Modelling advice #1 - Ballasting your track

Ballasting is one of those subjects that really worries some modellers, yet in reality if it is taken quietly and done one step at a time, it can be both enjoyable and much quicker than you think!

In this 5 page publication, we will list the tools, materials and methods that we use, and show you how its done. It will not need expensive tools and material costs can be quite low too… All you need to do make a good job of it is follow the next few pages!

For those who don't have them or need more, we've added Hyperlinks to these pages to take you to the items being discussed.

Tools:

For laying and wiring track you will need these fairly standard modelling tools:

* Track cutters (Here) * Small files for smoothing rail ends (Here) * Soldering Iron for soldering droppers (Here)

* Low cost stiffish-bristle smallish paint-brushes * larger soft brush * Glue dispenser bottle with fine nozzle

* Spray bottle with fine-mist ability * Softwood offcut * Seives (fine-ish) * Vacuum cleaner with new bag.

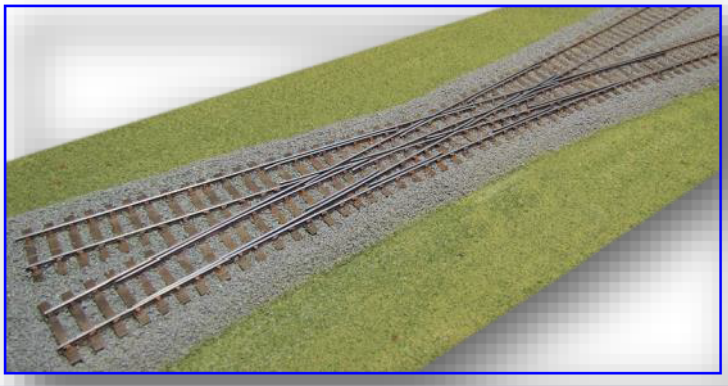
Materials:

* Track-bed:	We prefer our own range which uses quality closed cell EVA foam with ballast shoulders cut at the right angle to match the prototype (The angle of repose for ballast is 60 degrees)
* Ballast:	We prefer our own range however the choice is up to you.
* Fine roadside dust:	Take a trowel or small spade out and gather some—preferably from the area you model!
* Fine local dirt:	As for Roadside dirt… gather some—preferably from the area you model!
* Weathering powders:	We prefer our own range ...but the choice is of course up to you!
* Grey Car undercoat:	The brand you use will depend where you are, but do use automotive undercoat!
* Wood stain:	A 1 litre can will do several layouts. Matt in preference. Make it a dead, dark brown with not too much red or other highlight colour in it. A dark Walnut is OK.
* Model paints:	Type should match the stain as they'll be mixed. Could be model or any other paint but it should be matt. you need some terracotta colour and some black.
* Methylated Spirits:	Or Isopropyl alcohol, rubbing alcohol or something similar. A 1 litre bottle is enough
* Glue:	We have used PVA. You could use Bond-crete, Copydex or water based carpet glue if you want. As long as it is water based, it is OK. We have a small bottle with a small nozzle for glueing track and one low cost bottle for the glue that will be diluted for ballasting.
* Pine wood offcuts:	With the end grain soaked in paint thinners, they make a brilliant way to remove paint and stain from rail tops quickly, easily and without fuss. Keep the end grain of one soaking while doing all of this, soaking off excess and using it while the paint is still wet…. In just moments, and with just a couple of swipes of the wood over the track… most of the hard work of track cleaning will be done.
* Takeaway tubs:	Ideal for storing the stuff you have swived ready to use.

That's about it really…

You have what you need, so it is time to turn the page and read a little more so you can see how easy it really can be.

And then - it'll be time to get on with it!



Modelling advice #1 - Ballasting your track

Realistic track ready for tidy ballasting to be proud of with zero stress in just a few "easy to do" steps.!

Now that you have modified the turnouts (Click here please) to look good it takes just a few easy steps to go from bare track to a realistic layout. We created a small demo module and photographed each step.

