

OfW 85 Guidance Notes for an application for a Point to Point Fixed Link Licence – May 2008

How to fill In your licence application

This guide has step by step instructions to help you fill in your OfW 85 application form. It is particularly aimed for applicants who are less familiar with this licence process and for the initial application using the OfW 85 paper application form.

Please note that the application form is only available in a 'rtf' format on the web. It may be printed out, completed, and then sent to the address shown at the end of these notes, or completed electronically and e-mailed to us.

Contact the Ofcom Licensing Centre during office hours on 020 7981 3131 for help in completing the application, any other Ofcom forms, or information sheets referred to within these guidance notes. All information sheets are also available on the Ofcom website www.ofcom.org.uk From time to time the OfW 85 and the information within these guidance notes may change, for example due to policy changes, etc. Therefore please check that you have the latest release.

1. Introduction

The OfW 85 form can be used for any Point to Point Fixed Link (also known as 'Fixed Terrestrial (Point-To-Point) Link', 'Fixed Link', or 'Fixed Terrestrial Link') application that is to be deployed in geographical areas administered by Ofcom.

1.1. Your responsibility

You should design your system in accordance with the appropriate Technical Frequency Assignment Criteria (TFAC) available from the licensing section of our website.

Also you should ensure that the system(s) comply with the licensing conditions stated in UK Interface Requirement 2000 (UK IR2000).

Please fill in OfW 85 legibly, completely and accurately. Any missing information may require us to return the form to you.

You can use OfW 85 to submit a single link application, or make multiple link applications with our electronic batch process. Please follow carefully the advice provided both in the OfW 85 form and in these guidance notes. If you are unfamiliar with the batch process and conditions then please contact us for further advice.

If you are making an application for the first time then you will be expected to pay the initial licence fee before we will process any subsequent applications or issue the licence documentation.

Remember, no matter who applies on your behalf you are still legally responsible for all actions carried out on your radio system.

1.2. Our responsibility

We aim to meet our published Quality of Service targets stated in OfW 85 which will apply when we receive a correctly completed application. In cases of uncertainty or missing information we may attempt to contact you to resolve any points of detail or simply return the form.

When we are satisfied that all the correct details have been provided we will acknowledge this to the address stated in question B2.

1.3. Licence requirements

The licence is issued under the terms of the Wireless Telegraphy Act 2006. It is an instrument under which Ofcom authorises the use of radio apparatus to 'a person'.

1.4. Point to Point Fixed Link Spectrum

Users can only obtain access to the spectrum through a licence, unless the spectrum is exempt from needing a licence.

1.5. Conditions regarding use of the licence

Your licence will be issued subject to the following requirements. Please read them carefully:

- The licence supersedes all licences and schedules previously issued for the radio service.
- The operation of a radio service other than in accordance with the terms and conditions of the licence is an offence.
- The licence is valid until the renewal date on the licence, and thereafter so long as the licensee continues to pay the renewal fee to Ofcom on or before the renewal date.
- All changes to the radio service must first be made known to and, if agreed, authorised by Ofcom.
- The licensee must ensure that any new person operating the stations observes the conditions of the licence.
- Ofcom may at any time revoke the licence or vary the licence conditions, within the existing Terms and Conditions, providing an explanation of the reason(s) for this action. In such circumstances, the licensee will be informed using one of the following methods:

- a) notice in writing sent to the licensee;
- b) a general notice given by public broadcast;
- Ofcom reserves the right to change at any time the frequencies assigned for the licensee's use.
- The station(s) and the licence shall be available for inspection at all reasonable times (or when an urgent situation occurs at any time) by a person acting under the authority of Ofcom.
- The stations may be closed down at any time on the request of a person acting under the authority of Ofcom.
- Ofcom reserves the right to assign frequencies specified in the licence schedule to additional licensees.

The stations shall transmit and receive only on the frequencies specified in the licence schedule.

1.6. Ofcom treatment of variation of contact details

Ofcom will accommodate all contact changes to an existing licence, liaising with customers as and when required. These changes are referred to as 'licence amendment' and will affect Section B of the OfW 85 only.

Licence amendments concern changes to contact details changes, for example, permitting the licensee to:

- make simple changes because of individual's circumstances such as address, telephone number(s) etc;
- indicate company account and technical personnel changes;
- changes to company details etc.

