Car Kits configurations with TPH900

Table

Figures inside this document

Version	Date	Comment	Author
Initial	2015	Standard	D Mulsant
V2	October 2016	Include –B versions of Cradle and CCB, and Trafico	D Mulsant
V3	Nov. 2016	Include code with no audio	D Mulsant
Final	January 2017		D Mulsant

1. Aim of the document

This document presents the various configurations of TPH900 used in cars.

After providing a general overview, the second chapter describes the features and characteristics of the main components. Last chapter introduces the references codes of the solution for ordering. It includes the upgrade between P2G or TPH700 to TPH900 car configurations.

This document is a product description.

It is not an installation guide.

2. General overview

The schematic bellow presents the two TPH900 car configurations. Some elements are optional items, or may be ordered separately, please check Ordering Options chapter.
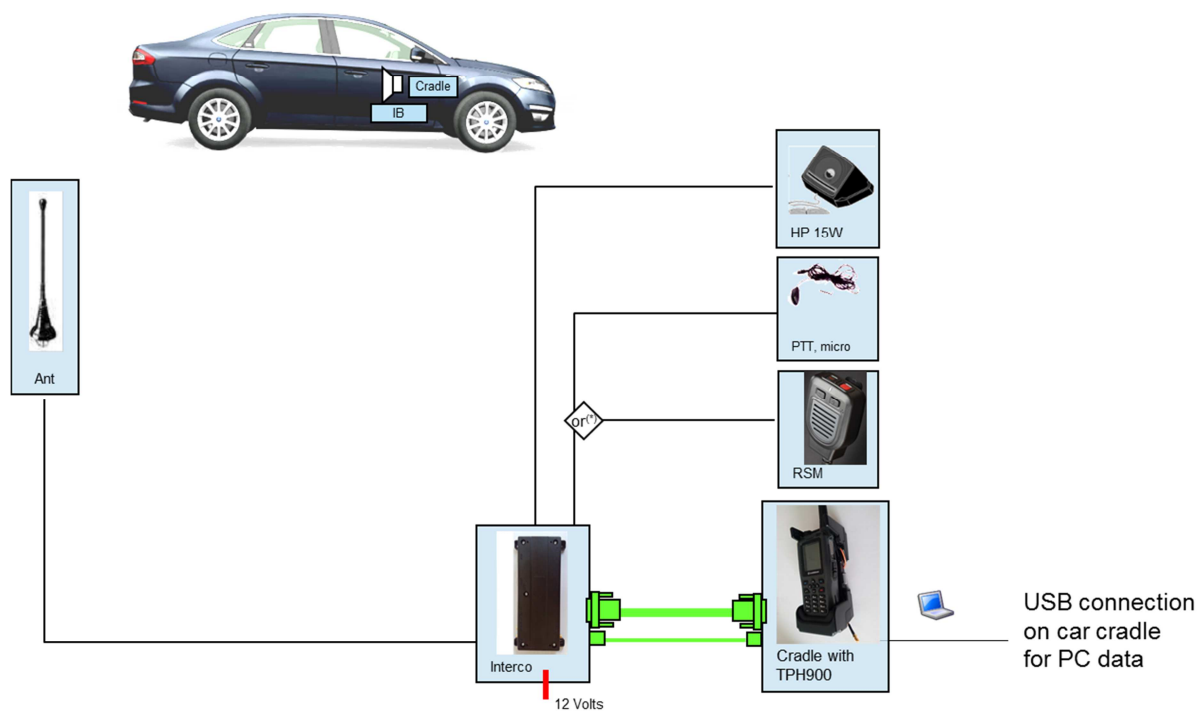
Figure 1: TPH900 car configuration 2 Watts
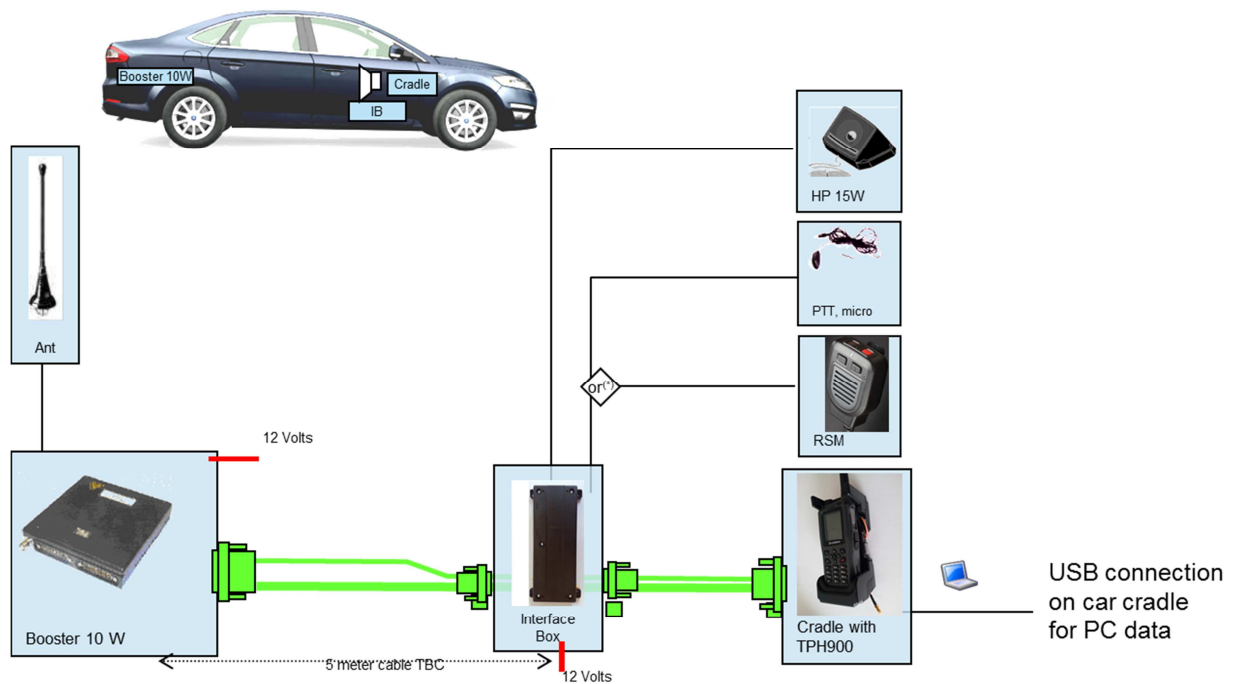
Figure 2: TPH900 car configuration with Booster (10 Watts)

