

## ISDN 2 & Euro-ISDN2

### 1. Service description

ISDN (Integrated Services Digital Network) is a fully integrated digital network that can be dialled up to transfer voice, data, text, image or fax information at speeds far higher than is possible on conventional lines across the Public Switched Telephone Network.

ISDN2 is the name for the KCOM ISDN basic rate access service. It consists of two bearer channels which can be used for calls and one D-channel which is used for signalling purposes. The two bearer channels each have a capacity of 64Kbit/s and can be used for 2 simultaneous calls or can (depending on the equipment being used) be combined together enabling data to be sent at a rate of 128Kbit/s.

- Not Available for new customers.

The term 2B + D is often used to describe the channels in an ISDN2 line i.e. two bearer channels and one D-channel.

### 2. Euro-ISDN 2

Euro-ISDN2 (or ISDN2e) is the name for the KCOM' ISDN2 service which is fully compliant with European standards published by the European Telecommunications Standards Institute (ETSI). Euro-ISDN2 has been designed to support CPE complying with European CPE approvals requirements which should eventually result in the provision of lower cost terminal equipment. It has also laid the foundations for future enhancements to supplementary services.

Three call packages are available. The Basic Package includes line rental and Local Calls<sup>1</sup>. The Basic Plus Package includes line rental and UK national geographic calls<sup>2</sup>. The Essential Package includes line rental, local calls, UK national geographic calls and mobile calls.

<sup>1</sup> Applies to directly dialled calls only. Includes calls to charge bands K and A1. ISDN data calls are specifically excluded, along with calls to charge band: L. Subject to Fair Usage Policy.

<sup>2</sup> Includes directly dialled calls to 01, 02 & 03 numbers only. Local ISDN data calls are specifically excluded, along with calls to Charge band: L. Subject to Fair Usage Policy.

### 3. Other information

- Available to both residential and business customers.
- ISDN2 and Euro-ISDN2 lines terminate on NT1 sockets which are larger than those used for standard analogue lines. KCOM responsibility ends at the NT1 socket.
- One directory number is allocated per ISDN2 or Euro-ISDN2 line i.e. one directory number serves the two B-channels. Customers requiring more than one directory number may wish to use either the Multiple Subscriber Number (MSN) service or the Direct Dial In (DDI) service, both of which are described below.
- In order to fully inter-work with Euro-ISDN2 and enable use of the various supplementary services, CPE needs to support functional procedures and conform to DSS1 protocols. With ISDN2, control of supplementary services was via stimulus protocols (i.e. \* # codes).

With functional procedures, the intelligence is built into the CPE to request explicitly the service and action that is required.

- When selecting UK National, the inclusive calls are not itemised on the customer's account.

## 4. Supplementary services

The table below illustrates which services are now available on ISDN2 and Euro ISDN2 lines:

Service Name		ISDN2	Euro ISDN2
<u>Direct Dialling In</u>	DDI	Y	Y
<u>Multiple Subscriber Numbering</u>	MSN	Y	Y
<u>Sub-Addressing</u>	SUB	Y	Y
<u>Calling Line Identification Presentation</u>	CLIP	Y	Y
<u>Calling Line Identification Restriction</u>	CLIR	Y	Y
<u>Connected Line Identification Presentation</u>	COLP	N	Y
<u>Connected Line Identification Restriction</u>	COLR	N	Y
<u>Terminal Portability</u>	TP	Y	Y
<u>Incoming Calls Barred</u>	ICB	Y	Y
<u>Outgoing Calls Barred</u>	OCB	Y	Y
- Permanent - Pre-arranged			
<u>Call Forwarding</u> (Admin. controlled only)	CFU CFB CFNR	Y	Y
- Unconditional		Y	Y
- On Busy		Y	Y
- No Reply			
<u>Trunk Hunting</u>	THU	Y	Y
<u>Time and Date</u>		Y	Y
<u>Early Bearer Connection</u>	EBC	Y	Y

### Direct Dialling In (DDI)

DDI can be applied to one or more lines and allows incoming calls to a Basic Rate PBX to be routed directly to an extension or appropriate CPE without going via the PBX operator. A group of lines may be allocated up to 5 separate DDI number ranges. Each DDI number range will be allocated as consecutive numbers and consist of a minimum of 10 numbers.

