



With kind permission of RDI-LB

Meridian A (West) Aerial Installer Newsletter February 2012

It's time to make final switchover preparations for the **Midhurst** transmitter group – are you ready?

Digital switchover (DSO) for the **Midhurst** transmitter group is on track. For this group switchover will happen in two stages, 14 days apart on the dates below. Viewers may need guidance on accessing the mix of analogue and digital services in the transition period, after which all remaining analogue services will end.

Transmitter group	Coverage	Transition	DSO stage one	DSO stage two
Midhurst	Much of West Sussex	14 days	29 February 12	14 March 12

The relay chains and switchover timings

The **Midhurst** transmitter group has 2 broadcaster relays: **Haslemere** and **Steyning**.

Re-attributions

There are the following relay re-attributions in the **Midhurst** transmitter group:

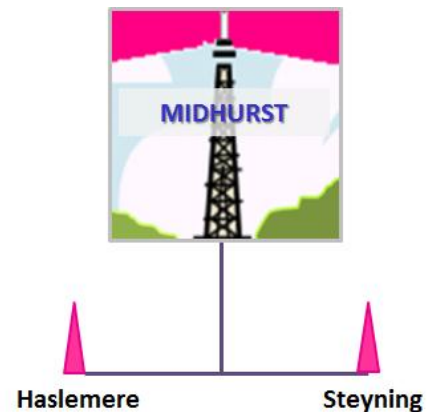
Steyning has been re-attributed **FROM** Heathfield to Midhurst for the ITV and Channel 4 services.

Self Help Relays

There are no Self Help relays in the **Midhurst** transmitter group. Further information about Self Helps can be found here:

<http://stakeholders.ofcom.org.uk/broadcasting/guidance/tech-guidance/selfhelp/>

The diagram below shows the relay chain for the **Midhurst** transmitter group.



MIDHURST

All masts in the [Midhurst](#) transmitter group switch on the same day - but at different times:

STAGE ONE: What happens on 29 February 2012?

Just after midnight, the switchover process for the [Midhurst](#) transmitter group will start:

At around midnight, analogue BBC Two ceases broadcasting permanently at all transmitters in the [Midhurst](#) group

- At [Midhurst](#) only, the existing low powered Mux 1 ceases broadcasting permanently.
- Other services will be subject to interruption until daytime.
- At all transmitters, the new BBC A mux is launched in 8k COFDM/64 QAM mode at full post-DSO power and on its final post-DSO UHF channel.
- Low powered existing DTT Mux 2, Mux A, Mux B, Mux C and Mux D will still be on air.

During the morning, analogue services (BBC One, ITV, Channel 4) are restored at all transmitters in the [Midhurst](#) group. Standard definition BBC Freeview channels will become available from relays for the first time (including BBC Two).

DSO stage one: Target transmitter switch timings*

* *These times and the order are subject to change due to events on the day.*

On DSO days actual switchover timings can be found at www.digitaluk.co.uk/midhurstrelaytimes

By 6am	MIDHURST, Haslemere, Steyning
---------------	---

All viewers will then need to install or retune Freeview TVs and boxes (including BT Vision or Top Up TV)

Analogue channel swaps within the [Midhurst](#) transmitter group:

There are no analogue channel swaps at the [Midhurst](#) transmitter group.

STAGE TWO: What happens on 14 March 2012?

- At around midnight, all remaining analogue services and low-powered DTT will be switched off permanently. At all transmitters, the BBC A mux will remain on-air but will be subject to switching breaks.
- During the morning, new high power digital services are launched
- At all transmitters: the new DSO PSB muxes BBC B and D3&4 launch
 - D3&4 in 8k COFDM/ 64QAM mode and on its final DSO UHF channels and powers.
 - The BBC B mux with HD content using DVB-T2 at full DSO power and on its final DSO UHF channels.
A 'Freeview HD' DVB-T2 (32kCOFDM-256QAM-MPEG4) receiver will be needed to view these services.

At [Midhurst](#) only, the new COM Muxes SDN, ARQ A and ARQ B launch at 64QAM using 8k transmission mode and on their final post DSO channels and powers. This is except for Arqiva B which adopts its final DSO power on a later date. See the '[Technical Events](#)' section below for more details.

