



User guide

2+8 Telephone



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About this guide

This guide explains how to use a standard telephone connected to a 2+8 system. There is a separate user guide for use with the 2+8 Systemphone.

Your system may be connected directly to one or two exchange lines or the lines may be connected to a host switchboard (PABX). This guide has a section containing instructions for using a line connected to a PABX (see *Making a call via a host PABX*).

Conventions

Certain conventions have been used in this guide.

Many instructions in this guide refer to pressing keys. Where the instruction says *press*, then press the key indicated and release it; there is no need to hold it down, unless specifically instructed to do so. For example:

press **RECALL**

Where you are asked to *key* a digit or series of digits, then key (dial) the digits using the keypad on the telephone. For example:

key **41**

or

key the number you require

Failed calls are often the result of pressing keys too quickly. If a call is not successful, try again, pressing each key firmly.

You will sometimes be referred to another part of the guide for details on a particular feature. The reference is given by section or sub-section heading, which is printed in italics. For example:

If the extension is engaged, you may tell the system to call you when it becomes free, (see *Callback when free*).

The system uses tones to indicate the status of a line, to confirm an action, and to warn you that a call is waiting.

Different types of ringing are used to differentiate between internal and external calls (see *Tones and ringing*).

Note Depending on the type of telephone you have, your **RECALL** key will probably be labelled **R**. It may be a key of a different colour, situated either next to the main keypad or under the handset.

During programming, you are asked to replace the handset when you hear the confirmation tone. You should do so within five seconds of hearing the tone to activate the programmed feature.

Also, during the programming of certain features, you are asked to listen for the internal dial tone. This dial tone indicates that there is a free intercom path (internal line). You must not proceed before you hear the tone, as those facilities cannot be programmed unless the intercom path is free.

Introduction

The 2+8 is a small telephone system having access to one or two external lines. The system may have up to eight extensions and these are numbered from 20 up to 27.

You can make a note of the extension users on the quick reference cards provided with the system. If you write in pencil the details can be altered. If you write in biro it will be permanent.

Power supply/failure

Note **The mains power should be left on at all times.** If the mains power is disconnected the programmed facilities will return to the unprogrammed/default conditions. The facilities affected are listed below. In addition, if your telephone has stored numbers, these may have been erased, depending on the type of telephone.

In the event of a mains failure, or disconnection of the power supply, internal calls cannot be made.

Extension 20 will be connected to line 1 and extension 21 to line 2, enabling both incoming and outgoing services.

When the power is restored, your extension may need to be re-programmed, as the following facilities will have returned to their default/unprogrammed conditions:

- divert
- night service
- external ringer on/off
- callback when free on lines and extensions
- call park.

Modes of operation

The system will have been set to work in one of three modes during installation. To alter it will require a visit by the service engineer. The modes are:

- OPERATOR (PBX) mode - all incoming calls are received on extension 20.
- ANYONE CAN ANSWER (keysystem) mode - any extension can take calls; all the extensions ring unless their ringers have been programmed off.
- EXCLUSIVE LINE mode - the second exchange line is exclusive to extension 21. The exclusivity can be shared with one other extension if extension 21 diverts its calls. Calls cannot be diverted to extension 21, although line 1 calls may be transferred to this extension.

Intercom paths

There are two intercom paths (internal lines) for connecting extensions on an internal call. One of these paths is also used by the system when you program a facility.

If you pick up your handset to make a call and hear the engaged tone, this means that both the intercom paths are being used. Until one intercom path becomes free, you cannot make an internal call. However, you can still make an external call by pressing **RECALL**.

Telephones

Almost any make or model of approved standard telephone may be used on the 2+8 system, provided it has earth loop recall.

If you are in any doubt, seek the advice of your supplier.

To take advantage of all the features of 2+8, it is recommended that one or more systemphones be used with the system.

The 2+8 Systemphone provides the following facilities which are not available on a standard telephone:

- direct exchange line/extension selection
- lamp indication of exchange line status
- lamp indication of extension status
- lamp indication of extension programming status
- lamp indication of intercom path status
- call transfer when intercom paths are engaged
- call shuttle between two external lines
- speak to other systemphones by pressing a single key.

