

**Technical training.**  
**Product information.**

## **G15 Infotainment**



**BMW Service**

Edited for the U.S. market by:  
**BMW Group University**  
**Technical Training**

ST1833

10/1/2018

# General information

## Symbols used

The following symbol is used in this document to facilitate better comprehension or to draw attention to very important information:



---

Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

---

## Information status: June 2018

BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

The information contained in the training course materials is solely intended for participants in this training course conducted by BMW Group Technical Training Centers, or BMW Group Contract Training Facilities.

This training manual or any attached publication is not intended to be a complete and all inclusive source for repair and maintenance data. It is only part of a training information system designed to assure that uniform procedures and information are presented to all participants.

For changes/additions to the technical data, repair procedures, please refer to the current information issued by BMW of North America, LLC, Technical Service Department.

This information is available by accessing TIS at [www.bmwcenternet.com](http://www.bmwcenternet.com).

## Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Handbook
- Integrated Service Technical Application
- Aftersales Information Research (AIR)

**The information contained in this manual is not to be resold, bartered, copied, or transferred without the express written consent of BMW of North America, LLC ("BMW NA").**

©2018 BMW of North America, LLC

The BMW name and logo are registered trademarks. All rights reserved.

# G15 Infotainment

## Contents

<b>1.</b>	<b>Head Unit</b>	<b>1</b>
1.1.	Bus overview	1
1.2.	Head Unit High 3	3
1.2.1.	System components	4
1.2.2.	System wiring diagram	6
1.2.3.	Installation location	7
1.3.	USB ports	8
1.3.1.	USB variants	8
1.3.2.	System wiring diagram	9
1.3.3.	Installation locations	10
1.4.	External CD player	11
1.4.1.	Introduction	11
1.4.2.	Front view	12
1.4.3.	Rear view	12
1.4.4.	Installation location	13
<b>2.</b>	<b>Telephone/Telematics</b>	<b>14</b>
2.1.	Telephony with wireless charging and NFC (SA 6NW)	14
2.1.1.	Installation location	15
2.1.2.	System wiring diagram	16
2.2.	Smartphone trays	17
2.3.	Screen mirroring	18
<b>3.</b>	<b>Speaker Systems</b>	<b>19</b>
3.1.	Overview	19
3.2.	Top HiFi system	19
3.2.1.	Component overview	20
3.2.2.	System wiring diagram	22
3.3.	Receiver Audio Module	23
3.3.1.	Variants	24
3.3.2.	System wiring diagram	25
3.3.3.	Installation location	26
3.4.	Booster	27
3.4.1.	Variants	27
3.4.2.	Installation location	28
<b>4.</b>	<b>Aerial system</b>	<b>29</b>
4.1.	Overview	30
4.2.	Components	31
4.2.1.	Vehicle WLAN aerial	31
4.2.2.	Bluetooth aerial	32

# G15 Infotainment

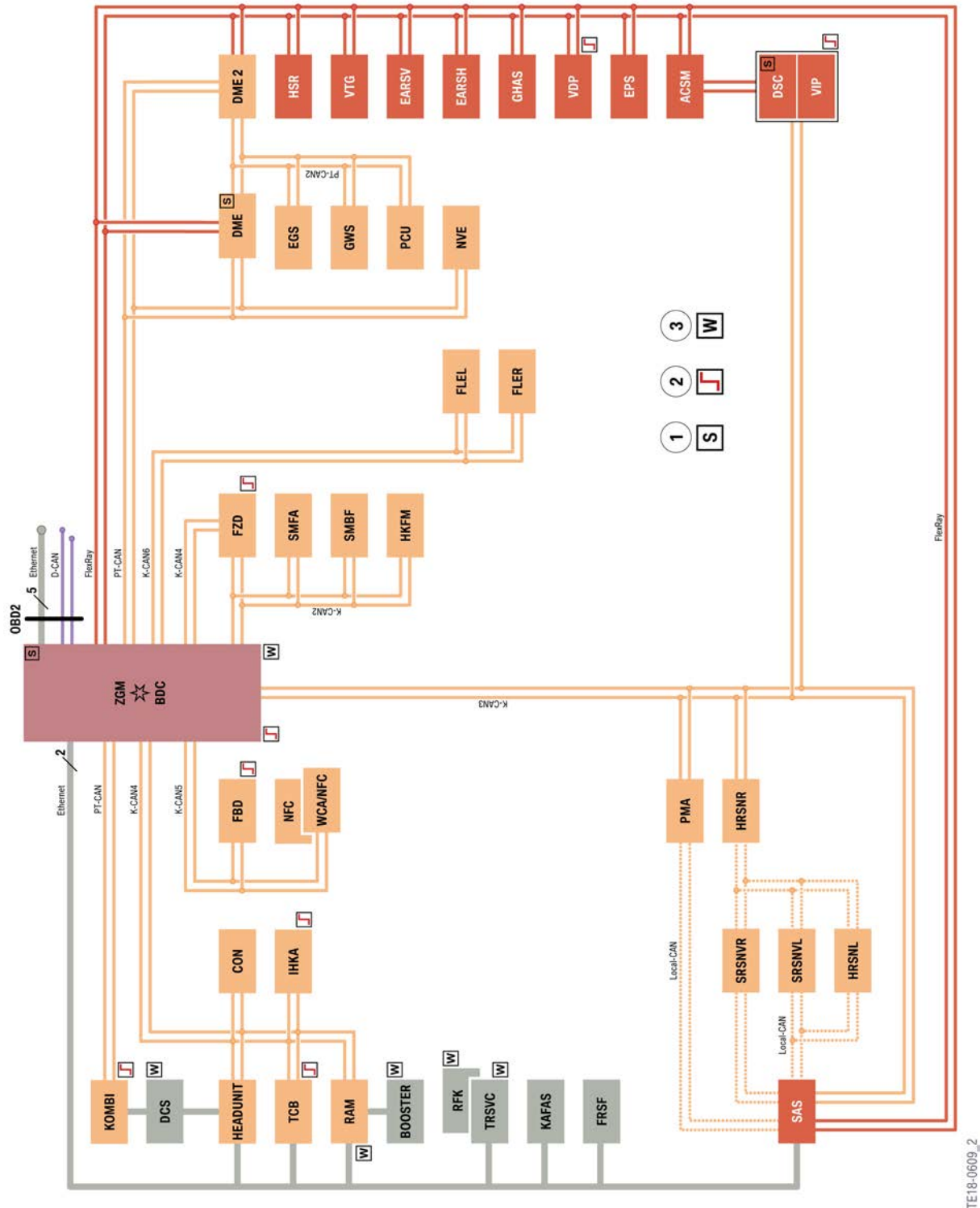
## Contents

- 4.3. System wiring diagram..... 33
  - 4.3.1. Multimedia.....33
  - 4.3.2. Telematics/connectivity..... 35

# G15 Infotainment

## 1. Head Unit

### 1.1. Bus overview



G15 bus overview

# G15 Infotainment

## 1. Head Unit

Index	Explanation
ACSM	Advanced Crash Safety Module
BDC	Body Domain Controller
BOOSTER	Hi-Fi amplifier
CON	Controller
DME	Digital Motor Electronics
DME2	Digital Engine Electronics 2
DSC	Dynamic Stability Control
DCS	Driver Camera System
EARSH	Electric active roll stabilization rear
EARSV	Electric active roll stabilization front
EGS	Electronic transmission control
EPS	Electronic Power Steering
FBD	Remote control receiver
FLEL	Frontal Light Electronics Left
FLER	Frontal Light Electronics Right
FRSF	Front radar sensor long range
FZD	Roof function center
GWS	Gear selector switch
GHAS	Regulated rear axle differential lock
HKFM	Tailgate function module
HRSNL	Rear radar sensor short range left
HRSNR	Rear radar sensor short range right
HSR	Rear axle slip angle control
HEADUNIT	Head Unit
IHKA	Integrated automatic heating / air conditioning
KAFAS	Camera-based driver assistance systems
KOMBI	Instrument cluster
NFC	Near Field Communication
NVE	Night Vision Electronics
PCU	Power Control Unit
PMA	Parking Maneuvering Assistant
RAM	Receiver Audio Module
RFK	Rear view camera
SAS	Optional equipment system
SMBF	Front passenger seat module

# G15 Infotainment

## 1. Head Unit

Index	Explanation
SMFA	Driver's seat module
TCB	Telematic Communication Box
TRSVC	Top rear side view camera
VDP	Vertical Dynamic Platform
VIP	Virtual Integration Platform
VTG	Transfer box
WCA/NFC	Wireless charging station with control electronics for Near Field Communication
ZGM	Central gateway module
1	Start-up node control units for starting and synchronizing the FlexRay bus system
2	Control units authorized to perform wake-up function
3	Control units also connected to wake-up line.

### 1.2. Head Unit High 3

A new generation of head units is being introduced at BMW with the G15: the Head Unit High 3 (HU-H3).