Note that Booster 10W in the back is indicative.

3. Basics on use cases

Standard features

Car configurations are installed in car and trucks. Choice is made between standard (2W) and with booster (10W) configurations, depending on the need of enhanced Radio Frequency coverage or not. User benefits from following functions.

- TPH900 is securely positioned of the in the car, with a specifically designed cradle. This cradle will ensure firm and robust attachment of the TPH900 in the car, also complying with standard EU regulations for inside vehicle equipment.
- Access to TPH900 features can be achieved handsfree, with external PTT key or Speaker Microphone, and loudspeaker.

Discreet installations are also possible, connecting wired PTT, microphone and earphones to the CCB900 instead of the RSM.

When TPH900 is in cradle:

Remote Speaker Microphone can be used. Only one communication can thus be handled at the same time.

For discreet configuration, press on the wired PTT, allows the driver to initiate call without using PTT on the TPH900. The speech goes through the wired microphone. The received audio goes through the external loudspeaker 4Ohms (option) or the binaural earpiece. Radiated signal will be sent by the car antenna and not the TPH900, thus giving more coverage. 10W booster enhances also the emission, when installed in the car.

Location - Identification

TPH900 can receive GPS location signal. When used in a car configuration, car cradle shall then be connected to external antenna either GPS or dual PMR/GPS.
For configurations using AVL server from AIRBUS SLC, an "IDENT" identification option exists.
TPH900 is then able to transmit the IDENT via DTAP.
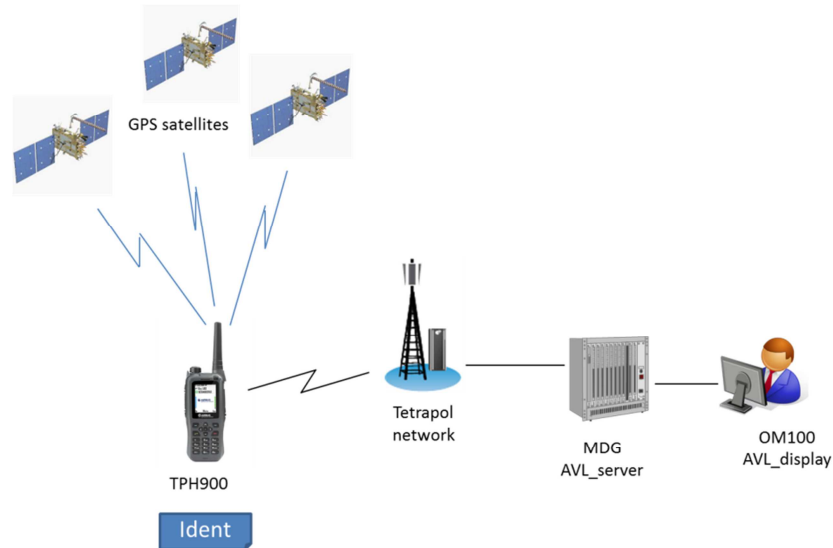
Figure 3 Location and Identification management

With HR9623BAA01, TPH900 is able to transmit an IDENT coming from external equipment and sent via DTAP protocol or via HR9623. The IDENT value can be stored in the CCB900 so that external equipment is no longer needed.
TPH900 allows user to configure IDENT with a specific user interface in maintenance mode. With this UI, a maximum 15 numerical characters string can be define for the IDENT.

As for today, AIRBUS AVL server offers access either to IDENT information or to RFSI information (attached to Terminal) provided by network.

4. Component descriptions

Car cradle TPH900 – HR9080

TPH900 car cradle is specific to TPH900, as any cradle is to one radio.
The product offers the following features:

- Connection of power supply to the terminal
- Connection to external antenna with one antenna cable dual band (Tetrapol and GPS)
- Connection to external device through µUSB port. Connection to data with µUSB/USB and µUSB/RS232.

The product is IP40.
Cradle can be attached thanks to swivel solution (optional).

Figure 4 TPH900 Car cradle picture

Note that audio accessories, when plugged on the TPH900 side interface, may not be usable when radio is inserted in the cradle. This priority management will depend upon items connected to the CCB.
TPH900 cradle allows the user to insert the radio with one hand. Removing the radio is also done with one hand only.
Note that it is mandatory to press the side buttons to allow easy extraction.
Note that RF antenna cable is now colored in black.

