 *Mute cable E33-A2*
- 19 *Mute box E58*
- 20 *Radio speaker cable C493/E33*
- 21 *Radio speaker connector*
- 22 *Microphone U9*
- 23 *Speaker*
- 24 *Plastic holder for A3D*
- 25 *A3D GPS/GSM module E55*
- 26 *VPS cable C267*
- 27 *Fuses F11, F12*
- 28 *Spring-loaded switch S86*

Connection diagram

Des.	Pos.	Description
C56	D9	JUNCTION BLOCK
C41	D9	1-pole
C44	D9	2-pole
C49	F6	Connector
C49	C3	2-pole
C49	B3	2-pole
D54	F5	Resistor
D54	F5	Resistor
E33	B3	Resistor
D5	D9	Audio frequency voltage divider
E34	F8	Control unit (PDS preparation)
E34	F8	Control unit (PDS preparation)
E55	F5	Control unit (SN mobile telephone)
E57	E5	Control unit PDS 2.0
E58	C2	MUTE-function PDS 2.0
F2	C5	Fuse panel
F11	D4	Fuse holder
F12	D4	Fuse holder
G10	C5	Ground
G10	D5	Load speaker
N15	D5	Switch
S86	E5	Microphone
U9	C5	Microphone
U10	C5	Microphone



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Installation

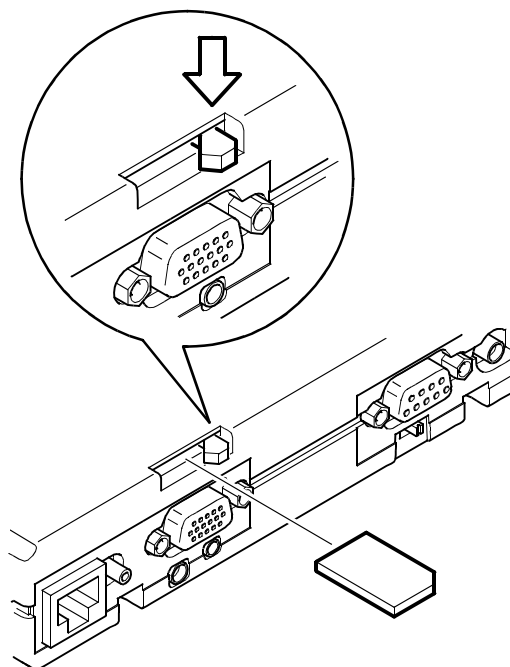
Note: Read the directions before installing.

SIM card

- 1 Slide the SIM card into the slot on the connector side of the GPS/GSM module.

The SIM card is secured in position when the catch is locked.

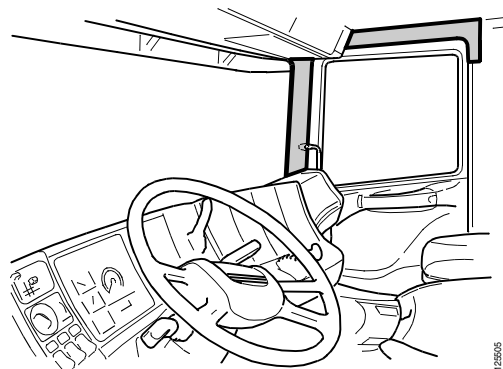
To remove the SIM card, the catch is pressed down and then the card can be removed. Refer to the illustration.



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Preparation

- 1 Remove the panels above the right-hand door and the ones covering the right-hand A pillar.
- 2 Loosen the panels and brackets for the bed, ladder, etc. to facilitate routing of the cables. Refer to the description in 18:01-05 Cab, Interior.
- 3 Loosen the headlining.
- 4 Loosen the roof shelf on cabs with low roof. This will give access for screwing on the aerial retaining nut.



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Attaching the aerial

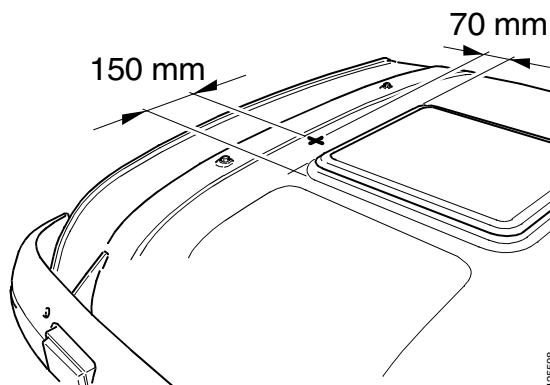
A correct attachment of the aerial assumes that

- the area around the inlet hole is level (only applies to cabs with a low roof).
- the distance to any other aerials is at least 500 mm. This is necessary to avoid disturbance in communication.

