



# Digital Switchover Transmitter Details

Tyne Tees Region

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# Digital Switchover Transmitter Details: Tyne Tees Region

This document contains details of the transmission characteristics which the television transmitter network will adopt at digital switchover. Information on current digital frequencies is available on the Ofcom website ([www.ofcom.org.uk](http://www.ofcom.org.uk)).

This information is primarily intended to help systems installers make initial preparations for switchover by highlighting those transmitters where frequency allocations and aerial group requirements are likely to change.

A key to column headings is provided in the Glossary.

Please note that although we anticipate that this frequency plan will remain relatively stable in the run-up to switchover, it may prove necessary to make changes to some aspects of the plan with the aim of maximising coverage across the UK. If you would like to be kept informed of any changes, please join our digital transmitter mailing list by sending an email to [broadcast.technical@ofcom.org.uk](mailto:broadcast.technical@ofcom.org.uk), with the word 'subscribe' as the message subject.

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## Bilsdale transmitter group - Public Service Broadcaster (PSB) Multiplexes

Site Name	NGR	BBC A		D3&4		BBC B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
<b>Bilsdale</b>	<b>SE553962</b>	<b>26</b>	<b>100kW</b>	<b>29</b>	<b>100kW</b>	<b>23</b>	<b>100kW</b>	<b>K/WH</b>	AH	33	26	29	23	
Aislaby	NZ863087	45	7.6W	39	7.6W	42	7.6W	BV	BV	39	45	52	49	
Bainbridge	SD935892	57	7.6W	60	7.6W	53	7.6W	C/DV	C/DV	57	63	60	53	
Castleton	NZ693077	50	2W	59	2W	55	2W	C/DV	C/DV	55	62	59	65	
Eston Nab	NZ569182	52	3W	51	3W	48	3W	BV	BV	40	46	43	50	
Grinton Lodge	SE048976	45	5W	42	5W	49	5W	BV	BV	40	46	43	50	
Guisborough	NZ592168	57	10W	60	10W	53	10W	C/DV	C/DV	57	63	60	53	
Limber Hill	NZ789053	47	8W	41	8W	44	8W	BV	BV	40	46	43	50	
Peterlee	NZ446410	45	2W	42	2W	39	2W	BV	BV	45	52	49	39	
Ravenscar	NZ970012	56	33W	58	33W	53	33W	C/DV	C/DV	58	64	61	54	
Romaldkirk	NY974220	44	12W	41	12W	47	12W	BV	BV	51	44	41	47	
Rookhope	NY926434	45	2W	42	2W	49	2W	BV	BV	40	46	43	50	
Rosedale Abbey	SE730966	45	2W	39	2W	42	2W	BV	BV	40	46	43	50	
Skinningrove	NZ715192	52	6W	51	6W	48	6W	BV	BV	40	46	43	50	
West Burton	SE030880	45	2.4W	39	2.4W	42	2.4W	BV	BV	40	46	43	50	
Whitby	NZ911095	55	100W	59	100W	50	100W	C/DV	C/DV	55	62	59	65	

### Bilsdale transmitter group - Commercial (COM) Multiplexes

Site Name	NGR	SDN		Arqiva A		Arqiva B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
<b>Bilsdale</b>	<b>SE553962</b>	<b>43</b>	<b>50kW</b>	<b>46</b>	<b>50kW</b>	<b>40</b>	<b>50kW</b>	<b>K/WH</b>	AH	33	26	29	23	

### Chatton transmitter group - Public Service Broadcaster (PSB) Multiplexes

Site Name	NGR	BBC A		D3&4		BBC B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
<b>Chatton</b>	<b>NU105264</b>	<b>45</b>	<b>20kW</b>	<b>42</b>	<b>20kW</b>	<b>39+</b>	<b>20kW</b>	<b>BH</b>	BH	39	45	49	42	
Berwick	NT980547	27	38W	24	38W	21	38W	AV	AV	21	27	24	31	
Rothbury	NZ031997	55	10W	59	10W	50	10W	C/DV	C/DV	55	62	65	59	
Wooler	NT989276	28	2W	25	2W	22	2W	AV	AV	22	28	25	32	

### Chatton transmitter group - Commercial (COM) Multiplexes

Site Name	NGR	SDN		Arqiva A		Arqiva B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
<b>Chatton</b>	<b>NU105264</b>	<b>41</b>	<b>10kW</b>	<b>44</b>	<b>10kW</b>	<b>47</b>	<b>10kW</b>	<b>BH</b>	BH	39	45	49	42	