Reference codes

HR9080AA	Car cradle V1	Includes mounting swivel
HR9080CA	Car cradle V2 (2017)	Antenna cable black, Includes mounting swivel
HR9080DA	Car cradle V2 (2017)	Antenna cable black, No swivel included

CCB_900 – HR9623

Car Configuration Box (CCB) is a new element in car kits configuration, compared to P2G/TPH700 solutions.

Figure 5 HR9623 - CCB_900

With 2016 version, CCB900 can now be installed up to 2m from cradle, with different cable variants.

CCB_900 main features are:
- Interface between the cradle, the BIV Smart;
- Interface to external antenna, PMR antenna, or dual band PMR/GPS antenna,
- Management of audio links: to/from Remote Speaker Microphone, loudspeaker, …
- Power supply management for TPH900 5V - 4A (vs 6.5V for P2G)
- Provide identification of the vehicle it is installed in. Therefore, a menu is available in the TPH900 to set up this identification.

BIV Smart - HR6723

Existing BIV Smart can be used with the retrofit kit. Software must be at least 010202.
AIRBUS will provide two possible configurations:

Retrofit kit, to upgrade existing P2G or TPH700 configurations to TPH900
Complete kit, to be installed in a new vehicle.

Nevertheless, the BIV smart box is connected to CCB900.
Installation kit is HT7528.

Remote Speaker Microphone – HR9035

Remote speaker microphone is the connected on CCB900.
Installation is done thanks to pivot located on back of RSM.
When user is pressing volume +/-, it interacts directly with TPH900 audio volume.

Figure 6 : HR9035 - TPH900 RSM for car kit

An extension cable exists to install RSM up to 2 meter from CCB900.
Connectivity is SUBD15 high density.

Loudspeaker – HC1194

Power : 20W
Impedance : 8 ohms
Dimensions: 176x186x80mm
Cable length 2,000m with MOLEX plug to connect to CCB.

Figure 7 : HC1194 - Loudspeaker

Mounting includes a Molex connector for installation in car kits.

Discreet configuration – HT11004

Discreet installation consists in plugging wired audio and PTT on the CCB900 on the plug dedicated to RSM.
It shall be highlighted that both car cradle and CCB900 have to be installed.
Discreet kit will include one cable (HG5445AA) to which three accessories are attached:
- Microphone,
- Binaural earpiece,
- PTT key.

This configuration is to be ordered separately.

Figure 8 : Discreet audio/PTT accessories for TPH900 car kit

Description	Qty	reference
specifique Cable ref ADS (HG5445AA)	1	HG5445XX01-ED (plan)
Binaural earpiece with jack3.5	1	MDR-E9LP/BC1(AE)
Microphone jack 2.5 mono + with velcro	1	Q400 MK3
Black PTT key L=3m jack 2.5 mono	1	nc (custom)
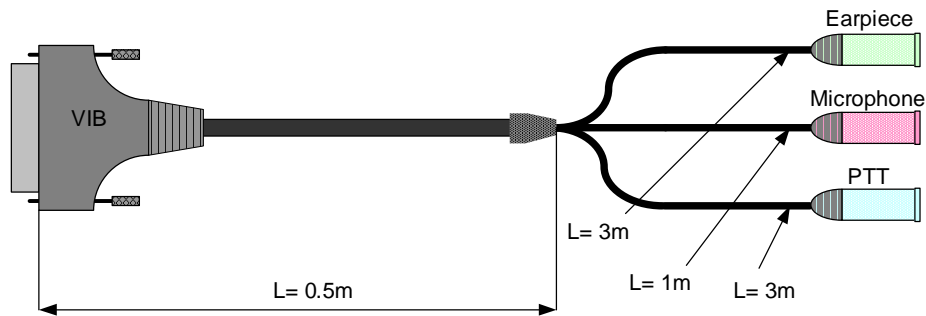
Figure 9 : HG5445 cable for discreet configuration

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Cables

HG5443 – CCB Power cable

This cable enables to connect to CCB with Molex connector to power source.

*: Provide items #12, #13, #14 and #15 within a transparent zipped sachet
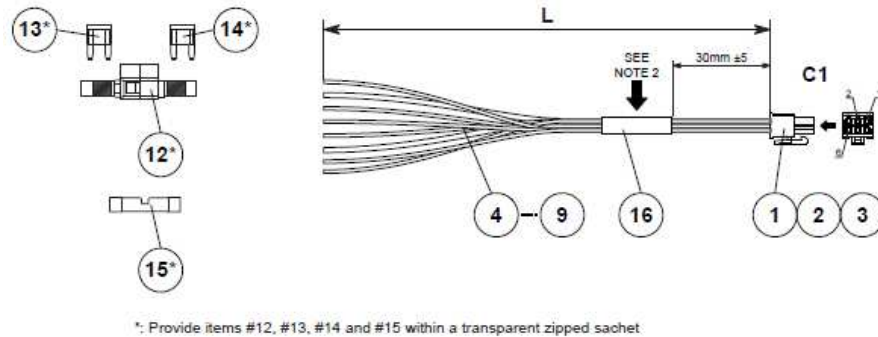
Figure 10 HG5443

#13 is Mini-Fuse, 5A, 32VDC, Ag plated, -40/+125°C
#14 is mini-fuse 20A, 32VDC, Ag plated, -40°C/+125°C
#15 is mini-fuse 5A, 32VDC, Ag plated, -40°C/+125°C
#12 is fuse holder 20A max.

