



Digital Audio Broadcast (DAB+ radio) retro fit to Discovery 4

By Peter A.

A great thing about this site are the friendly and knowledgeable people you meet. One day just looking around I stumbled on a build thread for Freelander 2 by a member Cambo351, (Cameron) tucked away in this thread was discussion about retro fitting components for DAB (and lots of other things) and a reference that it can be done on D4's as well, absolutely sensational, I'm sold, let me at it.

So a few emails later I was on my way, Cameron's technical knowledge and general help facilitated this, without his input it would not have happened, many thanks.

A quick comment about DAB, the clarity, dynamic range and channel separation is simply wonderful. As an added bonus you get access to a whole range of music stations that cater specifically to your listening preferences, and my experience is much less commercial content and general stuff you do not want to listen to.

If you want an idea of the most significant difference pick a song on an AM station that you have on a CD, listen to the difference, well, DAB is better.

Finally, this build is all about what I did for my vehicle, there are going to be permutations based on model year and I imagine specification level but I understand from talking to Cameron that the permutations can be accommodated.

So, first of all let's look at the parts for the DAB+ upgrade on MY13 D4 HSE.

- 1) DAB module – also known as DAB Amplifier, available from UK via ebay, prices seem to vary so shop around. I got mine from Metal Monster Junk (a UK wrecker) via Ebay.



Use the highlighted text to search on ebay.

LAND-ROVER-DISCOVERY-4-DIGITAL-RADIO-RECEIVER—

It is Located lower RH Side of rear cargo area, just rearward of the 2nd row seats behind trim.

The part number on my module is CPLA-14F720-BH, as you can see in the picture the part number is the same except for the last letter, which I understand from Cameron is just a revision level, so other than

that make sure it matches.

- 2) DAB Module power connecting cable – Part Number LR032814, available new from UK based suppliers like Rimmer Brothers, or LRParts it cost GBP1.65

(Hint – if you order this and Item 4 the Antenna interface from the same supplier you will save a bit on freight)



- 3) . **MOST Optic Fibre Jumper Cable Multimedia connector** - available via ebay, prices seem to vary so shop around, but generally low to mid AUD\$30, use the highlighted text as ebay search and you will get results. I think Cameron can also help you out with this cable, contact him by PM via this forum.



- 4) Antenna interface – (FM/DAB Receiver) available new from UK based suppliers like Rimmer Brothers or LR Parts, and quite a few others, two options, so read on.



OPTION 1 - Part Number LR001689, it cost approx. GBP39.00 (About AUD\$65) new from Rimmer Brothers.

It is located upper LH roof rail in the rear luggage compartment, this one is used for vehicles that are not already using the antenna embedded in the LH rear cargo area glass. You will be able to see this quite clearly if you look into the back of your car, top of the LH rear glass in the cargo area, there will be no fly lead coming from under the headlining and connecting into the glass

As you can see it has one antenna cable connector, (green plug) and a black fly lead with small round button connector (similar to the top of a 9V battery).

So look at the very top of the LH glass in the rear cargo area, in the middle of the glass more or less and see if you have an existing lead, if YES, see OPTION 2, if NO, OPTION 1 is the go, but also check you have a connector at the top edge of the glass.

OPTION 2 - **LAND ROVER DISCOVERY 4 FM/DAB RECEIVER** CH22-18C847-CA - TDV6 & V8 2014/2015

Again, it is located upper LH roof rail in the rear luggage compartment, this one is used for vehicles that are already using the antenna embedded in the LH rear cargo area glass.



You will be able to see this quite clearly if you look into the back of your car, top of the LH rear glass in the cargo area, you will see a fly lead with small round button connector coming from under the headlining and connecting into the glass

As you can see it has two antenna cable connectors (RH end) and the black fly lead. One antenna connector accepts the lead on the green unit you will already have there (same as option 1 above) and the other for the new cable to the DAB amplifier that you are going to fit.

This is the unit I used, I got it from Metal Monster Junk for \$66 so I do not know the cost to buy it new.