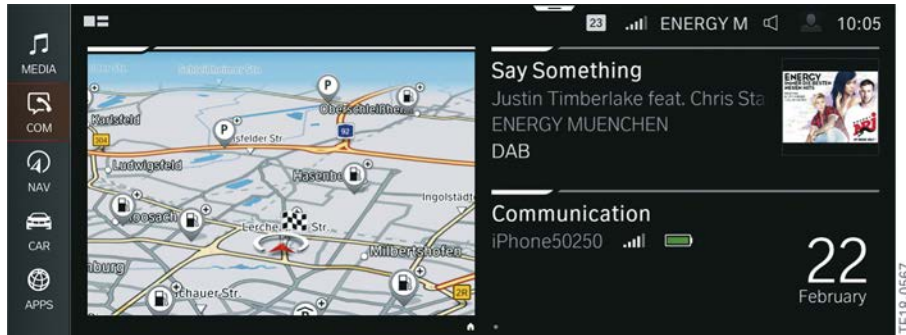


Head Unit High 3

# G15 Infotainment

## 1. Head Unit

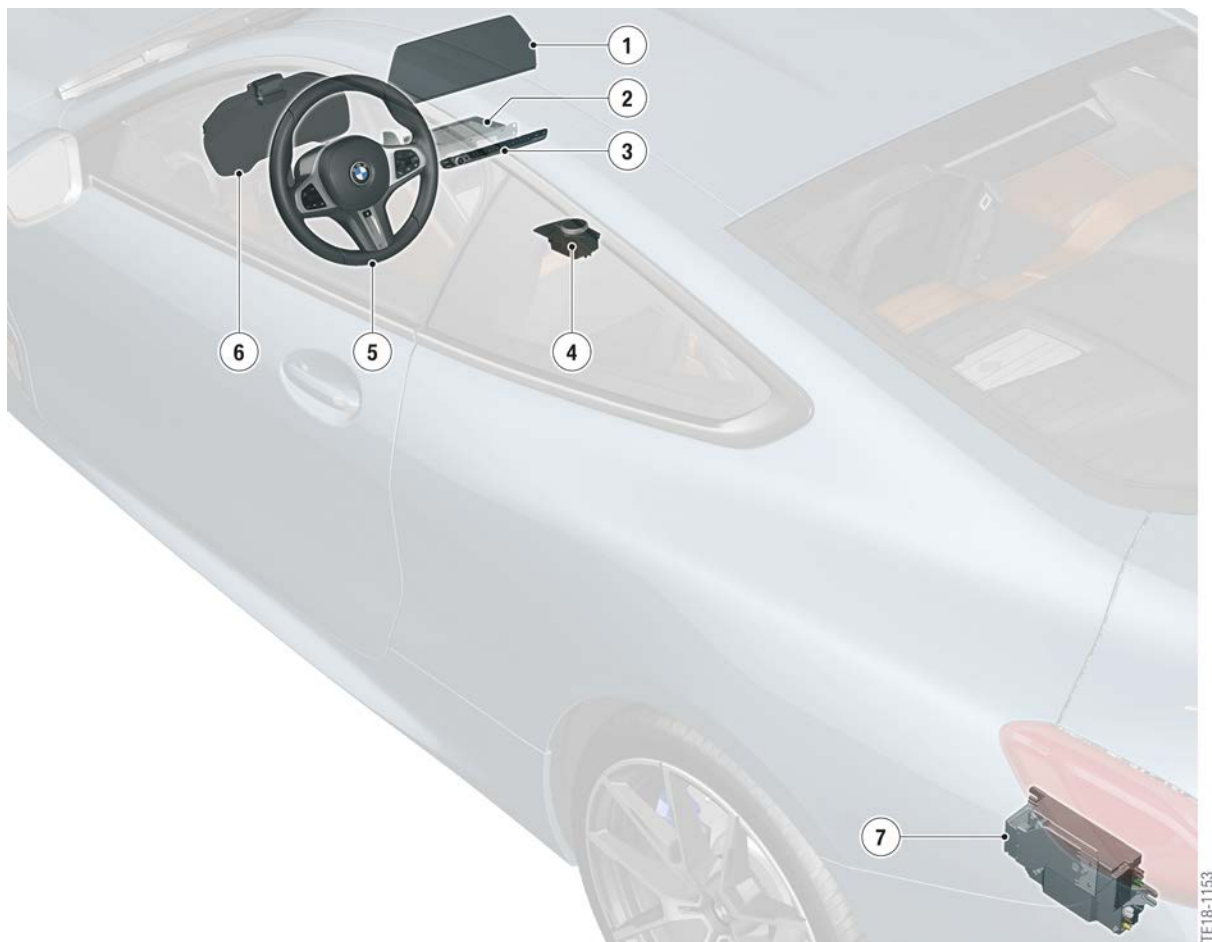
Additionally, the user interface ID7 in the Central Information Display has been designed for the new head unit.



ID7 main menu

### 1.2.1. System components

Here is an overview of the iDrive system components of the Head Unit High 3.



G15 Overview of system components for head unit



# G15 Infotainment

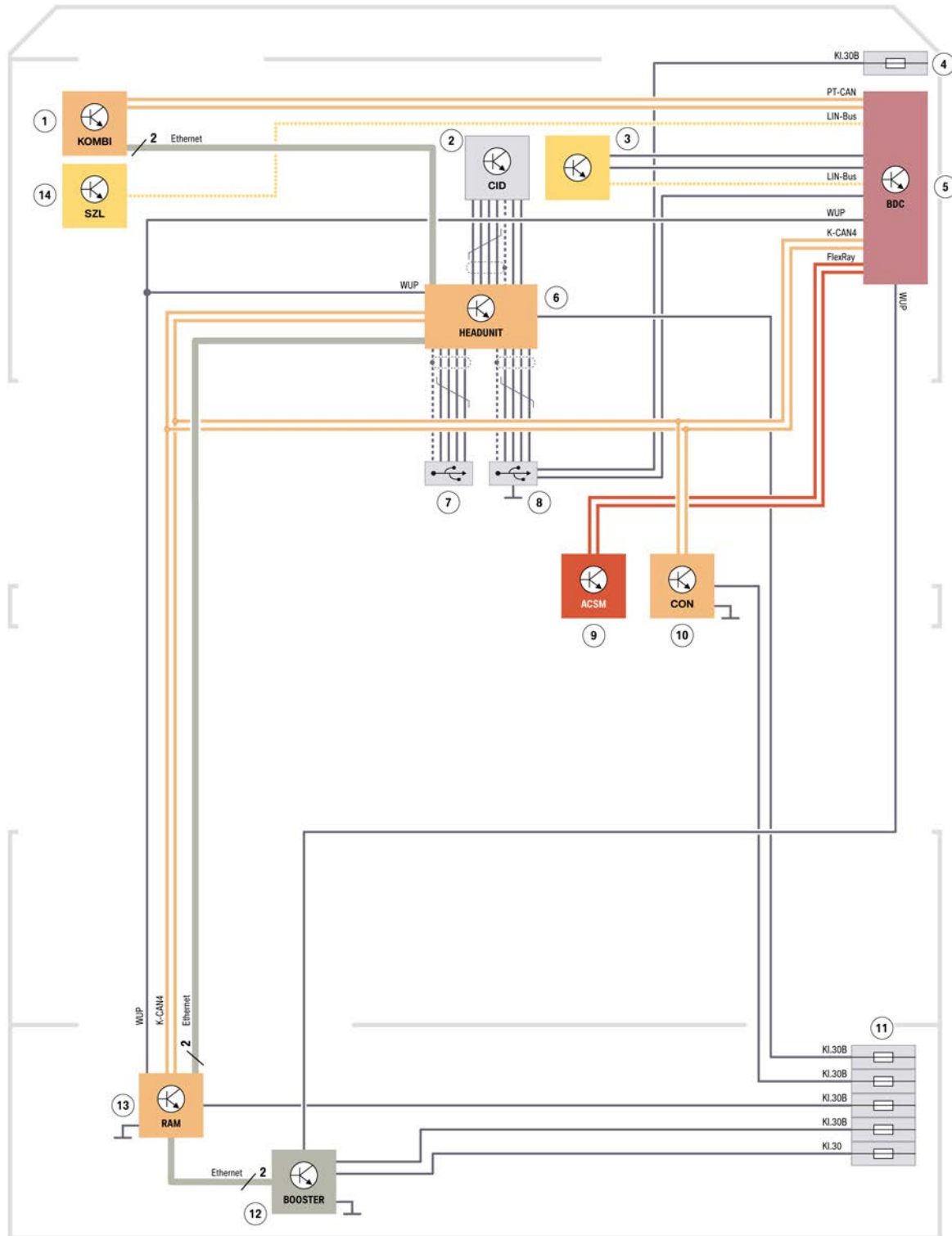
## 1. Head Unit

Index	Explanation
1	Central Information Display (CID)
2	Head Unit
3	Audio operating unit
4	Controller (CON)
5	Multifunction steering wheel (MFL)
6	Instrument cluster (KOMBI)
7	Receiver Audio Module (RAM)

# G15 Infotainment

## 1. Head Unit

### 1.2.2. System wiring diagram



G15 System wiring diagram HU-H3

TE18-0920\_2

# G15 Infotainment

## 1. Head Unit

Index	Explanation
1	Instrument cluster (KOMBI)
2	Central Information Display (CID)
3	Audio operating unit
4	Fuse in the power distribution box, battery
5	Body Domain Controller (BDC)
6	Head Unit
7	USB port type A in the center console
8	USB port type C in the center armrest
9	Advanced Crash Safety Module (ACSM)
10	Controller (CON)
11	Fuses, power distribution box, luggage compartment
12	Booster
13	Receiver Audio Module (RAM)
14	Steering column switch cluster (SZL)

### 1.2.3. Installation location

The Head Unit High 3 is located in the front section of the center console below the center stack.



