



# Digital Switchover Transmitter Details

Northern Ireland

Issue 2.0

Issued: 20 January 2012

# Digital Switchover Transmitter Details: Northern Ireland

This document contains details of the transmission characteristics which the television transmitter network will adopt at digital switchover. Details for pre-switchover digital transmitters are 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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### Brougher Mountain 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>Brougher Mountain</b>	<b>IH350527</b>	<b>28</b>	<b>20kW</b>	<b>22+</b>	<b>20kW</b>	<b>25</b>	<b>20kW</b>	<b>AH</b>	<b>AH</b>	<b>22</b>	<b>28</b>	<b>25</b>	<b>32</b>	
Belcoo	IH090364	44	70W	47	70W	41	70W	BV	BV	51	44	41	47	
Derrygonnelly	IH117514	44	4W	41	4W	47	4W	BV	E/WV	51	44	47	66	
Ederny	IH238674	58	11W	54	11W	49	11W	C/DV	C/DV	65	59	62	55	
Lisbellaw	IH309410	49	4W	54	4W	58	4W	C/DV	C/DV	55	62	59	65	

### Brougher Mountain 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>Brougher Mountain</b>	<b>IH350527</b>	<b>21+</b>	<b>2kW</b>	<b>24</b>	<b>2kW</b>	<b>27</b>	<b>2kW</b>	<b>AH</b>	<b>AH</b>	<b>22</b>	<b>28</b>	<b>25</b>	<b>32</b>	

## Divis 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>Divis</b>	<b>IJ287750</b>	<b>27</b>	<b>100kW</b>	<b>21+</b>	<b>100kW</b>	<b>24</b>	<b>100kW</b>	<b>AH</b>	<b>AH</b>	<b>31</b>	<b>27</b>	<b>24</b>	<b>21</b>	<b>(37)</b>
Armagh	IH891446	44	24W	41	24W	47	24W	BV	BV	39	45	49	42	
Banbridge	IJ134460	40	2W	43	2W	46	2W	BV	BV	44	48	46	50	
Bangor	IJ500817	55	2W	50	2W	59	2W	C/DV	C/DV	62	55	59	65	
Bellair	ID295153	56	8W	48	8W	52	8W	C/DV	C/DV	48	56	52	67	
Benagh	IJ261135	28	200W	25	200W	22	200W	AV	AV	22	28	25	32	
Black Mountain	IJ278727	45	5W	42	5W	49	5W	BV	BV	39	45	49	41	
Camlough	IJ055247	59	500W	55	500W	50	500W	C/DV	C/DV	58	64	61	54	
Carnmoney Hill	IJ336829	46	16W	40	16W	43	16W	BV	BV	40	46	43	50	
Conlig	IJ503783	45	13W	42	13W	49	13W	BV	BV	39	45	49	42	
Cushendall	ID209275	46	5W	40	5W	43	5W	BV	BV	40	46	43	50	
Cushendun	ID255349	27	20W	21	20W	24	20W	AV	AV	22	28	32	25	
Draperstown	IH763955	45	2.4W	42	2.4W	49	2.4W	BV	BV	39	45	49	42	
Dromore	IJ198535	59	2W	55	2W	50	2W	C/DV	C/DV	58	64	61	54	
Glenariff	ID235258	49	9W	54	9W	58	9W	C/DV	C/DV	58	64	61	54	
Glynn	ID401006	50	2W	55	2W	59	2W	C/DV	C/DV	58	64	61	54	
Kilkeel	IJ281180	45	400W	42	400W	39+	00W	BV	BV	39	45	49	42	
Killowen Mountain	IJ207174	27	5W	21+	5W	24	5W	AV	AV	31	27	24	21	
Larne	ID395037	45	400W	42	400W	39+	400W	BV	BV	39	45	49	42	
Leitrim	IJ253424	58	200W	54	200W	49	200W	C/DV	C/DV	57	63	60	53	
Moneymore	IH856827	46	8W	43	8W	40	8W	BV	BV	39	45	49	42	

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
Newcastle	IJ362303	50	800W	55	800W	59	800W	C/DV	C/DV	55	62	59	65	
Newry North	IJ090284	43	2W	46	2W	40	2W	BV	BV	51	44	41	47	
Newry South	IJ093255	44	4W	41	4W	47	4W	BV	BV	39	45	49	42	
Newtownards	IJ501738	50	2.2W	55	2.2W	59	2.2W	C/DV	C/DV	58	64	61	54	
Rostrevor Forest	IJ189176	39	23W	42	23W	45	23W	BV	BV	48	40	46	50	
Whitehead <sup>a</sup>	IJ476930	52*	2.4W	51	2.4W	56	2.4W	C/DV	C/DV	48	56	52	67	