If there is a suitable hole for the inlet on the right-hand side of the cab: fit the aerial there.

Otherwise, proceed as follows:

- 1 Make a 19 millimetre diameter hole with a suitable tool. Refer to the illustration for its location in relation to the roof hatch. Finely adjust the position as necessary depending on other equipment located on the roof.



Note: Make sure no metal shavings are left on the roof as they will corrode and fasten.

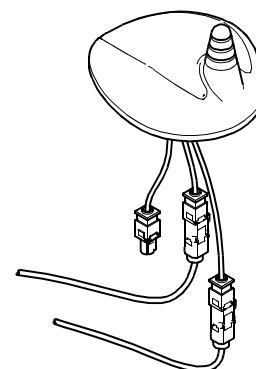
- 2 Apply a little anti-corrosive agent to the edge of the hole. Allow the agent to dry.

Note: Make sure the aerial nut underneath the roof is in good contact with the metal. This will ensure a good earth.

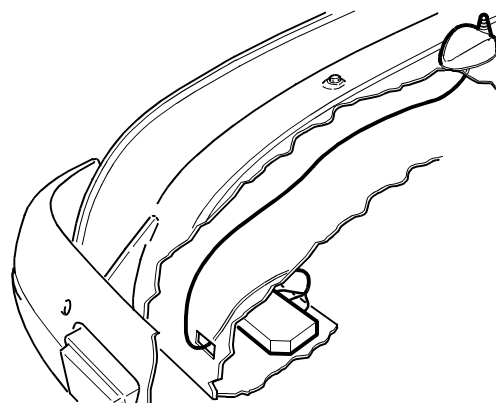
- 3 Pull through the cables and screw the aerial into the hole.

Routing the aerial wiring

- 1 Attach the GPS and GSM cables to the aerial cables.
- 2 The extra cable for the FM band can be used for the radio. If this cable is not being used, insulate it with tape and fasten it underneath the roof.
- 3 Run the cables via the headlining panels towards the windscreen and down behind the right-hand roof shelf lid. Then pull out the cables through the hole in the headlining to where the GPS/GSM module is being fitted.



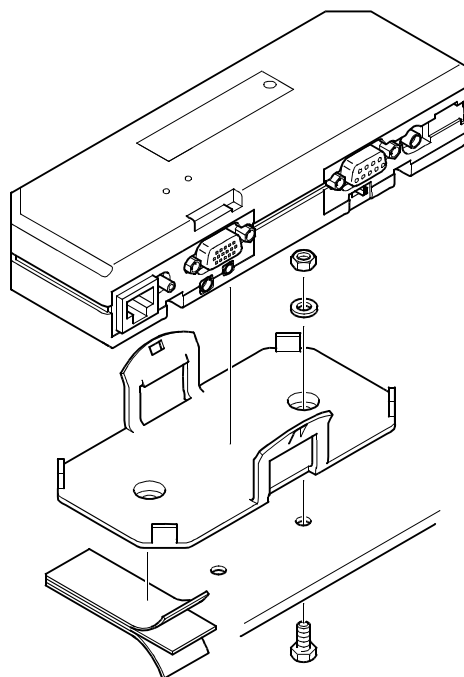
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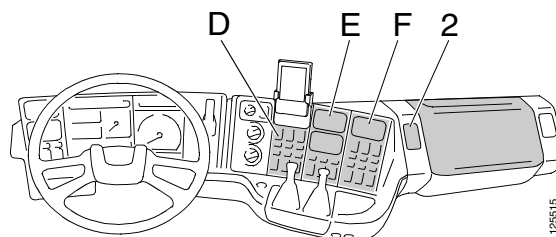
Fitting GPS/GSM module

- 1 The GPS/GSM module should be fitted in the centre compartment on the passenger side roof shelf.
- 2 Remove the rubber mat fitted in the compartment.
- 3 Position one end of the module bracket into one of the existing holes in the bottom of the roof shelf. Fasten the other end of the module bracket with double-sided adhesive tape.
- 4 Screw on the plastic bracket with an M5x10 bolt, nut and lock washer in the positioned hole. Fit the bolt from underneath and the nut from above.
- 5 Place the GPS/GSM module into the plastic bracket.
- 6 Connect the aerial cables to the GPS/GSM module.