Installation location of Head Unit High 3

# G15 Infotainment

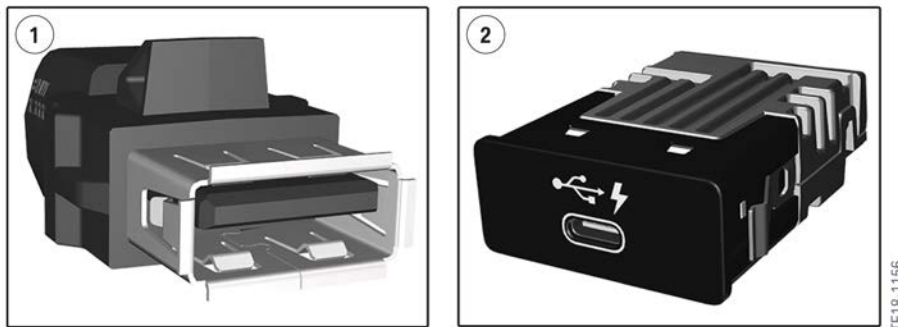
## 1. Head Unit

### 1.3. USB ports

#### 1.3.1. USB variants

Two different USB ports are installed in the G15:

- USB type A with charging function and data transfer
- USB type C with charging function and data transfer



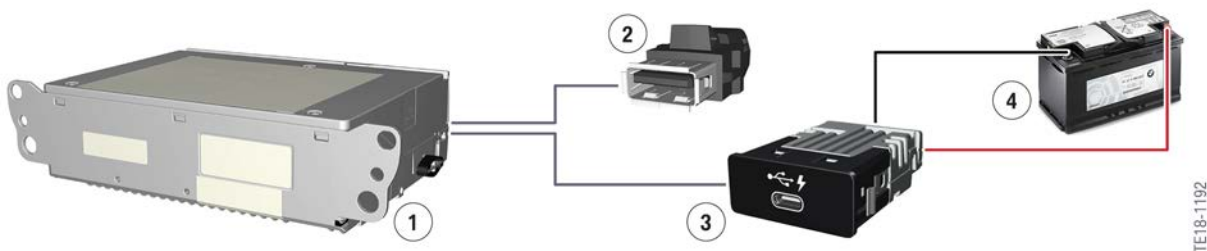
Overview of USB ports in the G15

Index	Explanation
1	USB port type A with charging function and data transfer
2	USB port type C with charging function and data transfer

#### Standard equipment

The following USB ports are installed as standard equipment:

- USB type A with 1.5 A charging function and data transfer
- USB type C with 3 A charging function and data transfer



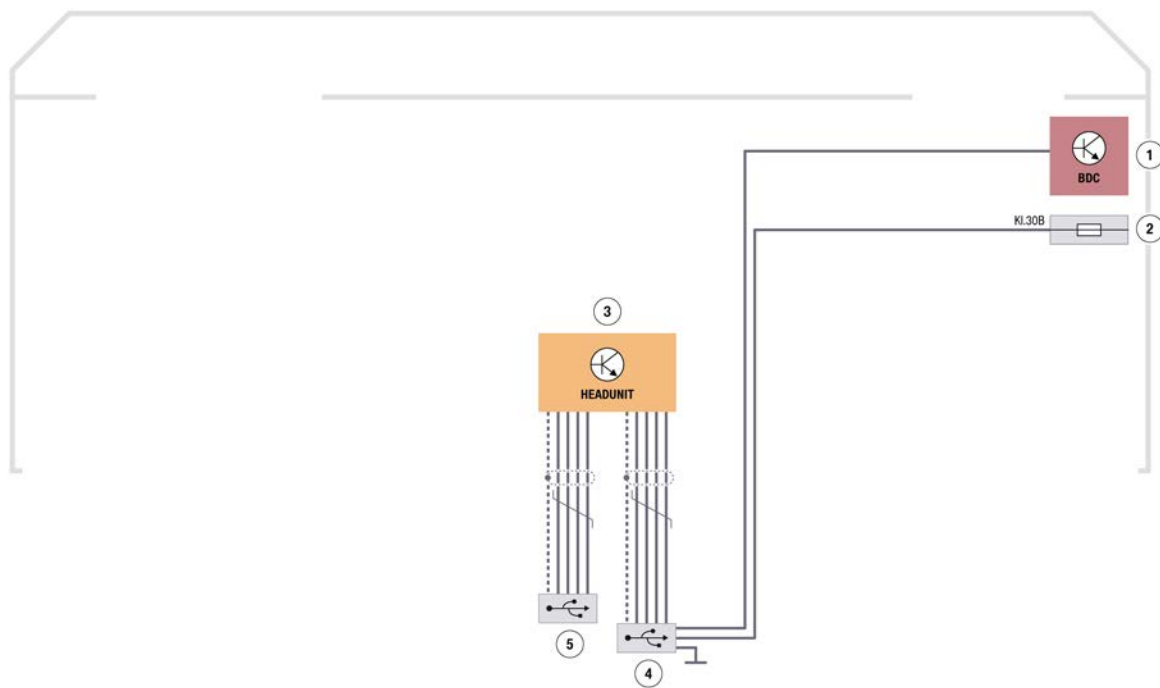
G15 Overview of standard equipment for USB ports

# G15 Infotainment

## 1. Head Unit

Index	Explanation
1	Head Unit
2	USB type A with 1.5 A charging function and data transfer
3	USB type C with 3.0 A charging function and data transfer
4	Voltage supply

### 1.3.2. System wiring diagram



System wiring diagram for USB G15

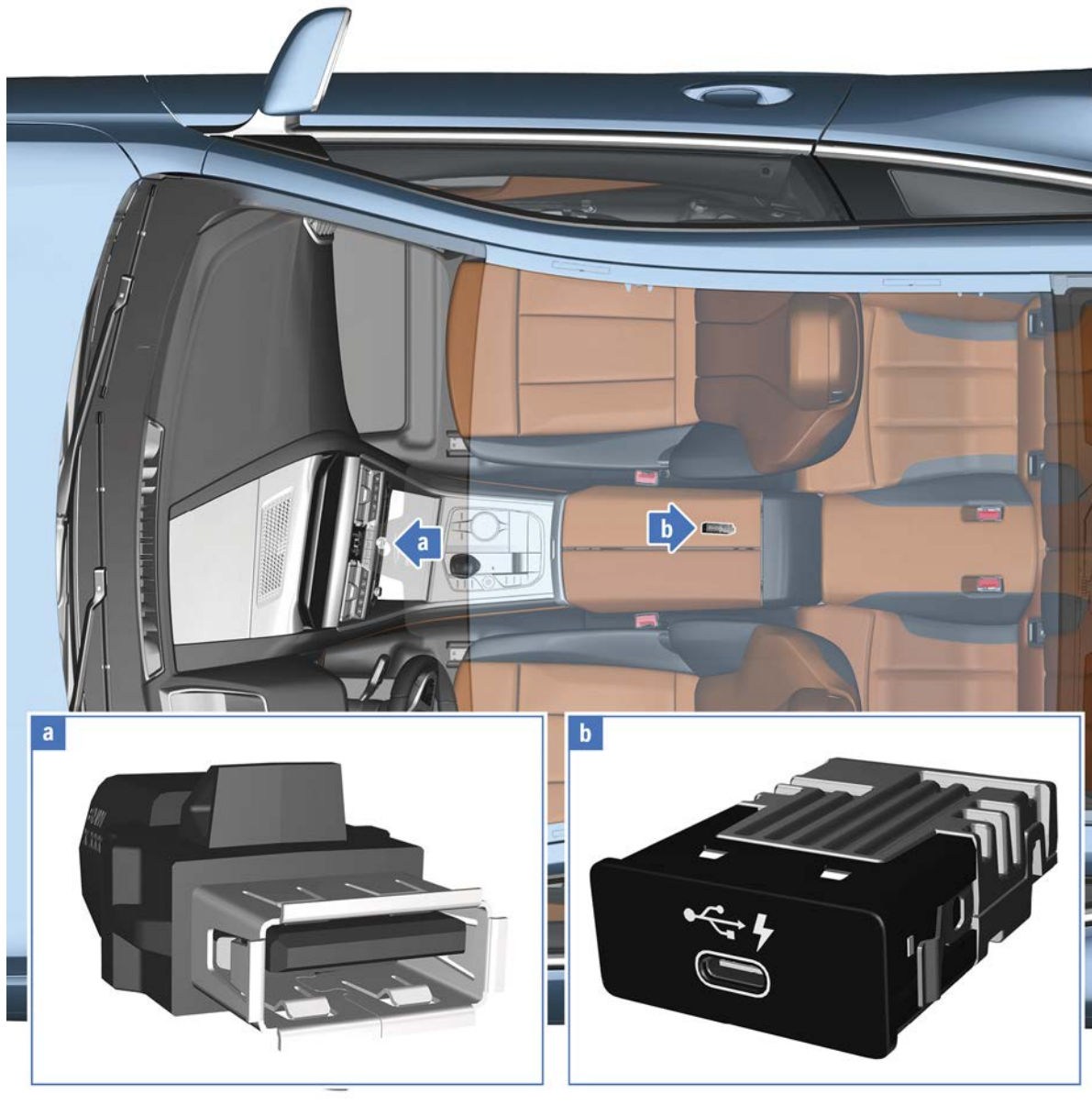
Index	Explanation
1	Body Domain Controller (BDC) (terminal 58g for the dimmable lighting)
2	Fuse for front right power distribution box
3	Head Unit
4	USB connection in the center console under the center armrest
5	USB port, center console front

