Installation of BlackVue DR650-2ch dash cams into Audi TT Mk3

Disclaimer: ***This 'how to' is supplied for information purposes only. I do not guarantee that your car is the same as mine or that it is safe to follow my installation on your vehicle. All work undertaken on your vehicle is your own responsibility – if you damage your vehicle or camera system it is your responsibility, not mine!***

Installing the Power Magic Pro box for BlackVue

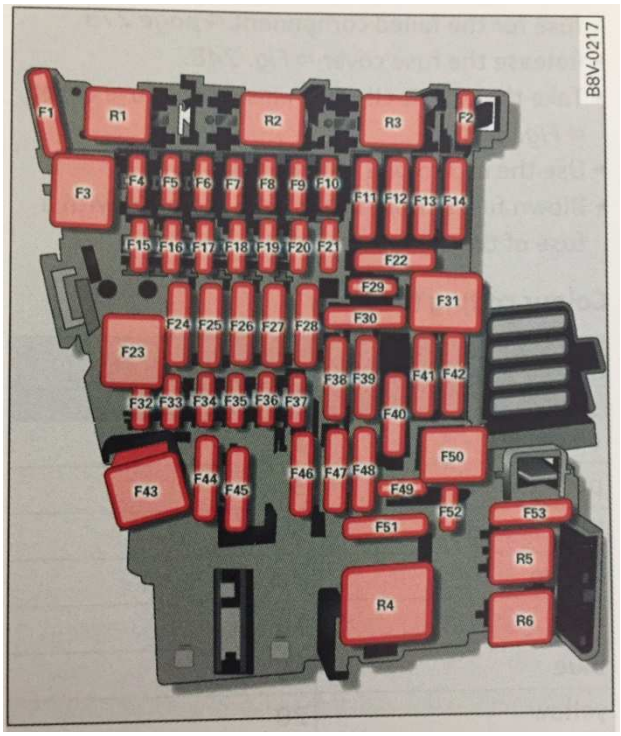
This little box is needed if you want to have the BlackVue take video whilst the car is parked.

It taps into the fuse box and needs the following connections:

1) 12v which is ON all the time.
2) 12v that only comes on when the ignition is on.
3) Ground (connect to car metalwork).

The main fuse box in the TT is inside the glove box, behind a blanking panel. The panel pulls off easily (there is a finger hole to pull on). This also exposes a little space to the right of the fuse box that can take some of the surplus wiring.

To tap into the fuse box, I used two standard-sized "Add a fuse piggyback fuse holders" which allow an extra fuse to be used for supplying the new equipment.



