



Digital Switchover Transmitter Details

West Region

Issue 4.0

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Digital Switchover Transmitter Details: West Region

This document contains details of the transmission characteristics which the television transmitter network in the West Region adopted at digital switchover.

A key to column headings is provided in the Glossary.

If you would like to be kept informed of any changes or update to these details, please join our digital transmitter mailing list by sending an email to broadcast.technical@ofcom.org.uk, with the word 'subscribe' as the message subject.

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Mendip transmitter group - Public Service Broadcaster (PSB) Multiplexes

Site Name	NGR	BBC A		D3&4		BBC B		Aerial Group
		Channel	ERP	Channel	ERP	Channel	ERP	
Mendip	ST564488	61	100kW	54	100kW	58	100kW	C/DH
Avening	ST881975	41+	2W	47	2W	44	2W	BV
Backwell	ST498716	25	19W	28	19W	22	19W	AV
Bath	ST769654	25	50W	28	50W	22	50W	AV
Blakeney	SO664069	24	3W	27	3W	21+	3W	AV
Box	ST832688	43	2W	50	2W	46	2W	BV
Bristol Barton House	ST611729	26	18W	23	18W	29	18W	AH
Bristol Ilchester Crescent	ST577700	41+	200W	44	200W	47	200W	BV
Bristol Kings Weston	ST547775	43	200W	50	200W	46	200W	E/WV
Bristol Montpelier	ST590745	27	10W	24	10W	21+	10W	AV
Bristol Warmley	ST654736	45	2W	42	2W	49	2W	BV
Bruton	ST680341	43	2W	50	2W	46	2W	BV
Burrington	ST477605	60	32W	53	32W	57	32W	C/DH
Calne	ST997699	24	20W	27	20W	21+	20W	AV
Carhampton	ST016426	24	20W	27	20W	21+	20W	AV
Cerne Abbas	ST645013	29	80W	26	80W	23	80W	AV
Chalford	SO882017	24	25W	27	25W	21+	25W	AV
Chalford Vale	SO886024	43	3W	46	3W	50	3W	BV
Chilfrome	SY579991	43	13W	50	13W	46	13W	BH
Chiseldon	SU190801	27	16W	24	16W	21+	16W	AV
Chitterne	ST995441	43	2W	50	2W	46	2W	BV
Cirencester ^a	SP004057	23	100W	29	100W	26	100W	AV
Clearwell	SO574084	59	2W	62-	2W	55	2W	C/DV
Coleford	SO569106	45	2W	49	2W	42	2W	BV
Corsham HP	ST869699	50	5W	46	5W	43	5W	BH
Corsham VP	ST869699	50	8W	46	8W	43	8W	BV
Countisbury	SS748500	59	42W	62-	42W	55	42W	C/DH
Crewkerne	ST444092	43	2W	50	2W	46	2W	BV
Crockerton	ST877428	43	11W	46	11W	50	11W	BV
Dursley	ST788963	43	11W	50	11W	46	11W	BV
Easter Compton	ST566830	53	3W	60	3W	57	3W	C/DV
Exford	SS847379	41+	2W	47	2W	44	2W	BV
Frome	ST778481	26	2W	23	2W	29	2W	AV

^a Cirencester: D3&4 will use channel 30 (at 100W ERP) until September 2011.