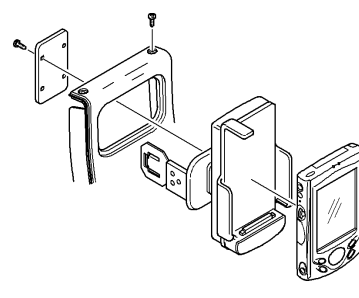
Routing the FAS wiring

- 1 Open the central electric unit.
- 2 Lay the FAS wiring behind the central electric unit.
- 3 Set the outlet air control 2 in the middle position and remove it from the instrument panel. The controls must be set to minimum position to remove the outlet.
- 4 Detach the panels D, E and F.
- 5 Press the hand-held computer cradle into panel D and screw on the attaching plate.

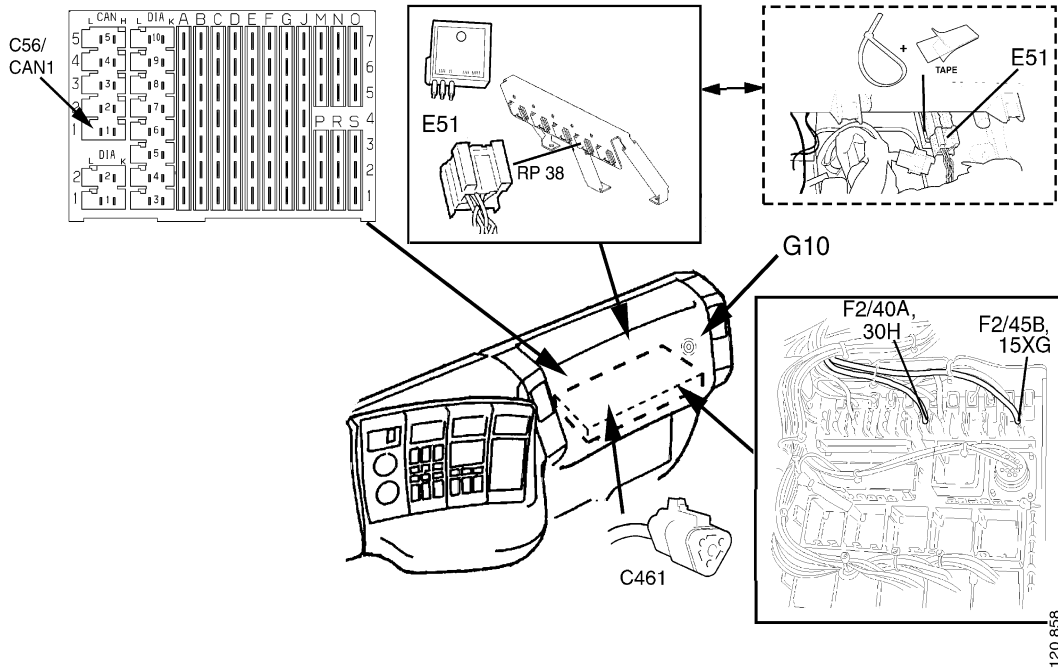


Note: The hand-held computer cradle should be located in panel D. If there is a diagnostic switch panel located in panel D, it can be moved to panel F.

- 6 Fit the spring-loaded switch for the telephone into a spare hole in panel D, E or F.
- 7 Place the telephone symbol label in the hole in the panel associated with the button.
- 8 Run the FAS wiring between the central electric unit and panel D and connect to the central electric unit.
- 9 Connect the wiring to the hand-held computer cradle and the switch.



Note: Connector C461 is an additional CAN socket and is not connected.



10 Vehicles with VPS:

Connect C267 to the VPS system connector. The alarm from the GPS/GSM module goes to the Scania Fleet Management Portal (FMP) and indicates the activated alarm, time and vehicle position.

11 Vehicles without VPS:

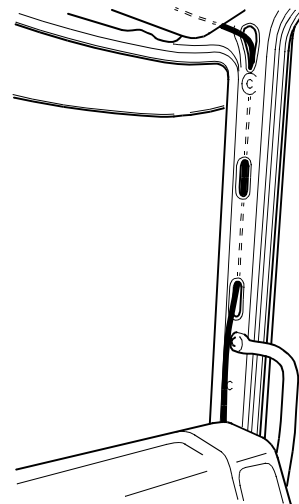
Insulate the connector with tape and fasten the cable in a suitable position. If the cable has been run via the GPS/GSM module in connection with commissioning.