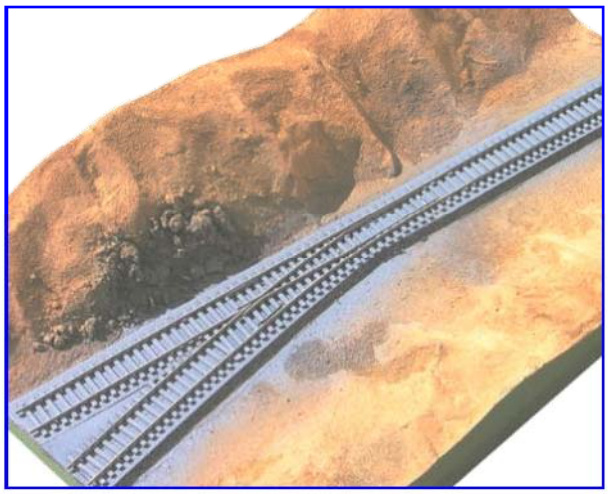
(Our quick scenery is just card & brown paper dipped in diluted glue, colour is paint mixed with some plaster and all initial texturing is dry stone powder from the road-side sieved on with a kitchen sieve onto the wet paint. Rocks are from the road-side too).

(1) Create the scenery and lay the track bed. We've used our DCCconcepts closed cell foam track-bed here, but any way you want to do it is fine.

For the DCCconcepts track bed range: Click here please

(1) Once this is done it is time to spray the track-bed with standard grey primer, masking the scenery roughly with paper or fabric.

(2) Place/cut the track to fit and drill holes for the droppers and throw-bar (or use the template and drill pilot holes for fixing Cobalt at the same time)



(4) Lay the track: We prefer to pre-fix droppers under the rails so they can be fed through the holes at the same time as track is laid. We prefer to secure our track with PVA glue run along every 3rd/4th sleeper/tie .

(5) Mask the scenery again and re-spray the track area with another light coat of the grey undercoat and let it dry thoroughly (overnight is best).

(6) Buy some dark brown wood stain and add a little black and terracotta or red-brown paint - the predominant colour we want is "aged sleepers and track" not a rusty look, so be heavier on black than red-brown.

(7) When the grey undercoat is totally dry, give the stain/paint mix a good shake and with reasonably soft 1~2" paintbrush paint the whole of the track and underlay. Brush gently and be generous, be quick and don't be fussy. This whole Module took only about 1 minute. When the paint coat is done go all over it again with a stippling motion to remove any brush marks. Because its mostly stain it will be a "See through brownish colour" now with the grey still semi visible. That is exactly what we want! (In scenery, less is often more when it comes to colour!)

(8) When the first stain is dry...Take a little of the stain and add more of the terracotta/red brown paint to it. NOT too much! This will be our colour for rusty rails & we want it to "wash" easily over the rails.

(9) Take a cheap kids paint brush (3~4mm max width) with stiffish bristles. Shake up this redder stain and quickly paint along the rail sides. We do NOT want to be over careful as it will not matter if a small amount gets on the sleepers... So be careful but not too careful. Shake or stir the "stain-paint mix" often - the paint settles out quickly.

(10) Wait a while & admire your handiwork. If there is too much on a sleeper spread it. If you want more rust colour let it "tack" properly first then re-coat ...but not too much. We want the stain to settle and blend naturally. You will notice that the stain has partially separated and the paint part has gathered around fixings and bolts... That's just what you want!

(11) Leave overnight... Touch up again if you want but do keep it subtle as there's nothing worse than rails that look like they were painted - nature Is more subtle than that and there are few hard edges, even to colour!

EXPERT TIP: Making later clean-up easier and keeping things moving properly:

*** When you paint around rails the tops are going to get covered...** But its easy to clean them. Before you paint take an off-cut of soft timber like pine and put it end-wise into a saucer of thinners. As soon as you finish painting, shake it off and rub over the rail tops... paint will come off immediately leaving a nearly perfectly clean rail-head... needing only a quick pass of the rail cleaner later!

*** While the paint is drying move the blades occasionally so they don't get stuck hard.** If they do stiffen up a bit don't worry... When all the ballasting and detailing is done, just get a couple of tiny drops of thin oil and place it on and around the tie bar...

work the turnout a little and it will free up - and the oil will spread into the ballast a little... Just as it always does on the real thing!

Modelling advice #1 - Ballasting your track

Ballasting is a job that modellers dislike and I've lost count of layouts ruined by those who speed through ballasting just to get it over and done with... but it can be a relaxed, easy process.

Now that we have the track in place and ready, we will start with the "cess". (The area between the ballast and the rest of the world). We start there as its always best to use the same sequence as the real thing does.