Length 300 mm

HG5444 – RF cable

This cable enables to connect the CCB900 to the cradle.
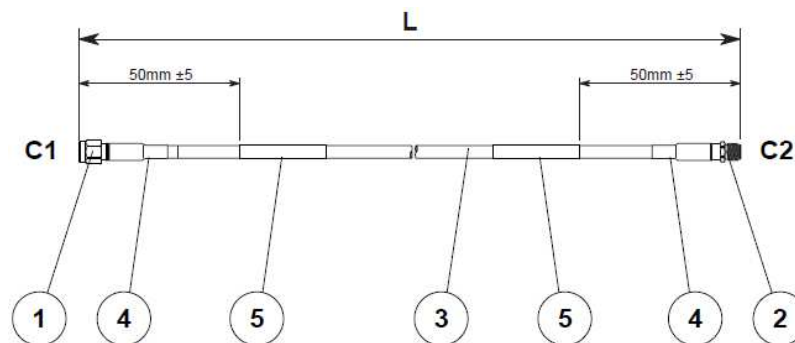
Figure 11 HG5444

Coaxial cable 50 Ω, RG223/U, MIL-C-17
#1 is SMA plug, straight, 50 Ω
#2 is SMA Jack, straight, 50 Ω

Length variants:
- HG5444AA01   500 mm (to be ordered separately)
- HG5444BA01 2,000 mm (standard kits)

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Cable between CCB & Cradle

HG5472xA Straight connector
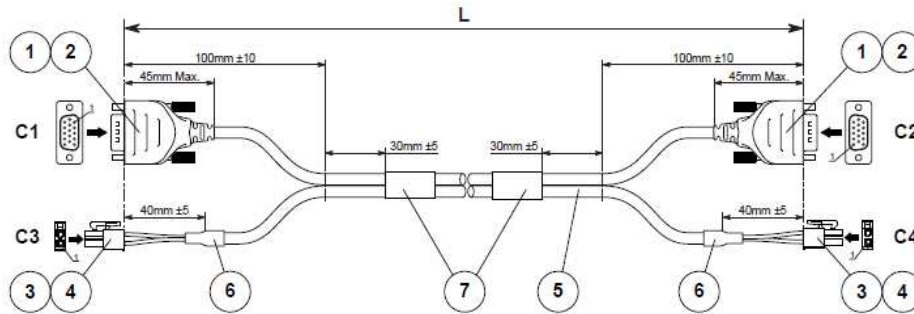
Figure 12 HG5472

#C1-C2 is DSUB-15 high density over molded plug, size E, straight exit.
#C3-C4 is Molex connector Mini-Fit Jr.

Reference:
- HG5472AA01 2,000 mm (standard kits)

HG5613 Connector with angle 90°
This 90° connector helps the installation in car, as it reduces the global wheelbase.
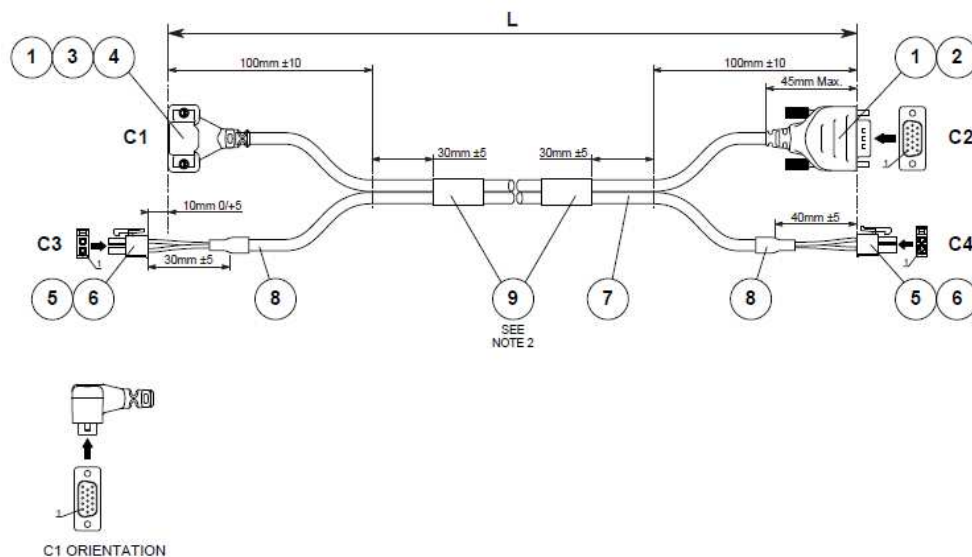
Figure 13 HG5613

#C1-C2 is DSUB-15 high density over molded plug, size E.
     C2 straight exit,
     C1 with 90° angle.
#C3-C4 is Molex connector Mini-Fit Jr.

