

Head Unit-to-Fibre Optic interface (OPTI-1) and Steering Wheel Control Installation

Important notes related to the OPTI-1 Interface Unit:

- 1- Not supporting the 4 channel right now. In an SL it won't matter; thankfully; you can still use the 2 channel ports of the new head unit in a 4 channel system, but with no FADE. You can install a separate Amp for the rear speakers or even power them up directly from the head unit
- 2- No Centre Cluster info

The power, grounding and fibre terminations:

- 1- All work should be implemented while ignition is OFF and the keys are outside the car.
- 2- +12v Switched power: from the cigarette lighter (+12V ACC: Black/Green, Ground: Brown, I would recommend using this ground lead for the size of the wire it has rather than connecting to the body or using a less size ground lead) .
- 3- +12V Constant: Red/Yellow wire connected to the COMAND-APS NTG1 connector block
- 4- **NOTE: Battery disconnection is not required if you are careful enough. I didn't investigate whether disconnecting the accessories battery (located in the trunk area) would set error codes later.**
- 5- **Fibre Optic leads: the main (and only) block connector hooked to the COMAND-APS NTG1 at the back of the unit has the following**
 - A- Red/Yellow wire: Constant/Continuous/Battery line
 - B- Brown wire: Ground
 - C- Blue wire: I would assume that it is for antenna control or wake-up control for the CAN network (didn't use anyway) as I connected the new head unit antenna power wire to the OPTI-1 blue control wire and the OPTI-1 did the job waking up the BOSE amp, the AGW and the antenna as it is supposed to be
 - D- **Fibre Optic (T: Transmit, R: Receive) Orange leads:** although they are not fragile but extreme care and attention should be taken when dealing with this. Due to the nature of the FO leads, MB made them reaching up to the required termination block with a loop of no more than 3" for maintenance purposes. The FO leads lands in a small black plastic male connector that hooks up in the main connector block. The FO leads pair terminates in a small male connector lands in the main COMAND block connector; look at it and check for a small release tab, press it and pull the male connector (the leads will not come off, don't worry); then take out the plastic female connector from the OPTI-1 main FO connector, hook the FO leads the male connector into the OPTI-1 female connector and keep it a side until you manage your head unit wiring so you can make the final FO hook-up at the very end (safer that way). Due to the above, I was forced to install the OPTI-1 right behind the new head unit and tie-wrap my wires neatly so that I won't squeeze the this valuable unit down there
- 6- Steering Wheel Control: You need to find the CAN HI and CAN LO leads, the easiest and most accessible location to find those (COPPER WIRES.... THAT CAN BE T-TAPPED.... music to my ears). I found those at the Audio Gateway (AGW). Details comes later
- 7- Antenna Installation:
 - A- antenna extension: 96" coax extension
 - B- Antenna Adapter: Metra 40-eu10 works



8- Running cables and wires from AGW to Head Unit: Loosen up the T20 bolts (circled in red in the following picture) holding the driver side-rear box, and wiggle, you don't have to remove the box all you need is create a 1/2" space between it and the back firewall to route the antenna coax extension, the CAN HI/LO wires. See pictures



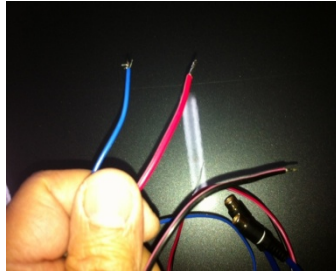
Head Unit Installation:

1- Dismantle the centre console from the COMAND unit down to the rear boxes (There are other posts in this forum detailing this process). See the 3M, DI-NOC Bubinga self- adhesive veneer that I applied to the Connects 2 kit for R230. The R230 Burl wood looked like a bird's eye wood with extra varnish which is very expensive and hard result to achieve so I thought of the 3M DI-NOC Bubinga as it closely matched the pattern, hard to scratch and matches the color tone



2- Fibre Optic Interface Installation:

- A- Pull COMAND unit and disconnect. This step is simple yet critical. Out of the module connected behind the COMAND optical, remove the optical plug from the power plug, install the clip, plug into the interface (see details above)
- B- COMAND Harness +12v constant Red /Yellow Wire: this is +12V Constant goes to the constant power red wire of the OPTI-1. The red wire came fused with a 5Amp fuse.
- C- COMAND Harness Brown Wire: ground goes to the red/black wire (ground) of the OPT1-1
- D- COMAND Harness Blue: didn't use it (see why above)
- E- RCA connectors: to new head unit front speakers outputs