## Pontop Pike transmitter group - Public Service Broadcaster (PSB) Multiplexes

Site Name	NGR	BBC A		D3&4		BBC B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
<b>Pontop Pike</b>	<b>NZ147527</b>	<b>58</b>	<b>100kW</b>	<b>54</b>	<b>100kW</b>	<b>49</b>	<b>100kW</b>	<b>C/DH</b>	C/DH	58	64	61	54	(68)
Allenheads	NY840469	27	2W	24	2W	21	2W	AV	AV	21	27	31	24	
Alston	NY730478	39	80W	42	80W	45	80W	BV	BV	52	45	49	42	
Bellingham	NY832812	27	10W	24	10W	21	10W	AV	AV	21	27	24	31	
Blaydon Burn	NZ167627	44	2W	41	2W	47	2W	BV	BV	51	44	41	48	
Byrness	NT765016	27	20W	24	20W	21	20W	AV	AV	21	27	31	24	
Catton Beacon	NY822590	40	28W	43	28W	46	28W	BV	BV	40	46	43	50	
Durham	NZ264423	41	3W	44	3W	47	3W	BV	BV	40	46	43	50	
Esh	NZ198444	39	2.4W	42	2.4W	45	2.4W	BV	BV	39	45	49	42	
Falstone	NY723863	44	2W	47	2W	41	2W	BV	BV	51	44	41	47	
Felling	NZ276616	40	2W	46	2W	43	2W	BV	E/WV	52	50	46	66	
Fenham	NZ216648	27	400W	24	400W	21+	400W	AV	AV	21	27	24	31	56
Haydon Bridge	NY809630	44	20W	47	20W	41	20W	BV	BV	51	44	41	47	
Hedleyhope	NZ162397	41	4W	44	4W	47	4W	BH	BH	40	46	43	50	
Humshaugh	NY906711	39	12W	42	12W	45	12W	BV	BV	39	45	49	42	
Ireshopeburn	NY862381	55	2.2W	50	2.2W	59	2.2W	C/DV	C/DV	55	62	59	65	
Kielder	NY625969	26	5.4W	29	5.4W	23	5.4W	AV	AV	33	26	23	29	
Morpeth	NZ218864	22	8.8W	25	8.8W	28	8.8W	AV	AV	22	28	25	32	
Newton	NZ035653	26	400W	29	400W	23	400W	AV	AV	33	26	23	29	
Seaham	NZ402485	44	100W	47	100W	41	100W	BV	BV	51	44	41	47	
Shotleyfield	NZ065532	22	40W	25	40W	28	40W	AV	AV	22	28	25	32	

Site Name	NGR	BBC A		D3&4		BBC B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
Staithes	NZ781189	52	2W	51	2W	48	2W	BV	BV	51	44	41	47	
Sunderland	NZ391547	52	6W	51	6W	48	6W	BV	BV	40	46	43	50	
Wall	NY909676	52	4.2W	51	4.2W	48	4.2W	BH	BH	40	46	43	50	
Weardale	NZ025384	44	200W	47	200W	41	200W	BV	BV	44	51	41	47	
Whitaside	SD979964	44	2.5W	47	2.5W	41	2.5W	BV	BV	51	44	41	47	

### Pontop Pike transmitter group - Commercial (COM) Multiplexes

Site Name	NGR	SDN		Arqiva A		Arqiva B		DSO Aerial Group	Pre-DSO Aerial Group	Analogue Frequencies				
		Channel	ERP	Channel	ERP	Channel	ERP			BBC1	BBC2	ITV1	C4	C5
<b>Pontop Pike</b>	<b>NZ147527</b>	<b>50</b>	<b>50kW</b>	<b>59</b>	<b>50kW</b>	<b>55</b>	<b>50kW</b>	<b>C/DH</b>	C/DH	58	64	61	54	(68)
Fenham	NZ216648	25	400W	22+	400W	28	400W	AV	AV	21	27	24	31	56

## Glossary

Site Name:	The name of the transmitter site. Primary transmitters in each transmitter group are highlighted in <b>bold</b> , 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.
ERP	The Effective Radiated Power of the multiplex, in watts (W) or kilowatts (kW)
DSO	Digital Switchover
DSO Aerial Group:	Suggested aerial group for reception of the 3 PSB multiplexes (and the 3 COM multiplexes, where broadcast) from this transmitter after digital switchover. See below for more information on aerial groups. The final character in this column indicates whether signals are horizontally (H) or vertically (V) polarised.
DSO Aerial Group Colour codes:	All DSO frequencies at this transmitter are re-assigned analogue frequencies. If aerials and cabling are in good condition, viewers should not need to replace them.
	One or more DSO frequencies were previously unused at this transmitter by analogue TV, but all DSO channels fall within the analogue aerial group. If aerials and cabling are in good condition, replacement should not be necessary. Some changes may be required to larger systems which contain channelised components, such as communal aerial (MATV / IRS) systems.
	One or more DSO frequencies were previously unused at this transmitter by analogue TV, and these also fall outside the existing analogue aerial group. Therefore a replacement aerial of a different group may be required. Some changes may be required to larger systems which contain channelised components, such as communal aerial (MATV / IRS) systems.
Pre-DSO Aerial Group:	Suggested aerial group for reception of analogue services from this transmitter. The aerial groups shown are based upon four-channel reception and do not take into account Channel 5's analogue frequencies where these are out of group.
Analogue channels:	The UHF channel numbers of the analogue services currently broadcast from this transmitter site. The nominal analogue vision carrier frequency, $F_v$ (in Megahertz) of the service can be calculated using $F_v=8n+303.25$ , where $n$ is the UHF channel number.
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 changes 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 Mode

It is anticipated that the post-switchover transmission mode for all multiplexes except BBC B, will be 64QAM modulation, coding rate 2/3, & 8K FFT.

The BBC B multiplex will operate using the DVB-T2 standard (256QAM modulation, coding rate 2/3, & 32K FFT). Conversion to DVB-T2 will generally take place at DSO in each region.

## 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.

## **Analogue Channel Changes**

For practical engineering reasons, some analogue channel allocations may need to be altered in the period immediately before switchover begins at a particular transmitter. This may involve swapping the frequencies of some programme services. In other cases, a previously unused analogue frequency may need to be used temporarily to allow high-power digital broadcasts to begin. Viewers will be informed of any such channel changes by Digital UK and the broadcasters in the run up to switchover.

## **Switchover Dates**

Up-to-date information on switchover dates is available from Digital UK

[www.digitaluk.co.uk](http://www.digitaluk.co.uk).

## **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

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