HG5613AA01
Length: 2,000 mm

HG5440 – CCB to BIVS (10W)
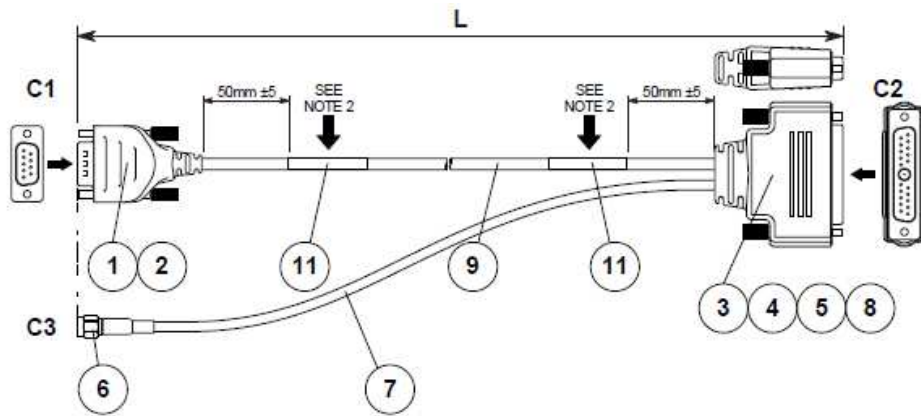
Figure 14 HG5440

#C1 is DSUB-10 over molded plug, size E.
#C2 is DSUB-21 over molded plug, size B
#C3 is SMA plug

Length variants:
- HG5440AA01   Length 3,000 mm
- HG5440BA01   Length 500mm

HG5569 – µUSB-RS232

(optional)
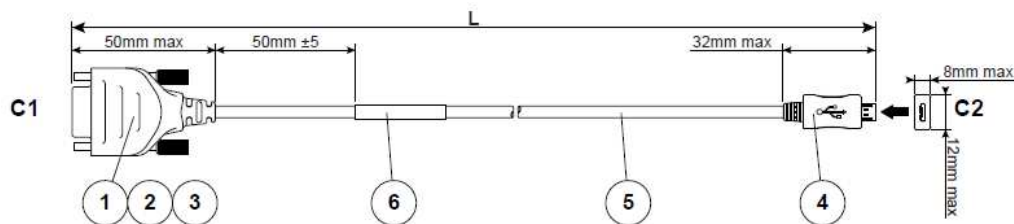
Figure 15 HG5569

HG5569 allows connecting Personnal Computer or Pilot Box to the cradle via RS232.
#C1 is DSUB-XX over molded, size E.
#C2 is µUSB plug
HG5569AA01
Length: 1,500 mm

HG5596 – RSM Extension cable
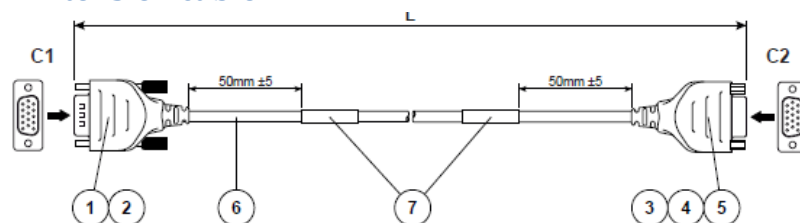
Figure 16 HG5596

#C1/C2 is DSUB-15 over molded plug, size E.
HG5596XX01
Length 2,000mm

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HG5438 – BIV POWER CORD
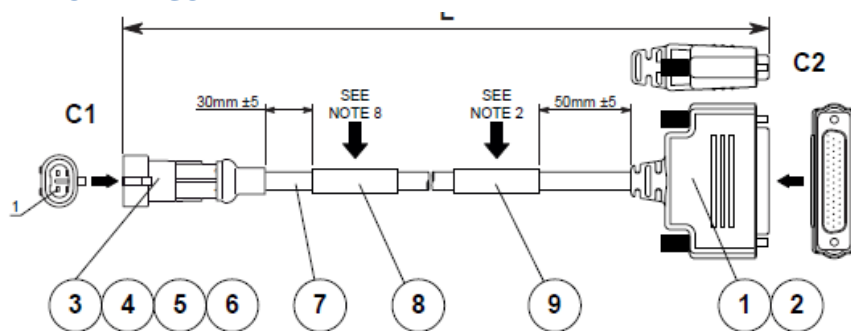
Figure 17 HG5438

#C1 is superseal 1.5 2-pos
#C2 is DSUB 44, Size B
HG5438AA01
Length 700mm

BIV connectivity kit – HT7462

Kit of screws, fuse. Refer to installation guide.

⚙	PD412H, VIS N5 X18 CBLZ ZN8NR, 01.1 (Design)
⚙	PK1171A, FUSEHOLDERS CAR FOR CABLE, 01.1 (Design)
⚙	PK1172A, FUS. H.T .AUTO .7A5 ., 01.1 (Design)
⚙	PS7645A, ETIQUETTE PRODUIT (52 X 17,5), 01.2 (Design)
⚙	PX175F, COSSE RO.M08 1-2,5MM2/D3,8MM, 01.1 (Design)

HT7462AAA01

5. Car configurations

2015 car configuration concept would see cradle and CCB900 positioned within 2 meters.
With 2016 configuration, distance between cradle and CCB900 can be extended up to 6 meters.
The two following schematics provide general understanding of the car kit concepts.