Site Name	NGR	BBC A		D3&4		BBC B		Aerial Group
		Channel	ERP	Channel	ERP	Channel	ERP	
Hutton ^b	ST361588	59	40W	62-	40W	55	40W	C/DV
Kewstoke	ST347639	43	16W	50	16W	46	16W	BV
Kilve	ST143425	59	3W	62-	3W	55	3W	C/DH
Lydbrook	SO600163	43	2W	50	2W	46	2W	BV
Marlborough	SU209688	25	20W	28	20W	22	20W	AV
Monksilver	ST085362	50	15W	43	15W	46	15W	BV
Nailsworth	ST849990	23	6W	26	6W	29	6W	AV
Ogbourne St George	SU205731	43	3W	50	3W	46	3W	BV
Parkend	SO616083	41+	2W	47	2W	44	2W	BV
Pillowell HP	SO625065	43	2W	50	2W	46	2W	BH
Pillowell VP	SO625065	43	0.2W	50	0.2W	46	0.2W	BV
Porlock	SS883462	24	5W	27	5W	21+	5W	AV
Portbury	ST501751	24	2W	27	2W	21+	2W	AV
Portishead ^c	ST458764	59	7W	62-	7W	55	7W	C/DV
Redbrook	SO538092	42	2W	45	2W	49	2W	BV
Redcliff Bay	ST439751	53	10W	60	10W	57	10W	C/DH
Roadwater	ST026375	23	6W	26	6W	29	6W	AH
Seagry Court	SU149881	41+	20W	47	20W	44	20W	BV
Siston	ST668744	26	8W	23	8W	29	8W	AV
Slad	SO872055	23	2W	29	2W	26	2W	AH
Stroud	SO836077	50	200W	43	200W	46	200W	BV
Tintern	SO538002	24	2W	27	2W	21+	2W	AV
Ubley	ST538594	24	16W	27	16W	21+	16W	AV
Upavon	SU145518	23	28W	29	28W	26	28W	AV
Washford	ST058409	59	12.4W	62-	12.4W	55	12.4W	C/DV
West Lavington	ST999525	23	2W	26	2W	29	2W	AV
Westwood	ST816597	43	20W	50	20W	46	20W	BV
Woodcombe ^d	SS951458	59	10W	62-	10W	55	10W	C/DV
Wootton Courtenay	SS934426	25	22W	28	22W	22	22W	AV

^b Hutton: BBC A will use channel 48, and D3&4 will use channel 52 (both at 40W ERP) until September 2011.

^c Portishead: BBCA will use channel 48, and D3&4 will use channel 52 (both at 7W ERP) until September 2011.

^d Woodcombe: BBCA will use channel 48, and D3&4 will use channel 52 (both at 10W ERP) until September 2011.

Mendip transmitter group - Commercial (COM) Multiplexes

Site Name	NGR	SDN		Arqiva A		Arqiva B		Aerial Group
		Channel	ERP	Channel	ERP	Channel	ERP	
Mendip^e	ST564488	48	100kW	52	100kW	56	100kW	C/DH
Bristol Ilchester Crescent	ST577700	42+	100W	45	100W	49	100W	BV
Bristol Kings Weston	ST547775	53	200W	57	200W	60	200W	E/WV

Ridge Hill (West)

Site Name	NGR	BBC A		D3&4		BBC B		Aerial Group
		Channel	ERP	Channel	ERP	Channel	ERP	
Ridge Hill (West) ^f	SO630333	-	-	29	20kW	-	-	AH

^e Mendip SDN and Arqiva A will temporarily operate on channels 62+ and 56+ respectively (both at 10kW ERP) until September 2011. Final DSO channels will then be adopted, though ERP levels will remain limited until early 2012. Arqiva B will operate on channel 59+ (10kW ERP) until January 2011, when it will move to channel 67 at 26kW ERP until September 2011. Arqiva B's final DSO channel will then be adopted, though ERP will remain limited until early 2012.

^f Ridge Hill principally carries Central region DTT services, including the ITV Central version of D3&4. However, Ridge Hill will additionally transmit the ITV West version of the D3&4 multiplex (serving the Cheltenham and Gloucester areas) from the time of Ridge Hill DSO in April 2011. The ERP of the Ridge Hill (West) multiplex will be restricted to 5kW until October 2011.

Glossary

Site Name:	The name of the transmitter site. Primary transmitters in each transmitter group are highlighted in bold , with their dependent relays listed alphabetically below them. Public Service Broadcaster (PSB) and Commercial (COM) multiplexes are shown in separate tables.
NGR:	The location of the transmitter site, in Ordnance Survey National Grid Reference format.
Multiplex names:	The post-switchover name of the multiplex. See below for more details
Channel	The UHF channel number of the multiplex. The centre frequency, F_c (in Megahertz) of the multiplex can be calculated using $F_c=8n+306$, where n is the UHF channel number. A + or - following the channel number indicates that the frequency is offset by +0.167MHz or -0.167MHz with respect to the channel centre. Channel numbers highlighted in red are likely to be affected in future by the clearance of channels 61 and 62: see the '800 MHz Clearance' section below.
ERP	The Effective Radiated Power of the multiplex, in watts (W) or kilowatts (kW)
Aerial Group:	Suggested aerial group for reception of the 3 PSB multiplexes (and the 3 COM multiplexes, where broadcast) from this transmitter. See below for more information on aerial groups. The final character in this column indicates whether signals are horizontally (H) or vertically (V) polarised.
Aerial Group Colour codes:	All frequencies at this transmitter were formerly used by analogue channels.
	One or more digital frequencies at this transmitter were formerly unused at this transmitter by analogue TV, but all digital channels fall within the former analogue aerial group.
	One or more digital frequencies at this transmitter were formerly unused at this transmitter by analogue TV, and at least one of these frequencies also falls outside the former analogue aerial group.
DSO	Digital Switchover
Single Frequency networks (SFNs)	In order to maximise digital coverage, some transmitter sites will operate as Single Frequency Networks (SFNs) at switchover. In an SFN, neighbouring transmitters use the same frequencies as each other.