- 5) Antenna connection Cable. This one is easy, do not waste your time searching for the LR parts, LR have discontinued the part, so no longer available. Contact Cameron by PM via this forum he has cables available. I tried many places to get a cable and the problem was always the unique double plug that goes into the DAB module.

The cable you will get looks a bit different to the one in the picture at left but it connects the FM/DAB Receiver Module with the DAB Amplifier and hence goes from upper left to lower right in the cargo area, so it will be about 2.5m long.



- 6) Some M6 nuts and washers for the DAB module, electrical tape, thread locking compound, cable ties and assorted tools and we are good to go.

If you have a wrecker with a D4 being pulled apart somewhere near you it's worth a drive to check it out before you start. You can also fossick around and get a few spare clips for the door sill scuff plates and spare trim clips, these things can sometimes be sucked into the abyss that is the car interior never to be seen again.

If you are not into hunting around for parts from the internet and buying stuff from OS, send Cameron a PM, he can help you out with the parts to do this upgrade, it will be the easiest option.

Build process

Clean out the back cargo area, fold and roll the two outside seats forward and fold and lower the centre seat. This makes it easier to scramble around the inside.

1) Remove the interior trim, the dot points are

- Remove RH rear door aperture weatherstrip
- Undo the seat belt lower anchorage, this is a T50 Torx head, mine is 1/2" square drive, torque for re-fit 40 N.m. The instructions in the manual state you should fit a new bolt, I will leave this decision up to the individual, I was careful with cleaning the thread and applying a dry thread locking compound and using the correct bolt torque when re-fitting. It goes without saying but I will anyway, this is a safety critical part, attention to detail is a must.
- Remove RH rear quarter panel trim bolt underneath the plastic cap near the rear door opening
- Lift the trailing section of the RH rear door scuff plate trim, just enough to allow the removal of the RH rear cargo trim, watch out for the clips that may be retained in the sill panel. I found it easiest to use a piece of wire and needle nose pliers to turn them upside down then remove them so they can be positioned on the pegs of the scuff plate before refitting.
- Remove the two tie down hooks in the floor, this allows easier removal of the rear cargo trim. Since you might need to access the wiring to do a bit of soldering I found it easier just to bite the bullet and remove the RH rear cargo trim
- Release Tailgate aperture seal
- Remove RH tailgate support cable.
- You should now be able to remove the cargo area trim, and it should look like this

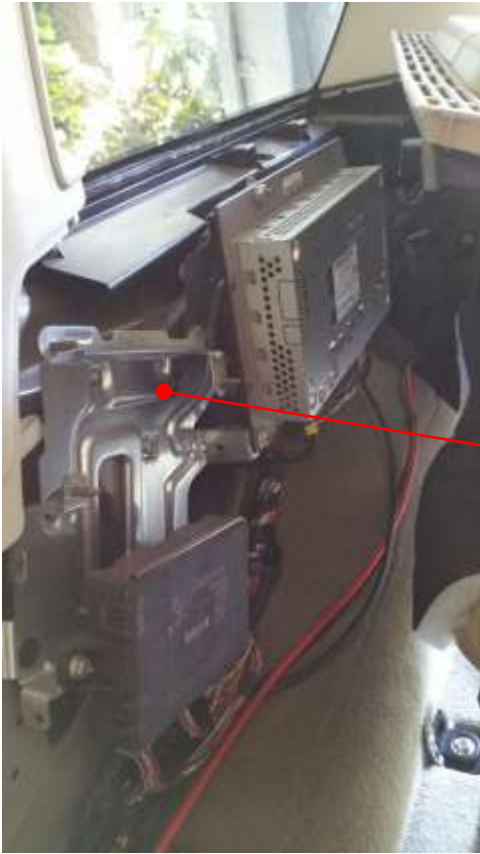


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Main Audio
Amplifier

DAB Amplifier goes here,
nice of JLR to put the
bracket in there for you, all
you need is some 6mm
nuts, washers and some
thread locking compound



DAB Amplifier
goes here



Just like that, but it
needs nuts and washers.