TPH900 2W configuration
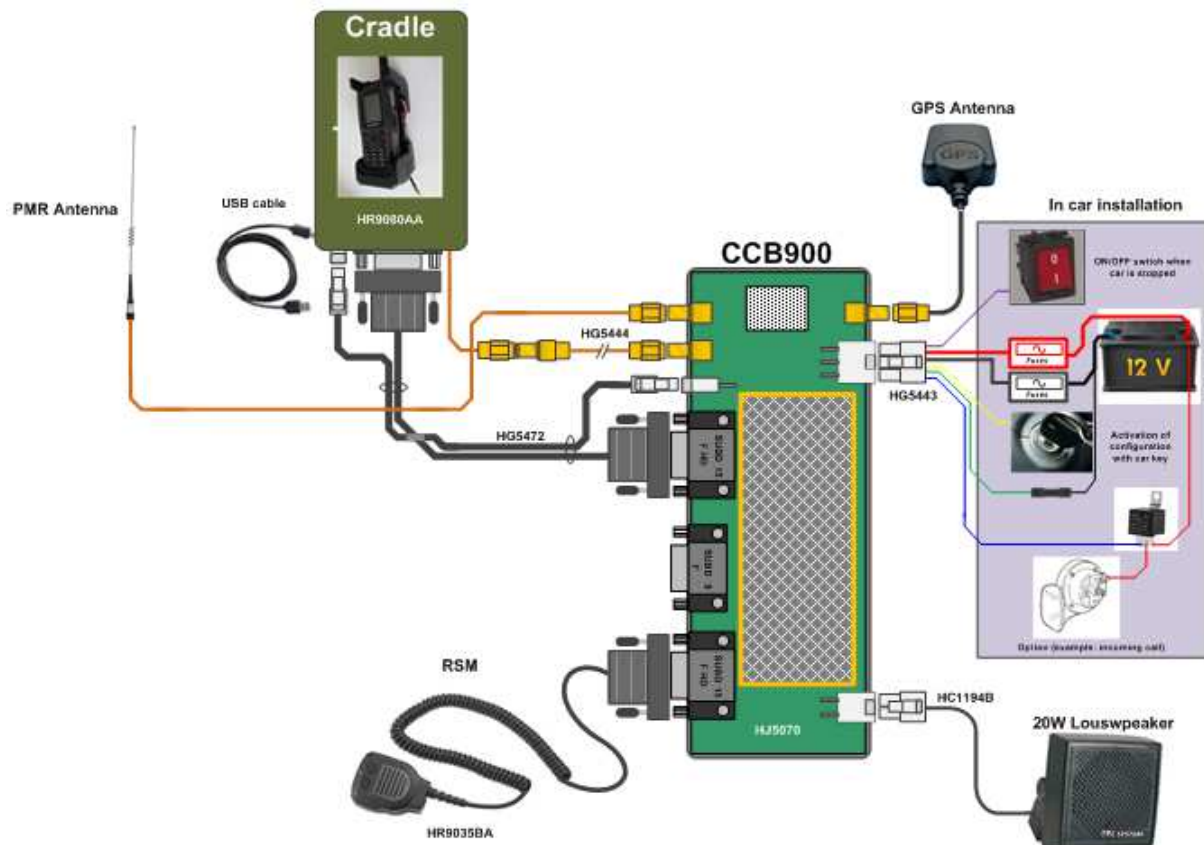
Figure 18 Car configuration 2W - components

TPH900 10W configuration

Figure 19 Car configuration 10W – 2016 - components

Adaptations in 2016 of this 10W configuration lead to some specific packages:
- TPL for Antares:

Company TPL will integrate BIV and CCB900 in a dedicated housing, easing the integration in the trunk of the car. A dedicated unique cable will then connect front end equipment (cradle, RSM, µUSB plug) to back end equipment (10W booster, CCB board, car battery).

- SPICA:

Standard installation is to have both CCB900 and BIV below copilot seat (as it was the normal case with P2G / TPH700 installations). The CCB900 to cradle cable (HG5613) is using normal 2 m length, but with 90º connector. Also, an extension cable (HG5596) is provided between CCB900 and RSM, to be able to install the RSM in the dashboard.

ANTARES

In this configuration, the main cables are not included.
They are provided while the integration of CCB in additional casing is performed.
Report to ANTARES kit description in "6-Ordering".

Figure 20 Overview ANTARES configuration

TPL is supplier of 6 meter system cable.
BIV TPL is host metal box for all equipment installed in the back of the truck.
Detailed description in HYP/TR/DFF/35

6. Ordering

Antennas are ordered separately.
Note that the B version of cradle/CCB includes 2017 features (§3).
An CCB900-B will work only with a cradle-B.

Configurations with 2W capacity

TPH900 2W initial configuration

This configuration will be phased out in 2017.

Commercial code	Designation	Comment
HR9703AA	TPH900 2W configuration	
HR9080	TPH900 CAR CRADLE	
HR9035	CCB900–MLS MICROLOUDSPEAKER	HR9035BAA01 With SUBD-15 connector CCB
HC1194	LOUDSPEAKER 15/20W VEHICLE (CCB)	HC1194BA01 Dimensions 176x186x80mm
HG5443	POWER CORD	HG5443AA01 Length 0.3 meter
HG5444	RF CORD	HG5444AA01 Length 2 meters
HR9623	CCB900	
HG5472	CRADLE ALIMENTATION and DATA CORD	HG5472AA01 Length 2 meters

TPH900 2W configuration - CAR CONFIG 900 2W -B

Commercial code	Designation	Comment
HR9703BA	**TPH900 CAR CONFIG - B 2W**	HR9703BAA01
HR9080	TPH900 CAR CRADLE KIT –V2	µUSB-RS232 capable with swivel HR9080CAA01
HR9035	CCB900–MLS MICROLOUDSPEAKER	HR9035BAA01 With SUBD-15 connector CCB
HR9623	CCB900 -B	With ident capacity HR9623BAA01
HC1194	LOUDSPEAKER 15/20W VEHICLE (CCB)	HC1194BA01 1 loudspeaker per kit Dimensions 176x186x80mm
HG5443	POWER CORD	HG5443AA01 Length 0.3 meter
HG5444	RF CORD	HG5444AA01 Length 2 meters
HG5472	CRADLE ALIMENTATION and DATA CORD	HG5472AA01 Length 2 meters

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Configurations with 10W capacity

TPH900 10W initial configuration

This configuration will be phased out in 2017.