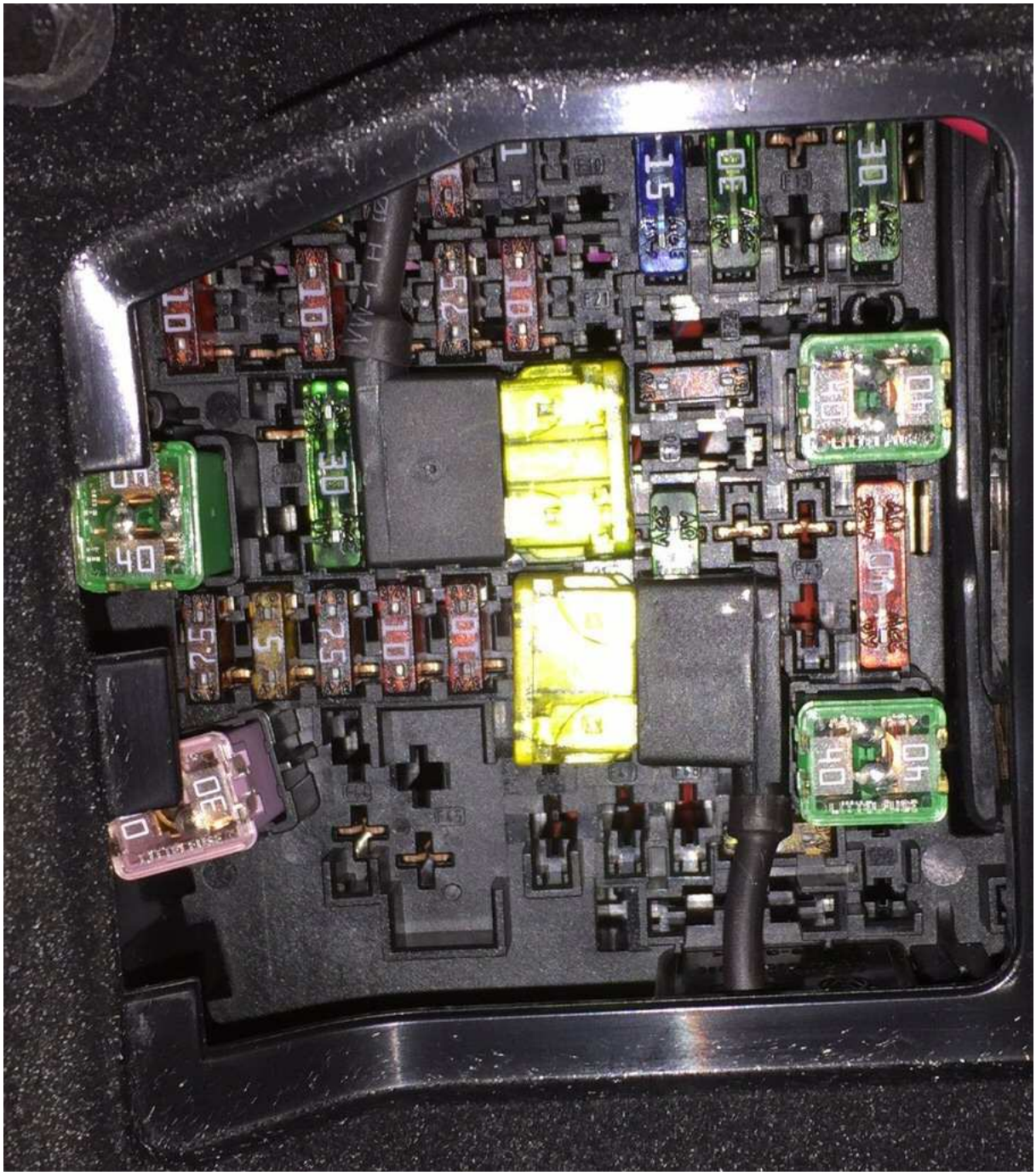
The following fuses were the ones I used:

F26 has a permanent 12v and is the fuse for the seat heating if fitted.

F40 has 12v that is only present when the ignition is on.

Add-a-fuse piggyback fuse holder from eBay.

Fuse holders fitted in positions F26 and F40:



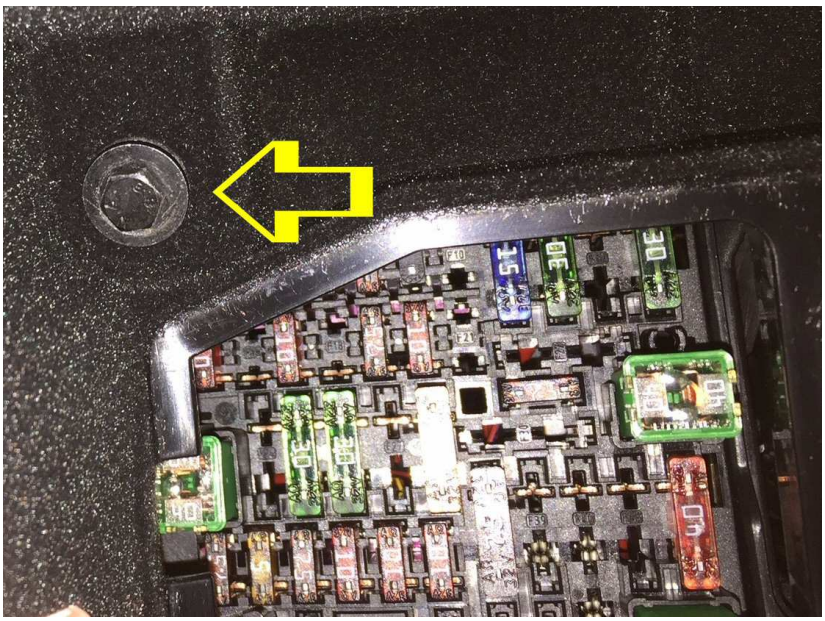
SAFETY NOTICE

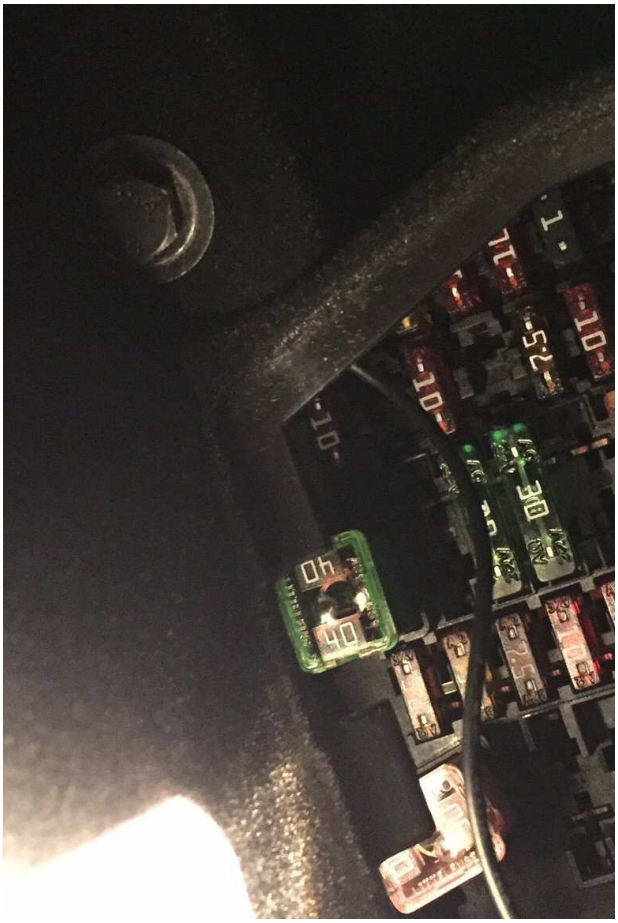
Please note that in the photos, I have fitted much larger capacity fuses than intended (the only spares I had were 20A). I intend to replace them with two 2A fuses for greater safety as soon as they arrive from eBay.

Connecting the Ground (GND) wire:

** Please note that the Power Magic Pro box should **not be connected to the wiring** at this point (in this next stage you might get sparking if it is connected and this could damage the box or be a fire hazard).

The Ground wire has a double-pronged fork on the wire to assist in connecting to a grounding screw. There is a handy bolt inside the glove box which can be used for this.





It wasn't a good idea to connect to the nut on the outside since you can't put the cover back over the fuse box, so I loosened the bolt and tucked the prongs on the ground wire around the bolt on the underside of the glove box shell as shown before re-tightening the bolt.

The Power Magic Pro box could now be connected, but I left that until a little later so that I could make the wiring tidy.

Routing the power cable

The DR650 power cable has a 12V Lighter Socket jack fitted which connects to the Power Magic Pro wiring. Leaving this large connector in the glove box, I removed a blanking panel from the underside of the glove box to make it easier to get the power cable out.

It takes a bit of tugging to get this panel off, but there is a handy finger hole provided to get a purchase. Pull firmly downwards using that hole and it should come off.

It's equally tough to get back on, but it does go eventually!

Using one hand to feed the cable down in from the inside of the glove box next to the fuses and the other hand underneath in the hole fishing for the dangling cable, it is pretty easy to get the power cable through.

The tricky bit now is to feed enough cable out to wind around the door frame and windscreen without leaving loads of slack to deal with.

I guessed this pretty well first time, but for anybody trying to repeat this, it might help to read through the next few steps to see where the cable is going to go first.

I then fed the cable between the plastic of the glove box and the car pillar so that it came out just level with a horizontal joint in the pillar plastic surfaces.

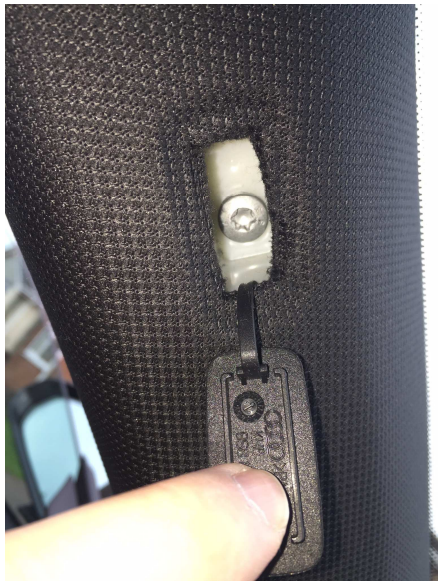
The rubber seal strips make a good place to hold and route the power cable – just make sure you tuck the cable far enough in under the rubber so that the rubber can fall flush to the plastic as it would normally.

If any rubber is raised up, just push the cable in a little more and it should go back into place correctly.

The rear camera cable needs to go down the same rubber strip, so no need to tuck the power cable in just yet. Photo is just to show where the cable goes.

