

# Connecting AV Units – Part 2

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In Part 1, we took a basic setup of AV units – a VCR and TV – to which we added a Sky digibox to give access to hundreds of satellite digital TV and radio channels. We optimised the video quality by configuring the unit to send RGB components to the TV and pinched Colin Sutton’s idea of improving audio quality by taking a feed from the Sky unit to a Hi-Fi.

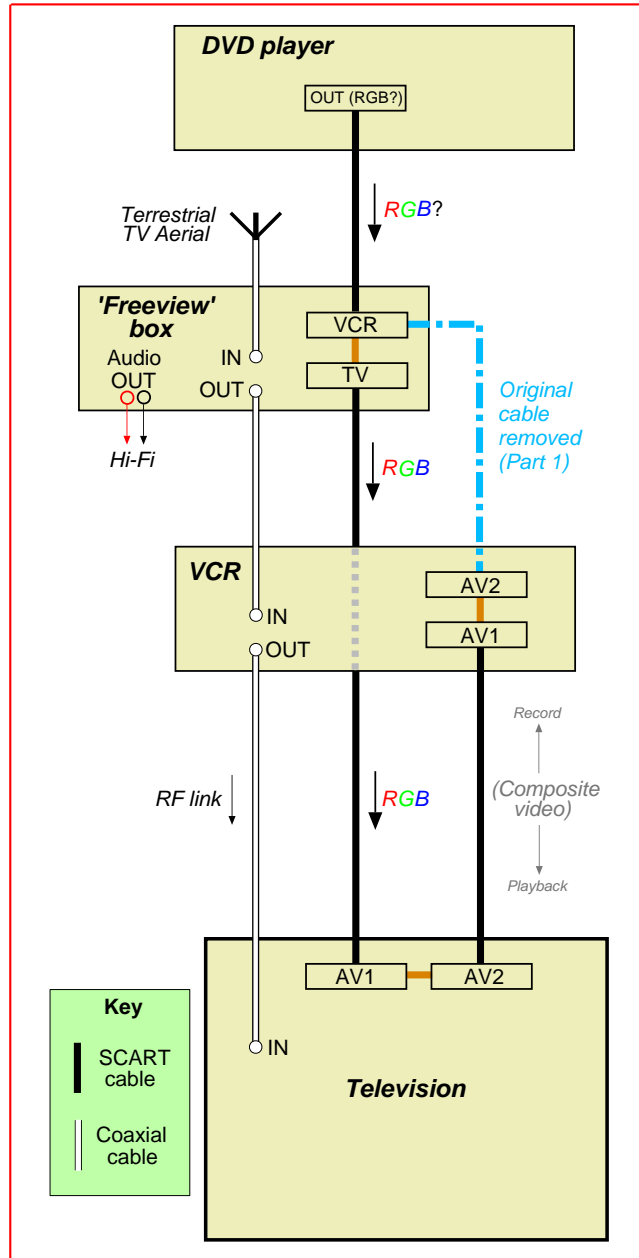
In this part we’ll replace the Sky digibox with a ‘Freeview’ unit, treat ourselves to a DVD player and do something about the rat’s nest of cables.

## Freeview digiboxes

Not everyone wants to pay a monthly subscription fee to Sky or the cable operators, or have a satellite dish cluttering up the roof. One option is to buy an IDTV, giving direct access to Freeview terrestrial digital TV/radio channels (60+ at the moment with more to come). However, refugees from the defunct ITV Digital service may still have their digibox available and can use it to access the same repertoire of Freeview programmes.

We’re not sure if the following applies to all ex-ITV Digital boxes, but both the Pace and Philips variants are for all practical purposes identical to the Sky units – with the exception of not having a socket for the satellite dish cable. So in the illustration, we’ve simply replaced the Sky digibox with a Freeview unit.

The twin SCART socket arrangement is identical to that of the Sky digiboxes so this presents no additional problem (the connection from the DVD player will be discussed later).



As with the Sky digibox, the supplementary audio OUT phono sockets are linked to the Hi-Fi unit, enhancing sound reproduction.

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A significant difference in aerial connections is that the feed from the terrestrial TV aerial now needs to be connected first to the Freeview box IN coaxial socket, thence to the VCR and TV, in a daisy-chain fashion. The only additional coaxial cable required is the short, extra link segment to the VCR.

This leaves us only to configure the ITV Digital box to use the higher-quality RGB lines in the SCART socket marked TV, instead of the default, composite video link. The procedure is the same as for the Sky boxes, but the ITV Digital menu terminology is slightly different:

- Press the **Menu** button on the remote control to access the **ONsetup** main menu.
- Select Item 4 **viewing preferences** and press the **Select** button.
- Select Item 2 **tv and video settings**.
- Select item 3 **tv standard**.
- Use the L/R buttons to change from **composite** to **rgb** and press the **Select** button.
- Press the **Back** button to leave the menus.

A third Freeview option is to instal one of the many stand-alone digital adaptor units; for example the Pace TwinDigital recorder. The problem here is that not all adaptors have two SCART sockets. If only one socket is present, the digital channels cannot then be routed *directly* to the VCR for recording, as the SCART connection shown in the illustration in Part 1 cannot exist.

However, there is quite literally another way round, and this is to route the signals via the TV. Assuming there are at least two SCART sockets on the TV, these will almost certainly be linked-through internally, as represented by the brown line in the illustration on p1.

Although both AV1 and AV2 will most likely be IN *only* for RGB (or alternatively S-video), they will however be simultaneously *bi-directional* for composite video and audio.

In practice, this means that Freeview channel signals will come into the TV via AV1 (in RGB format), and will then be output via AV2 (in composite video format), making recording by the VCR possible.

