

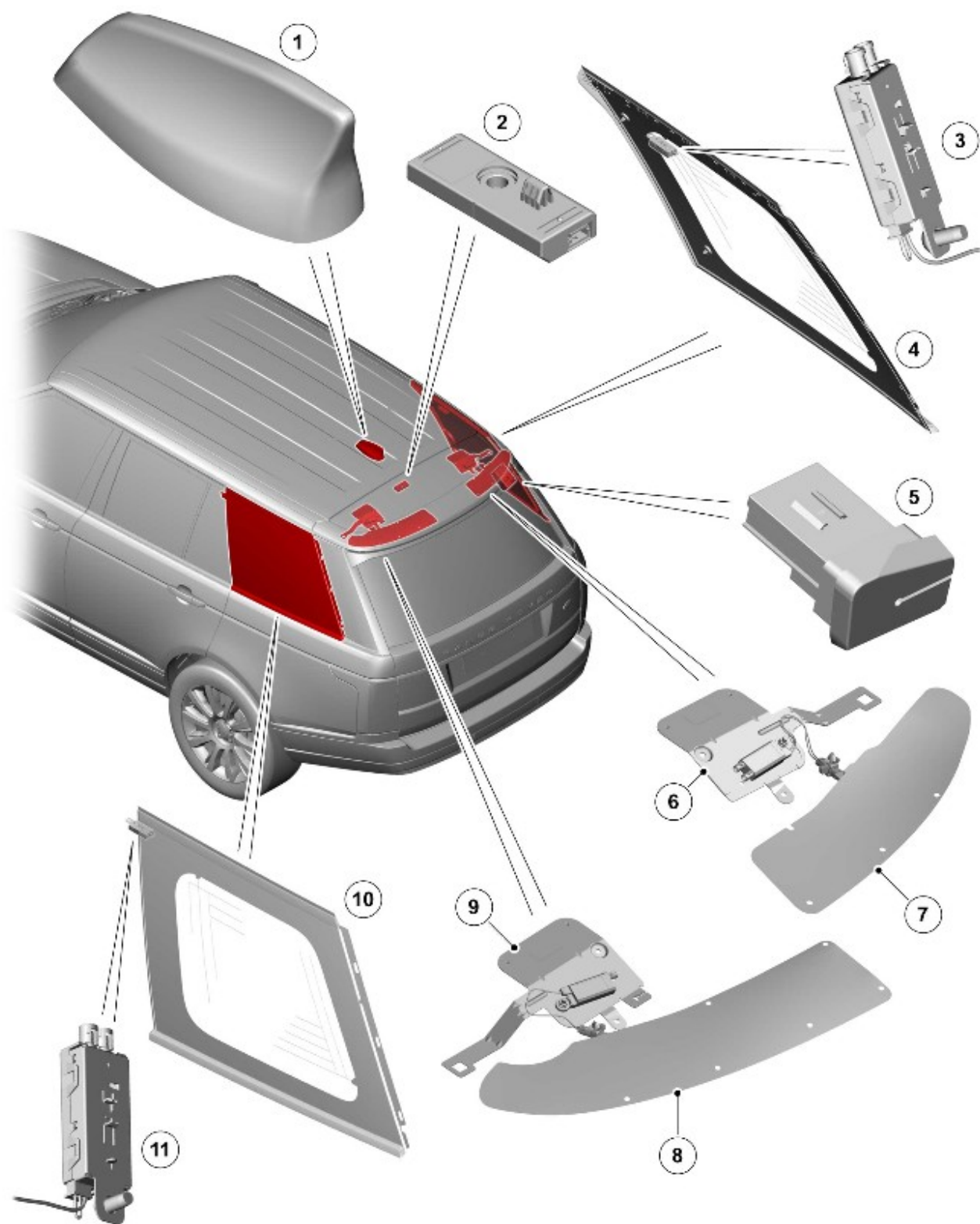
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2018.0 RANGE ROVER (LG), 415-01