In addition to these facilities the systemphone has full handsfree working, 10-number abbreviated dialling and last number redial.

In operator mode, using a systemphone at extension 20 will enable you to manage the system to its best effect.

Call barring

Your extension may have been restricted from accessing one or both exchange lines. If this seems to be the case, check with your System Manager. The call barring is set at the time of installation and requires a visit from the service engineer to alter it.

Answering a call

Internal call

An internal call is indicated by single, evenly spaced rings.

To answer the call

Lift the handset and speak.

To end the call

Replace the handset.

External call

An external call is indicated by a double ring.

To answer the call

Lift the handset and speak.

To end the call

Replace the handset.

Call waiting

If you are busy on a call, and you hear a one-second warn tone, this indicates that a second call is waiting to be answered.

In operator mode, only extension 20 will receive warn tone. If this is not possible, because extension 20 is in the process of making an outgoing call, being rung or programming, then extension 21 will ring or receive warn tone.

Call pick up

You may hear an incoming call ringing another extension which is unattended. You can answer this call if you wish.

Lift the handset.

When you hear the internal dial tone

key **8**

Note In the exclusive line mode, only extension 21 or the extension it is diverted to can answer an incoming call on line 2.

Making a call

Internal call

To make the call

Lift the handset.

Listen for the internal dial tone. If you hear the engaged tone replace the handset and try again later.

When you hear the internal dial tone

key the appropriate extension number (20 to 27)

To end the call

Replace the handset.

If the extension is engaged, you can use the callback when free facility (see *Callback when free*).

External call - general

To make the call

Lift the handset.

You will hear either the internal dial tone, or the engaged tone. The engaged tone indicates that both intercom paths are busy. This will not prevent you making an external call.

press **RECALL**

You will hear the external dial tone.

key the number you require

To end the call

Replace the handset.

If both lines are engaged, you will hear the engaged tone after pressing **RECALL**. You can either try again later or use the callback when free facility (see *Callback when free*).

External call - using a specific line

You may specify which external line you want to use for a call. However, if on lifting the handset you hear the engaged tone, you cannot use this facility as it requires a free intercom path.

To specify an external line for an external call

Lift the handset.

When you hear the internal dial tone

key **41** for line 1

key **42** for line 2

Transferring a call

You can transfer a call only if the extension to which you wish to make the transfer is free. If you hear engaged tone when you press **RECALL**, (indicating busy intercom paths) the call cannot be transferred.

Transferring a call with announcement

While connected to the external call

press **RECALL**

When you hear the internal dial tone

key the extension you require

When the extension answers

Announce the caller and replace the handset.

The call is transferred.

If the extension user does not accept the call, or if there is no reply, or if the extension is engaged

press **RECALL**

The system returns you to the external caller.

The external caller cannot overhear your conversation with the other extension user.

Transferring a call without announcement

While connected to the external call

press **RECALL**

When you hear internal dial tone

key the extension you require

When you hear the ring tone

Replace the handset.

If the called extension does not answer within 30 seconds, the call will revert to your extension for a further 30 seconds if your extension is free. If you do not answer, or your extension is engaged, the call is re-presented as a new incoming call.

Holding for an enquiry call

If, while engaged on an external call, you wish to make an enquiry to someone on another extension

press **RECALL**

The caller is placed on hold.

When you hear the internal dial tone

key the required extension number

Make your enquiry; the external caller cannot overhear the conversation. When you have completed the enquiry, to return to the waiting caller

press **RECALL**

Note You can make an enquiry call only if an intercom path is available. If you hear engaged tone when you press **RECALL** you cannot make an enquiry, so you should return to the caller by pressing **RECALL** again.

Call park

The call park facility allows an external call, which cannot immediately be cleared or transferred, to be parked within the system, allowing you to deal with other calls, or move to another extension and deal with it there. This is particularly useful for the system operator, when the extension required is engaged and the caller is willing to hold.

To park a call

Tell the caller you are going to put them on hold

press **RECALL**

key **5**

When you hear the confirmation tone

Replace the handset.

The call is now parked in the system.