The next part involves loosening the trim that goes up the left windscreen pillar. Please note that this pillar contains an airbag and as such is not something to mistreat in any way! I was VERY careful handling this part of the wiring routing. Again – if you're trying to replicate this, please be reminded that you are doing it at your own risk!

Remove the blanking plate labelled "Airbag". You can do this by using fingers. Beneath is a security screw. I removed the screw so that I could pull the trim gently away at the top and make a gap for the cables.



Run the power cable below the airbag (see next photo), approximately at the height of the demister grille in the pillar cover.

I also took the opportunity to route the rear camera cable (silver) at the same point.

NOTE – the rear camera cable originally caused severe DAB interference (knocked-out nearly all DAB radio channels). See the section about shielding the rear camera cable at the end of this document if you want to avoid this!!

The airbag is the white strip on the bottom of this photo (with “FRONT” stamped on it).

It is closer to the door than the windscreen.

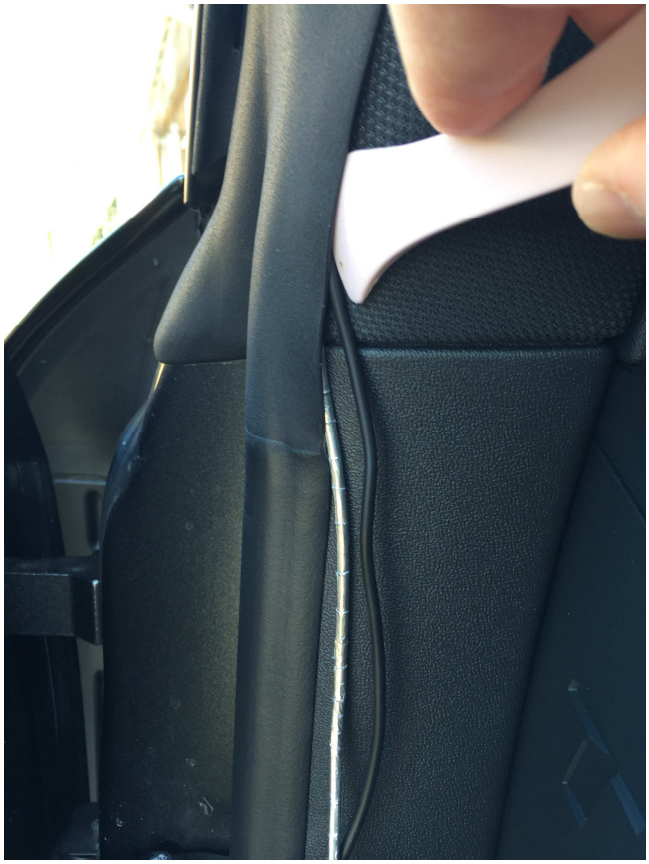
The cables are both routed up the inside of the pillar cover on the right of the two white plastic “turrets” so that the cables are close to the windscreen and not interfering with the airbag. They both exit the pillar cover at the top next to the windscreen.

Using a paper-creasing tool (blunt, strong plastic) that I got from (you guessed it!) eBay, I gently prised the headlining down above the windscreen just enough to slot the two cables into place.

This tool is useful for all of the “pushing the cable under” parts of this job. I found it invaluable.

Eventually I positioned the power connector and rear camera connector right next to the rear view mirror/sensor housing.

(This photo shows an unshielded rear cable –taken before I found the DAB interference problem).



The power cable (black) and rear camera cable (silver) were taken down to the base of the pillar cover then I simply tucked them under the rubber. Silver first, then black.

The black power cable comes out of the rubber seal horizontally across to the glove box (as shown on page 5).

It may be necessary to pull the power cable slightly from underneath the glove box to take up any slack in the cable at this point.

The rear camera cable (silver) carries on down the door frame under the rubber seal and is fed along the bottom of the door frame and back up at the rear of the frame.

The cable can be taken to the top of the rubber seal just where the rear quarter window is.

Unfortunately there seems to be no easy path for the cable to take which would keep it from view, so the next part of the cable route is visible.

A wrapping of black insulation tape camouflages the cable quite well.