1.7. Ofcom treatment of variation of link technical details

If technically feasible Ofcom will accommodate all technical link variations to an existing licence, liaising with customers as and when required. These changes are referred to as 'technical variations' and will affect Section B (for identifying your licence number) and Sections C to F as appropriate for technical changes. Technical variations concern changes, for example,

permitting freedom to:

- Deploy new radio equipment operating in a different bandwidth and using a different modulation scheme to that previously deployed on the existing link;
- Deploy new antennas associated with different gains and performance to that deployed on the existing link;
- Adjust antenna positioning;
- Change frequency band;
- Adjust polarisation etc.

2. General advice before answering questions

2.1. Before starting

When completing an OfW 85 you may find it useful to have access to the following information:

- **UK Radio Interface Requirements 2000 (UK IR2000):** Point-to-point radio relay systems operating in fixed service frequency bands administered by Ofcom.
- **Appropriate Technical frequency Assignment Criteria.**
- **Spectrum Trading Guides.**

All are available from the licensing section of our website at: www.ofcom.org.uk

Use these guidance notes to help you to answer the relevant questions.

If you have any doubts about answering the question in the OfW 85 form then please contact Ofcom before submitting your application.

2.2. How to fill in the form

You are required to complete the OfW 85 by entering all relevant information in the appropriate fields. Please write legibly and in black ink. When options are provided then please place an X against the relevant choice.

2.3. How to answer the questions

We suggest you start by answering Section A sequentially through the sections to Section G answering all relevant questions.

Section A Purpose of application

A.1 Please put an X in the appropriate box

You have six options to select from:

1. Apply for a new link licence;
2. Surrender an existing link licence;
3. Vary contact details;
4. Technically vary an existing link;
5. Technical variation enquiry;
6. Surrender an existing link licence (see the important note below).

Administrative variations do not require technical consideration or re-assignment and these are therefore more straightforward for Ofcom to deal with. Option 3 should be chosen to indicate a change in customer details. Further advice is given in Section 1.6 above.

Technical changes to a link should be indicated using Option 5 and typically this requires a re-assignment to be completed. Further details are given in Section 1.6 above. Under spectrum trading there is now a requirement to provide information to those intending to trade. Therefore Option 6 is provided for this purpose.

Important Note:

In future, a request to surrender a link licence will mean that the link is removed from the Ofcom assignment and licensing databases at the time of notification. This releases the channel for re-allocation to other users. If the existing licensee wishes to explore the possibility of trading a licensed link it is therefore important that they take no surrender action prior to the next licence renewal date.

A.2 Ofcom will process and charge for your application on the basis of annual use unless you specifically indicate below it is for short-term use whereby it will be charged for each month of operation.

Please answer accordingly:

1. Short term use for a duration of months
2. First extension for an authorised short-term use months
3. Converting a short-term link to annual operation

If appropriate, cross the box for converting a short-term link to annual operation.

Please note that you are only permitted one extension for a short-term licence under Option 2. Option 3 will extend the duration of use to the next renewal date after which it will be treated on the basis of annual use.

A licence application that is required for less than 1 year will be considered as a short-term licence as long as this is your first application for this link. If you are applying for your first extension of a short-term link, please cross Option 2.

If this is your second extension or you require the link for more than a year, then please cross Option 3.

A.3 If you already hold a licence do you wish to harmonise the payment renewal date?

If so please state the renewal date of one of your existing link licences. This options permits you to harmonise the renewal payment with an existing license should you require.

Section B Contact details

B.1 If you already hold a point to point licence please enter your Organisational Identification Number and go to section C

You will find this printed on one of your existing link licences.

However, if there have been any changes to the contact details previously provided, or you have not provided a contact for Windfarm matters please provide this information in Section B.

B.2 To whom is the licence to be issued?

Legally 'a person' may be an individual operating a business from one of their own premises or two or more people acting together as a Partnership, Company or an Incorporated Association. The WT Act licence must state the full name of the specific person, company or organisation so that the licence is quite clear. A list of legal entities is provided and you should choose one from the list. If the status of your organisation is not listed then you should specify this against 'Other legal entity'. You are also required to enter all appropriate contact details here. It is a legal requirement that the original licence must be sent to the licence contact. This is the only address we will use to send you your licence and accompanying schedules.

B.2.1 Company registration number

Having a registration number is very much dependent on your legal status. You should check whether your legal entity requires you to do so. If so, please enter this in the box provided.

B.3 Should the licensee, at B.2 also be contacted for account matters?

Either cross Yes and go to question B.3.2 or No and go to question B.3.1 to provide these details.