When the track is laid, the cess is a part of the track engineering that is completed before ballasting so ballast should be on top of it... It's also the part that nature encroaches on so it should be under greenery at the outer edge.

(1) Get hold of some very fine "stone powder" from the side of the road.

(2) Mix PVA & water about 3:1 and paint it from the edge of the track-bed to the edge of the other scenery - Make the edge soft, wavy and natural.

(3) Put the "stone powder" in a fine sieve and tap so the glued area is well covered with fine stone grains. Mist the area with alcohol based window cleaner. Leave until it's totally dry. When dry, Vacuum up the excess

Tidy ballasting is important. This is how to keep it that way with no stress and also reduce the amount of ballast you will need!

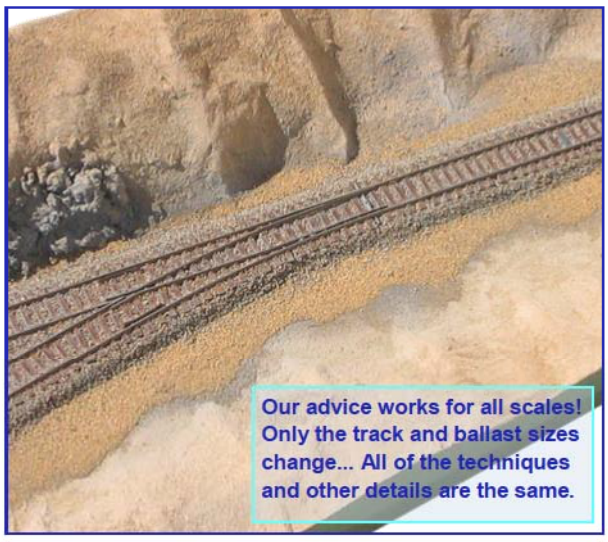
With the "Cess" tidied up we will tackle just the angled shoulders of the track-bed as a first step. This is where you will really appreciate having the correct 60 degree shoulders on that pre-cut closed cell foam underlay!

(4) Using a brush of about 5mm~1/4", paint neat PVA or latex glue ONLY on the ballast shoulders. Try to be neat and do only about a metre (3 feet) at a time.

(5) Put ballast (We prefer our own. Click here please) into a bag & cut a small hole in one corner. Sprinkle a good coat onto the glue, When well covered, pat it all down gently with taps of a finger then leave it alone totally until dry.

(6) Without touching the ballast and cess areas, vacuum off the excess (We keep a small vacuum cleaner especially for ballast - so we get 100% recovery)

You'll now have a tidy edge to the ballast area that looks like it should!



Now the all important step... Ballasting around the track!

We have tidy edges already, These edges will hold the rest of the ballast as you spread it... Keeping the job tidy and making it much easier.

(7) Put the ballast into a wide mouth jar or dish. borrow a medium spoon.

(8) Place ballast ONE spoon at a time and spread it with your finger tips.

(9) When an area has been well spread, very gently tap the rail with the spoon. This will vibrate the rail a little and any bits that are alongside the rail will bounce away... So there will be less to clean from rails later.

(10) STOP adding ballast one "sleeper gap" away from the tie-bar. We will do this area in a different way on the next page!

(11) Be fussy. If there are any grains on the sleepers or there they should not be such as between guard rail and rail, remove them with the wet tip of a fine modelling paint brush. When you've done enough for the day - Stop! Its best to fix what you start and do more another day!

(12) Make up a mix of one part glue to 3 parts warm water. When that is well mixed, add 2/3 parts of IPA/alcohol or methylated spirits & shake well. Get a spray bottle with a fine mist. Fill with methylated spirits or alcohol.

(13) From far enough away to not disturb the ballast, mist the area to be glued with methylated spirits or alcohol until it is quite damp.