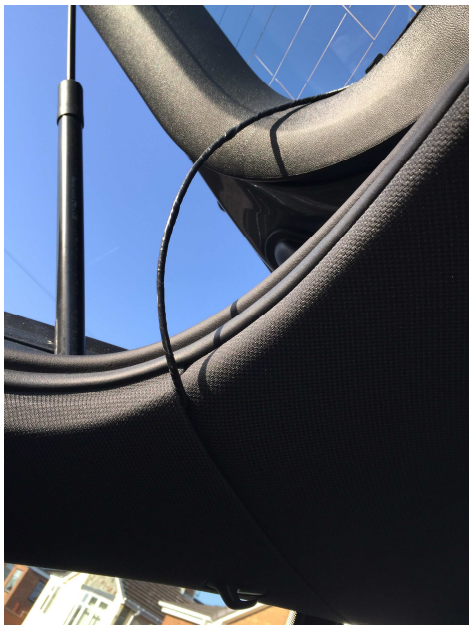
Using the pry tool, the headlining can easily be made to part. Underneath this, towards the boot side of the pillar, there appears to be a considerable amount of empty space in which any spare length of cable can be pushed.

This is handy – simply connect the cable to the rear camera, roughly route the cable (see the next images for clues) and start hiding the cable within the pillar cavity.

I covered the exposed silver cable with black tape at this point and connected it to the rear camera again.

Using one of the self-adhesive clips that are supplied with the BlackVue, I fed a loop of cable up to the rear windscreen.

This MUST be done with the boot lid open to get the length right.



The cable isn't visible from the cockpit and doesn't stand out when the car is seen from behind.

Going back to the glove box, I connected the camera power connector to the Power Magic Pro, then fed the control box cable through the finger hole of the blanking plate so that I could access the control box from inside the glove box.

A bit of black tape around the wires made it look better.

The box tucked tidily to one side of the glove box without any fixings needed.

The BlackVue front camera was then attached to the power and rear camera cables before being stuck into position.

Don't mount it too close to the rear view mirror or you'll have difficulty getting the memory card in and out – leave room for fingers!

The Front camera is quite discreet when mounted on the passenger side.

The rear camera looks neat, but that dangling cable is a bit of an irritation initially.

It would have been nicer to feed the rear cable through the rubber wiring gaiter that goes to the boot hatch, but I couldn't see an easy way to access it without removing the headlining completely.

Appendix – Shielding the rear camera cable

As previously mentioned, when I originally fitted the rear camera cable, I experienced severe DAB radio interference whenever the rear camera was connected.

This happened due to high-frequency emissions from the rear camera cable when the rear camera was in operation.

The following process (along with the routing path outlined in this document) cured the problem. It's quite cheap (less than £3 for the aluminium foil), but time-consuming (it took me two hours to wrap the cable completely).

I used 2.5mm wide self-adhesive aluminium foil from Maplin (code KW40H).

http://www.maplin.co.uk/p/aluminium-tape-25mmx46m-kw30h

General Wrapping of the cable

I cut approximately 8 inches of tape off the reel, cut that in half lengthways and then apply to the cable lengthways and roll. Then repeat. A lot!

The entire length of the cable has to be covered with tape with no gaps. Overlap the tape a little when applying successive strips.

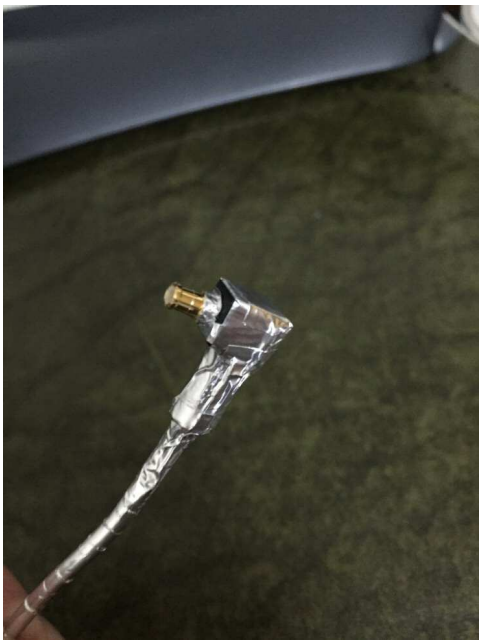
Wrapping the connectors

Both connectors need to be wrapped in aluminium foil with the metal outer of the connector connected to it.

Therefore one essential step for each connector is to cut a thin strip of foil, wrap it around the base of the gold metal connector and then feed the strip to the side of the connector.

More foil can then be wrapped around and over the top of the plastic part of the connector in order to make contact with both the thin strip you applied earlier AND the foil on the cable itself.

This ensures that the shielding is continuous.



One connector covered adequately. Note that both connectors must be similarly covered.

The finished article.

After two hours of mind-numbing wrapping I was ***really*** hoping that it fixed the interference problem!

At least now that I've had chance to try it myself, people following this guide can be assured that their time won't be wasted.