# G15 Infotainment

## 1. Head Unit

### 1.3.3. Installation locations

The following graphic shows an overview of the installation locations of the USB ports:



Installation locations of the USB ports in the G15

Index	Explanation
a	USB port type A with charging function and data transfer in the center console
b	USB port type C with charging function and data transfer in the center armrest

# G15 Infotainment

## 1. Head Unit

### 1.4. External CD player

#### 1.4.1. Introduction

A CD/DVD drive is **not** integrated into the new Head Unit High 3. When ordering the vehicle, the customer can also order the optional equipment "Preparation for external CD player (SA 65A)". In doing so, it is important to bear in mind that this is only the preparation of the vehicle wiring harness used to connect the external CD player. The external CD player is available as an optional accessory.

It is **not** possible subsequently to retrofit the optional equipment "Preparation for external CD player (SA 65A)" to the vehicle.

When purchasing the optional accessories, the frame and the CD player are installed in the vehicle at the workshop. The CD player is automatically detected by the head unit once the vehicle has gone to sleep. Coding is therefore also not necessary.

The external CD player is installed in the glove compartment.

Audio data read by the CD player is transferred to the head unit via a USB connection or ID3 tags. The head unit processes the data and forwards it to the Receiver Audio Module, which has the task of playing the music back via the loudspeakers.

The CD player supports the following file formats, among others:

- MP3
- M4A
- FLAC
- WAV
- CD-DA
- ID3 tag

DVDs are **not** detected by the CD player. The external CD player has no diagnostic capability.

# G15 Infotainment

## 1. Head Unit

### 1.4.2. Front view



Front view of external CD player

### 1.4.3. Rear view

The following graphic shows the USB port of the CD player.



Rear view of external CD player

Index	Explanation
1	USB port

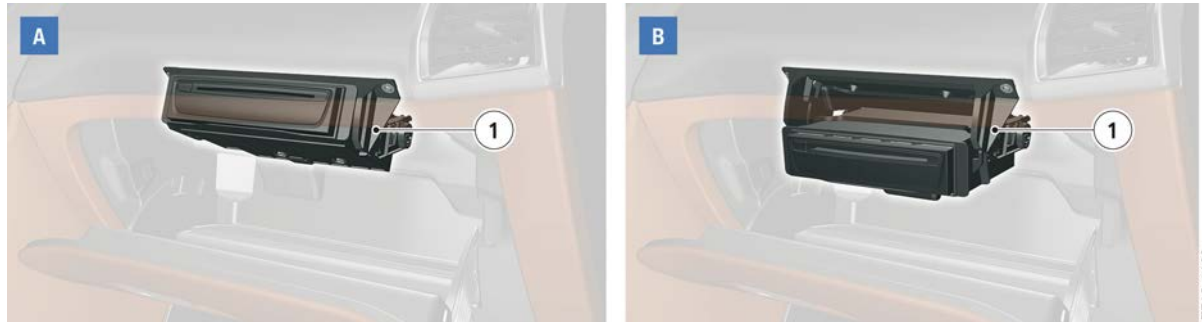


# G15 Infotainment

## 1. Head Unit

### 1.4.4. Installation location

The external CD player is located in the upper section of the glove compartment.



Installation location of external CD player

Index	Explanation
A	CD player in engaged state
B	CD player in extended state
1	CD player

When the external CD player is gently pressed from below, a spring mechanism in the latch is triggered which causes the CD player to move down mechanically. The CD player must be pushed up to the limit position in order to lock the mechanism. During this movement, the spring mechanism is tensioned and the latch is locked.

# G15 Infotainment

## 2. Telephone/Telematics

The G15 comes with the following telephone systems:

- Bluetooth hands-free system (standard equipment)
- Telephony with wireless charging (SA 6NW).

### 2.1. Telephony with wireless charging and NFC (SA 6NW)

The G15 is equipped with a Bluetooth hands-free system and the wireless charging station (SA 6NW) as standard equipment. Additionally, the vehicle is equipped with NFC for BMW Digital Key as part of the Comfort Access (SA 322) as standard equipment.

A LTE compensator is provided in the G15, which has the task of amplifying the aerial signals.

Features	Telephony with wireless charging (SA 6NW)
Number of mobile phones	2 mobile phones and an audio player can be active at the same time.
USB ports	2
Wireless charging	Yes
Bluetooth audio	Yes
Screen mirroring	Yes
Number of microphones	2 (driver's and passenger's side)
Wi-Fi hotspot preparation	Yes
WLAN hotspot (SA 6WD)	Standard equipment (SA 6WD)
Office functions	Yes, depending on telephone
NFC for BMW Digital Key	Yes (with SA 322)
Connection to the telephone aerial of the vehicle	Yes

# G15 Infotainment

## 2. Telephone/Telematics



Wireless charging station (SA 6NW) with NFC for BMW Digital Key (SA 322)

### 2.1.1. Installation location

In the G15, the wireless charging station with NFC is located in front of the cup holder.