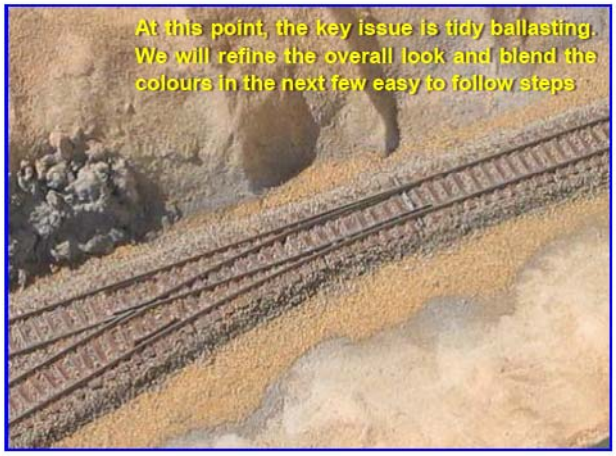
(14) Shake the Glue mix again and drip it onto the ballast with a dispenser bottle - do it from close up so you don't disturb the ballast. You do not need to use too much glue - it will soak in really well and spread easily. Do NOT touch the ballast now for any reason.

(15) When you have added glue to the entire area of ballast to be fixed during the session, re-mist again with a generous amount of Meths/alcohol. Now... Walk away and don't touch anything until it is totally dry - that will be 6 to 24 hours depending on weather.

(16) When it is totally dry rub a finger alongside each rail and put a toothpick between all check or guard rails etc. Rub any grains off sleepers and generally tidy up. Because you did not use a too strong glue mix, this will all be easy. Vacuum up any loose grains.

That's the worst of it done! On the next page, we'll do the area around the tie-bar and add a little more "easy weathering".

Modelling advice #1 - Ballasting your track



Your track will now look something like this...

It will be natural and well ballasted, with no lumps of ballast where they shouldn't be and no need to spend hours picking excess off the rail sides and sleepers... All because you were relaxed about it, took it one step at a time and used the right tools and glue mix!

If you want to do more than a short length at a single session, go for it, but still do only a metre at a time and leave a gap, doing another metre... Don't jump ahead though - do all of one step/process at a time - in other words, do several lots of ballast edges at a time, then go back and fill the gaps.

When all the edging is done, do several 1 metre lots of ballasting with gaps between them then go back and fill those gaps.

Because we are being careful, deliberate and using a step by step process it will all seem much less of a chore... and because each step uses the same process, the gaps you fill later will be totally seamless, blending the separate tasks together as it you did it all at once!

Ballasting around the tie-bar.

This area needs care so take your time. Even if you take your time and are very cautious, 5 minutes per point/turnout is all this step will take!

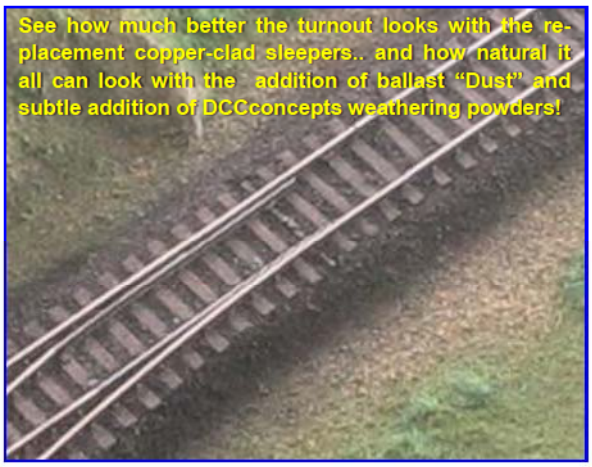
(1) Take a reasonably fine modelling paintbrush. Carefully paint neat glue between the sleepers (onto the track-bed only) alongside the tie-bar.