12 Refit detached panels.

13 Refit the outlet air control 2.

14 Fasten the FMS control unit to the central electric unit. Use a cable tie or the bracket intended for the purpose.

15 Continue to run the FAS wiring from the central electric unit to the GPS/GSM module on the roof shelf via the right-hand A pillar. To make it easier to run the wiring via the A-pillar, it can be taped on.



- 16 Connect the cables to the GPS/GSM module.

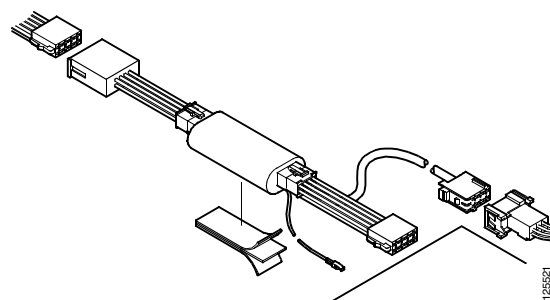
Note: Make sure the wiring in the roof shelf is slightly slack.

- 17 Connect E38A to the voltage converter wiring. Connect E38B to the voltage converter, the voltage cable between the voltage divider and the GPS/GSM module.

Note: If pin 12 on the voltage divider is free then cable C3-15 must be connected there. Otherwise, connect the cable together with the existing cable on pin 15 in connector C3.

- 18 On vehicles with original radio:

- A) Disconnect the speaker connector from the radio.
- B) Connect the mute box cable for the radio speaker to the speaker connector C493/E33.
- C) Then connect the mute box cable E33-B and the mute cable E33-A2 to the radio.
- D) Fasten the mute box with double-sided adhesive tape to the bottom of the shelf behind the radio.
- E) Connect the mute box connector C492 to the FAS wiring.



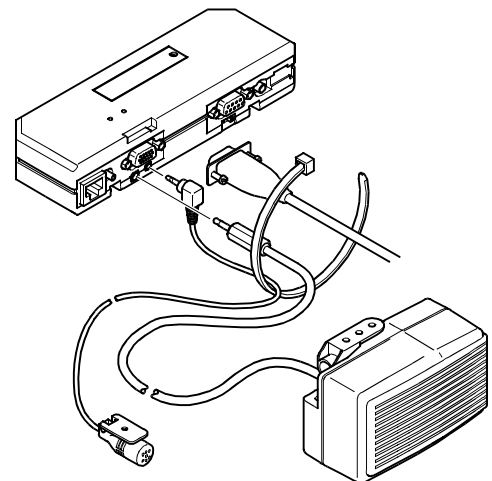
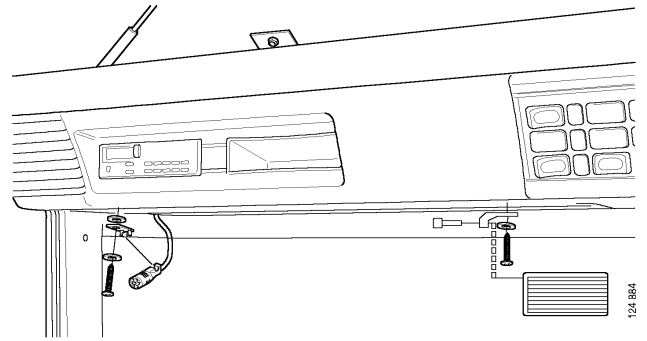
- 19 For vehicles without radio or mute box:

Do not use the mute box. Install the speaker as follows instead.

Installing speaker and microphone

Note: For vehicles with radio: Install the microphone only.

- 1 Remove the centre panel to facilitate routing of the cables.
- 2 Remove the radio panel in the roof shelf.
- 3 Route the cables for the microphone and speaker through the roof shelf to the GPS/GSM module and connect them.
- 4 Refit the centre panel.
- 5 Detach the speaker and microphone from their brackets.
- 6 Insert the screw through the microphone bracket. Use a washer between the screw and the bracket.
- 7 Fit the radio panel in the roof shelf with the middle screw.
- 8 Fit the microphone and speaker brackets at the same time as the radio panel is screwed on, see illustration.
- 9 Press the microphone into its bracket.
- 10 Fit the speaker into its bracket.



Function test

Install the FAS software on the hand-held computer.

For installing and testing the software, refer to the manuals Installation of Fleet Analysis System 2 and Vehicle Data Communicator Settings, VDC settings.

Check that there is contact between the hand-held computer and vehicle.

Finishing operations

Refit and screw on all equipment that has been removed such as panels, roof hatch, bed, ladder, etc.

Troubleshooting

If the hand-held computer does not work, troubleshoot FAS 2 as described below.