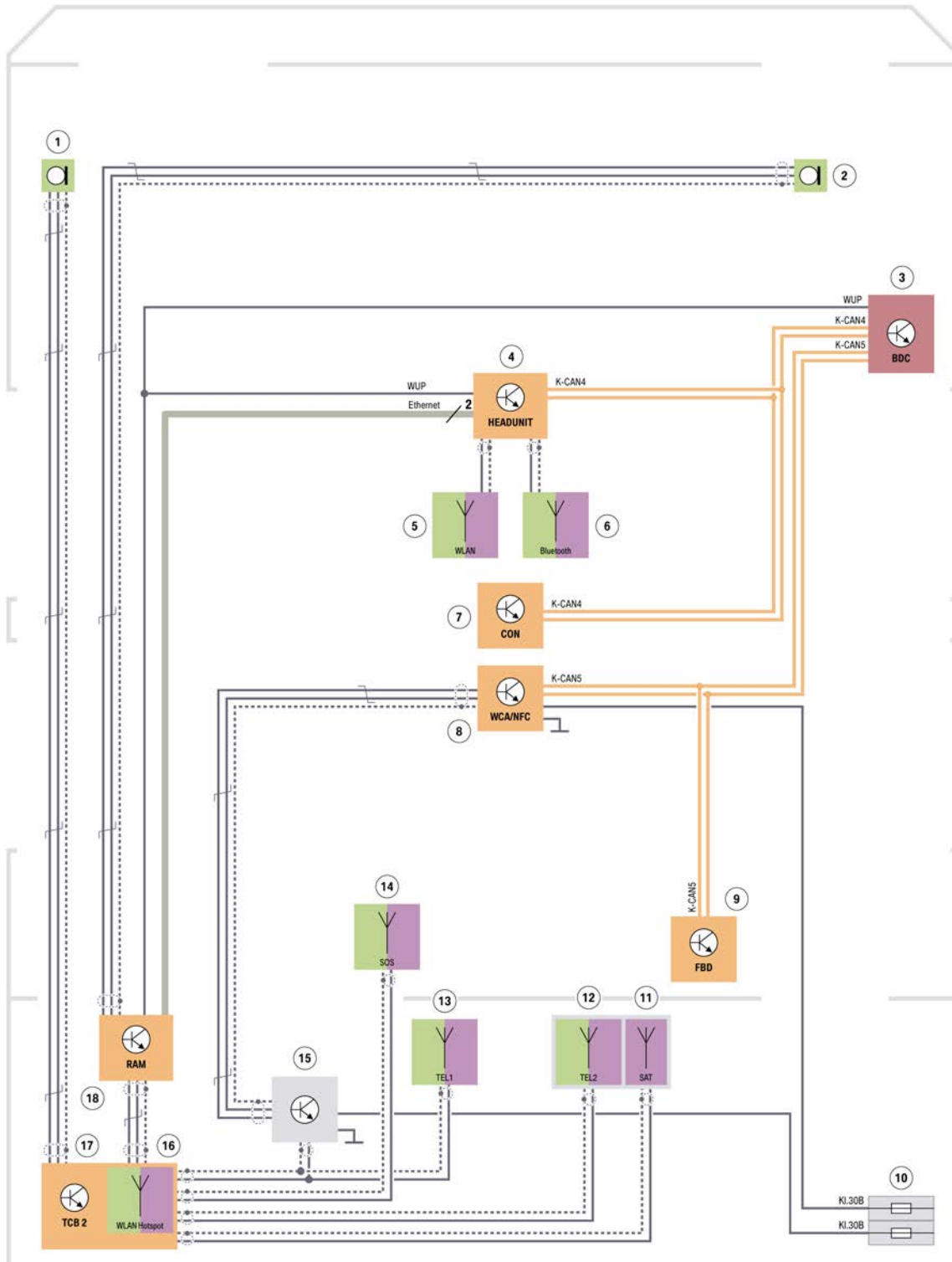


G15 Wireless charging station installation location

# G15 Infotainment

## 2. Telephone/Telematics

### 2.1.2. System wiring diagram



TE18-1160\_2

G15 System wiring diagram for wireless charging with NFC

# G15 Infotainment

## 2. Telephone/Telematics

Index	Explanation
1	Microphone, driver's side
2	Microphone on passenger's side
3	Body Domain Controller (BDC)
4	Head Unit
5	WLAN aerial for vehicle WLAN
6	Bluetooth aerial
7	Controller (CON)
8	Wireless charging station (WCA) with Near Field Communication (NFC)
9	Remote control receiver
10	Fuses, power distribution box, luggage compartment
11	SAT aerial for the navigation
12	TEL2 aerial (telematics)
13	TEL1 aerial (customer's mobile phone connection)
14	Emergency GSM aerial
15	LTE compensator
16	WLAN aerial for Wi-Fi hotspot
17	Telematic Communication Box 2 (TCB2)
18	Receiver Audio Module (RAM)

### 2.2. Smartphone trays

The G15 offers one smartphone tray: wireless charging and NFC electronics



Index	Explanation
1	Wireless charging station with NFC electronics

# G15 Infotainment

## 2. Telephone/Telematics

### 2.3. Screen mirroring

The screen of a smartphone can be displayed on the Central Information Display by establishing a Wi-Fi direct connection between the smartphone and head unit.

The sound is played back via the loudspeakers in the vehicle.



G15 view of screen mirroring

The head unit cannot decide which screen contents are streamed to the vehicle via screen mirroring.

In the interest of traffic safety, the contents in the CID are switched off when driving at speeds of 7 km/h or more.

Screen mirroring can therefore only be used when the vehicle is at a standstill.

# G15 Infotainment

## 3. Speaker Systems

### 3.1. Overview

At the start of production, the G15 comes with one speaker system: Top HiFi system (Harman Kardon surround sound system (SA 688)).

The high-end Bowers & Wilkins Diamond surround sound system will be available in the G15 from December 2018.

	<b>Top HiFi system (Harman Kardon surround sound system (SA 688))</b>
<b>Overall power</b>	464 W
<b>Number of tweeters</b>	7
<b>Number of mid-range speakers</b>	7
<b>Number of bass speakers</b>	2
<b>Amplifier</b>	Receiver Audio Module and Booster

### 3.2. Top HiFi system

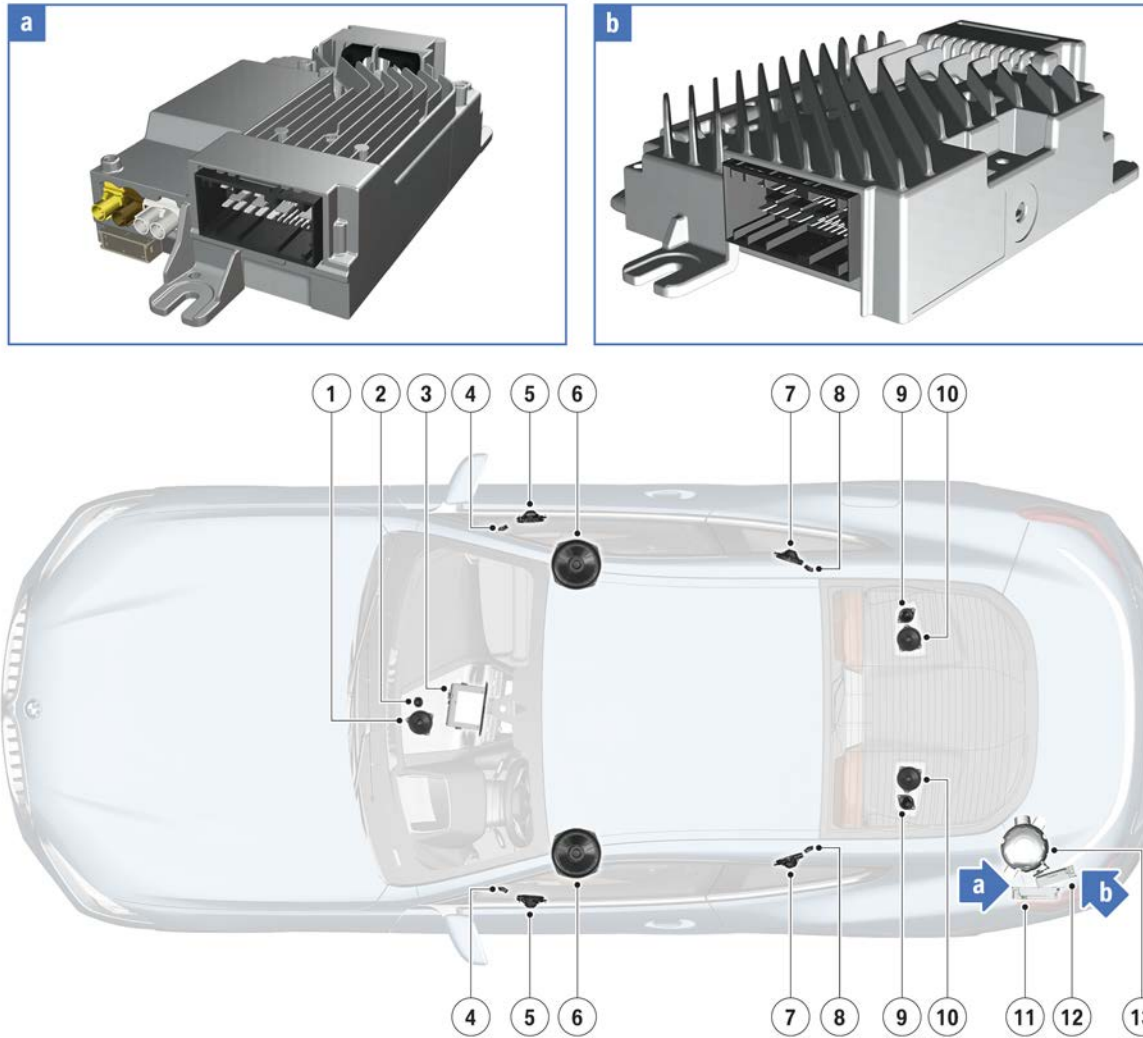
The Harman Kardon Surround Sound system is composed of the following components:

- 7 tweeters
- 7 mid-range speakers
- 2 bass speakers
- Receiver Audio Module (RAM)
- Booster.

# G15 Infotainment

## 3. Speaker Systems

### 3.2.1. Component overview



G15 System overview Top HiFi system

Index	Explanation
1	Mid-range speaker, front center
2	Tweeter, front center
3	Head Unit
4	Tweeter, front
5	Mid-range speaker, front
6	Bass speakers
7	Mid-range speaker, rear
8	Tweeter, rear
9	Tweeter, parcel shelf