While you are in this general area you will need to fit the power cable to the DAB module, item 2 in the parts list above.

I needed to cut the unused plug off the end of the cable (do a trial fit so you are sure which one is redundant), extend it and then I spliced into the main power feed for the audio amplifier which is just rearward of the DAB module.

The plug into the main audio amplifier is easy to remove, unwind a bit of tape to give yourself some room in the loom.

I staggered the splice to make it less bulky in the area of the connections, a bit of solder, some tape and you are done. You could also use an earth stud instead of the black wire splice that I did. The DAB module will now power up whenever the audio amp is turned on.

Re-connect the main amplifier cable and plug in the DAB module, align the cables, run them neatly, no sharp kinks or tight corners, secure into place with some small cable ties. Have a good look at what they might rub against and use some foam to protect it

- Now that the DAB module is in place you can hook up the MOST cable, item 3 in the parts list. Unfortunately I lost a few photos of the build process but this one shows the MOST cable connected into the DAB module.

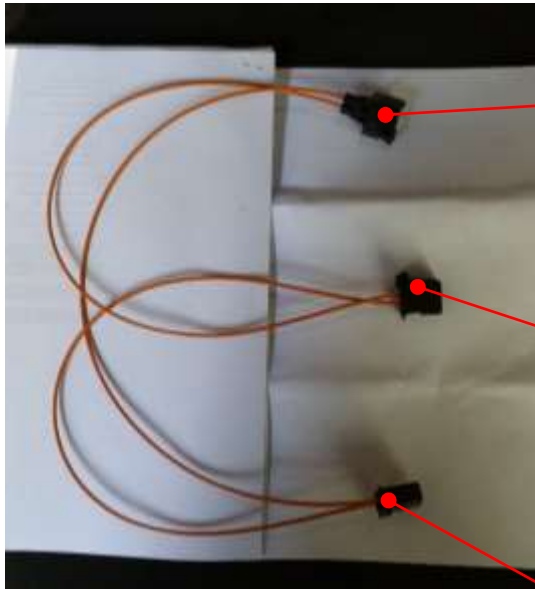


Power cable

MOST cable

Antenna cable, this is a single plug, yours will be a double housing, so twice as wide.

- You can also plug in the antenna cable, yours will probably look slightly different to mine, where I have a single connector you will most likely have a double connector housing.
- Remove the MOST cable from the main amplifier and connect the plug it into the only female connector, the two remaining connectors are male and plug back into the main amplifier and DAB module respectively.



Female connector, the lead that is removed from the amplifier goes here

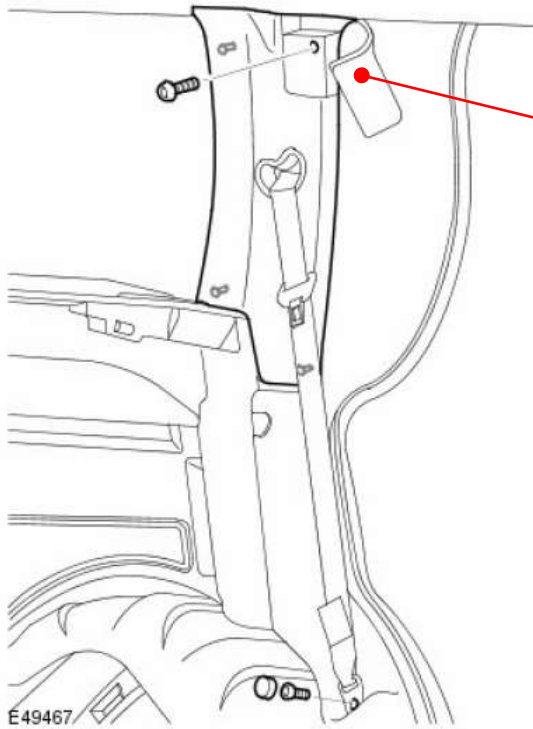
Male connector, to the amplifier

Male connector goes to the DAB module.