Commercial code	Designation	Comment	
HR9704AA	TPH900 10W configuration	Overall configuration code	
HR9080	TPH900 CAR CRADLE		
HR9623	TPH900 CCB900		
HR9035	CCB900–MLS MICROLOUDSPEAKER	With SUBD-15 connector CCB	
HG5472	CRADLE ALIMENTATION and DATA CORD	HG5472AA	2 meters
		HG5472BA (1)	0.35 meter
HC1194	LOUDSPEAKER 15/20W VEHICLE (CCB)	HC1194BA01 Dimensions 176x186x80mm	
HR6723	RECH BOITIER BIVS		
HT7528	KIT SUPPORT BIVS		
HG5438	BIVS POWER CORD	HG5438AA01 Length 0.7 meter	
HG5440	BIVS DATA CORD V2	HG5440AA01 Length 3 meters	
HG5443	POWER CORD	HG5443AA01 Length 0.3 meter	
HG5444	RF CORD	HG5444AA01 Length 2 meters	

TPH900 10W configuration - CAR CONFIG 900 10W –B

Commercial code	Designation	Comment
HR9704BA	**TPH900 CAR CONFIG - B 10W**	Overall configuration code HR9704BAA01
HR9080	TPH900 CAR CRADLE – V2	HR9080CAA01 with swivel
HR9623	TPH900 CCB900 - B	HR9623BAA01
HR9035	CCB900–MLS MICROLOUDSPEAKER	HR9035BAA01 With SUBD-15 connector CCB
HC1194	LOUDSPEAKER 15/20W VEHICLE (CCB)	HC1194BA01 - 1 loudspeaker per kit Dimensions 176x186x80mm
HR6723	RECH BOITIER BIVS	HR6723AAJ03
HG5438	BIVS POWER CORD	HG5438AA01 Length 0.7 meter
HG5440	BIVS DATA CORD V2	HG5440AA01 Length 3 meters
HG5443	CCB POWER CORD	HG5443AA01 Length 0.3 meter
HG5444	RF CORD	HG5444AA01 Length 2 meters
HG5472	CRADLE ALIMENTATION and DATA CORD	HG5472AA01 Length 2 meters
HT7462	KIT CONNECTIQUE BIV SMART	HT7462AAA02
HT7528	KIT SUP BIV SMART VIS TOLE D4	HT7528AAA01

TPH900 10W configuration - CAR CONFIG 900 10W –B -SP

Commercial code	Designation	Comment
HR9704CA	CAR CONFIG 900 10W –B -SP	Overall configuration code HR9704CAA01
HR9080	TPH900 CAR CRADLE - B	HR9080CAA01 with swivel
HR9623	CCB900 - B	HR9623BAA01
HR9035	CCB900–MLS MICROLOUDSPEAKER	HR9035BAA01 With SUBD-15 connector CCB
HC1194	LOUDSPEAKER 15/20W VEHICLE (CCB)	HC1194BA01 - 1 loudspeaker per kit Dimensions 176x186x80mm
HR6723	RECH BOITIER BIVS	HR6723AAJ03
HG5438	BIVS POWER CORD	HG5438AA01 Length 0.7 meter
HG5440	BIVS DATA CORD V2	HG5440BA01 Length 0.5 meters
HG5443	CCB POWER CORD	HG5443AA01 Length 0.3 meter
HG5444	RF CORD	HG5444AA01 Length 2 meters
HG5596	EXTENSION µLS 2 meters	HG5596AA01
HG5613	CRADLE ALIMENTATION and DATA CORD	HG5613AA01 Length 2 meters 90° angle
HT7462	KIT CONNECTIQUE BIV SMART	HT7462AAA02
HT7528	KIT SUP BIV SMART VIS TOLE D4	HT7528AAA01

TPH900 10W configuration - CAR CONFIG 900 10W without audio

Commercial code	Designation	Comment
HR9704DA	**TPH900 CAR CONFIG -B WITHOUT AUDIO**	This kit can be ordered with Discreet audio kit for discreet in car installation HR9704DAA01
HR9080	TPH900 CAR CRADLE - B	HR9080CAA01 with swivel
HR9623	TPH900 CCB900 - B	HR9623BAA01
HR6723	RECH BOITIER BIVS	HR6723AAJ03
HG5438	BIVS POWER CORD	HG5438AA01 Length 0.7 meter
HG5440	BIVS DATA CORD V2	HG5440AA01 Length 3 meters
HG5443	CCB POWER CORD	HG5443AA01 Length 0.3 meter
HG5444	RF CORD	HG5444AA01 Length 2 meters
HG5472	CRADLE ALIMENTATION and DATA CORD	HG5472AA01 Length 2 meters
HT7462	KIT CONNECTIQUE BIV SMART	HT7462AAA02
HT7528	KIT SUP BIV SMART VIS TOLE D4	HT7528AAA01