Multiplex Names

The naming convention for the six multiplexes changed at switchover, and the table below compares their pre-switchover and post-switchover designations:

Pre-Switchover Name	Post-Switchover Name	Operator
Multiplex 1	BBC A	BBC
Multiplex 2	D3&4	Digital 3 & 4
Multiplex A	SDN	SDN
Multiplex B	BBC B	BBC
Multiplex C	Arqiva A	Arqiva
Multiplex D	Arqiva B	Arqiva

Aerial Groups

Television aerials are designed to operate most efficiently over a specific range of frequencies, as shown in the table below. For guidance, this document suggests a suitable aerial group for reception of the digital services from each transmitter. Where a transmitter uses a semi-wideband channel grouping (E or K), a wideband (W) aerial is also suggested as an alternative. The colour codes in the table below are often used by aerial manufacturers to aid identification of the aerial's group.

Aerial Group	Channels	Colour Code
A	21-37	Red
B	35-53	Yellow
C/D	48-68	Green
E	35-68	Brown
K	21-48	Grey
W	21-68	Black

Transmission Modes

The post-switchover transmission mode for all multiplexes except BBC B is 64QAM modulation, coding rate 2/3, & 8K FFT.

The BBC B multiplex uses the DVB-T2 standard: 256QAM modulation, coding rate 2/3, & 32K FFT.

Transitional Transmission Characteristics

Transmission frequencies are intensively used in many parts of the UK. To avoid unnecessary interference being caused to viewers, a certain number of multiplexes will need to operate with 'transitional' transmission characteristics for a limited period following switchover at particular transmitters. These transitional characteristics are only likely to affect a small proportion of sites. For example, some channels may need to operate at slightly reduced power levels compared to the final post-switchover allocations shown in this booklet. This is primarily in order to prevent interference being caused to neighbouring transmitters which may not switch over until later in the regional sequence. Full power operation will be adopted when these interference constraints are removed, generally when the neighbouring transmitter or region switches over. Details of known transitional arrangements affecting individual transmitters are provided in footnotes.

800 MHz clearance

In order to align the frequencies released by digital switchover for alternative uses with those released by other European countries, UHF channels 61 and 62 will be 'cleared' of digital TV services over the coming years. UHF channels 39 and 40 (which were previously among the channels due to be released for other uses after switchover) will instead now be retained for TV broadcasting.

In order to minimise changes to domestic aerial groups, the general approach for adopting these changes is that multiplexes using channels 61 or 62 will move to channels 49 or 50, and multiplexes using channels 49 or 50 will move to channels 39 or 40. Other channels may also be affected in some cases. The changes will either be carried out at digital switchover, or sometime after switchover completes (e.g. during 2013). If the changes are to be carried out at digital switchover, an updated version of this guide will be issued.

Multiplexes using channels 61, 62, 49, or 50 are highlighted in **red** in this guide to indicate that these allocations are likely to change in the future.

Transmitter Locations

Maps showing the location of TV transmitters within individual regions are available on Ofcom's website at:

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

Document History

Version	Date	Details
1.0	24/10/2007	Document Issued
2.0	5/11/2008	Com mux names revised. Map removed and replaced with link to online version. Transmission mode section revised to include DVB-T2.
3.0	9/2/2010	Offsets added. Bristol Ilchester Crescent, Cirencester, Hutton, Portishead & Woodcombe parking channels added. Cirencester frequency modification. Mendip COM and Ridge Hill West transitional arrangements revised. DVB-T2 conversion details added. ERPs rounded consistently. Other editorial amendments.
4.0	5/1/2011	Format and text changed for post-switchover situation, and analogue details removed. Initial 800Mhz clearance information added, Transitional arrangements footnotes updated. Ridge Hill West renamed Ridge Hill (West). Corsham and Pillowell polarisations corrected.

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