

# ***P***roduct ***D***escription

**Panasonic**

**KX-TD816E/KX-TD1232E**

**Digital Super Hybrid  
Telephone System**

Product Description

New Features are described on pages 63 & 64

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## System Parameters

|                                  |                    |
|----------------------------------|--------------------|
| <b>System Microprocessor</b>     | 16 Bit type 68301  |
| <b>System Memory</b>             | 2 Megabit RAM      |
|                                  | 16 Megabit EPROM   |
| <b>Digital Bandwidth (2 B+D)</b> | 8 Kilobytes/Second |
| <b>Voice Channel</b>             | 16Kbps             |
| <b>Data Channel</b>              | 64Kbps             |
| <b>Signalling</b>                | 64Kbps             |
| <b>Cabling (digital)</b>         | 1 pair (2 wires)   |
| <b>Analogue (SLTs)</b>           | 1 pair (2 wires)   |
| <b>Modulation</b>                | Pulse code         |
| <b>Intercom Paths</b>            | Non blocking       |

## System Hardware

### **Cabinets**

| KX-TD1232E                         | Single Cabinet | Double Cabinet |
|------------------------------------|----------------|----------------|
| <b>Maximum port configurations</b> |                |                |
| Exchange line ports                | 12             | 24             |
| Extension ports                    | 32             | 64             |
| Max number of Digital keyphones    | 32             | 64             |
| Max number of DECT                 | 64             | 64             |
| Max number of Analogue keyphones   | 32             | 64             |
| Max number of SLTs                 | 32             | 64             |
| Max number of Extensions           | 64             | 128            |
| Max number of DSS Consoles         | 4              | 8              |
| Max number of ISDN2 (Channels)     | 6 (12)         | 12 (24)        |
| Max number of ISDN30 (Channels)    | 30             | 30             |
| Max number of E&M Circuits         | 4              | 8              |

| KX-TD816E                          | Single Cabinet |
|------------------------------------|----------------|
| <b>Maximum port configurations</b> |                |
| Exchange line ports                | 8              |
| Extension ports                    | 16             |
| Max number of Digital keyphones    | 16             |
| Max number of DECT                 | 16             |
| Max number of Analogue keyphones   | 16             |
| Max number of SLTs                 | 16             |
| Max number of Extensions           | 32             |
| Max number of DSS Consoles         | 4              |
| Max number of ISDN2 (Channels)     | 4 (8)          |
| Max number of ISDN30 Channels      | 8              |
| Max number of E&M Circuits         | 4              |

*Note: This table shows the maximum values possible in the system, the actual values will depend upon the configuration of the specific system and its components.*

## **System Components**

### **KX-TD1232E Central Control Unit**

The central control unit is initially configured 0 exchange lines and 16 extension ports. The following devices are built in:

1. Two music inputs
2. Two paging outputs
3. RS232C call logging port
4. Ring generator
5. DTMF receivers
6. All system control
7. Two doorphone circuits
8. Two door release contacts

### **KX-TD816E Central Control Unit**

The central control unit is initially configured 0 exchange lines and 8 extension ports. The following devices are built in:

1. Two music inputs
2. Two paging outputs
3. RS232C call logging port
4. Ring generator
5. DTMF receivers
6. All system control
7. Two doorphone circuits
8. Two door release contacts

### **KX-TD142E Cell Station**

Cell Station provides the ability for DECT portable handsets to make and receive calls when within range of a cell station.

### **KX-TD144E Cell Station Interface**

2 Cell Station Interface Unit. Provides four wired extensions and connection of one or two cell stations. Provides four speech through each cell station for the use of DECT portables.

### **KX-TD146E Cell Station Interface**

6 Cell Station Interface Unit. Provides four speech paths through each cell station for the use of DECT portables.

### **KX-TD170E Extension Module**

Interface card for the connection of up to 16 telephones. All ports on this module will support digital keyphones, analogue keyphones and SLT telephones. *Note: Only one line module may be fitted onto a KX-TD816, Two may be fitted to each KX-TD1232 cabinet.*

### **KX-TD180E 4 Circuit exchange Line Module**

Interface card to allow connection of 4 PSTN or equivalent lines.

*Note: Only one line module may be fitted onto each cabinet.*

### **KX-TD181E 8 Circuit exchange Line Card (KX-TD1232E Only)**

Interface card to allow connection of 8 PSTN or equivalent lines.

*Each cabinet will allow one card to be installed.*

### **KX-TD182E 4 Circuit exchange Line Card (KX-TD816E Only)**

Interface card to allow connection of 8 PSTN or equivalent lines.