- 3- Run antenna extension to the audio gateway by the CD changer and install the Metra adapter 40-eu10 (See the adapter and installation area in the pictures above).
- 4- Plug in optical from the COMAND to the head unit Fibre Optic interface (power and ground off the 2 wires that supply the COMAND. I did connect the ground to the main ground of the Cig. Lighter)
- 5- Switched 12V for the new head unit: source from cigarette lighter
- 6- Plug the interface RCA's into the Front Speaker Output of the new head unit
- 7- Test

Sat Radio and GPS Antenna Installation

- 1- Antenna location: Driver side hood air vent
- 2- Wire route: From vent area to the engine bay fuse box at the driver side (join both cable together and wrap with tape for protection).
- 3- See pictures, I have glued a couple of 1/2" steel washers and mounted the antennas on them (antennas have magnet on the bottom for easy installation)
- 4- A lot of extra coax length. Coil and tuck on top of the knee bolster of the driver side



Dismantle the bottom (4x T20 screws)



Wire Route (Fuse box side)

Glued washers



Wire Route (Driver foot well side)

Sat Radio Tuner and ASWC boxes Installation:

The Kenwood DNX 7190HD is a SiriusXM-Ready, meaning that it needs a tuner only. The small size of the tuner enabled me to mount it on top of the driver side knee bolster easily

AXXESS ASWC Steering Wheel Control:



- 1- Follow the ASWC instructions for the specific head unit you are using to terminate the control lead, power and ground
- 2- Follow the instructions on the ASWC terminations excel sheet to terminate the CAN HI and CAN LO wires at the Audio Gateway (AGW) and bring the wires up to the where the ASWC located close to the head unit
- 3- The following table has been extracted from the METRA AXXESS ASWC instructions for the Mercedes SL 2005-2008):

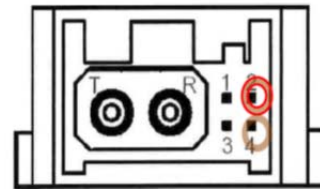
MAKE	MODEL	YEAR RANGE	ACTION REQUIRED FOR THE AUTO-DETECT TO BE SUCCESSFUL	PIN NUMBERS USED ON THE ASWC (FIRST NUMBER LISTED CONNECTS TO THE VEHICLES 1st SWC WIRE LISTED)	NOTES	VEHICLE1st SWC WIRE COLOR and Pin NUMBER AND DEFINITION	VEHICLE2nd SWC WIRE COLOR Pin NUMBER AND DEFINITION
MERCEDES	SL CLASS	2005-08	Tap Vol Up Continually	1,7	Must get the CAN wires at the tuner. Tuner is located on the left side of the trunk (Pins 2&4 are on the optical bus connector at the audio gateway . See picture) The wiring is Power, Ground, CAN HI & CAN LO Directly tap on the CAN HI & CAN LO copper wires)	BROWN/RED PIN #2 (CAN HI)	BROWN PIN#4 (CAN LOW)

4- See the detail of the fibre and CAN leads hooked at the Audio Gateway

Mercedes SL (R230) & Comand APS NTG1:



Cable colour/connector:	Allocation:
●● Brown/Red	CAN HIGH Pin 2
● Brown	CAN LOW Pin 4



The installation has to be carried out at the Audio Gateway (AGW). You find the latter behind the carpet on the passenger side. The control unit doesn't have to be dismantled for the installation.



Tapping on Pins 2&4 on the Audio Gateway Fibre, Power and CAN connector

Credits to:

To "JBONDOX" from MBWORLD.org, for introducing the OPTI-1, testing it and provide many suggestions and replying to all my questions before the installation process. His thread started all that <http://mbworld.org/forums/audio-electronics/466505-replacing-comand-just-got-easier.html>

To "AMGFan" from MBWORLD.org for his step by step project <http://mbworld.org/forums/sl55-amg-sl63-amg-sl65-amg-r230/289127-amgfan-2006-sl65-audio-upgrade-thread.html>

To "Schoerny" from benzworld.org for his step by step paneling dismantling thread: <http://www.benzworld.org/forums/r230-sl-class/1688422-center-armrest-rear-interior-panelling-disassembly.html>

End Product:

- 1- The OPTI-1 was a cost saver as no need for extra amp/s not replacement to almost perfect speakers. I stand puzzled for the fact that the BOSE amp is almost a different amp now, reproduces frequencies the way audiophiles like to hear and gives a new depth to all the speakers at the same time
- 2- With the AXXESS ASWC, the whole steering wheel controls was demystified. Checking resources to confirm the connection details was a long process but I was committed to get results and I was happy with programming: Volume UP& DOWN, Input Select, Attenuation ON & OFF, DVD Chapter change
- 3- Video in Motion: E-bayed and purchased the small item



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