B.3.1 If no, please provide the account contact details

Please enter the contact details for account queries in the text spaces provided for name, address, town, postcode, telephone, fax and e-mail etc.

B.3.2 Are you a third party contractor installing on behalf of a licensee?

If you are third party contractor or handling agent you should cross the 'Yes' box , otherwise cross 'No'.

B.4 Who should be contacted for technical matters?

If a contact given in question B.2 or B.3 is the same for technical details then you should select the appropriate option, and go to section C. If not, you should provide these details under question B.4.1.

B.4.1 If neither, please provide the technical contact details

Please enter the contact details for technical queries in the text spaces provided for name, address, town, postcode, telephone, fax and e-mail etc.

B.5 Who should be contacted for windfarm matters?

If a contact given in question B.2 or B.4 is the same for windfarm details then you should select the appropriate option, and go to section C. If not, you should provide these details under question B.5.1.

B.5.1 If neither, please provide windfarm contact details

Please enter the contact details for windfarm queries in the text spaces provided for name, address, town, postcode, telephone, fax and e-mail etc.

Section C Common technical characteristics

C.1 For a new application, please enter your own unique Customer Link Reference

This question is mandatory for a new application but should be ignored if you are submitting either an amendment or cancellation. In which case, you should proceed to question C.2.

For a new application, please fill in your own reference that uniquely identifies your system. You can use any combination of alpha/numeric characters. Please note that we will consider any characters such as '*' and '\' etc. as a valid part of the Customer System Reference.

C.2 If this is a technical variation of an existing licensed link, please quote your existing Licence Number for this link

When technically varying a link you should enter your licence number for this link in the space provided.

C.2.1 If surrendering an existing licensed link, please quote your Licence Number for this link and go to Section G

When surrendering a licensed link it is assumed that you are an existing customer. You should enter the licence number of this link in the space provided.

C.3 What frequency band do you prefer?

You should cross the appropriate frequency band from the options provided etc.

C.4 If appropriate, please specify the tuning range of the equipment

This is an optional question which allows you to provide any equipment carrier tuning ranges you wish us to consider for your assignment. This frequency range may be the equipment frequency range and must be specified between lower and upper frequency limits.

For duplex operation you need specify only the 'go' band limits. We will assume that the 'return' band limits are spaced above the 'go' band limits by the appropriate duplex spacing.

The appropriate Ofcom Technical Frequency Assignment Criteria (TFAC) will provide the formulae for calculating all carrier (channel) frequencies.

If you specify a carrier tuning range in MHz, Ofcom will attempt to assign the frequency (channel) in this range. If your assignment is unsuccessful then we will automatically assign you the nearest available channel. You can accept, amend or cancel this at a later stage in the licence process. The 'go' band channel assignment will be associated with an equivalent channel assignment in the 'return' band segment.

C.5 Please state your preferred polarisation

Please cross 'Vertical', 'Horizontal', 'Co-Channel Dual Polar' or 'No' preference as appropriate.

Section D Link details

D.1 Please state the required service availability level between 99.9% and 99.999%

You should specify the required service availability level which will determine the receiver median signal level (receiver sensitivity level plus fade margin). The Effective Isotropically Radiated Power (EIRP) is determined in dBW using:

$$\text{EIRP} = \text{Rx median signal level} + \text{Rx station feeder losses} - \text{Rx antenna gain} + \text{median path loss}$$

Cross the appropriate box for 99.9%, 99.95%, 99.99%, 99.995%, 99.999% or within the permissible range state the actual value required.

D.2 Please state the estimated length of the radio path

You should enter the length of the path in kilometres. We will validate this against the site national grid references entered in E.2.

Section E Site details

E.1 Is this a one-way link?

You are required to cross one of the options.

E.2 Please provide the link locations

This question permits you to enter the location details in various formats, which are:

- National Grid Reference;
- Latitude/longitude.

Further advice on each type is provided below.

For providing National Grid, Irish Grid and Easting/Northing:

The extended grid reference is an extension of the National Grid Reference and is preferred by some applicants. Effectively this extends the Easting and Northing for sites outside the usual National Grid range and this is offered to customers, who are already familiar with this extended grid system. We will be pleased to assist customers should they wish to know more about the applicability of this reference system.

The National Grid Reference (NGR) format is in three parts:

- Part A is a two letter, 100 km, site square identifier for mainland UK, or one letter for Northern Ireland, which identifies the specific grid square in the National Grid reference system;
- Part B is for Easting;
- Part C is for Northing.