### Divis 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>Divis</b>	<b>IJ287750</b>	<b>23</b>	<b>50kW</b>	<b>26</b>	<b>50kW</b>	<b>29</b>	<b>50kW</b>	<b>AH</b>	<b>AH</b>	<b>31</b>	<b>27</b>	<b>24</b>	<b>21</b>	<b>(37)</b>

<sup>a</sup> Whitehead BBC A will temporarily operate on channel 56 between the first and second stages of switchover

### Limavady 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>Limavady</b>	<b>IC711296</b>	<b>50</b>	<b>20kW</b>	<b>59</b>	<b>20kW</b>	<b>55</b>	<b>20kW</b>	<b>C/DH</b>	<b>C/DH</b>	<b>55</b>	<b>62</b>	<b>59</b>	<b>65</b>	
Ballintoy	ID037446	52	4W	51	4W	56	4W	C/DV	BV	39	45	49	42	
Ballycastle	ID118397	45	2.6W	42	2.6W	39	2.6W	BV	BV	39	45	49	42	
Buckna	ID222062	44	20W	41	20W	47	20W	BV	BV	51	44	41	47	
Bushmills	IC947405	44	2W	41	2W	47	2W	BV	BV	51	44	41	47	
Castleberg	IH267830	54	2.2W	58	2.2W	49	2.2W	C/DV	C/DV	55	62	65	59	
Claudy	IC561069	57	23W	53	23W	60	23W	C/DV	C/DV	57	63	60	53	
Glenelly Valley	IH576913	26	2.6W	29	2.6W	23	2.6W	AV	AV	33	26	23	29	
Gortnageeragh	ID155148	45	32W	42	32W	39	32W	BV	BV	39	45	42	49	
Gortnalee	IG955554	28	30W	25	30W	22	30W	AV	AV	21	27	24	31	
Londonderry	IC404175	44	2kW	41	2kW	47	2kW	BV	BV	51	44	41	47	31
Muldonagh	IC599100	27	20W	24	20W	21	20W	AV	AV	22	28	32	25	
Plumbridge	IH490906	54	5W	58	5W	49	5W	C/DV	C/DV	52	66	56	68	
Strabane	IH393947	45	400W	42	400W	39+	400W	BV	BV	39	45	49	42	

### Limavady 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>Limavady</b>	<b>IC711296</b>	<b>54</b>	<b>10kW</b>	<b>58</b>	<b>10kW</b>	<b>49</b>	<b>10kW</b>	<b>C/DH</b>	<b>C/DH</b>	<b>55</b>	<b>62</b>	<b>59</b>	<b>65</b>	

## 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 and Transmission Modes

The naming convention for the DTT multiplexes changes at switchover. The table below compares the post-switchover and pre-switchover names, and provides information on transmission modes:

Post-Switchover Name	Pre-Switchover Name	Operator	Post-switchover Transmission Mode
BBC A (PSB)	Multiplex 1	BBC	DVB-T: 64 QAM, code rate 2/3, 8K FFT
D3&4 (PSB)	Multiplex 2	Digital 3 & 4	DVB-T: 64 QAM, code rate 2/3, 8K FFT
BBC B (PSB)	Multiplex B	BBC	DVB-T2: 256 QAM, code rate 2/3, 32K FFT
SDN (COM)	Multiplex A	SDN	DVB-T: 64 QAM, code rate 3/4, 8K FFT <sup>2</sup>
Arqiva A (COM)	Multiplex C	Arqiva	DVB-T: 64-QAM, code rate 3/4, 8K FFT <sup>2</sup>
Arqiva B (COM)	Multiplex D	Arqiva	DVB-T: 64-QAM, code rate 3/4, 8K FFT <sup>2</sup>

## 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

## 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.

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<sup>2</sup> At a limited number of transmitters one or more COM multiplexes may continue to use their pre-switchover transmission mode for a short period following switchover. COM multiplexes at some transmitters which have switched over currently operate at 64 QAM code rate 2/3, but all COM multiplexes are expected to move to 64 QAM rate 3/4 by summer 2012. Digital UK's postcode checker provides more information.

## **Analogue Channel Changes**

For 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. Information on channel changes will be available from Digital UK 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

Version	Date	Details
1.0	25/5/2011	Document issued
2.0	20/1/2012	Document renamed 'Northern Ireland' Divis transmitter group: Channel usage changes at Cushendall, Larne, Moneymore, Newry North, Newry South, & Rostrevor Forest. ERP change at Kilkeel. Glenariff BBC A ERP corrected.  Other editorial amendments.

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