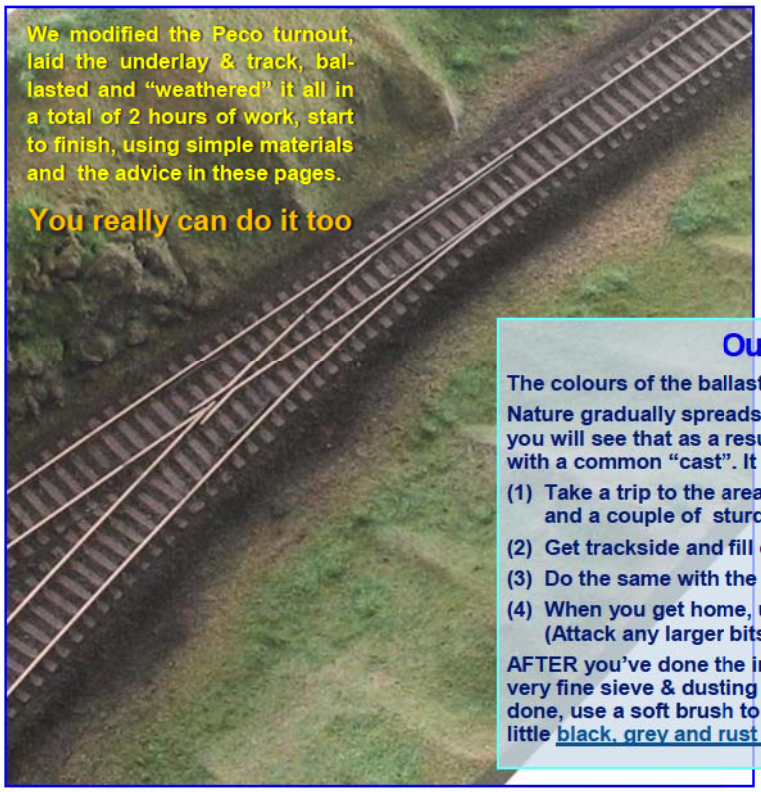
(2) Use another similar brush and paint a little oil onto both sides of the tie-bar itself. This will stop any glue or ballast sticking to it.

(3) Now, paint glue into the gap either side of the tie-bar itself. You do NOT need a lot of glue, but the roadbed should be well covered. If you do get a little too much on, pick it up with the brush and remove it. Be fussy!

(4) Pick up a little ballast and sprinkle onto the glue - a teaspoon is the perfect tool! When its all in place, pat down with a finger, mist it with the Methylated spirits or alcohol and then just leave for several hours.

(5) When its dry vacuum off, tidy up and that's it - all done. Congratulations!





Refining the ballast look to integrate it into scenery:

(1) Take some of the ballast and sieve it so you end up with only the finest particles. Spread these all over the ballast area and work it in with a finger or fine brush as needed.

(2) Mist-spray with meths then spray using a window cleaner bottle containing a really weak glue spray (1 part glue to say 5 parts water and 5 of methylated spirits or Alcohol)

(3) When its all dry, tidy up then follow the Expert tip below as the final detail work makes all the difference!

Our final "Expert Tip" for this manual

The colours of the ballast and cess are those of the railway and the area that is close to it.

Nature gradually spreads that colour as a fine "dusting" over everything. Look closely & you will see that as a result there are no quick colour changes and that areas blend in tone, with a common "cast". It is quite easy to recreate it too... Using natures own materials!

(1) Take a trip to the area you are representing in your model. Also take with you a trowel and a couple of sturdy bags to hold your materials when you gather hem.

(2) Get trackside and fill one bag with the "Fines"-The dust and tiny rocks.

(3) Do the same with the local non-railway soil and perhaps get some "roadside dust" too

(4) When you get home, use several sieves to sort the dust from heavy/sandy stuff. (Attack any larger bits with a hammer or mortar & pestle to grind them smaller)

AFTER you've done the initial weathering,... It is time to unify the overall area by using a very fine sieve & dusting it with the "dust" grades that you have created... When its all done, use a soft brush to work it in as needed, unifying the scene. Finish it all off with a little black, grey and rust coloured DCCconcepts weathering powder.

We hope this manual has been of help to you. Enjoy the hobby!

Modelling advice #1 - Ballasting your track

It's time for an "ad break" that may also make life easier!

If you're building a layout, then you may also be using solenoids to change turnouts. If you are, will are going to need to find a way to operate point-work, add panel lights to show which way they are set and you will probably need to switch the polarity of live frog turnouts too!

The big question is: How to do what is needed without too much complexity, too much wiring, too much tweaking of installations and too much cost!

This same set of issues has existed for perhaps 50 years. We are proud to say that at last, DCCconcepts have fixed this once & for all with the AD-S2fx and AD-S8fx Accessory decoders.

It does not matter if you use AC, DC or DCC to drive your trains, because AD-Sfx decoders just do not care… they work equally well for modellers no matter how they drive the trains!

When you use AD-Sfx decoders, you'll no longer need CDU's or micro-switches. Because each output can reliably throw two peco, seep or Hornby motors you will need less switching and fewer accessory decoders too. So - we absolutely guarantee that used properly and wired to our instructions, AD-Sfx decoders will save you time, complexity, effort and valuable hobby money!