DSO Stage Two: Target transmitter switch timings*

* *These times and the order are subject to change due to events on the day.*

On DSO days actual switchover timings can be found at www.digitaluk.co.uk/midhurstrelaytimes

By 6am	MIDHURST, Haslemere,
---------------	--------------------------------------

By 9am	Steyning
---------------	--------------------------

All viewers will then need to install or retune Freeview TVs and boxes (including BT Vision or Top Up TV)

Viewers should wait for each stage to end the process before tuning or retuning.

Before the completion of switchover at each stage, TV services may appear at different times. We advise viewers to wait until the expected completion time for switchover at their transmitter on both dates, before retuning their Freeview TV, box or recorder (including BT Vision and Top Up TV).

Technical Events

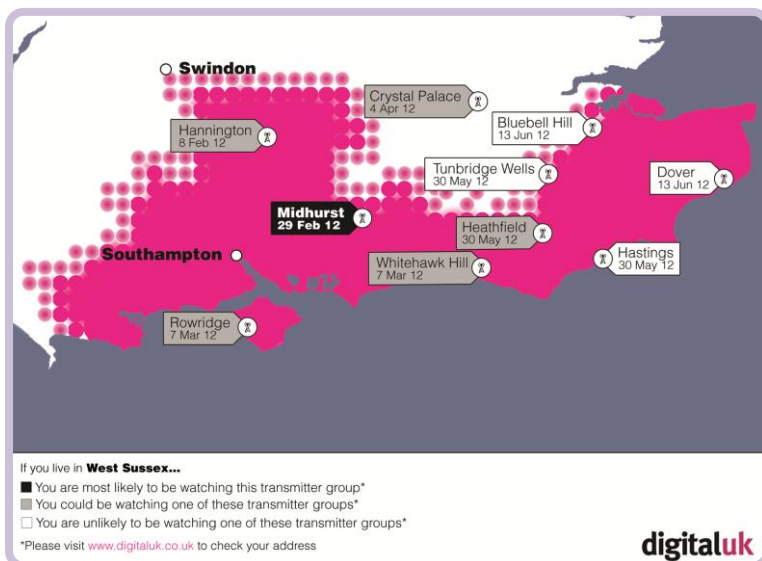
There is one later switchover technical event for the [Midhurst](#) primary transmitter that may require a retune for some homes:

Site	Event	Notes	Dates
MIDHURST	COM Mux post DSO power-up	ARQ B adopts its final post DSO power	25 April 2012

- Power increases will mean that some COM mux services will become available to some households for the first time. To receive them may require the user to make another retune on or after the date shown.

Adjacent transmitter groups

A household in West Sussex is most likely to be watching the **Midhurst** transmitter group. However, they could also be watching one of the following transmitter groups: **Hannington, Heathfield, Rowridge or Whitehawk Hill** (Meridian), **Crystal Palace** (London)



Prepare for transmitter overlaps

Some homes will be able to receive signals from more than one mast when DTT broadcasts commence from relays for the first time, and transmission powers increase from the **Midhurst** primary transmitter. The use of wideband aerials will also increase the chances of this. Viewers may find that running a retune will give either no services, or picture and sound break-up. This can happen where relay-served homes also receive a little of the signal from a primary mast. It can also happen where homes served by the primary transmitter receive weak signals from an adjacent relay that uses UHF channels lower in the band than the primary mast. The exact experience will depend on whether the viewer's receiver stores services by strongest received signal or by the lowest UHF channel:

Receivers which store UHF channels on the basis of signal quality or strength in accordance with the Digital TV Group (DTG) 'd-book' standards will load regional services based on those criteria. For the majority of households with a suitable aerial directed at the required transmitter, that transmitter will be the strongest and therefore will be selected, giving the correct regional services.

Receivers that store channels on first-found basis. All Freeview products (including BT Vision and Top Up TV) scan for UHF channels, starting with lowest frequencies and moving up the band (Ch21-68.) Those that store channels on a first-found basis may then display services from an adjacent relay operating on a lower UHF channel regardless of the quality or strength of signal. Some products may then also store the better signals from the main transmitter at the bottom of the LCN list, usually in the 800s.