Only one call may be parked in the system at a time.

To retrieve the parked call

Lift the handset.

key **5**

You are now reconnected to the held caller.

If the parked call is not retrieved within three minutes, the system takes the call out of hold and rings your extension.

If you do not answer this call within 30 seconds, or if your extension is now engaged, the call is re-presented as a new incoming call.

Callback when free

Callback when free on an extension

If an extension you want to call is engaged you can arrange for it to ring you back when it becomes free.

To place a callback

Lift the handset.

key the extension number

When you hear the engaged tone

key 40

When you hear the confirmation tone

Replace the handset.

If the confirmation tone is not received, this means that either a callback to that extension has already been set up, or more than four internal extension callbacks have been set up on the 2+8 system.

When the handset of the called extension is replaced, your telephone rings with internal ringing.

Lift the handset.

You will hear the internal ringing tone as your telephone rings the other extension number as in a normal internal call.

To end the call

Replace the handset.

If the callback attempts to ring your telephone and it is now engaged, it will ring when you replace your handset.

Callback will be cancelled when:

- the originating extension has been rung for 20 seconds without answer
- the handset of the originating extension is replaced before the target extension is answered.

No more than four internal callbacks can be set up at any one time on the 2+8 system.

If you set a callback and then put your extension on divert before receiving the callback, the system will callback on the original extension.

Callback when free on an external line

You may use this facility if you want to make an external call and both lines are engaged. The system will call you back when a line becomes free.

To place a callback

Lift the handset.

press **RECALL**

When you hear the engaged tone

press **RECALL**

When you hear the confirmation tone, replace the handset.

No more than two external callbacks can be set up at any one time on the 2+8 system. The extensions will receive callback in the order that they were placed. When the line becomes free, your telephone rings.

Lift the handset.

You are connected to the external line and will hear the external dial tone.

key the required number

The callback will be cancelled if you do not answer within 30 seconds.

Diverting calls

You may wish to have all your calls forwarded to another extension. You can use the divert facility for this. Any call to your extension will be automatically diverted to the extension you have nominated.

One extension can be designated to receive the calls of a number of extensions. For example, a secretary or receptionist could be nominated.

An extension to which calls are being diverted cannot have its own calls diverted to any other extension. You will hear unobtainable tone if you try to divert your calls while another extension is diverting its calls to you.

To divert your calls

Lift the handset and listen for the internal dial tone

key 70

key the extension number to which you wish to divert your calls

When you hear the confirmation tone

Replace the handset.

While your extension is on divert:

- you will hear special dial tone every time you lift the handset
- the extension to which your calls are being diverted may have its ringer programmed off, but it still rings when your calls are diverted to it.

To cancel divert

Lift the handset.

When you hear the special dial tone

key 77

When you hear the confirmation tone

Replace the handset.

Divert is now cancelled.

To divert the exclusive line

Extension 21 is the only phone which can be allocated to the exclusive line. However, it can divert its calls to another extension in exactly the same way as described in the foregoing paragraphs.

During diversion, extension 21 and the extension it is diverted to are able to make outgoing calls on line 2.

Shuttling

If you are engaged in an outside call, you may also wish to speak to someone on an internal extension. The shuttle facility allows you to do this.

To make an internal shuttle call

While connected to the outside call

press **RECALL**

When you hear the internal dial tone

key the required extension number

Note You can set up a shuttle only if an intercom path is available. If you hear the engaged tone when you press **RECALL**, the shuttle cannot be set up.

To shuttle between the extension and the outside caller

press **RECALL**

You may shuttle between the two as many times as you want. You can speak to only one caller at a time, the other one cannot overhear you.

To end the shuttle call

Replace the handset while connected to the external line.

To transfer the external caller to the other extension

Replace your handset while connected to the extension.

Night service

Outside normal working hours, the extension which normally answers incoming calls will probably be left unattended. Therefore, when night service is in operation, incoming calls will ring on all extensions, even when the ringers have been turned off. The ringer programming remains in effect, however, and reverts to previous settings when night service is cancelled.

Note Night service is not available when the system is in exclusive line mode.