Just click here... or on the picture to see AD-S2fx and AD-S8fx on our website

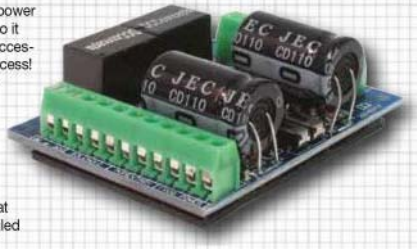
DCC concepts thinking outside the square

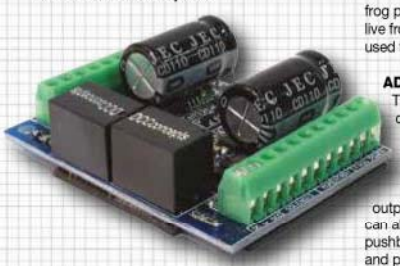
AD-Sfx Solenoid Decoder Range

Very few Accessory decoders can reliably power two Peco, SEEP or Hornby point motors, so it was no surprise that DCCconcepts' ADS accessory decoders were already a runaway success!

However, we are never satisfied until we reach our ideals, and the newly released AD-S8fx (eight-way) and AD-S2fx (two-way) accessory decoders do just that!

Building on the success of our ADS design that already allows any individual output to power both ends of a loop or a crossover, we have now added features that take away problems modellers have struggled with for more than 50 years!





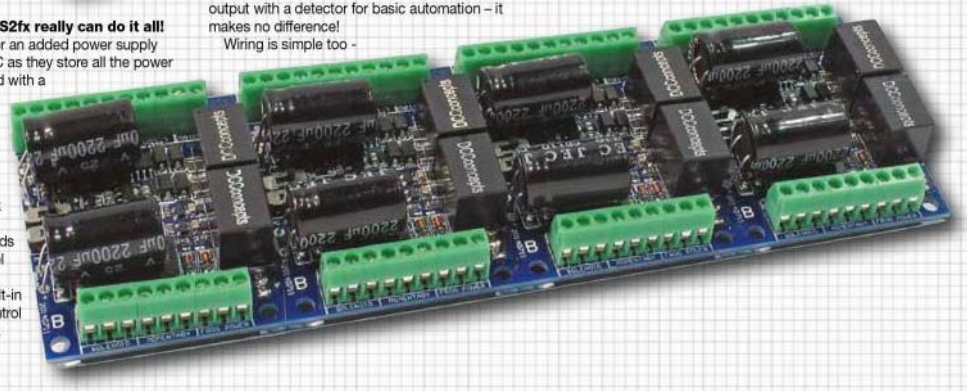
AD-S8fx and AD-S2fx really can do it all!
There is no need for an added power supply when used for DCC as they store all the power they need on-board with a CDU built into every output. As a result they do not drain the track power when operating. Because of this, they also work beautifully with the fast-firing commands of computer control and route setting.

They include built-in LED control for control panels and signals, frog power switching to change the polarity of live frog (electrofrog) pointwork and can even be used to provide feedback to a computer system.

AD-S8fx and AD-S2fx are very versatile
They are equally capable on DC or DCC controlled layouts and how you choose to control them is up to you - they are incredibly versatile. For DC control, use a 15–22v DC laptop or similar power supply.

You can of course address each of the outputs individually and operate with DCC. You can also have manual control just by adding two pushbutton switches, or if you prefer, use stud and probe, diode matrix or even trigger each output with a detector for basic automation – it makes no difference!

Wiring is simple too - most connections are via simple screw terminals and only the LED outputs require any attention from a soldering iron.



Saving you time, frustration, effort and a LOT of money!
If you have ever added micro-switches for frog and panel light control to a solenoid machine, along with all that extra wiring, then had to tweak the motor to get it working reliably because of the extra load you'll understand exactly what we mean here.

None of us wants the added stress of complex installation and DCCconcepts AD-Sfx series decoders make it so much simpler, easier and most importantly save you money at the same time, because there is simply NOTHING else to buy when you use them.

For example, a single AD-S8fx Solenoid decoder can power a whole 16-point double ended fiddle yard and, at the same time, it can power all of its live frogs and let you add control panel lights. Yet AD-S8fx itself costs only about two-thirds of the cost of the double micro-switches you would need to buy if you used ANY other accessory decoder! With a street price of under £70 for the AD-S8fx it really is exceptional value!