INFORMATION AND ENTERTAINMENT SYSTEM - VEHICLES WITH: INCONTROL TOUCH PRO

# ANTENNA (G2149434)



## COMPONENT LOCATION



E209158

ITEM	DESCRIPTION
1	Roof pod
2	High Mounted Stop Lamp (HMSL) suppressor
3	Television (TV) antenna amplifier - Rear right quarter window antenna
4	Rear right quarter window antenna element - TV
5	Rear window wiper motor suppressor
6	Frequency Modulation (FM) 2/TV antenna amplifier
7	Foil antenna - TV
8	Foil antenna - FM 2/Digital Audio Broadcast-3 (DAB-3) antenna amplifier
9	Foil antenna - FM 2/DAB-3 antenna
10	Global Navigation Satellite Systems (GNSS) signal splitter
11	Rear left quarter window antenna amplifier
12	Rear left quarter window antenna elements - DAB-3 and TV

## VEHICLE INFORMATION AND COMMUNICATION SYSTEM (JAPAN ONLY)

For additional information, refer to: [Navigation System](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

### OVERVIEW

A number of antennas are used for the various frequency reception requirements of the infotainment system.

A roof pod is fitted and contains antennas for Global System for Mobile communications (GSM), Global Navigation Satellite System (GNSS), Satellite Digital Audio Radio Service (SDARS) and external WiFi.

TV and radio antennas are located in the rear quarter windows and the tailgate spoiler. Foil type antennas are located within the tailgate spoiler assembly. The antennas fitted vary depending on audio system specification.

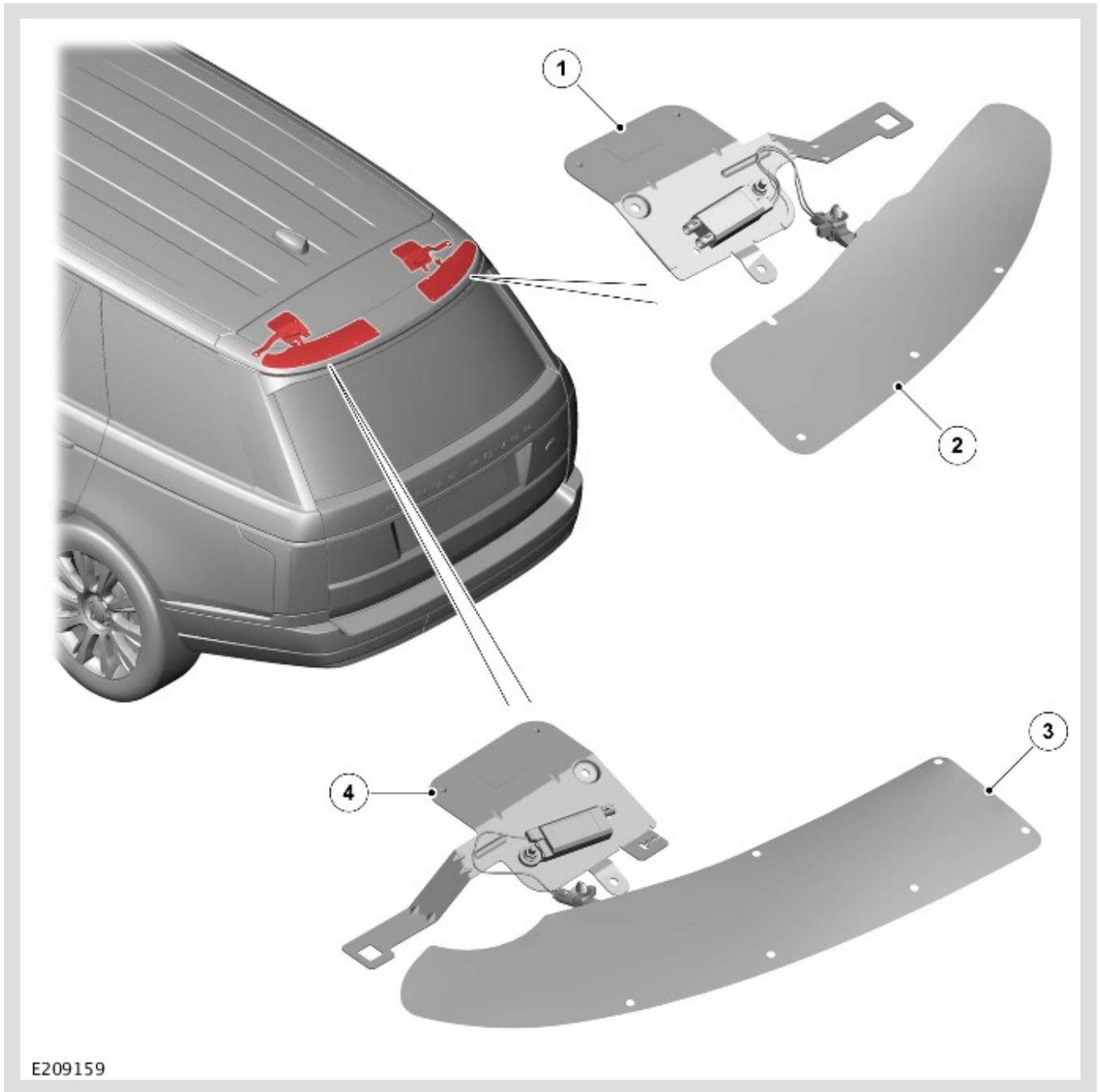
Radio Frequency (RF) filters are fitted to remove interference caused by the operation of the rear window wiper and the High Mounted Stop Lamp (HMSL).