# G15 Infotainment

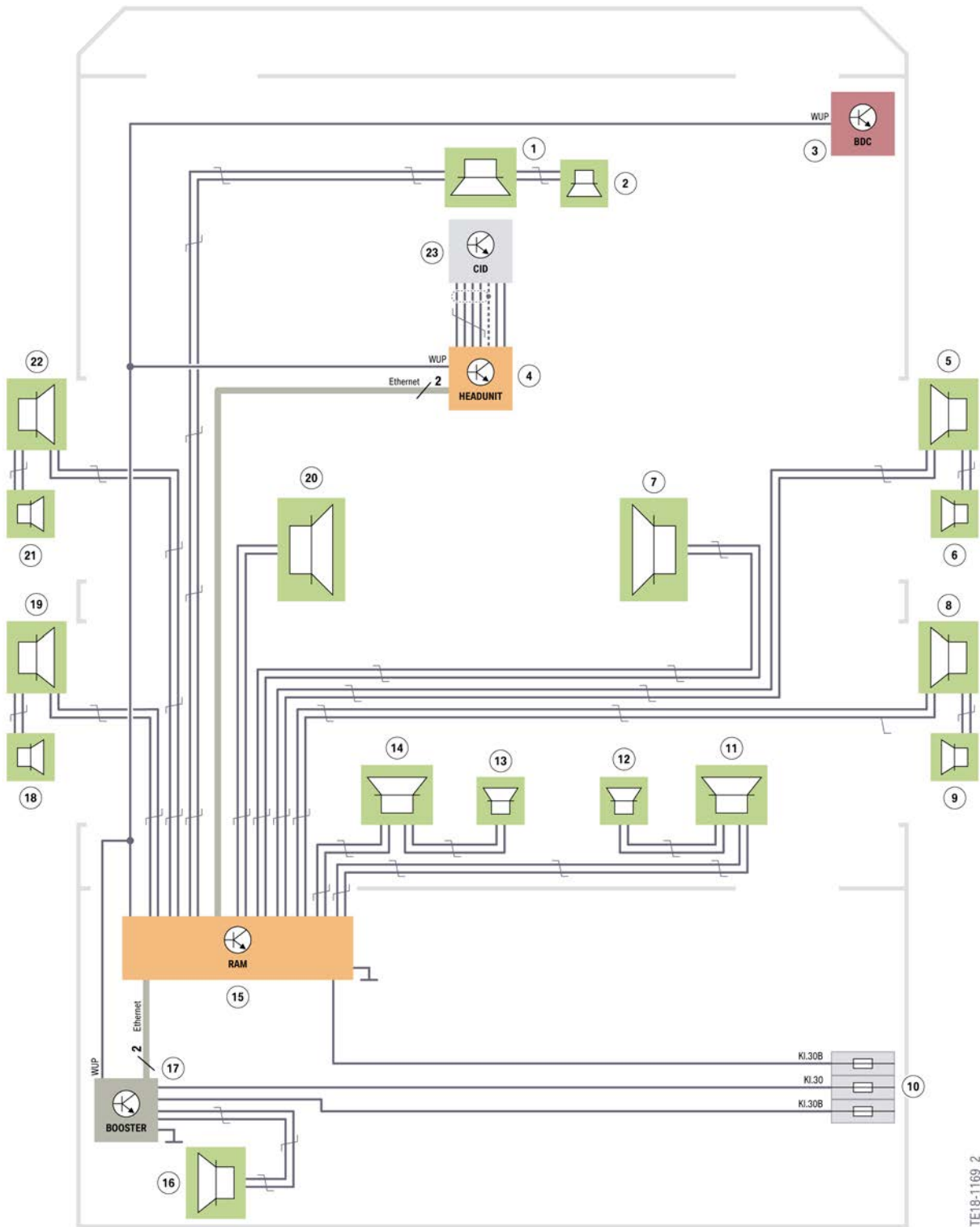
## 3. Speaker Systems

Index	Explanation
10	Mid-range speaker, parcel shelf
11	Receiver Audio Module (RAM)
12	Booster
13	Loudspeakers for outside sound (SA 1MA) (Not for US)

# G15 Infotainment

## 3. Speaker Systems

### 3.2.2. System wiring diagram



G15 system wiring diagram, Top HiFi system

# G15 Infotainment

## 3. Speaker Systems

Index	Explanation
1	Mid-range speaker, front center
2	Tweeter, front center
3	Body Domain Controller (BDC)
4	Head Unit
5	Mid-range speaker, front right
6	Tweeter, front right
7	Bass speaker, right
8	Mid-range speaker, rear right
9	Tweeter, rear right
10	Fuses, power distribution box, luggage compartment
11	Mid-range speaker, rear window shelf, right
12	Tweeter, rear window shelf, right
13	Tweeter, rear window shelf, left
14	Mid-range speaker, storage shelf on left
15	Receiver Audio Module (RAM)
16	Loudspeakers for outside sound (SA 1MA) (Not for US)
17	Booster
18	Tweeter, rear left
19	Mid-range speaker, rear left
20	Bass speaker, left
21	Tweeter, front left
22	Mid-range speaker, front left
23	Central Information Display (CID)

### 3.3. Receiver Audio Module

The Receiver Audio Module (RAM) is used in the G15.

Depending on the equipment, the following functions are integrated in the RAM:

- AM/FM tuner
- SDARS tuner
- Aerial diversity module
- Audio amplifier (Hi-Fi system).

# G15 Infotainment

## 3. Speaker Systems

### 3.3.1. Variants

One variant of the RAM is used in the G15: RAM high.



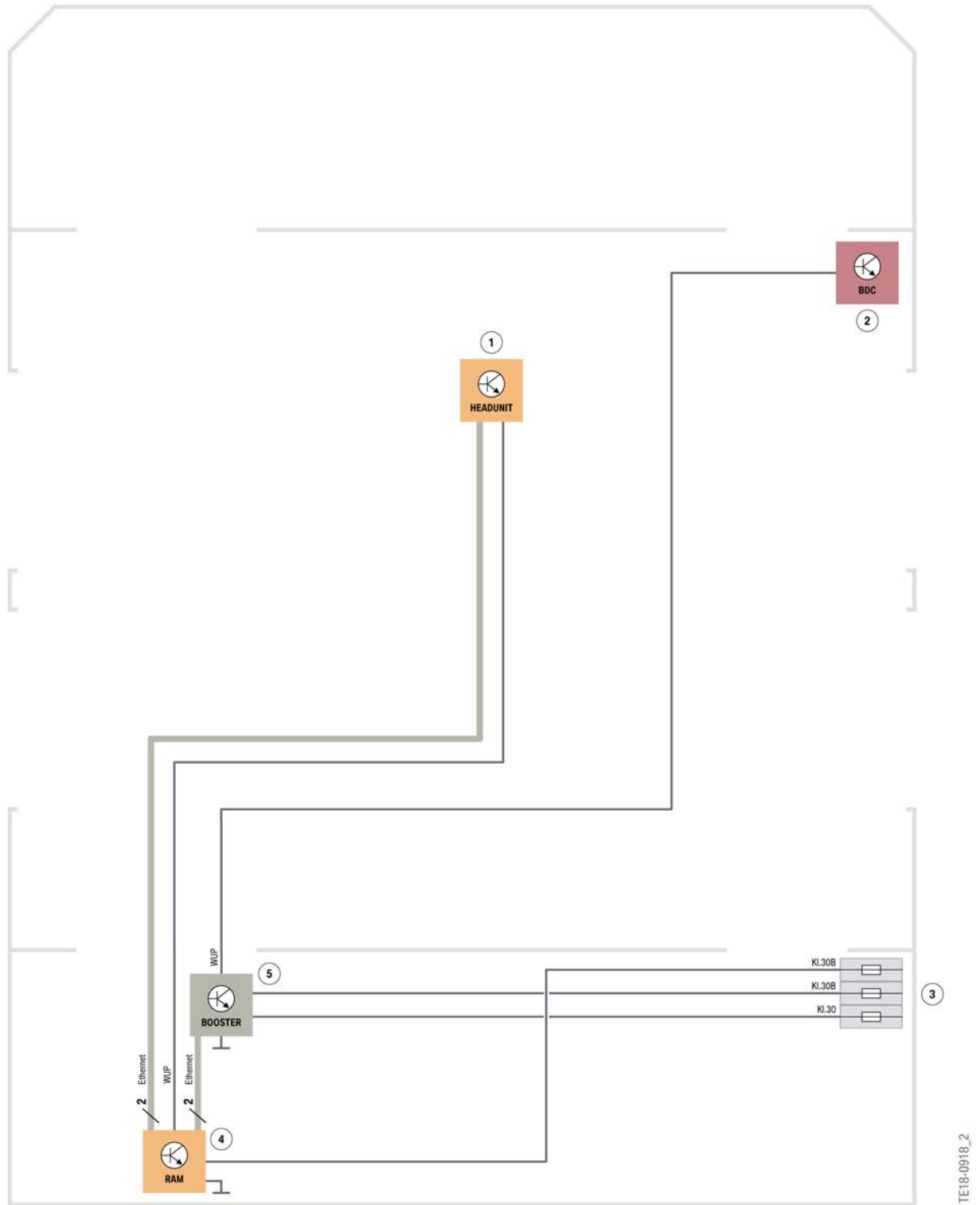
Overview of the RAM in the G15

Index	Explanation
1	Receiver Audio Module high

# G15 Infotainment

## 3. Speaker Systems

### 3.3.2. System wiring diagram



G15 System wiring diagram for Receiver Audio Module

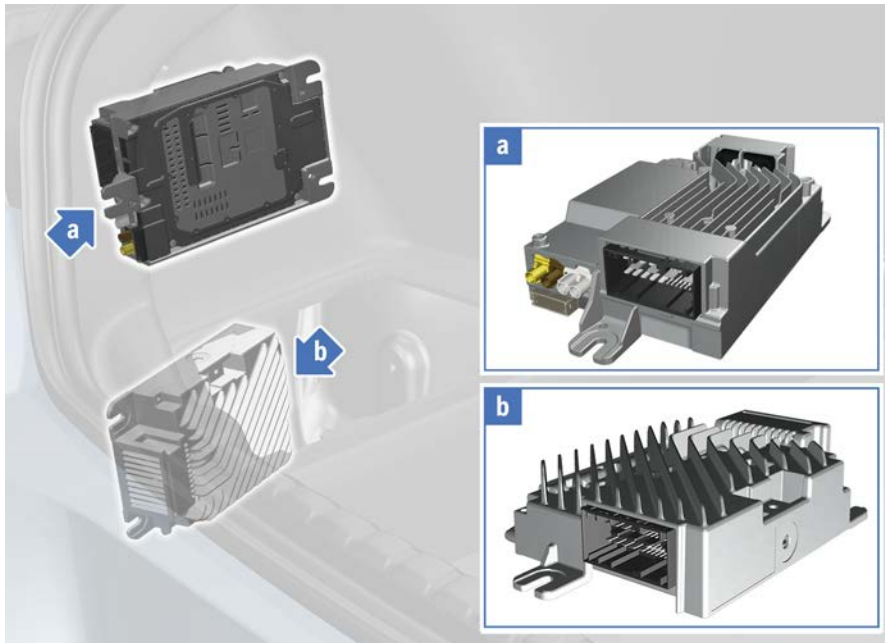
# G15 Infotainment

## 3. Speaker Systems

Index	Explanation
1	Head Unit
2	Body Domain Controller (BDC)
3	Fuses in the power distribution box of the luggage compartment
4	Receiver Audio Module
5	Booster

### 3.3.3. Installation location

The Receiver Audio Module is located in the luggage compartment on the left behind the side trim panel.