Night service can be programmed from extension 20 only.

To activate night service

At extension 20

Lift the handset.

When you hear the internal dial tone

key 10

When you hear the confirmation tone

Replace the handset.

Night service is now in operation.

To cancel night service

Lift the handset.

When you hear the internal dial tone

key 11

When you hear the confirmation tone

Replace the handset.

Night service is now cancelled.

Extension reset

The following programmed facilities can be returned to their default/unprogrammed condition in a single resetting operation:

- divert
- external ringer on/off
- callback when free on lines and extensions
- call park.

To reset your telephone

Lift the handset.

When you hear the internal dial tone

key **30**

When you hear the confirmation tone

Replace the handset.

The extension is now reset.

Exclusive line mode

In exclusive line mode, line 2 is exclusive to extension 21 and the following conditions apply:

- Extension 21 cannot make calls on line 1.
- Extension 21 cannot receive calls on line 1, unless they are transferred from another extension.
- No other extension can divert its calls to extension 21.
- No other extension can access line 2.

If extension 21 is engaged on an intercom call when a call arrives on line 2, extension 21 receives a warn tone.

If extension 21 is dialling out or being rung when a call arrives on line 2, the warn tone will not be heard. In this instance, the caller will hear the engaged tone.

If extension 21 has diverted its calls to another extension and that extension is dialling out or being rung when an incoming call arrives, then extension 21 will be made to ring.

- Night service facility cannot be used in this mode.

Call barring

Your extension may have been set so that you cannot access one or both lines. However, you can still make internal calls.

There are some exceptions:

- When the system is in operator mode, extension 20 cannot be barred from using either line.
- In both the exclusive line and the anyone can answer modes, calls cannot be barred on extension 20 from line 1 nor on extension 21 from line 2.

Note If your extension is barred access to external lines, you will hear the unobtainable tone if you attempt to obtain a line.

However, if your extension is barred, and you need to make an external call, you can request the assistance of an unbarred extension. To do this

Call the unbarred extension and request an external call.

Replace the handset.

The unbarred extension sets up the external call and, on connection, transfers the call to you in the usual way (see *Transferring a call*).

When an extension has been barred calls cannot be made to the Emergency Services. Telephones on barred extensions should **not** display the emergency number, for example 999.

Setting the ringer on/off

Depending on your extension number, you may be able to turn off the ringer on your telephone, but this also depends on the configuration (mode) of your system. It is not possible to turn off the ringers on all the extensions.

You may turn on/off the external line ringing only. It is **not** possible to turn off internal ringing.

Operator mode

Extension 20 ringer is always on for both lines, and cannot be turned off.

All other extension ringers are automatically turned off for incoming calls when in this mode.

Anyone can answer mode

Extension 20 ringer is always on for line 1 and cannot be turned off.

Extension 21 ringer is always on for line 2 and cannot be turned off.

All other extension ringers are normally on for incoming calls on both lines but can be individually turned off.

If it is not possible to indicate an incoming call by ringing a free extension or supplying a warn tone, then telephones with their ringers programmed off **will** ring.

Exclusive line mode

Extension 20 ringer is always on for line 1 and cannot be turned off. All other extensions, except extension 21, are on for incoming calls on line 1, but can be individually turned off.

Extension 21 ringer is always on for line 2 and cannot be turned off. No other extension rings for line 2 unless extension 21 diverts its calls.

To turn off the ringer

Note The ringers can be programmed on for individual lines only if they have been turned off for both lines first.

To turn off the ringer for both lines

Lift the handset.

When you hear the internal dial tone

key 66

When you hear the confirmation tone

Replace the handset.

This turns off the ringer for both lines.

To turn on the ringer

To turn on ringer selectively

Lift the handset.

When you hear the internal dial tone

For line 1

key 61

For line 2

key **62**

When you hear the confirmation tone

Replace the handset.

To turn on ringer for both lines

Lift the handset.

When you hear the internal dial tone

key **69**

When you hear the confirmation tone

Replace the handset.

Note When the system is in night service mode, all the telephones will ring even when their ringers have been turned off.