## Multiple Subscriber Numbering (MSN)

MSN can only be applied to a single ISDN2 or Euro-ISDN2 line and allows incoming calls to be routed directly to an individual piece of CPE that supports MSN. MSN enables up to 10 directory numbers to be assigned to a single line. The numbers allocated are dependent on availability within the exchange numbering plan and may not be consecutive.

## Sub-Addressing

This enables expansion of the called user's addressing capacity beyond the ISDN number. This allows an ISDN number followed by additional alpha-numeric sub-address characters to be dialled, allowing CPE to be accessed. ISDN2 and Euro-ISDN2 will allow the conveyance of up to 6 and 20 sub-address characters respectively. This service is provided to the called user.

## Calling Line Identification Presentation (CLIP)

This service is automatically provided by the network to the called party (even for ex-directory numbers) and enables the called party to receive the line identity of the calling party.

If DDI or MSN are used, the calling user (depending on the type of CPE) may provide the DDI or MSN digits only or the full ISDN number. Where the calling user does not provide the DDI or MSN digits, the network will automatically insert a default directory number which will normally be the number used for billing purposes.

If sub-addressing is used, the calling party sub-address will only be delivered if both calling and called parties are using Euro-ISDN2.

## Calling Line Identification Restriction (CLIR)

This applies to outgoing calls and prevents the release of a caller's line identity. Callers are, by default, able to prefix the called number with the digits "141", to restrict CLI presentation on a call by call basis. As an alternative, a customer can request automatic restriction of their line identity for every call. In this case, by prefixing the called number with the digits "1470" callers will be able to override the restriction (thereby *releasing* their line identity) on a call by call basis. This service is independent of the Connected Line Identification Restriction (COLR) service.

## Connected Line Identification Presentation (COLP)

This service is automatically provided by the network to the calling party (even for ex-directory numbers) and provides the calling party with the possibility to receive the line identity of the connected party. If the call has been subject to call forwarding, it is the connected number and not the called party number that is provided to the calling user.

If DDI or MSN are used, the calling user (depending on the type of CPE) may provide the DDI or MSN digits only or the full ISDN number. Where the calling user does not provide the DDI or MSN digits, the network will automatically insert a default directory number which will normally be the number used for billing purposes.

If sub-addressing is used, the calling party sub-address will only be delivered if both calling and called parties are using Euro-ISDN2.

## **Connected Line Identification Restriction (COLR)**

This applies to incoming calls and prevents the release of connected line identity to a calling party. This service is provided on request. This service is independent of the Calling Line Identification Restriction (CLIR) service.

## **Terminal Portability (TP)**

This service does not apply if the line is connected to a PBX, LAN Bridge/Router etc. This allows a user to move a terminal from one socket to another within one line while a call is in progress. It also allows a user to move a call from one terminal to another within one line while the call is in progress. Suspension of the call has no impact on call charging i.e. call charging continues.

## **Incoming Calls Barred (ICB)**

This service is provided on request by KCOM and prevents all incoming calls.

## **Outgoing Calls Barred (OCB)**

This service is provided on request by KCOM and enables the user to place restrictions on the destinations to which outgoing calls may be placed. The service is available on a permanent basis only (Admin OCB). See the **call barring** for the categories of outgoing call barring.

Admin OCB prevents users from making outgoing calls. The calls can be split into different categories, which are: Local calls, national, international, operator services, KCOM Choice services or premium rate numbers.

## **Call Forwarding**

This group of services enables calls to be redirected to another telephone number under the following conditions:

Unconditional (CFU) - All calls are forwarded by the network to the pre-selected ISDN number. The customer can still make outgoing calls.

On Busy (CFB) - Incoming calls are forwarded by the network, to a pre-defined ISDN number, when the user is identified as being busy.

On No Reply (CFNR) - Calls which are not answered within a specified time are forwarded by the network, to a pre-defined ISDN number.

The diverted leg of the call will be charged to the customer who invoked Call Forwarding. Euro-ISDN2, unlike ISDN2, will allow 64kbit/s data calls to be forwarded in addition to speech calls.