The preferred location precision for all frequency bands is 1 metre (i.e. five figure Easting and five figure Northing). You should always enter the numerical Easting and Northing information starting from left to right entering 0s for any unused spaces.

For providing Latitude/Longitude:

Alternatively, you can specify the location in Latitude/Longitude format. You are required to enter the Latitude and Longitude in a separate series of boxes which use degrees (°), minutes (') and seconds (").

Remember when entering the longitude to also select E (ast) or W (est).

E.3 Please give the site name and address

For onshore sites, please enter the scanner site name details in the spaces provided for name, address, town, county and postcode. You should attempt to provide as much detail as possible. Where sites have been used before please provide us with the existing site name.

We understand that sometimes providing postcode information is difficult, particularly for rural locations. If so, please attempt to provide us with at least the first half of the post code.

E.4 Please confirm the height of the antenna in metres above ground level (or mean sea level if offshore)

For onshore sites, please provide the antenna height measured above ground level (AGL). For offshore sites, please provide the antenna height above mean sea level.

E.5 If these are two new sites then please confirm which site should transmit in the upper half of the frequency channel plan, cross one option only

Transmit high/low checking has been incorporated into the Ofcom general online register. You will be required to enter frequency range, location and search radius. The register will return a list of licences and whether they transmit high or low at these locations.

You will be expected to check any sites against the online register before submitting your application. For existing sites, from which licensed links are transmitting, Ofcom will maintain the established high/low transmit status for these sites. For new sites, where no high/low status is provided from the register, please state which site you would like to transmit high.

Section F System details

F.1 Please provide the Equipment Reference Code from the Ofcom website which can be found under the licensing section at: www.ofcom.org.uk

The Equipment Reference Codes on the website show previously licensed and notified equipment. It is in no way an endorsed list of preferred equipment or a complete list of all notified fixed link equipment. It has been requested by licensees as a helpful reference for simplifying applications and for this reason it is published on our website.

This is typically a spreadsheet periodically downloaded from our assignment system. The provided headings in single quotes from left to right are:

1. Frequency 'Band' (GHz);
2. 'Description' which is usually the manufacturer;
3. 'Model Number' of the equipment;
4. Unique equipment reference 'Code';
5. 'Bit Rate' usually shown with channel spacing (e.g. 155/28 for a 155 Mbit/s in 28 MHz system etc);
6. 'Active' status either 'Y' or 'N'. 'N' signifies that the equipment is old or not in production and we usually will not assign this equipment; and
7. 'R&TTE Notified' signifying that the equipment has been successfully notified under the current R&TTE

Directive by 'Y' or approval was under the old national type approval regime using UK national MPT regulations by 'N'.

When making your application it is the code (item 4) which is required. The application form prefixes this code with 'E' for equipment for clarity. You should ensure that when entering this code that you enter the information accurately from left to right, taking notice of any code separators '/' and any other special characters. If you are unable to find the relevant Equipment Reference Code on the website then you should contact us directly before sending your application to us.

As examples, two valid entries for 38 GHz 155 MBit/s in 28 MHz systems are:

- 38/DT/0/43/DM for ALTIUM 38GHZ STM-1; and
- 38/DT/2/91/NE for PASOLINK PLUS 38GHZ.

If the equipment code is not available from the website then either complete question F.1.1 or contact us directly before making your application.

F.1.1 If the Equipment Reference Code is not known please specify the following:

Equipment manufacturer, ETSI spectral efficiency class, equipment model number, bit rate, bandwidth and modulation level and type

If you cannot find the code for the equipment then you should specify this information which will help us to process your application quicker and make any necessary enquiries to ensure that the equipment has been correctly notified, and if so, update the Equipment Reference Number spreadsheet for future applications. Occasionally manufacturers change their name from time to time and sometimes this confuses the identification of equipment. So we can uniquely identify the correct piece of equipment we also like you to specify the minimum equivalent PDH/SDH (bit rate), ETSI spectral efficiency class, bandwidth, and modulation with level. Then we can be certain we have the correct equipment details.

F.2 Please provide the Antenna Reference Code from the Ofcom website which can be found under the licensing section at: www.ofcom.org.uk

The Antenna Reference Codes on the website show previously licensed and notified antenna equipment. It is in no way an endorsed list of preferred equipment or a complete list of all notified fixed link antennas. It has been requested by licensees as a helpful reference for simplifying applications and for this reason it is published on our website.