Making a call via a host PABX

If your 2+8 system is connected to a host automatic switchboard (PABX), you can make internal calls to other extensions on the PABX and external calls via the PABX.

Internal call

To make an internal call to an extension on the host PABX

Lift the handset.

Listen for the internal dial tone (if you hear engaged tone you can still make the call).

press **RECALL**

When you hear the host PABX dial tone

key the PABX extension number you require

To end the call

Replace the handset.

External call

You may have to dial an access code (usually 9) to obtain an outside line on the host PABX.

To make an external call

Lift the handset.

If you hear engaged tone you can still make the call.

press **RECALL**

When you hear the PABX dial tone

key the PABX access code

key the external number you require

To end the call

Replace the handset.

If you hear engaged tone after pressing **RECALL** both lines to the host PABX are engaged. You can either try again later or use the callback when free facility (see *Callback when free*).

Host PABX recall

If you are on an external call and you need to make an enquiry call to a host PABX extension, tell your caller that you are placing the call on hold.

press **RECALL** twice within one second

When you hear the PABX internal dial tone

key the required PABX extension number

To transfer the external caller to the host PABX extension, replace your handset while connected to the host PABX extension.

Note In case of difficulty, refer to the PABX user's guide or to your System Manager.

Using British Telecom Star Services

The 2+8 system is suitable for use with British Telecom Star Services. However, some Star Services require the use of the **RECALL** key (refer to your Star Services user's guide).

To use Star Services RECALL from 2+8

Proceed as instructed by the Star Services user's guide.

Where the Star Services instructions tell you to use **RECALL (R)**

press **RECALL** twice within one second

If the **RECALL** key appears to be ineffective, check with the supplier that your system has been set for Time Break Recall (TBR) working.

Note Star Services are available only to customers connected to a British Telecom digital exchange.

Numbering plan

The following list gives the numbers allocated to the system extensions and for programming system facilities and modes of operation.

Number	Extension
0	Call extension 20 - system operator
20	1st extension
21	2nd extension
22	3rd extension
23	4th extension
24	5th extension
25	6th extension
26	7th extension
27	8th extension

Number	Facility
10	Night service on
11	Night service off
30	Extension reset
40	Callback when free
41	Exchange line 1
42	Exchange line 2
5	Call park
61	Activate external ring line 1
62	Activate external ring line 2
66	Turn off ringer for both lines
69	Turn on ringer for both lines
70	Divert
77	Cancel divert
8	Incoming call pick up
9	Spare

Connecting ancillary equipment

You can connect equipment such as answering and facsimile machines to the 2+8 system.

Connecting answering machines

Answering machines will work only when connected to a telephone with an active ringer. Extension 20 is therefore the ideal choice for connecting an answering machine, because its ringer cannot be turned off.

If you wish to connect the answering machine to another extension, make sure that the ringer is not programmed off.

Using a facsimile machine

If you are likely to have a large number of incoming fax calls, it is recommended that you use the system in exclusive line mode with the fax machine on the exclusive line. This will ensure that the fax line cannot be used by other extension users for making outgoing calls.

Alternatively, you may use the system in Keysystem mode. If you do this, you must ensure that the extension to which the fax is connected has its ringer programmed on for whichever line you nominate for fax calls.

Operator mode is not recommended as all incoming calls are answered by only one extension.

There are two important points to remember:

- For outgoing calls, you will need to program the fax machine to select the exchange line (either 41 or 42, see *Numbering plan*) since the machine is unlikely to have a recall button to select the line.
- Using auto-calling facilities, you may need to programme a pause after the exchange line is selected to overcome any delay in receiving exchange line dial tone.

Note Every attempt is made to ensure that 2+8 is compatible with all types of telephone ancillary equipment, but British Telecom cannot guarantee that all arrangements will work correctly. If you are in doubt about whether a particular piece of equipment may be used on the 2+8, you should contact your equipment supplier.

Problem solving

If you have a problem with your 2+8 system, check the following points:

Equipment check

- Check that all phones are plugged into their sockets correctly.
- Check that your telephone is working correctly.
- Check that the mains power lead to the Central Control Unit (the box mounted on the wall labelled 2+8) is plugged in and that the power is switched on.