Use the Digital UK postcode checker trade view at www.digitaluk.co.uk to identify the available transmitters and the UHF channels they use. Digital UK also offers Ofcom's [complete channel tables for Meridian transmitters](#) on its Transmitter Network microsite and Digital Almanac pages. In most cases, overlap issues can be resolved by manually retuning (see below).

Transmission Powers

As mentioned above, transmission power and coverage increases radically at switchover and can compound the overlap issue. The powers for the **Midhurst** transmitter and its dependent relays are shown below. **Transmission powers for the three Midhurst public service muxes and Mux D/Arq B increase tenfold representing 10dB added gain to the aerial system. The Mux A/SDN commercial mux increases fivefold (+6dB) and Mux C/Arq A powers increase four times (+3dB).**

* Effective Radiated Power							Midhurst						
Current *ERP	Public Service Muxes			Commercial Muxes			Post DSO *ERP	Public Service Muxes			Commercial Muxes		
	Mux 1	Mux 2	Mux B	Mux A	Mux C	Mux D		BBC-A	D3 & 4	BBC-B	SDN	Arqiva-A	Arqiva-B
	2kW	2kW	2kW	2kW	2.5kW	1kW		20kW	20kW	20kW	10kW	10kW	10kW

The table below gives transmission powers for the three multiplexes served by the two relays in the **Midhurst** transmitter group from switchover.

Midhurst Relays	
Effective Radiated Powers (ERP) all 3PSB Muxes	
10W	28W
Haslemere	Steyning

Amplifiers may need to be removed

When transmission powers increase, homes with aerial amplifiers could experience service loss or picture and sound disturbance due to the DTT receiver's tuner being overloaded. Old aerial amplifiers with poor filtering could also cause video/audio synchronisation problems where the receiver trying to read noise as a DTT signal. Removing the amplifiers should rectify both issues.

Handling overlaps with legacy equipment

For currently deployed models there are four main ways to set up DTT products to display only the desired services:

1. The manual retune procedure – the most reliable but you need to know the UHF Channels for each multiplex.
2. Add an attenuator – to knock out unwanted weak UHF channels. If removing the attenuator afterwards to maximise signals, remember it will be needed again for future retunes.
3. Running a tuning search with aerial plug removed and then inserting just before the process gets to the wanted UHF channels. This is not always practical when neighbouring wanted and unwanted services use adjacent channels.
4. Alternatively, for some products, “favourite” channels or “edit channels” settings can be used to reorganise services to the user’s preferred order. Check the Overlap guides at http://www.digitaluk.co.uk/retailers/tv_equipment/trouble_shooting_guides.

8k transmission mode and the impact on 2k-only equipment

The move to 8k at switchover means that any homes using legacy 2k-only equipment, (including old ONdigital and some very early Freeview equipment without the ‘digital tick’ logo) will find that it will stop working when the **Midhurst** primary transmitter commences switchover. **IMPORTANT:** At DSO stage one, those with 2k-only equipment will lose only the BBC services provided by Mux 1 as it closes and the new BBC A mux starts at 8k. At DSO stage two, the D3&4 PSB mux and the three commercial muxes also adopt the 8k mode. It is then that 2k-only receivers will not deliver any services. Digital boxes will need to be replaced. 2k IDTV’s can display Freeview services, but only with the addition of a Freeview box or recorder carrying the ‘digital tick’ logo. See www.digitaluk.co.uk/2kequipment for the latest list of affected models. Retailers and installers should prepare their helplines for calls from viewers that are affected.

Split NIT equipment

Installers and retailers may also receive calls about other old products (without the ‘digital tick’ logo) that stop working. Some were affected by the Freeview/broadcasters’ “Split NIT” network changes completed in August 2008 and fail when the owner retunes the product. The majority of Split NIT models are expected to have been revealed through the Freeview National Retune on 30 September 2009. However, some have emerged at every transmitter group switchover to date through such as consumers inheriting product from family or buying secondhand models. See: www.digitaluk.co.uk/splitnit or www.freeview.co.uk for more information on models affected.