Typically a spreadsheet periodically downloaded from our assignment system. The provided headings in single quotes from left to right are:

1. Frequency 'Band' (GHz);
2. 'Description' which is usually the manufacturer;
3. 'Model' number of the antenna;
4. Unique equipment reference 'Type';
5. 'Antenna Description' usually a free text field with additional information e.g. full absorber, side ear absorber, no absorber etc.;
6. 'Performance' status either 'H', 'S' or 'O' respectively for high performance, standard performance or other performance.; and
7. 'Size' signifying antenna diameter in metres, for example 0.3, 0.6 etc;
8. 'Gain' signifying bore sight gain in dBi, for example 38 and 43 etc; and
9. 'Beam Width' specifying the half-power 3dB beamwidth in degrees, for example 1 or 2.

When making your application it is the type (item 4) which is required. The application form prefixes the type code with 'A' for antenna for clarity. You should ensure that when entering this code that you enter the information accurately from left to right, taking notice of the code separators '/' and any other special characters. If you are unable to find the relevant Antenna Reference Code on the website then you should contact us directly before sending your application to us.

As examples, two valid entries for high performance 38 GHz antennas are:

- A/38/H/97/10/AA for 0.3 metre parabolic; and
- A/38/H/91/6/FM for 0.2 metre lens horn.

If the antenna code is not available from the web site then either complete question F.2.1 or contact us directly before making your application.

F.2.1 If the Antenna Reference Number is not known please specify the following:

Antenna manufacturer, ETSI spectral efficiency class, antenna model number and the antenna maximum (boresight) gain

If you cannot find the code for the antenna then you should specify this information which will help us to process your application quicker and make any necessary enquiries to ensure that the equipment has been correctly notified, and if so, update the Antenna Reference Number list. Also, occasionally manufacturers change their name from time to time and sometimes confuse the identification of equipment.

F.3 Please state the feeder losses

You are required to provide the value of the feeder loss in dB. This value should be rounded to the nearest dB. The loss may be 0dB as in the case of an integrated transceiver with parabolic antenna operating above 25 GHz or the equipment might be connected by a run of waveguide with typically 2dB feeder loss.

At lower frequencies we normally expect a value greater much greater than 0dB for feeder losses connecting the terminal indoor and outdoor units. In exceptional conditions this might exceed 15dB to 20dB where the units are connected by waveguide or coaxial cable.

F.4 Please state any other losses

You are required to provide the value of any other system losses such as branching or hot standby losses in dB. This value should be rounded to the nearest dB. Acceptable losses on a band-by-band basis are stated in our published Technical Frequency Assignment Criteria. We use this criterion to judge whether your requirements are reasonable. Ofcom does not generally permit the use of frequency diversity for standby purposes. You should note that we don't encourage the use of N+1 systems.

F.5 Feeder losses greater than 10 dB and other losses greater than 4dB need to be justified. If the losses in question F.4 and/or F.5 exceed these limits, please provide justification below.

This question provides boxes to justify any untypical feeder or other losses. We retain the right to challenge or refuse any losses which seem unreasonable. Generally, acceptable feeder losses are no more than 10dB and combined other losses no more than 4dB. We require justification for values greater than these limits and will consider these on a case-by-case basis. Descriptions of excessive losses are required for both sites.

F.6 Does the system including antennas meet the licensing requirements of UK Interface Requirement 2000 (UK IR2000)?

Please cross 'Yes' or 'No' as appropriate. It is the responsibility of the applicant to ensure that the proposed scanner equipment is licensable. See UK IR2000. Your equipment supplier will be able to advise you on eligibility.

Section G Declaration

Following the granting of any licence the licensee has 28 days in which to raise any objections to the conditions contained therein. The applicant completing the application should provide his or her name in capital letters, enter the date of the application in the following format dd/mm/yyyy.

It is helpful from an evidential point of view if the applicant signs the declaration to acknowledge their obligation to state the truth. Applicants who submit their form electronically will be deemed to have acknowledged this declaration (in Section G) by the act of making this electronic submission

If you have not received acknowledgement of your application within two working weeks you should contact Fixed Links Licensing at the address below.

Useful contacts for further advice on completing OfW 85

Completed applications should be sent to:

Fixed Link Licensing
Ofcom Licensing Centre
PO Box 56373
London SE1 9SZ

Telephone 020 7981 3131
0300 123 1000

Facsimile 020 7981 3235

E-mail: fixedlinklicensing@ofcom.org.uk