This interlink will normally remain ‘live’, even if the TV is switched off, so recordings can take place off-air. The only limitation is that a Freeview box channel cannot be recorded onto video tape while a television channel (1-5) is being viewed. However, the opposite is possible; a Freeview box digital TV channel can be viewed whilst an analogue programme (1-5) is being recorded, using the VCR’s internal tuner.

### **Adding a DVD player**

The operative word here is “player” as, ironically, going the whole hog and adding a DVD *recorder* is a relatively simple matter (to be covered in Part 3). So before we install a DVD player, we first need to reflect on various implications.

– **The ‘daisy-chain’**. Up to now, we’ve coupled two units to the TV, using both the SCART sockets on the set. So unless the TV is up-market and has three SCART sockets (and for the sake of discussion we’ll assume it doesn’t), we have to add the third box by coupling at least two units in-line, in a daisy-chain fashion.

– **Priority switching**. The corollary to this is that data from two or more units will be passed along the same SCART lead and, to do that, there must be some sort of switching control. This is often achieved automatically by the units themselves by what is known as ‘priority switching’, with control signals being sent via pin 8 of each SCART socket.

In theory, this will work fine but, in practice, with different boxes from maybe different manufacturers, they don’t always talk to each other in a preferred manner.

Typically however, we will have a situation such as when a video tape is loaded into the VCR, it

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will be presumed that we wish to play it – whether we want to or not... The VCR will switch on, it will take priority over any other box(es) in that section of the daisy-chain and the tape will start to replay.

– **SCART sockets.** To date, we've assumed the Sky/Freeview digibox, the VCR and the TV all have two SCART sockets, with each pair 'linked-through' internally. This is the norm for relatively modern units.

However, DVD players are not usually so well furnished, being considered as 'data-out' units only and the majority having only one SCART socket, which may or may not be capable of being configured for RGB OUT. (Some units may also have an S-video OUT socket.) For the sake of the discussion in this part, we'll assume the DVD player has only *one* SCART socket fitted, but which *is* configurable for RGB video.

### **Connecting up the DVD player**

With only one SCART socket, the DVD player must necessarily be connected at one end of a daisy-chain of units. In the illustration, we've shown it as being connected to the VCR SCART socket of the Freeview box (recalling that the latter is, in effect, an RGB IN socket).

Provided the DVD player can be configured to output RGB video, using the procedure which no doubt will be detailed in the unit user-guide, the arrangement is as shown in the illustration. DVD video will be passed first to the Freeview box, linked-through to the output SCART socket (TV) and thence fed to the TV (AV1). The same argument applies to DVD audio.

But the system must determine whether to give priority to DVD video/audio, or Freeview channel video/audio. In all probability, the act of switching the DVD player to either **Standby** or to **Play** will send a switching signal to the Freeview box, giving priority to the DVD unit. By the same token, if the player is switched off, in all probability, the Freeview box will retake control and pass programme video/audio to the TV.

As far as optimising audio quality is concerned, a built-in advantage here is that, if the DVD unit is playing, DVD audio *may* be fed to the supplementary audio OUT phono sockets of the Freeview box, and thence to the Hi-Fi unit.

This is not guaranteed for all units, and may necessitate the Freeview box having to be left on. (The Pace and Panasonic Sky digiboxes are known to pass audio from the SCART sockets to the supplementary audio OUT phono sockets, *provided* the digibox is switched on.)

### **Alternative arrangements**

If the DVD player is incapable of being configured to optimise video quality by selecting RGB, this simply means that composite video and audio will be fed to the TV instead, via the interlinked composite video/audio lines of the Freeview box SCART sockets. The control switching will still take care of box priority.

By coupling the DVD player to the Freeview box as illustrated, we've necessarily removed the *direct* SCART link to the VCR (dotted blue line). But the roundabout route, via the TV as discussed earlier, remains in place. So we can still record all Freeview programmes and TV programmes 1-5 onto tape, and replay them.

A possible complication is that, if the Freeview box has only one SCART connector, the arrangement illustrated is not feasible. However, an alternative would then be to connect the DVD player to the now unused AV2 SCART connector on the VCR.

DVDs can be played and video/audio fed to the TV (AV2) through the interlinked SCART connectors on the VCR. The VCR *may* have to be switched off to ensure it does not retain priority control of this new, two-unit daisy-chain.

An unavoidable downside of this revised arrangement is that video quality may be limited to composite video standards, and DVD audio will no longer be interlinked to the Hi-Fi.

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**The rat's nest...**

In this illustration we have necessarily added an extra, short coaxial cable link. That, plus the existing three SCART leads, inevitably generates a considerable rat's nest behind the units. Standard, 21-line SCART cables plus screening (typically 1.5m to 2m in length) are inflexible and a devil to arrange tidily.

Using flat, 50-75cm SCART leads make for a much neater result. We find these to be an extremely convenient alternative, even more so if you leave them in the 'coiled' condition, as packaged, when they can easily be used to interconnect stacked AV units. They're also far less likely to become partially dislodged, avoiding many of the reliability problems listed on p5 of the *SCART – What's it all about?* article.

Note that the cheapest SCART cables will not necessarily have all 20 pins fully wired and/or have adequate screening, which can give unpredictable results (e.g. the priority switching may not work). So if your budget will run to it, we fully support Colin Sutton's recommendation (LwT 1.5 p39) to use the highest-quality 'home cinema' cables with gold-plated connectors and fully screened, oxygen-free copper leads. Maplins stock a range in various lengths from 75cm upwards, including the flat variants discussed above.

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