Also refer to the manual from the hand-held computer manufacturer.

It is always a good idea to check that cables and connectors are intact each time a more thorough inspection is carried out.

Fault	Cause	Action
1. Charging diode on hand-held computer does not come on.	1.1. Charging diode on hand-held computer is broken.	1.1.1. Check that the charging icon is displayed on the hand-held computer screen. It should be visible in the bottom right-hand corner of the Today program. Can also be checked by going to <i>Start=> Settings=> System</i> and selecting <i>Power. Main battery</i> indicates whether the battery is being charged. As long as the battery is charging and there are no other fault symptoms present then the diode in the hand-held computer is probably broken.
	1.2. Poor contact between hand-held computer and cradle.	1.2.1. Make sure the hand-held computer is securely positioned in the cradle. 1.2.2. Check for any damage to the contacts on the hand-held computer and the cradle and make sure the connectors are clean. Renew and/or clean as necessary.

Fault	Cause	Action
	1.3. No charging voltage.	<p>1.3.1. Check fuses no. 40, 20A, and no. 45, 10A, in the central electric unit. Renew if necessary.</p> <p>1.3.2. Make sure all cables are intact. Renew wiring if necessary.</p> <p>1.3.3. Check voltage to E57. Test between earth, E57-6, and E57-4, 30H, and also E57-5, 15XG, <i>after starting the engine</i>. Check also the voltage, 5-6V, to the cradle connector from E57. Test between the hand-held computer earth, E57-2, and the hand-held computer charging/operating voltage, E57-8. Renew the adapter if necessary.</p>
2. No contact between hand-held computer and vehicle.	2.1. Damaged wiring.	<p>2.1.1. Inspect and/or test with a multimeter, buzzer, that the CAN cables to and from C56, C461, E51, E57 and the cables from E57 to the hand-held computer are intact, in working order and connected securely. Also refer to 1.2. Check that connectors C 490 and C 491 are intact and connected correctly.</p>
3. Poor or no sound from speaker.	3.1. Poor connection of speaker cable (to GPS/GSM module) or damaged cable.	<p>3.1.1. Check that the cable is connected securely and that the connector on the GPS/GSM module and the cable are intact and clean. Replace the speaker or clean the connector as necessary.</p>
	3.2. Blown speaker element.	<p>3.2.1. Check that the element is intact. Renew speaker if necessary.</p>

Fault	Cause	Action
3.3. No communication to GPS/GSM module, damaged wiring.	3.3.1. Check that the GPS/GSM cables are connected securely and are intact. Renew wiring if necessary.	3.3.1. Check that the GPS/GSM cables are connected securely and are intact. Renew wiring if necessary.
4. Radio speakers do not mute during call.	4.1. Mute box and cables badly connected or damaged.	4.1.1. Check that all cables to and from the mute box are intact, clean and connected securely.
5. Other party cannot hear you.	5.1. Switch not working.	4.1.2. Check that the mute box is not damaged. Renew if necessary. 5.1.1. Check that the switch is connected securely and is not damaged. Renew switch if necessary. 5.1.2. Check that the wiring to the switch is intact. Renew if necessary.
5.2. Poor connection of microphone cable to GPS/GSM module or damaged cable.	5.2.1. Check that the cable is connected securely on the GPS/GSM module. Check also that the connector on the GPS/GSM module and the cable are intact and clean. Replace the microphone and/or clean the connector as necessary.	5.2.1. Check that the cable is connected securely on the GPS/GSM module. Check also that the connector on the GPS/GSM module and the cable are intact and clean. Replace the microphone and/or clean the connector as necessary.
6. No incoming calls.	6.1.) Poor connection of cables to GPS/GSM module or damaged cables.	6.1.1. Check that the GPS/GSM module voltage supply diode is on and that the network traffic diode is flashing.

Fault	Cause	Action
6.1.2. Check that the other cables are intact and connected securely, and that the connectors on the GPS/GSM module are not damaged or fouled. Renew or clean wiring if necessary.		
6.2.1. Check that the aerial is intact. Renew if necessary.	6.2. Aerial broken.	
7. GPS/GSM services not working	7.1 GPS/GSM module not working	<p>7.1.1. Check fuses F11 and F12, 1A, on the GPS/GSM module voltage supply cable. Check that the power supply cable is connected securely and that the power supply diode on the GPS/GSM module is on. Renew module if necessary.</p> <p>Note: This fault will generate subsequent faults such as no network connection, no sound from speaker and no outgoing or incoming calls can be made.</p>