G15 Installation location of Receiver Audio Module

Index	Explanation
a	Receiver Audio Module (RAM)
b	Booster

# G15 Infotainment

## 3. Speaker Systems

### 3.4. Booster

The Booster is used in the G15 and is an additional audio amplifier in the vehicle.

#### 3.4.1. Variants

The Booster is installed in the G15 with the following optional equipment:

- Harman Kardon Surround Sound System (SA 688)
- Bowers & Wilkins Diamond Surround Sound System (SA 6F1) (available from December 2018)



G15 View of Booster

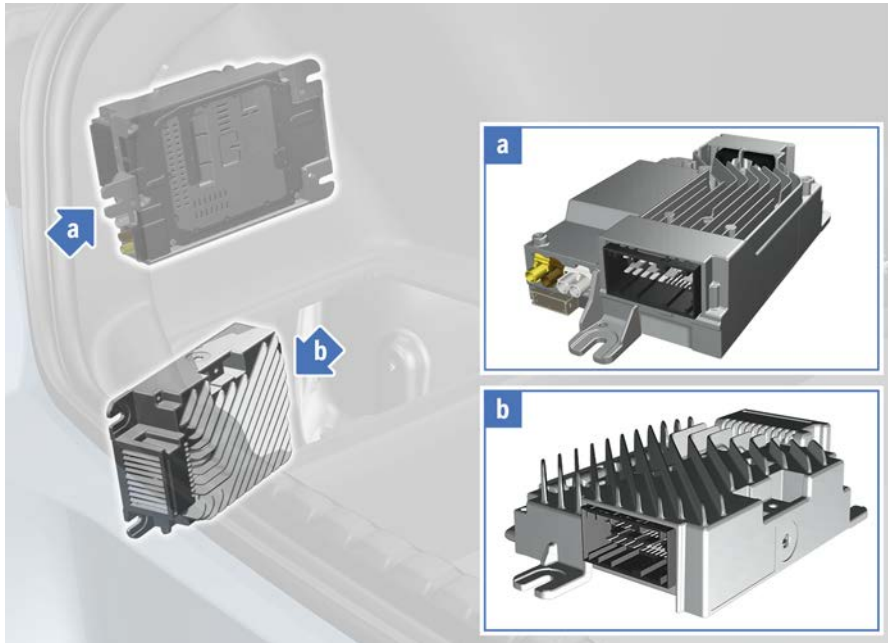
TE18-0922

# G15 Infotainment

## 3. Speaker Systems

### 3.4.2. Installation location

The Booster is located in the luggage compartment on the left behind the side trim panel.



G15 Installation location of Booster

Index	Explanation
a	Receiver Audio Module (RAM)
b	Booster



# G15 Infotainment

## 4. Aerial system

The G15 has different aerial systems, depending on the national-market version and optional equipment used:

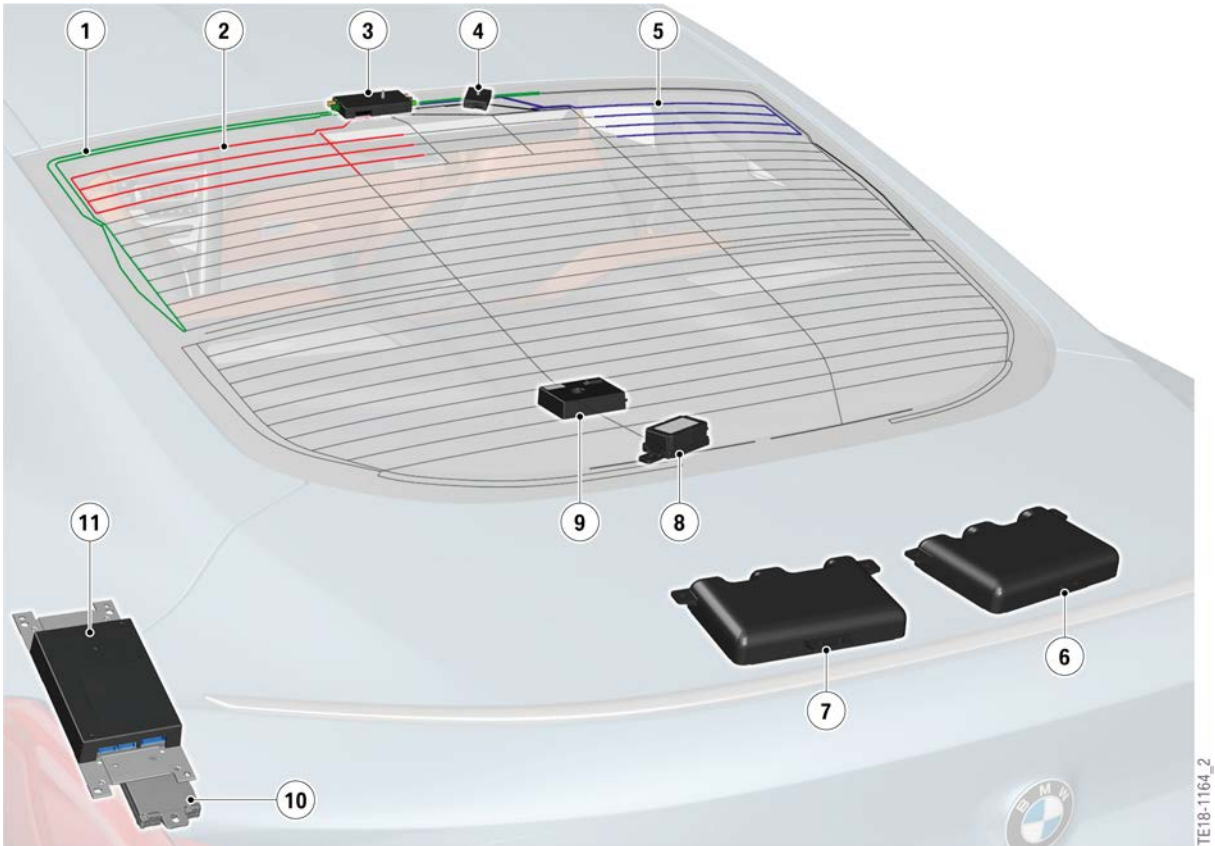
<b>Aerial</b>	<b>System</b>	<b>Installation location</b>
FM aerial	Radio	FM1 and FM2 aerials in the rear window
AM aerial	Radio	AM aerial in the rear window
SDARS aerial	Radio	Integrated in the tailgate
SAT aerial	Navigation system	Integrated in the tailgate
Remote control service aerial	Body Domain Controller (remote control services)	Below the parcel shelf
Telephone aerial	Telephone	Integrated in the tailgate
Bluetooth aerial	Telephone	Integrated in the wiring harness
Vehicle WLAN aerial	Telephone	Integrated in the wiring harness
Wi-Fi hotspot aerial	Telephone	Telematic Communication Box 2
Emergency GSM aerial	Telematics services	Below the parcel shelf

# G15 Infotainment

## 4. Aerial system

### 4.1. Overview

The following graphic gives you an overview of the aerial system of the G15.



