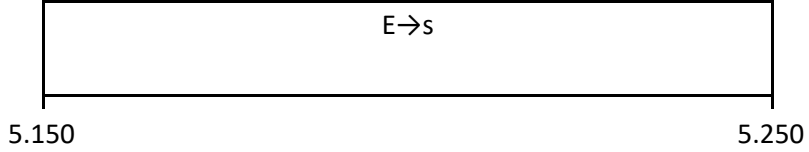
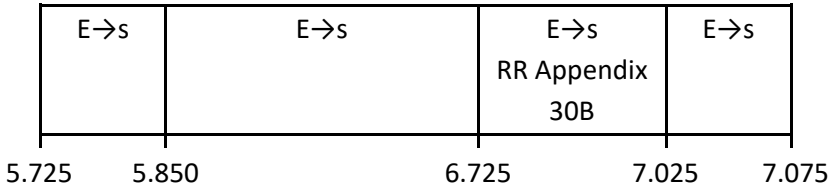
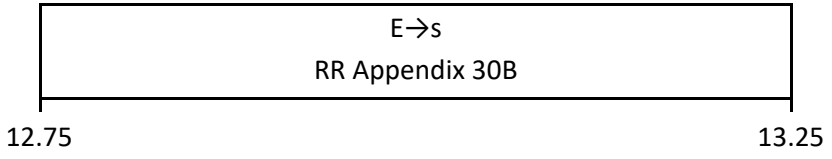
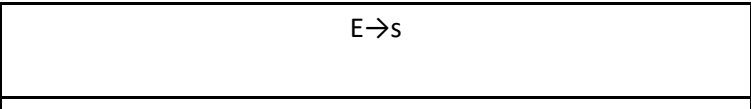
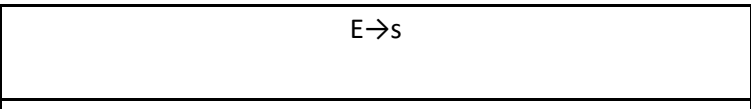

UK Frequency Allocations for Satellite Earth Stations

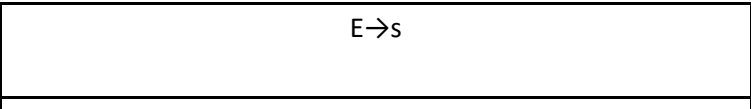
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Transmit Allocations

5 GHz	Applications	Licence Products	Other Information
 <p>5.150 5.250</p>	This band may only be used for MSS NGSO feeder links.	Satellite (Permanent Earth Station).	
6 GHz	Applications	Licence Products	Other Information
 <p>5.725 5.850 6.725 7.025 7.075</p>	Mainly used for intercontinental television contribution, telephony and digital business links.	Satellite (Permanent Earth Station). Satellite (Transportable Earth Station): 5.925 - 7.075 GHz.	Requires coordination with terrestrial fixed links in the band 5.850 - 7.075 GHz.
13 GHz	Applications	Licence Products	Other Information
 <p>12.75 13.25</p>	12.75 - 13.25 GHz is primarily used for uplinks to satellites offering commercial TV and interactive services.	Satellite (Permanent Earth Station).	Requires coordination with terrestrial fixed links. Use of the band within the M25 and other major conurbations is not generally feasible because of extensive fixed link use.

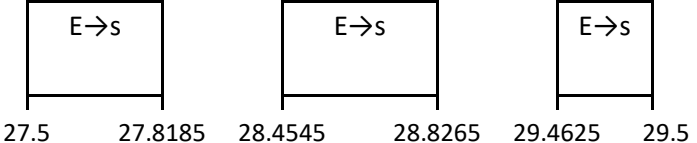
14 GHz	Applications	Licence Products	Other Information
 <p>13.75 14.0</p>		Satellite (Permanent Earth Station). Satellite (Transportable Earth Station): 13.78 - 14.0 GHz.	A minimum antenna diameter of 1.2m applies. Use of this band by the FSS is subject to compliance with Radio Regulation footnotes 5.502 and 5.503.