The retune challenge

At each stage of switchover, viewers will have to install or retune their equipment to pick up the new digital services. Further retunes are required when new channels are introduced or change position (e.g. Freeview’s National Retune on 30 September 2009.) This is the single most common issue that causes viewers to contact helplines and retailers. **Installers and their retailer partners are reminded to have sufficient staff available and plan to handle retuning for customers not able to manage it themselves.**

Some suggestions include:

- Explain retuning and its importance when you sell equipment.
- Offer chargeable “Home Help” options around switchover and ongoing.
- Have dedicated (temporary) staff to run an in-store “retune area.” This helps separate the customers wanting advice from those wanting to buy.
- Tailor your answerphone message – direct those seeking advice to the Digital UK Advice Line.
- Know where other retuning advice is available:

Digital UK Retune Tools: To help viewers and trade, Digital UK has created simple retune guides that are being included by manufacturers in their UK DTT model packaging. These are also available on the Digital UK website for downloading alongside generic guides ideal for retailers. There are also manual search helpsheets (one for the more technical user and one that is designed more for the general public), a webvideo designed to reassure users and a drop down search area where full instruction manuals can be accessed for many models. All can be accessed via www.digitaluk.co.uk/retune. There is also a **manual retune widget** found under ‘missing channels or wrong news service’ which customises manual retune instructions for the viewer’s postcode.

Encourage viewers to learn how to retune their Freeview TV, box or recorder. Retuning from time to time will ensure they always have the latest services and best performance from their equipment.

Early TVs may not store all channels

Following Freeview's latest network changes there are now potentially more than 100 services for Freeview TVs, boxes and recorders to handle. There can be more than this, if homes also receive extra signals due to transmitter overlaps. The National Retune of 30 September 2009 revealed some older cathode ray tube Freeview TVs (many being 2k-only models that will cease to work at switchover) that cannot store one or two of the available services due to memory constraints. For some products, over-air software updates were broadcast last year to reallocate memory in the model but some homes missed these. Where no updates are available, the use of the "manual retune" or "favourites" options can enable the viewer to select the channels they definitely want, and discard those they are not interested in.

Look out for RF-connected equipment

Recent switchovers have revealed a significant number of cases where digital TV systems have been connected through RF (radio frequency) modulators and coax cabling, rather than SCART AV inputs. Some viewers find that they miss services on a retune, because the VCR or Sky box is tuned in to the TV on the same or adjacent UHF channel.

DDR spectrum release means more retunes and Sky RF2 output channels will need to be changed

After switchover the Government and Ofcom will release the fourteen 'digital dividend' UHF channels via an auction process. For full details see:

<http://stakeholders.ofcom.org.uk/consultations/DDR/summary>

UHF channels 61 and 62 are currently used in some areas for Freeview and will be released along with others at the top of the band (to channel 68), in order to harmonise frequencies across Europe for the development of fourth generation mobile technologies. Other mid-band frequencies will also be released in due course. Consequently, retunes to new UHF channels will be required by homes that currently use the DDR frequencies. Homes feeding secondary rooms with Sky box signals from another room via the RF2 output (usually set to UHF channel 63, 65, or 68) will also need to be retuned.

Checklist

Important things to remind your customers about include:

Getting every TV and recorder in their home ready for switchover.

Relays will not all switch at the same time.

The need to retune digital equipment when new multiplexes or services are introduced.

For advice on the digital switchover, call:

- the Digital UK Advice Line on: 08456 50 50 50
- friends / family
- the manufacturer

Digital switchover trade support



- 1 The Digital UK postcode checker:**
The only site for accurate information on switchover and re-tune dates, platforms and services availability, aerial groups and UHF channel allocations digitaluk.co.uk/postcodechecker
- 2 The planned engineering web pages:**
With information and alerts on switchover related transmitter work digitaluk.co.uk/engineering_works
- 3 The transmitter network microsite:**
For maps, UHF channel tables, Installer newsletters and other useful downloads for the Installer's Almanac handbook digitaluk.co.uk/transmitternetwork
- 4 The manual re-tune widget:**
Enter a postcode and get all of the UHF allocations for each mux through and beyond switchover. digitaluk.co.uk/manualretuning
- 5 The trade support helpline:**
If your query is not answered by checking the websites above, you can call a dedicated trade helpline for switchover transmission enquiries on **0845 270 1708**. Identify your company and role and a Digital UK Liaison Engineer at Arqiva will be able to help you.

get set for digital 
08456 50 50 50 digitaluk.co.uk