Preparation to run the antenna cable and fit the antenna amplifier

IMPORTANT - Measure between the floor of the cargo area and the head lining at the back of the car, find something that is 200mm (20cm) or so shorter that can be used to support the rear of the head lining when we pop it down. I used a couple of cardboard boxes on end, the head lining is not heavy but if you do not support it then it will crease under it's own mass at around the "B" pillar.

- Remove the 4 grab handles on the head lining – this will allow the head lining to drop down enough to gain access to where the antenna amplifier needs to be fitted once the rear trim panel with the cargo area light is removed.
- Both "C" pillar trim needs to be popped off. This will allow the headlining to drop down and give you easy access to run the antenna cable up the driver's side "C" pillar.



Remove this trim access cover and remove the Torx screw.

You should now be able to pull the trim off, gently does it.

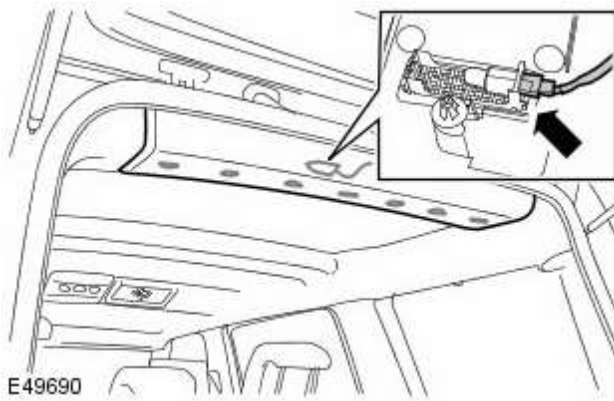




- You can remove the passenger's side "C" pillar trim with the cargo area trim still in place, it is a little fiddly but it will come out.

- Similarly both "D" pillar trims need to be removed, and you can get the passenger's side one without removing the cargo area lower trim, it's just a bit fiddly





- Remove the headliner rear trim panel,
- Disconnect the wiring to the light, it is a bit stubborn so be careful not to break it
- Look backward from inside the cargo area up at the roof rail, you will see two round plastic discs, they unscrew.
- From outside the car look at the gap between the tail gate opening and the headlining, shine a torch in there and you will see the headlining retaining clips. I use a long flat piece of nylon with a taper on the end to get between the clip and the retainer so there is no force on the headlining when removing the clips.

Anything with a tapered end will do it, a long handled screw driver, a bit of timber sanded down, or you can just put your hand and arm in to release the clips....but take care not to detach the clip from the headlining.

Now, place the prop/boxes/stand that you organised earlier just inside the tailgate opening and it will support the headlining while you run the antenna cable and fit the Antenna interface – (FM/DAB Receiver), item 4 in the list and



Antenna interface – (FM/DAB Receiver) in place, this is actually my original unit, I fitted a grey unit in it's place, one screw, one connection onto the glass

Original antenna cable, unfortunately I lost the photo with the replacement unit fitted but It's basically the same.

Here is another picture that I borrowed from Cameron, a bit of a close up view (thanks Cameron)



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Put some tape on the antenna cable and attach it to the existing loom that runs around the perimeter of the headlining, don't leave it loose, you just know it will rattle against something and it will give you the shits!, I used some duct tape (cloth tape 50mm wide, very aggressive adhesive) to secure the antenna cable up the "C" pillar and onto parts of the underside of the headlining where I could not get at it easily.

SECOND LAST STEPNice if you can do this before it all goes back together

You will need to do some changes to the CCF, for this you will need some form of diagnostic tool. If you do not have one then there is a register on the forum of people who have this type of equipment. At a last resort I guess you could go see the dealer but I think another forum member would be the first choice.

I have an IIDTool (GAP Diagnostics), I had to contact GAP technical help about getting access to the correct fields to edit, they advised me to download the latest version of the firmware build 2444, that solved the problem. Sorry I cannot help anyone with the CCF edit, mine is VIN locked.

Turn on the radio, follow the screen menu to select region as Australia and explore the list of music channels, the fields on the entertainment system screen make it quite obvious.

THE LAST STEPPut it all back together and enjoy the music, it's well worth the effort.