Japanese market vehicles have antenna located on the top of the instrument panel for the Vehicle Information and Communication System (VICS) and the electronic toll collection system.

Two antennas are located in the floor console. These antennas are used for vehicle WiFi and Bluetooth® reception. On vehicles with the Rear Seat Entertainment (RSE) system a third rear WiFi antenna is located in the floor console.

DESCRIPTION

REAR SPOILER FOIL ANTENNAS AND AMPLIFIERS



E209159

ITEM	DESCRIPTION
1	Frequency Modulation 2 (FM 2)/Television (TV) antenna amplifier
2	Foil antenna - TV
3	Foil antenna - Amplitude Modulation (AM)/FM
4	AM/FM antenna amplifier

TV and radio antennas are located in the rear quarter windows and the tailgate spoiler.

Two large foil antennas are located in the tailgate spoiler

The left foil antenna is used for Amplitude Modulation (AM) and Frequency Modulation (FM) reception.

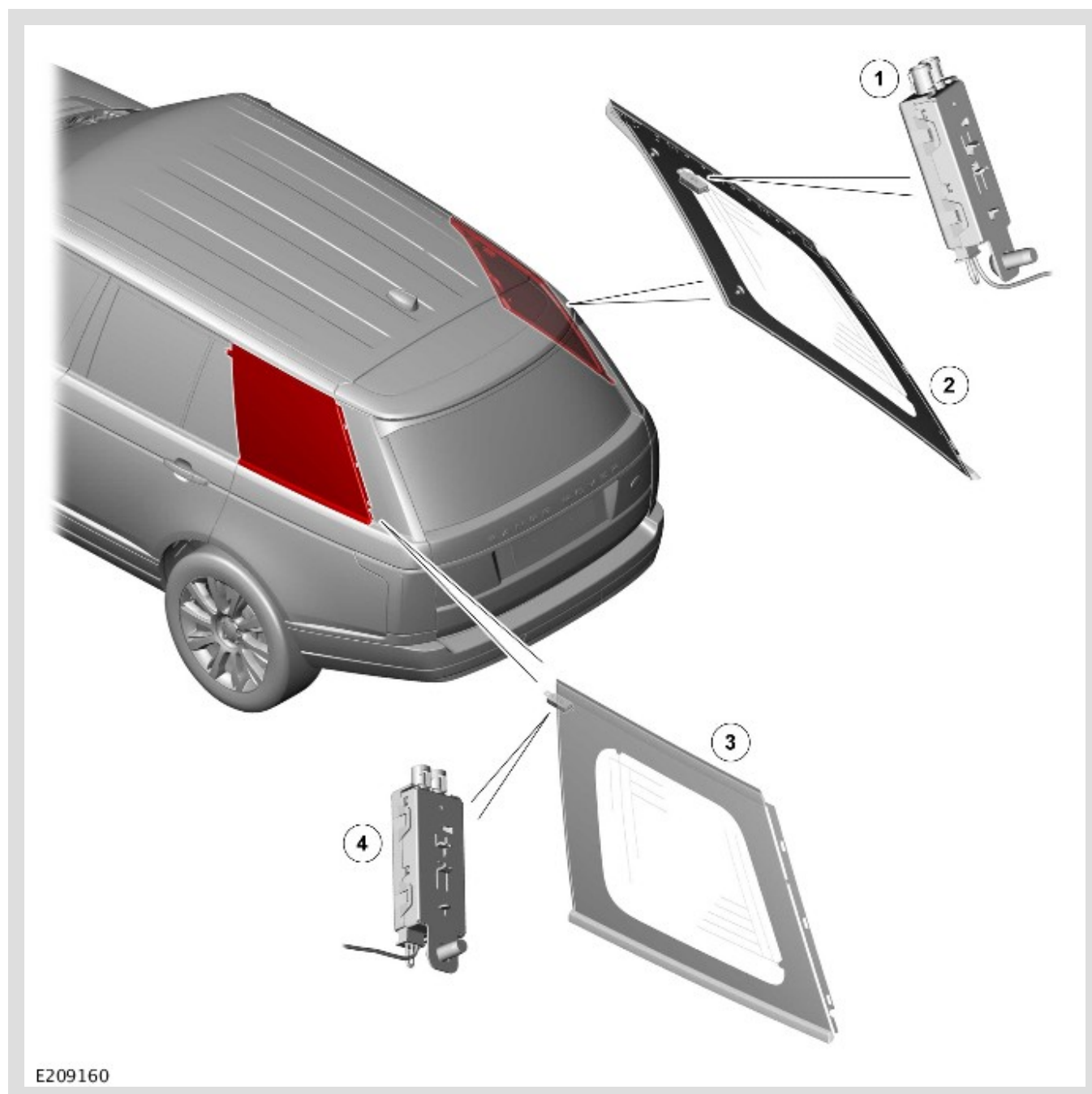
The right foil antenna is used for FM and television (TV).

Two antenna amplifiers are located on a bracket at each end of the rear spoiler. The brackets are attached to the spoiler structure.

- The left side antennas amplifier are for TV reception and AM/FM reception.
- The right side antennas amplifier are for TV reception and FM 2 (if equipped).

For additional information, refer to: [Navigation System](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

## REAR QUARTER WINDOW ANTENNAS AND AMPLIFIERS



ITEM	DESCRIPTION
1	Television (TV) antenna amplifier - Rear right quarter window antenna
2	Rear right quarter window antenna - TV antenna
3	Rear left quarter window antenna amplifier - Digital Audio Broadcast (DAB-3) and TV
4	Rear left quarter window antenna elements - DAB-3 and TV

The rear left quarter window contains a bonded antenna element for:

- Digital Audio Broadcast (DAB) 3

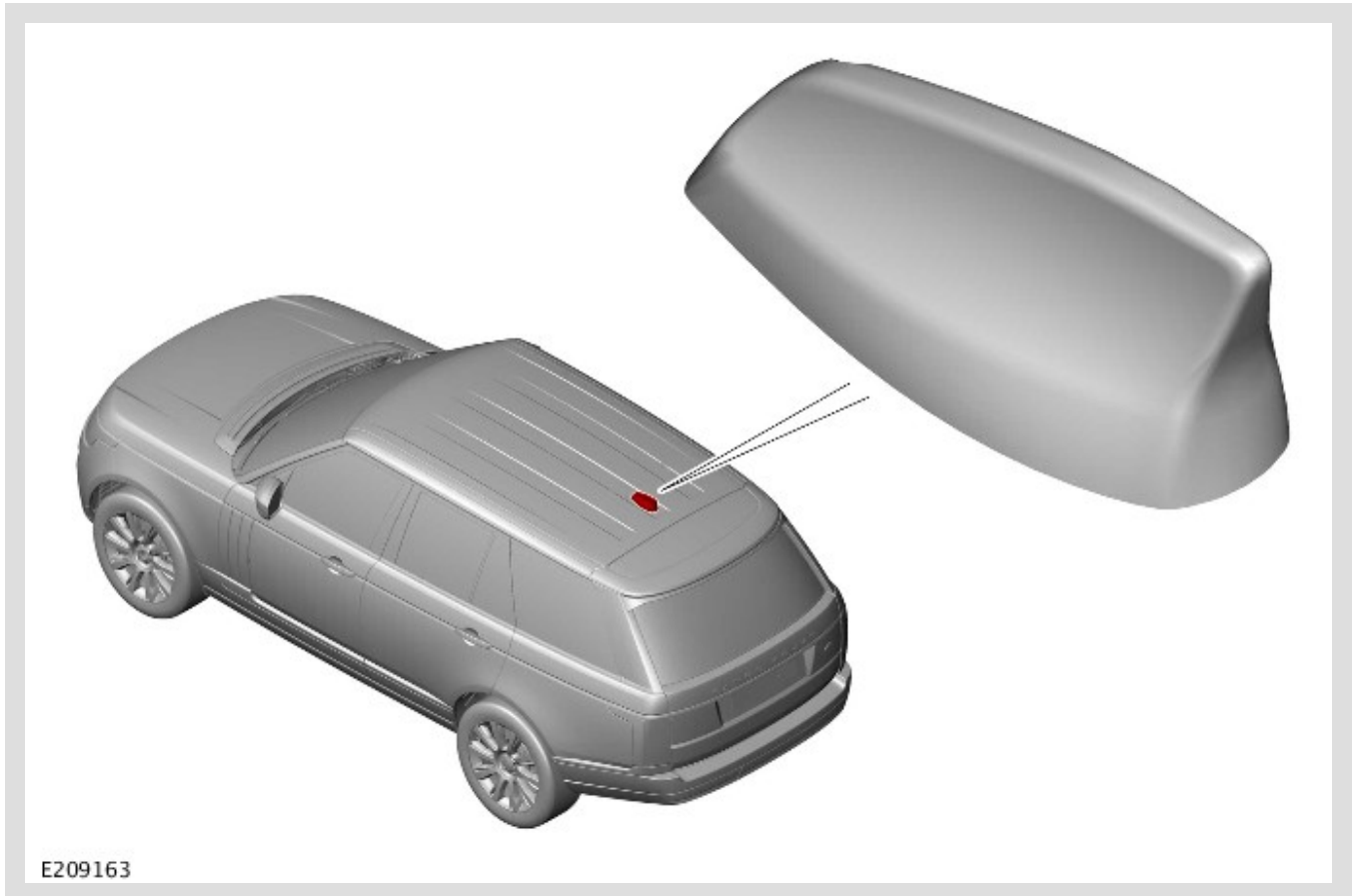
- DAB-3 and Television (TV) (if equipped)

A DAB3 and/or TV antenna amplifier is located on the left C-pillar.

The rear right quarter window contains an antenna for TV (if equipped).

A TV antenna amplifier is located on the right C-pillar.

## ROOF POD



A roof pod is fitted externally at the rear of the roof panel. The roof pod is secured to the roof panel with two studs, a mounting bracket and two nuts. A seal between the roof pod and the outer surface of the roof panel prevents the ingress of water. Up to five co-axial connectors provide for the connection for the various system antennas.

The roof pod can contain antenna for:

- Global Navigation Satellite Systems (GNSS):
  - North American Specification (NAS) has Global Positioning System (GPS) only
  - Rest Of World (ROW) has Global Navigation Satellite System (GLONASS)
- Global System for Mobile communications (GSM)
- Satellite Digital Audio Radio Service (SDARS) (NAS only)
- External WiFi.



**NOTE:**

Global Navigation Satellite System (GLONASS) is the Russian global satellite system.

On vehicles with the Connected Navigation and/or the Telematics system, the GNSS/GSM signal is passed via a coaxial cable to the GNSS signal splitter. The signal is then passed from the GNSS signal splitter to the Infotainment Master Controller (IMC) for use by the navigation system and to the Telematics Control Module for use by the telematics system. For additional information, refer to: [Navigation System](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

Depending on vehicle specification and market requirements, the roof pod is available with a combination of the above antenna options.