TPH900 10W configuration - CAR CONFIG 900 10W –B   ANTARES

Commercial code	Designation	Comment
HR9704EA	**TPH900 CAR CONFIG -B 10W ANTARES**	This kit can be ordered with Discreet audio kit for discreet in car installation HR9704EAA01
HR9080	TPH900 CAR CRADLE - B	HR9080DAA01 (no swivel)
HR9623	CCB900 - B	HR9623BAA01
HR6723	RECH BOITIER BIVS	HR6723AAJ03
HR9035	CCB900–MLS MICROLOUDSPEAKER	HR9035BAA01 With SUBD-15 connector CCB
HG5569	RS232-µUSB conversion cable	HG5569AA01
HT7462	KIT CONNECTIQUE BIV SMART	HT7462AAA02

Discreet audio and PTT

Commercial code	Designation	Comment
HT11004AA	Vehicular discreet kit, including: - HG5445AA, 3 meters cable - Visor microphone - Wired PTT - speaker	To be plugged on CCB900 Plug audio kit in place of HR9035 RSM

Retrofit kit

The following kits have been created to upgrade P2G car installation to TPH900 capable installation.

Car Config 900 upgrade 10W -B

This KIT has been agreed for SPICA configuration.

Commercial code	Designation	Comment
HR9715BA	**TPH900 KIT UPGRADE -B 10W**	HR9715BAA01
HR9080	TPH900 CAR CRADLE - B	HR9080CAA01 with swivel
HR9623	CCB900 - B	HR9623BAA01
HR9035	CCB900–MLS MICROLOUDSPEAKER	HR9035BAA01 With SUBD-15 connector CCB
HG5596	Extension cable CCB-µLS – 2 meters	HG5596AAA01
HG5440	BIVS DATA CORD V2	HG5440BA01 Length 0.5 meters
HG5443	CCB POWER CORD	HG5443AA01 Length 0.3 meter
HG5444	RF CORD	HG5444AA01 Length 2 meters
HG5613	CRADLE ALIMENTATION and DATA CORD	HG5613AA01 Length 2 meters 90° angle
HT11248	kit "MOLEX"	HT11248AAA01

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7. Installations options

Options for Cradle

Car cradle HR9080 can be alternatively attached with swivel or with a metal plate. This kit is sometimes used for installation in gloves compartment. Please note that gloves compartments are now quite smaller that they were in the 90'.
HT6159 kit has been developed for P2G installations in gloves compartment. It includes:

- a metal plate (see figure below).
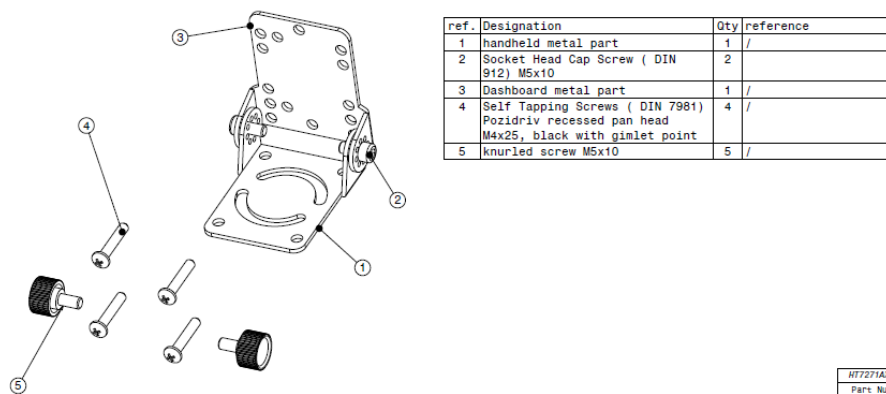- A fixing plate PA5329A
- Screws etc.

ref.	Designation	Qty	reference
1	handheld metal part	1	/
2	Socket Head Cap Screw (DIN 912) M5x10	2	
3	Dashboard metal part	1	/
4	Self Tapping Screws (DIN 7981) Pozidriv recessed pan head M4x25, black with gimlet point	4	/
5	knurled screw M5x10	5	/

HT7271AXX01
Part Number

Figure 21 Option with Metal plate holder kit

Reference: HT6159

Re-use of Pioneer loudspeaker

In case integrator would like to re-use the old Pioneer loudspeaker, recommendation is to purchase Molex connectors with wiring as in bellow scheme.
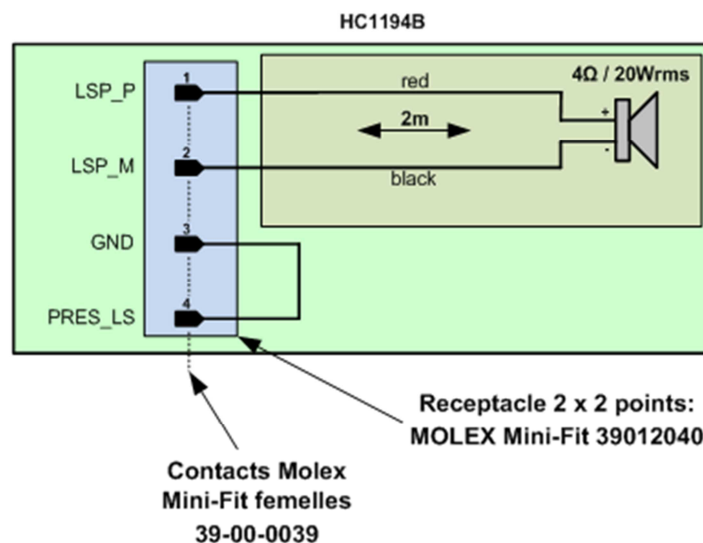

Figure 22 : Molex wiring

Kit Molex HT11248 is available in HR9704CA & HR9715BA.

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