## **Trunk Hunting (THU)**

This service is usually provided on two or more ISDN2 or Euro-ISDN2 lines, however it is not possible to have a hunt group comprised of a mix of both ISDN2 and Euro-ISDN2. This service enables calls to an ISDN number (i.e. the hunt group number) to be offered to a line in a hunt group which contains a free channel.

The hunt group can be allocated one directory number. DDI can also be used with Trunk Hunting. As a default, calls will be offered in a sequential manner, although cyclic hunting will be provided on request.

Note: a single "service profile" is provided against all of the directory numbers which are associated with the hunt group of lines and not individual B-channels.

## Time and Date

This service provides a calling Euro-ISDN2 user with the time and date that the network detected called party answer.

## Early Bearer Connection (EBC)

This service is generally provided on one or more lines connected to a PBX and enables the establishment of a connection before a call is answered. The purpose is to allow the called user to provide internally generated tones and announcements to a caller, prior to answer by the called user.

## 5. Charging structure

### Connection Charge

Service	Connection Charge
	Ex VAT
ISDN2	Not available for new connections
Euro-ISDN2 Basic, Basic Plus and Essential	£292.00
Upgrade from ISDN2 to Euro-ISDN2	£77.00
Data changes at customers' request ( <u>See Note 1</u> )	£32.00
Installations Taken Over (Basic 2 lines into premises - with no alterations) ±	£65.00
Conversion from ISDN2/2e to Analogue*_	£68.00

## Rental Charge

### ISDN2e when paid via Direct Debit

Service		Annual Rental Per Line when paid by Direct Debit		
		1 Year Contract	3 Year Contract	5 Year Contract
		Ex VAT	Ex VAT	Ex VAT
ISDN2e Basic <a href="#">Line Only1</a>	1 to 15 lines	£360.00	N/A	N/A
	16 to 50 lines	£360.00	£344.64	£332.28
	51 to 200 lines	£344.64	£332.28	£316.92
	200+ lines	£332.28	£318.00	£301.56
ISDN2e Basic Plus <a href="#">Line Only2</a>	1 to 15 lines	£456.00	N/A	N/A
	16 to 50 lines	£456.00	£440.64	£428.28
	51 to 200 lines	£440.64	£428.28	£412.92
	200+ lines	£428.28	£414.00	£397.56
ISDN2e Essential <a href="#">Line Only2</a>	1 to 15 lines	£480.00	N/A	N/A
	16 to 50 lines	£480.00	£464.64	£452.28
	51 to 200 lines	£464.64	£452.28	£436.92
	200+ lines	£452.28	£438.00	£421.56

## ISDN2e when paid via invoice

<sup>1</sup> Inclusive calls apply to directly dialled calls only. Includes calls to charge bands K and A1. ISDN data calls are specifically excluded, along with calls to Charge band: L. Subject to Fair Usage Policy.

<sup>2</sup> Inclusive calls apply to directly dialled calls to charge bands K, A1, 01, 02 & 03 numbers only. Local ISDN data calls are specifically excluded, along with calls to Charge band: L. Subject to Fair Usage Policy.

In order to qualify for the volume and tenure discounted prices shown above, all lines must be billed on one summary bill.

Service		Annual Rental Per Line when paid by Invoice		
		1 Year Contract	3 Year Contract	5 Year Contract
		Ex VAT	Ex VAT	Ex VAT
ISDN2e Basic <a href="#">Line Only1</a>	1 to 15 lines	£372.00	N/A	N/A
	16 to 50 lines	£372.00	£356.64	£344.28
	51 to 200 lines	£356.64	£344.28	£328.92
	200+ lines	£344.28	£330.00	£313.56
ISDN2e Basic Plus <a href="#">Line Only 2</a>	1 to 15 lines	£468.00	N/A	N/A
	16 to 50 lines	£468.00	£452.64	£440.28
	51 to 200 lines	£452.64	£440.28	£424.92
	200+ lines	£440.28	£426.00	£409.56
ISDN2e Essential <a href="#">Line Only2</a>	1 to 15 lines	£492.00	N/A	N/A
	16 to 50 lines	£492.00	£476.64	£464.28
	51 to 200 lines	£476.64	£464.28	£448.92
	200+ lines	£464.28	£450.00	£433.56