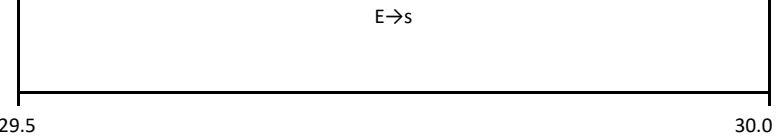
14 GHz	Applications	Licence Products	Other Information
 <p>14.0 14.25</p>	Mainly used for low density carriers, including VSATs and TESS.	Satellite (Permanent Earth Station). Satellite (Transportable Earth Station). Satellite (Earth Station Network).	* Limitations on frequency range and type of use apply – see licence conditions.

14 GHz	Applications	Licence Products	Other Information
 <p>14.25 14.5</p>	Mainly used for low density carriers, including VSATs and TESS.	Satellite (Permanent Earth Station). Satellite (Transportable Earth Station). Satellite (Earth Station Network).	Requirement to protect radio astronomy and terrestrial fixed links, as required by the relevant licence conditions. Limitations on frequency range and type of use apply – see licence conditions.

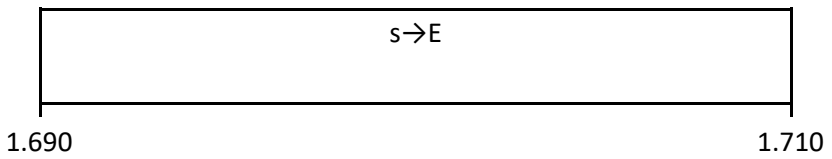
17 GHz	Applications	Licence Products	Other Information
<div> <div> <div>E→s / s→E</div> <div>RR Appendix 30A</div> </div> <div>17.3</div> <div>17.7</div> </div>	<p>Limited for use by BSS feeder links (E→s). Also available for earth station receivers (e.g. VSAT/HDFSS) on an uncoordinated basis.</p>	Satellite (Permanent Earth Station).	<p>Requires coordination with a few terrestrial fixed links associated with cable TV systems in the Channel Islands. Subject to RR Appendix 30A and paired with the BSS downlink band 11.7 - 12.5 GHz.</p>

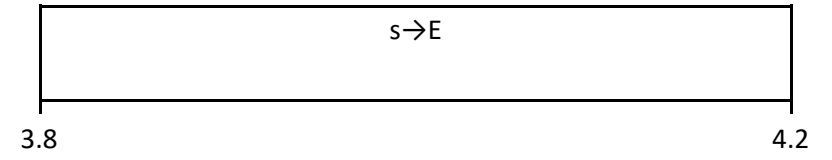
18 GHz	Applications	Licence Products	Other Information
<div> <div> <div>E→s / s→E</div> <div>RR Appendix 30A</div> </div> <div>17.7</div> <div>18.1</div> <div>18.4</div> </div>	<p>17.7 - 18.4 GHz use as an uplink band is limited to use by BSS feeder links. Also available for earth station receivers (e.g. VSAT/HDFSS) on an uncoordinated basis.</p>	Satellite (Permanent Earth Station).	<p>Requires coordination with terrestrial fixed links. Subject to RR Appendix 30A and paired with the BSS downlink band 11.7 - 12.5 GHz.</p>

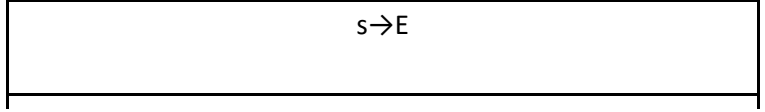
28 GHz	Applications	Licence Products	Other Information
 <p>27.5 27.8185 28.4545 28.8265 29.4625 29.5</p>		Satellite (Permanent Earth Station). Satellite (Transportable Earth Station). Satellite (Earth Station Network).	<p>Note: In addition to the licence products listed in the previous column, satellite earth stations meeting Interface Requirement 2066 are exempted from licensing (see Statutory Instrument 2010 No.2512).</p> <p>Spectrum between the three bands shown (i.e 27.8285 - 28.4445 GHz and 28.8365 - 29.4525 GHz) has been awarded on a technology and service neutral basis, including use by the FSS, in February 2008. Details can be found on the Ofcom website:</p> <p>https://www.ofcom.org.uk/data/assets/pdf_file/0027/73926/Spectrum-bands-and-licence-areas-for-28-GHz..pdf</p>