G15 overview of aerial system

Index	Explanation
1	FM1 aerial
2	AM aerial
3	Aerial amplifier (for the FM1, AM, FM2 aerial)
4	Interference suppression filter for the additional brake light
5	FM2 aerial
6	TEL2 aerial, SAT aerial for the navigation
7	TEL1, SDARS aerial
8	Remote control receiver
9	Emergency GSM aerial
10	LTE compensator
11	Telematic Communication Box 2 (TCB2) with integrated WLAN aerial for Wi-Fi hotspot

# G15 Infotainment

## 4. Aerial system

### 4.2. Components

#### 4.2.1. Vehicle WLAN aerial

The installation location of the vehicle WLAN aerial is shown in the following graphic:



TE18-1154

G15 Vehicle WLAN aerial

Index	Explanation
1	Vehicle WLAN aerial

# G15 Infotainment

## 4. Aerial system

### 4.2.2. Bluetooth aerial

The installation location of the Bluetooth aerial is shown in the following graphic:



G15 Bluetooth aerial

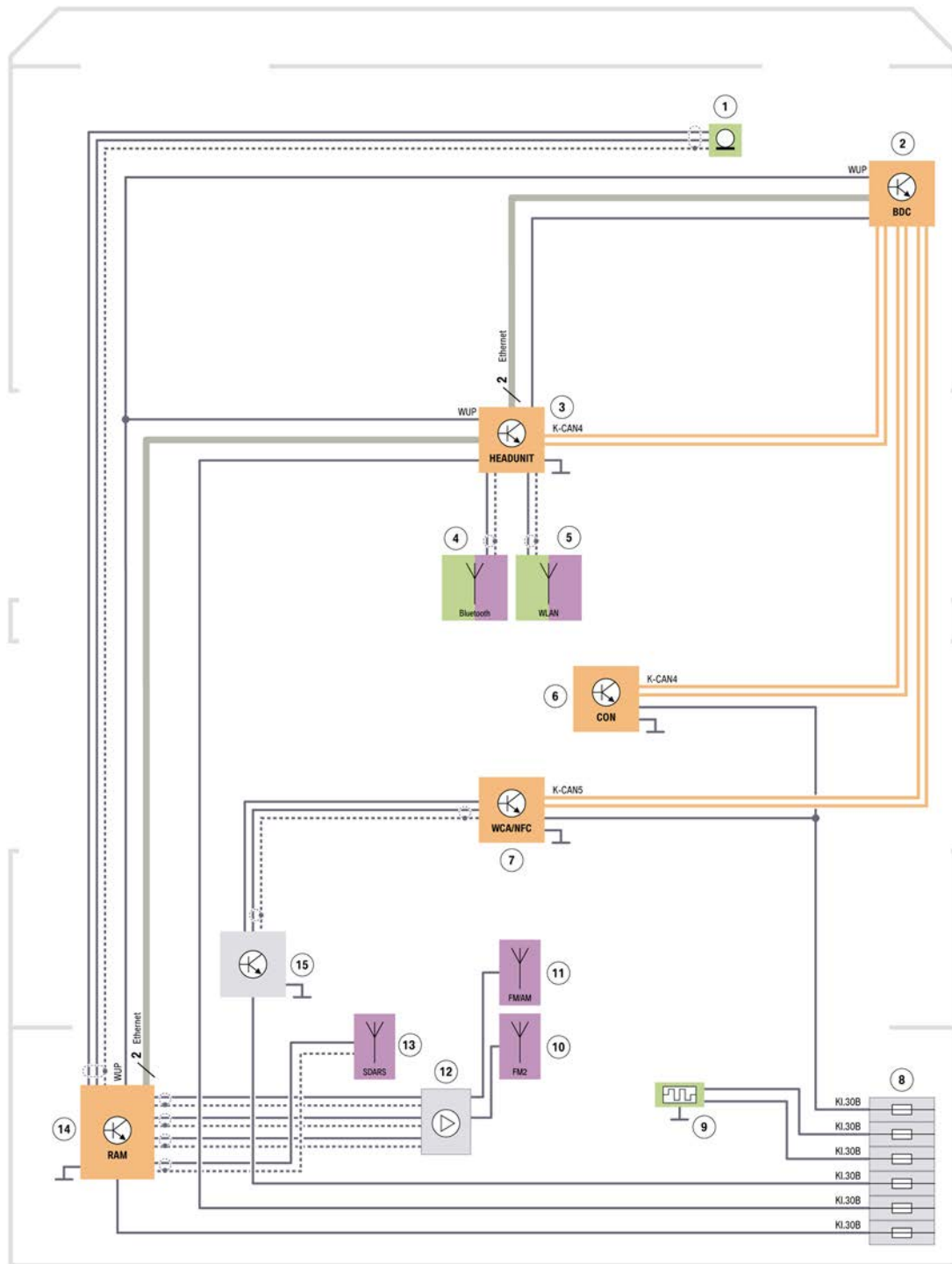
Index	Explanation
1	Bluetooth aerial

# G15 Infotainment

## 4. Aerial system

### 4.3. System wiring diagram

#### 4.3.1. Multimedia



G15 multimedia aerial

TE18-1173\_2

# G15 Infotainment

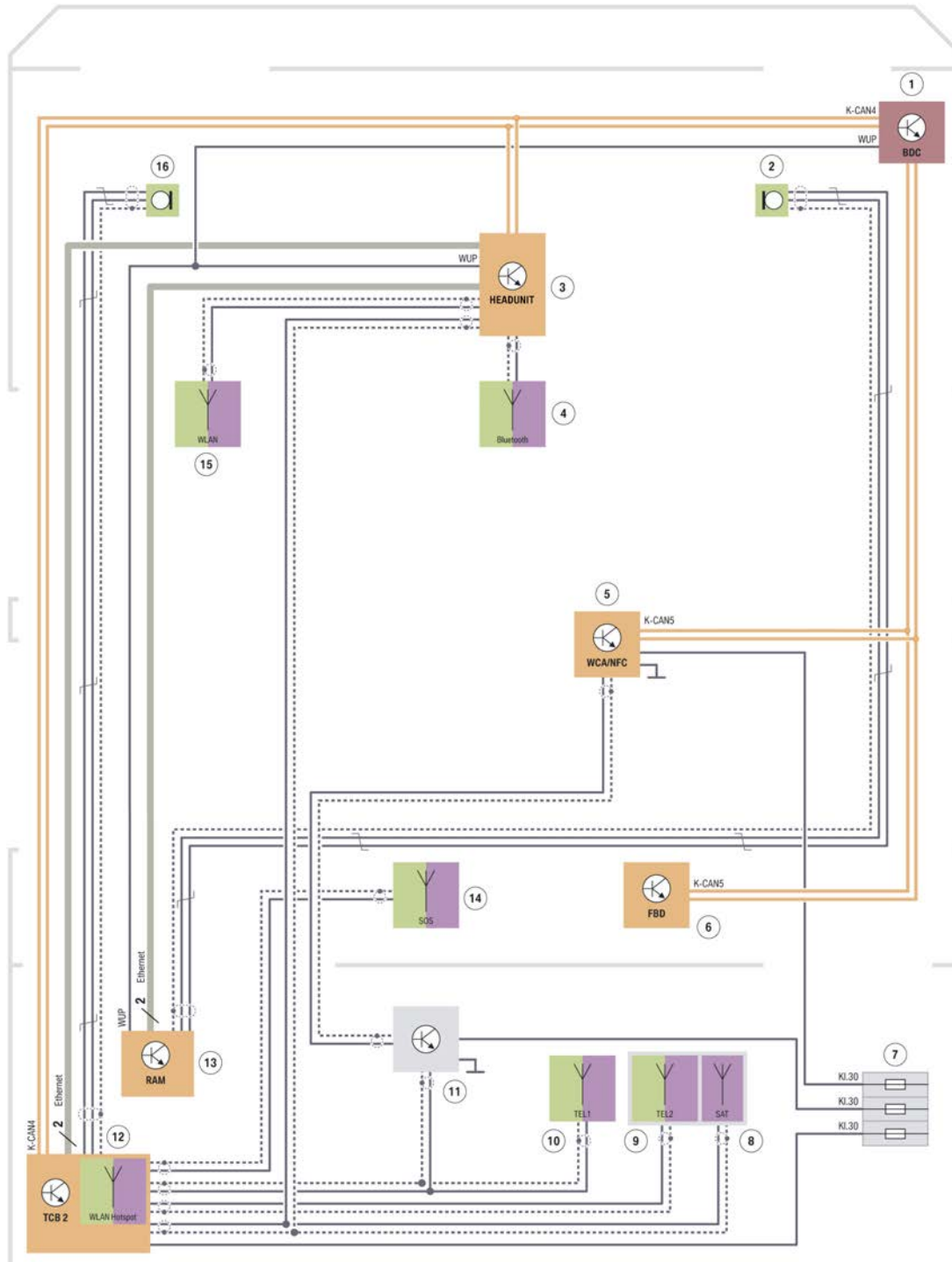
## 4. Aerial system

Index	Explanation
1	Microphone, front passenger side
2	Body Domain Controller (BDC)
3	Head Unit
4	Vehicle WLAN aerial
5	Bluetooth aerial
6	Controller
7	Wireless charging station (WCA) with Near Field Communication (NFC)
8	Fuses in the power distribution box of the luggage compartment
9	Heated rear window
10	FM2 aerial
11	FM1/AM aerial
12	Aerial amplifier (for the FM1, AM, FM2 aerial)
13	SDARS aerial
14	Receiver Audio Module (RAM)
15	LTE compensator

# G15 Infotainment

## 4. Aerial system

### 4.3.2. Telematics/connectivity



G15 telematics aerial

TE18-1172

# G15 Infotainment

## 4. Aerial system

Index	Explanation
1	Body Domain Controller (BDC)
2	Microphone on passenger's side
3	Head Unit
4	Bluetooth aerial
5	Wireless charging station (WCA) with Near Field Communication (NFC)
6	Remote control receiver
7	Fuses in the power distribution box of the luggage compartment
8	SAT aerial for the navigation
9	TEL2 aerial (telematics)
10	TEL1 aerial (customer's mobile phone connection)
11	LTE compensator
12	Telematic Communication Box 2 (TCB2) with integrated aerial for Wi-Fi hotspot
13	Receiver Audio Module (RAM)
14	Emergency GSM aerial
15	Vehicle WLAN aerial
16	Microphone, driver's side