**RADIO FREQUENCY FILTERS**

There are 2 Radio Frequency (RF) filters located on the underside of the rear roof reinforcement panel, adjacent to the roof pod attachment.

The first RF filter is used for the rear window wiper to remove interference created when the rear window wiper is operating. The second RF filter is connected to the High Mounted Stop Lamp (HMSL) to remove interference when the HMSL is operating.

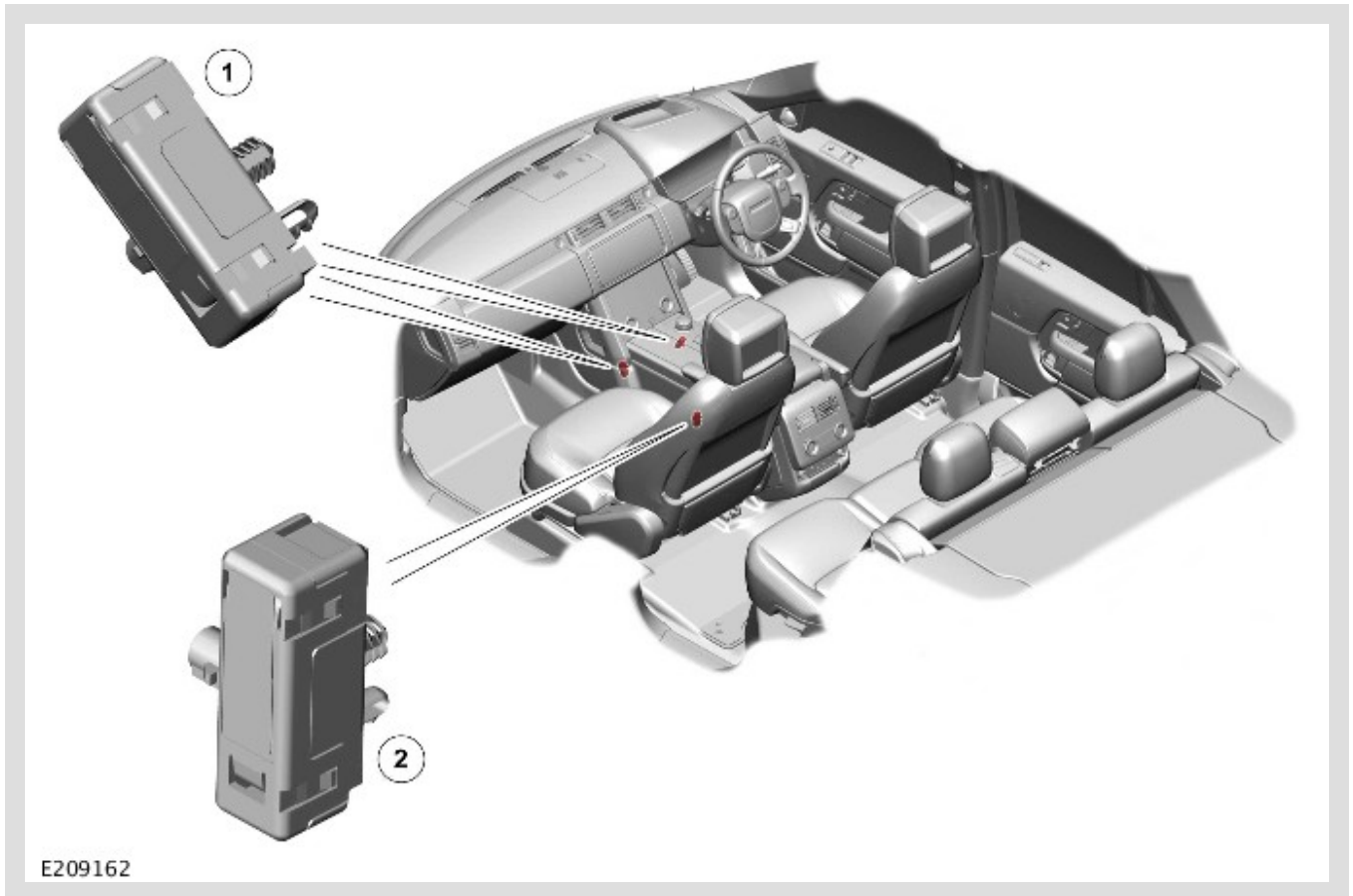
## GLOBAL NAVIGATION SATELLITE SYSTEMS SIGNAL SPLITTER



The Global Navigation Satellite Systems (GNSS) signal splitter is located behind the rear left trim panel in the luggage compartment. Two studs attached to the left inner quarter panel provide for attachment of the GNSS signal splitter which is secured with two nuts. The GNSS signal splitter is only fitted to vehicles with the Telematics systems.

