

This information sheet provides details about Private Business Radio (PBR). A business radio system is used to pass messages between a base station and mobile sets and mobile to mobile as an aid to conducting business. The different Business Radio licences allow the licensee to operate different types of systems in accordance with licence conditions and Wireless Telegraphy legislation.

## Telephone Interconnect on Private Business Radio (PBR) Channels

OfW56 (previously Radiocommunications Agency information sheet RA 222)

### 1. Introduction

This leaflet explains what telephone interconnect is and when you may use it on a PBR system.

### 2. What is telephone interconnect?

'Telephone interconnect' is used here to describe the facilities that give mobile radio users access to either:

- a public switched telephone network (PSTN), such as those run by BT – this is called **PSTN connection**; or
- a private branch exchange (PBX) or private automatic branch exchange (PABX), i.e. an organisation's switchboard and internal telephone extensions – this is called **PBX or PABX connection**.

For the purpose of licensing policy, a PABX and a PBX are treated the same; for simplicity, only the term PABX is used here.

Calls can be made either from the mobile to the telephone network (outgoing calls) or in the reverse direction (incoming calls).

### 3. Why impose restrictions?

PBR is intended for users who pass a large number of short, business-related messages. Typical users are those controlling fleets of taxis, national couriers, breakdown organisations etc.

A busy mobile PBR channel may easily pass more than 100 messages an hour, each lasting around 15 seconds. Because of the demand on PBR channels in many parts of the UK, most users have to share channels, taking it in turn to pass messages when the channel is free of traffic.

Mobile telephone calls tend to last much longer than PBR messages – and the call set-up time must also be taken into account. If PBR users had unrestricted use of telephone interconnect, the PBR channels would become even more congested and other users would often be unable to use them.

### 4. Licensing

You may not use telephone interconnect facilities on a PBR system unless:

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- certain conditions are met; and
- the telephone interconnect facility has been detailed on your PBR licence schedule.

Telephone interconnect requires licensing under:

- the Wireless Telegraphy Acts 2006 (WT Acts) – see Section 8; and
- any communications services need to be operated in accordance with the General Conditions of Entitlement made under Section 45 of the Communications Act 2003.

## 5. Equipment

Your radio transmitting and network connecting equipment fall within the scope of the Radio & Telecommunications Terminal Equipment Regulations (Statutory Instruments 2000/No.730 amended by 2003/No.1903 and 2003/No.3144). These place obligations on the suppliers of such equipment to ensure it complies technically with the relevant essential requirements, that the user is provided with the relevant information on countries where use is permitted and that it is appropriately placed on the market with the necessary markings and documents signifying compliance. This does not diminish the user's responsibility for taking equipment into service and operating it appropriately.

## 6. What is permitted?

We will consider various categories of interconnect use:

### 6.1 Common Base Station

For this category of licence, there is normally no WT Act licence restriction on PSTN or PABX interconnect. However, we will not make any allowance if you fail to meet minimum mobile loading requirements because you have an interconnect facility. Before you use interconnect, its use must be authorised on your licence schedule.

### 6.2 Wide-Area: exclusive channels

In exceptional cases, we may grant a licensee sole use of a channel, either regionally or nationally. In these cases, we will consider applications for both PSTN and PABX interconnect. If we grant you sole use of a channel, we will not place restrictions on incoming or outgoing calls, or time of day for use. The call-duration parameters set out in Section 7 will apply.

Sole use of a channel cannot, however, be guaranteed indefinitely. If an exclusive channel becomes shared, we may apply the restrictions for shared channels.

### 6.3 On-Site

Consideration will be given to both PSTN and PABX interconnect, similar to that given to wide-area exclusive use (see Section 6.2).

An on-site system is normally contained on a local site, such as a shopping precinct. The antenna height must be less than 10 metres above ground level, with an effective radiated power (ERP) of 2W or less; these factors normally confine transmissions to a radius of 3km or less.

The limitations specified in Section 7 will apply to this type of service. We strongly recommend that you use short-form dialling facilities. There is no limit on the number of PABX extensions you may connect.

#### **6.4 Wide-Area: shared channels**

This category of authorisation, applies to licensees who operate on shared channels. For PSTN interconnect, we can normally allow dial-in connection only between midnight and 8.00am. (This is for incoming calls only.)

Before a call is connected, we recommend that the caller is told that they will be speaking over a radio link; they may be overheard; the quality of communication may be worse than a telephone call; and it will not be possible for both parties to speak at the same time.

The system parameters set out in Section 7 will apply. We will not permit any extension to the hours specified above, except in exceptional circumstances. The only outgoing calls that we will consider are those to 999 emergency services; these must be made by short-form dialling.

PABX interconnect on shared channels will not be subject to time-of-day restrictions, but will be subject to the limitations given in Section 7. Up to ten contactible extensions may be used. We will consider requests for PSTN interconnect for emergency 999 calls only; this must be by short-form dialling. Please note that it is not possible to operate interconnect without a fixed base station.

### **7. System parameters**

Telephone interconnect systems presently use two forms of dialling:

- dual-tone multi-frequency (DTMF); and
- short-form dialling.

The DTMF keypad gives a mobile full access to any number on a PABX – and, if the connection is there, to the PSTN as well. To prevent channels from becoming too congested, the interconnect unit must limit the availability of telephone extensions to the levels contained above.

Please remember that the greater the number of mobiles with access to telephone extensions, and telephone extensions with access to mobiles, the more congested the system will become. We will not make additional assignments to a licensee whose use of an interconnect facility causes channel congestion.

Your interconnect systems must not use full duplex operation, unless you are the sole user of the channel, either regionally or nationally. If you are the sole user, we will consider duplex operation, although it is less likely to be granted on a regional basis. Semi-duplex or simplex operation may be used.

The following system parameters for any connection to a PABX or a PSTN are required:

- Ringing tones: 30 seconds
- Maximum call duration: 3 minutes
- Reset if no carrier on 'receive' present: 10 seconds
- Redialling barrier: 2 minutes

Numbers that begin with 0898 etc or that provide a 'dial in and listen' service must be barred.

## 8. Applying for telephone interconnect

### 8.1 General information

If you already have a radio licence and you want to add an interconnect facility to your licence, write to your normal contact point within Ofcom, quoting your licence reference number. We cannot guarantee that we will allow interconnect, so you should **not** commit to buying any interconnect equipment until we have given our approval by adding a suitable clause to your licence schedule.

You must provide full equipment details of the interconnect unit with your application. If your application does not contain these, it is liable to be delayed.

It is a standard condition of all licences issued under the WT Acts that no interference should be caused to other radio users. If we allow you to operate telephone interconnect, but we then find that it causes harmful interference to other radio users, we may require you to modify or suspend its use.

If connected to radio apparatus, you will need a WT Act 2006 licence under Section 1.1.

### 8.2 Common Base Station licensees

If you have a Common Base Station licence and you want to add an interconnect facility, write to the appropriate local Ofcom office (see Section 9 for the address) or contact:

#### **Business Radio Unit**

Ofcom  
Riverside House  
2a Southwark Bridge Road  
London  
SE1 9HA  
Tel: 020 7981 3084

## 9. Further Information

For further information on telephone interconnect or on any other matter concerning PBR licensing, please contact:

#### **Ofcom Contact Centre**

Riverside House  
2a Southwark Bridge Road  
London  
SE1 9HA  
Tel: 0845 456 3000  
Fax: 0845 456 3333  
Email: [contact@ofcom.org.uk](mailto:contact@ofcom.org.uk)  
Web: [www.ofcom.org.uk](http://www.ofcom.org.uk)