Supplementary Service		Connection Charge	Annual Rental
		Ex VAT	Ex VAT
Direct Dialling In		<b><u>Please click here</u></b>	
Multiple Subscriber Numbering	2 number group	£21.50	£0.00
	10 number group		£45.00
Sub-addressing		£11.00	£12.00
Calling Line Identification Presentation		£0.00	£0.00
Calling Line Identification Restriction		£0.00	£0.00
Connected Line Identification Presentation		£0.00	£0.00
Connected Line Identification Presentation		£0.00	£0.00
Terminal Portability		£0.00	£0.00
Incoming Calls Barred		<b><u>Please click here</u></b>	
Outgoing Call Barred - Permanent, Pre-arranged		Admin Controlled, Permanent Outgoing Call Barring Only	
Call Forwarding - Unconditional, On Busy, No Reply (Admin controlled only)		<u>See Note 2</u>	£0.00
Trunk Hunting		£0.00	£0.00
Time and Date		£0.00	£0.00
Early Bearer Connection		£0.00	£0.00

Service		Connection Charge	Annual Rental
		Ex VAT	Ex VAT
Euro-ISDN2: Basic, over Fibre ( <u>See Note 3</u> )	First 15 lines	£292.00	£312.00
	Line 16 and above	£146.00	
Euro-ISDN2: Basic Plus, over Fibre ( <u>See Note 3</u> )	First 15 lines	£292.00	£366.00
	Line 16 and above	£146.00	
Euro-ISDN2: Essential over Fibre (see Note 3)	First 15 lines	£292.00	£372.00
	Line 16 and above	£146.00	
ISDN2: Local, over Fibre ( <u>See Note 3</u> )	First 15 lines	Not available for new connections	£312.00
	Line 16 and above		
ISDN2: UK National,	First 15 lines	Not available for	£366.00



over Fibre ( <a href="#">See Note 3</a> )	Line 16 and above	new connections	
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## Extension Sockets

Extension Sockets	Connection Charge
	Ex VAT
To fit one extension socket, up to 10 metres from the main socket ( <a href="#">See Note 1</a> )	£100.00
Further extension sockets at the same location when installed at the same time as the first.	£47.00
Upgrade of NT1 ISDN socket (single channel 128k/bs) to new Fujitsu ISDN socket (2 x 64k/b) ( <a href="#">See Note 1</a> )	£47.00
Internal move of existing extension socket (within 10 metres of the main socket) ( <a href="#">See Note 1</a> )	£47.00

Extensions over 10 metres from the main socket are subject to a quote following a technical survey.

## 6. Internal move Of master socket

		Ex VAT
Internal Move Of Master Socket ( <a href="#">See Note 1</a> )	Business	£95.00
	Residential	£63.00

**Note 1:** KCOM reserves the right to charge a fixed fee of £32.00 exc. VAT (£38.40 Inc. VAT), where applicable, for any changes to data facilities requested by the customer after the service has been installed.

**Note 2:** An £12.00 exc. VAT (£14.40 Inc. VAT) admin fee will be charged each time a request is made for change to the number calls are being diverted to.

**Note 3:** This service will be provided via a C-Mux and is not suitable for high volume incoming traffic.

+ A visit charge will apply, see the time related charges section for this charge (click here for [residential charges](#) and for [business charges](#)).

In addition to the charges above, a one-off payment of £3,560.00 (Ex VAT, £4,272.00 Inc. VAT) will be charged for provision of Fibre if no Fibre currently exists.

\* These conversions will be waived for those customers who simultaneously have their line DSL enabled.

## 7. Conversion charge

Service	Conversion Charge
	Ex VAT
Conversion from analogue or Business Superway	£143.00

## 8. Call charges

Local: Same as normal telephony (per channel)

National: Same as normal telephony (per channel)

International: Voice calls: same as normal telephony (per channel)

Data calls: Please see **[International ISDN data call charges](#)**

Separate call charges will apply for data calls across the KC network, for details residential customers should **[click here](#)** and business customers should **[click here](#)**