The GNSS signal splitter shares the Global Navigation Satellite System (GNSS) signal and Globalnaya Navigatsionnaya Sputnikovaya Sistema (GLONASS) from the roof pod antenna with the Telematics Control Module (TCU) and the Infotainment Master Controller (IMC). For additional information, refer to: [Telematics](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

## BLUETOOTH®/WIFI ANTENNAS



ITEM	DESCRIPTION
1	Front Bluetooth®/WiFi antenna (2 off)
2	Rear WiFi antenna

The front Bluetooth®/WiFi antennas are located in the floor console.

The left Bluetooth®/WiFi antenna functions as a Bluetooth® or WiFi antenna depending upon system usage at the time, the right Bluetooth®/WiFi antenna functions for the WiFi system only. The Bluetooth®/WiFi antennas are able to operate in the 2.4Ghz and 5Ghz bands, the Bluetooth® operation only uses the 2.4GHz band.

Each WiFi antenna is connected to a separate socket on the Infotainment Master Controller (IMC).

On vehicles with the telematics system and/or the Rear Seat Entertainment (RSE) system, a third rear Bluetooth® antenna is provided. It is located in the floor console. The antenna is connected to the Infotainment Slave Controller (ISC). For additional information, refer to: [Telematics](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation) / [Video System](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

## **ELECTRONIC TOLL COLLECTION MODULE ANTENNA – JAPAN ONLY**

For additional information, refer to: [Navigation System](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

## **VEHICLE INFORMATION AND COMMUNICATION SYSTEM (VICS) BEACON ANTENNA – JAPAN ONLY**

For additional information, refer to: [Navigation System](#) (415-01 Information and Entertainment System - Vehicles With: InControl Touch Pro, Description and Operation).

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### **OPERATION**

#### **DIAGNOSTICS**

The Infotainment Master Controller (IMC) can detect the connections between the tuners in the IMC and the Amplitude Modulation (AM)/Frequency Modulation (FM)/Digital Audio Broadcast (DAB)/Television (TV) antenna amplifiers. Faults in these connections will store a Diagnostic Trouble Code (DTC) in the IMC.