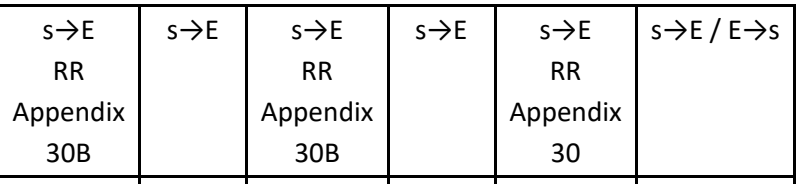
30 GHz	Applications	Licence Products	Other Information
 <p>29.5 30.0</p>	This band is primarily used by interactive and ubiquitous uncoordinated terminals.	Satellite (Permanent Earth Station). Satellite (Transportable Earth Station). Satellite (Earth Station Network).	<p>Note: In addition to the licence products listed in the previous column, satellite earth stations meeting Interface Requirement 2066 are exempted from licensing (see Statutory Instrument 2010 No.2512).</p>


Receive Allocations

1.7 GHz	Applications	Licence Products	Other Information
 <p>A horizontal bar representing the frequency range from 1.690 to 1.710 GHz. The bar is labeled 's→E' in the center. The start frequency '1.690' is written below the left end of the bar, and the end frequency '1.710' is written below the right end of the bar.</p>	Meteorological-Satellite applications.	Grant of RSA for ROES.	Requires coordination with terrestrial fixed links.

4 GHz	Applications	Licence Products	Other Information
 <p>A horizontal bar representing the frequency range from 3.8 to 4.2 GHz. The bar is labeled 's→E' in the center. The start frequency '3.8' is written below the left end of the bar, and the end frequency '4.2' is written below the right end of the bar.</p>	Mainly used for intercontinental television contribution (mainly digital); telephony and digital business links; MATV.	Satellite (Permanent Earth Station). Grant of RSA for ROES.	Requires coordination with terrestrial fixed links and broadband wireless access.

7.8 GHz	Applications	Licence Products	Other Information
 <p>7.750 7.850</p>	Meteorological-Satellite applications.	Grant of RSA for ROES.	Requires coordination with terrestrial fixed links.

11 GHz	Applications	Licence Products	Other Information
 <p>10.7 10.95 11.2 11.45 11.7 12.5 12.75</p>	<p>10.7 - 12.5 GHz mainly used for Direct to home television, ISP backhaul and Television distribution.</p> <p>12.5 - 12.75 GHz used for the above and VSATs.</p>	Satellite (Permanent Earth Station).	<p>Requires coordination with terrestrial fixed links in the band 10.7 - 11.7 GHz.</p> <p>11.7 - 12.5 GHz for BSS.</p>

18 GHz	Applications	Licence Products	Other Information
 <p>17.7 19.7 20.2</p>	19.7 - 20.2 GHz is normally paired with 29.5 - 30 GHz, mainly intended for use by interactive and ubiquitous uncoordinated terminals.	Satellite (Permanent Earth Station).	Requires coordination with terrestrial fixed links in the band 17.7 - 19.7 GHz.

Further information

Email: spectrum.licensing@ofcom.org.uk

Website: www.ofcom.org.uk

Notes

Ofcom will only accept a licence application for a Satellite (Permanent Earth Station) if the total receive bandwidth is less than or equal to the total transmit bandwidth.

Glossary

BSS	broadcast-satellite service
E→s	earth-to-space
FSS	fixed-satellite service
HDFSS	high-density applications in the fixed-satellite service
ISP	internet service provider
MATV	master antenna television
MSS	mobile-satellite service
NGSO	non-geostationary satellite orbit
ROES	receive only earth station
RR	Radio Regulations
RSA	recognised spectrum access
s→E	space-to-earth
VSAT	very small aperture terminal