Function/facility check

- You are programming a facility and you hear unobtainable tone:
 - the timeout period may have elapsed
 - you may have keyed an invalid code.
- You are attempting to divert to another extension and you receive unobtainable tone:

Check that you are not diverting to:

- your own extension
 - a non-existent extension
 - an extension on divert; to check, replace the handset and then call extension in the normal way and your call will be diverted to the nominated extension who will be able to confirm that calls are being diverted
 - extension 21 if the system is in exclusive line mode.
- Your telephone does not ring:

The ringer may be programmed off. Refer to *Setting the ringer on/off*.

- Your telephone rings although the ringer has been programmed off:
 - your extension is the target of a diversion from another extension
 - the system is in night service
 - there is an incoming call which cannot be answered by the usual extension.

- You want to make an external call but you hear the unobtainable tone:

Your extension may have been barred from making external calls. Check with your System Manager.

- You are trying to put the system into night service and receive unobtainable tone:
 - you are trying to activate night service from an extension other than 20
 - the system is in exclusive line mode.

- The facilities programmed on your extension are no longer in force:

There may have been a power failure or the power may have been switched off.

- The stored numbers in your telephone are erased. Again, there may have been a power failure or the power may have been switched off.

If after making these checks your system is still not working correctly, your system may be faulty. Contact your equipment supplier or maintainer.

Tones and ringing

Tones

There are a number of tones which you will hear when using the system. These are described in the following paragraphs.

Dial tone

Dial tone is a continuous purring tone. It indicates that you may dial.

Engaged tone

Engaged tone is an interrupted tone. It indicates either that the number you want is engaged or that both intercom paths are in use.

Confirmation tone

Confirmation tone is a series of three short bursts of tone and a pause. You will hear this after entering certain commands while programming. It confirms that the system has accepted the command.

Special dial tone

Special dial tone is an interrupted dial tone. It indicates that divert has been programmed.

Warn tone

Warn tone is a one-second burst of tone, which is not repeated. This tone will be given when there is an external call waiting to be answered and there is no free extension to answer it. It is not heard by the external caller.

Unobtainable tone

Unobtainable tone is a continuous unbroken tone. You will hear this if you attempt to make an external call while call barring is in force for your extension, or if you try to call an unequipped external line or extension.

Types of ringing

Internal

Single bursts of ringing which occur when your extension is being called by another extension, as follows:

One long ring, pause, repeat.

External

Double rings which occur when an outside call arrives, as follows:

Two short rings, pause, repeat.

Fast

This occurs when a call has been abandoned in hold or is being transferred. Similar to internal ringing but faster, as follows:

One short ring, short pause, repeat.

Mandatory information

- The 2+8 system is suitable for use on exchange lines which provide either loop disconnect (LD) or multi-frequency (MF) signalling.
- The total Ringer Equivalence Number (REN) of each extension is 4.
- The REN of the exchange line ports is 1.
- 2+8 is not suitable for connection to a payphone.
- The approval for the use of external extensions (connection of extension instruments) by the Department of Trade and Industry is granted provided that the installation of the extension is within the confines of the customer's premises and that the distance of the extension instrument from the 2+8 control unit does not exceed 150 metres for the 2+8 Systemphone and 300 metres for an approved standard telephone.
- The control unit to extension instrument line loop resistance (speech pair only) is 25 ohms maximum for the 2+8 Systemphone and 50 ohms maximum for an approved standard telephone.
- Only telephones conforming to BS6317 (1982) can be connected to the 2+8 system.
- 2+8 is suitable for connection in subsidiary mode to most switchboards; however, satisfactory performance cannot be guaranteed with every allowable combination of host and subsidiary system.
- A power failure will reset the system and return all extensions to their default settings. During power failure, extension 20 will be connected to line 1 and extension 21 to line 2, to enable both incoming and outgoing calls.

- The approval of the 2+8 facilities does not guarantee their satisfactory performance under all operating conditions.
- For further details please refer to the mandatory information notes provided with your system.

APPROVED for connection to
telecommunication systems specified
in the instructions for use subject to
the conditions set out in them.

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