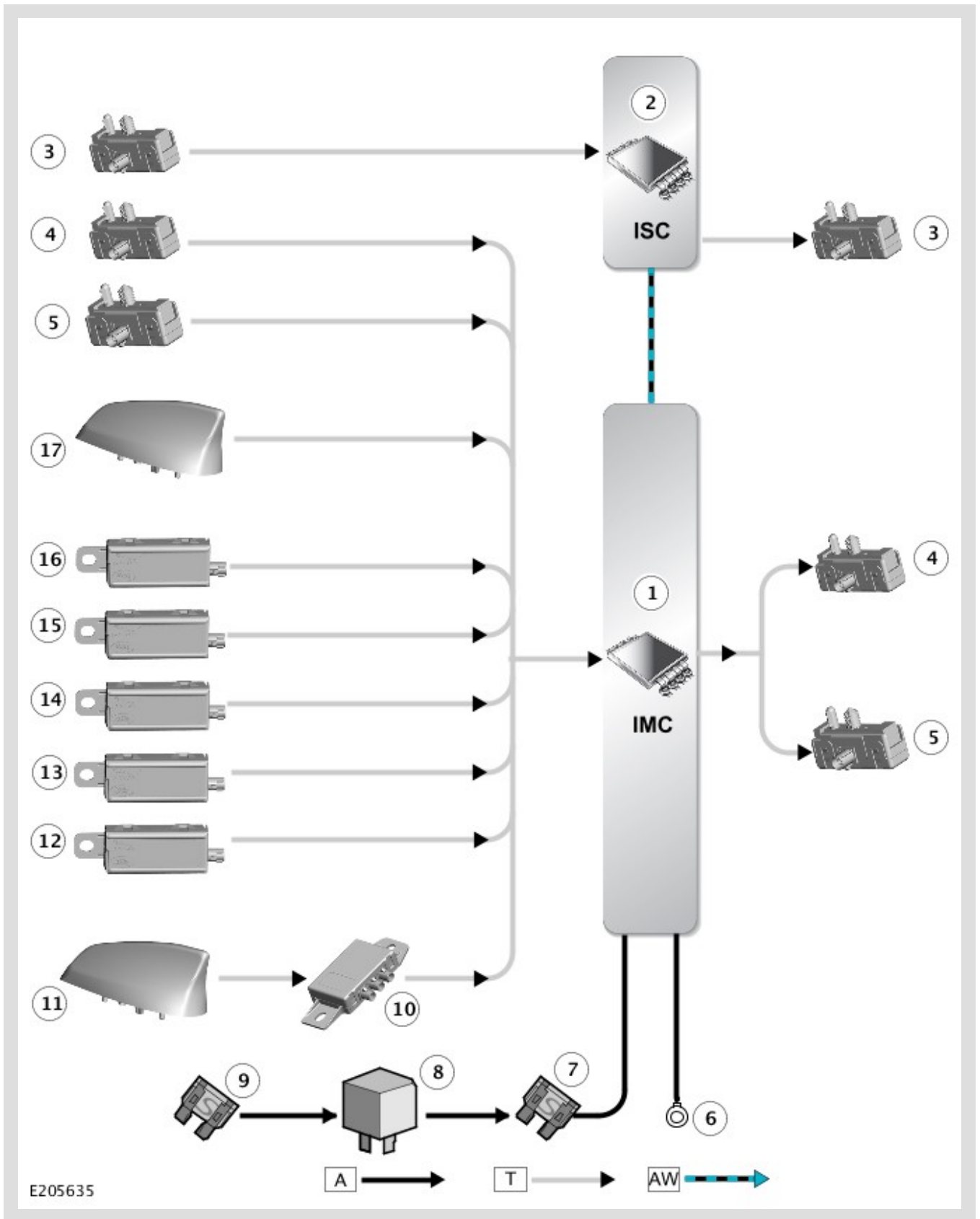
The DAB-3 and the Global Navigation Satellite System (GNSS) antennas are monitored by the IMC. Faults with these antennas will record DTCs in the IMC.

The connection of the amplifiers to the foil antenna structures in the rear spoiler is not detectable via DTC and is only possible via physical check.

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### **CONTROL DIAGRAM**

#### **CONTROL DIAGRAM**



A = HARDWIRED: T = CO-AXIAL: AW = BROADR-REACH® ETHERNET

ITEM	DESCRIPTION
1	Infotainment Master Controller (IMC)

ITEM	DESCRIPTION
2	Infotainment Slave Controller (ISC) (Only if equipped with Rear Seat Entertainment (RSE) system)
3	Rear Bluetooth® antenna (Only if equipped with RSE)
4	Left Bluetooth®/WiFi antenna
5	Right Bluetooth®/WiFi antenna
6	Ground
7	Fuse - Located in Battery Junction Box (BJB)
8	Quiescent current relay - Located in Rear Junction Box (RJB)
9	Fuse - Located in RJB
10	Global Navigation Satellite Systems (GNSS) signal splitter - Only on vehicles equipped with telematics system and navigation system
11	Roof pod (Global Navigation Satellite System (GNSS)/Global System for Mobile communications (GSM)/Satellite Digital Audio Radio Service (SDARS) (North American Specification (NAS) only)/external WiFi antenna)
12	Digital Audio Broadcast (DAB-3) antenna amplifier
13	Amplitude Modulation (AM)/Frequency Modulation (FM) antenna amplifier
14	Television (TV) antenna amplifier
15	TV antenna amplifier
16	TV or TV/DAB3 or DAB3 antenna amplifier
17	Roof Pod GNSS antenna