*Each cabinet will allow one card to be installed.*

### **KX-TD184E 4 Circuit E&M Module**

Interface to allow connection of 4 E&M circuits. Each cabinet will allow one module to be installed.

*Note: Only one line module may be fitted onto each cabinet.*

### **KX-TD190E Message Unit**

The KX-TD190E Message Unit comprises of one KX-TD199E Message Card and housing.

### **KX-TD192E Interconnecting Card & Cable (KX-TD1232E Only)**

There are two cards and one connecting cable used to connect two central control units together to build a double cabinet structure doubling system capacity.

### **KX-TD197E 33600 bps Remote Card**

A 9600/14400/19200/28800/33600 bps modem may be used in the KX-TD1232E central control unit or in the KX-TD190 Message Unit. Providing the KXTD with a remote programming and remote diagnostic option.

### **KX-TD198E 33600 bps Remote Unit**

The KX-TD198 Remote Unit comprises of one KX-TD197E Remote Card and housing for use on the KX-TD816E.

### **KX-TD199E Message Card**

The Message Card provides up to 64 seconds of recording time split between up to 4 messages. It is for use with UCD.

### **KX-TD280E 2 Circuit ISDN2 Line Module**

Interface card to allow connection of 2 ISDN2 circuits.

*Note: Only one line module may be fitted onto each cabinet.*

### **KX-TD281E 4 Circuit ISDN2 Line Card (KX-TD1232E Only)**

Interface card to allow connection of 4 ISDN lines. Each cabinet will allow one card to be installed.

### **KX-TD282E 2 Circuit ISDN2 Line Card (KX-TD816E Only)**

Interface card to allow connection of 4 ISDN lines. Each cabinet will allow one card to be installed.

### **KX-TD286E 6 Circuit ISDN2 Line Card**

Interface card to allow connection of 6 ISDN2 circuits.

*Note: This module cannot be used in conjunction with any other line card or module on a single cabinet.*

### **KX-TD290E Primary Rate Interface Module**

The primary rate interface will allow 8 channels of ISDN30 to be used on the KX-TD816 and 30 channels when used on the KX-TD1232.

*Note: Only one line module may be fitted onto each cabinet.*

### **KX-TD7590E DECT Portable**

3 key, display, DECT portable handset.

### **KX-A278E Charger**

Charger for DECT portable.

### **KX-A46E Back-up Battery Adapter**

Externally fitted lead acid cells, charged by the KXTD and used to maintain system operation during power failure. The capacity of different size batteries will determine the duration of back up. Standard car batteries should maintain system operation for about 4 hours if the batteries are fully charged.

### **KX-T30865E Door-phones**

The central control unit has an interface built in to support one or two door-phones. The door-phones are proprietary, weather resistant units. There are also two sets of relays for controlling a remote door-lock for each doorphone. A double cabinet system can have 4 doorphones and is able to operate 4 remote door locks.

## Hand-set Options

1. Digital Proprietary Keyphones (KX-T7420E, KX-T7425E KX-T7431E, KX-T7433E and KX-T7436E)
2. KX-T7000 Series Keyphones (KX-T7050E, KX-T7020E and KX-T7130E)
3. DECT (KX-A7590E)
4. Single Line Devices

The Digital Super Hybrid System offers the choice of a wide range of key hand-set.

The features which are available to hand-set users will depend upon the type of hand-set being used.

### ***Hand-set Features***

Key features of the KXTD hand-sets are:

|                               |   |
|-------------------------------|---|
| One-Touch keys                | The one-touch keys provide single key access to personal speed dials or system features allowing them to be called up with a single key press.                            |
| Flexible keys                 | Flexible keys are used as line use indicators. Unused Flexible keys can be programmed with other system functions or used as extension calling and busy lamp field keys.  |
| Dual colour LEDs              | The Flexible keys each have a dual colour LED which is used when the key is programmed as a line, extension, message waiting or call forward call key to show the status. |
| Message lamp messages.        | Each key telephone can have an LED lamp which is used to give visual indication of messages.  |
| Distinctive HOLD key operate. | The HOLD key's orange colour and prominent position make it easy to locate and operate.   |
| Volume control                | To adjust ringing, speaker and hand-set volumes independently..   |
| LCD display                   | Certain key telephone models have an alphanumeric display allowing the display of information and messages which enhance its functionality.                               |

### ***Hand-set Types***

The table below lists the KXTD hand-set types and their key specifications.

| Model     | Description          | Flexible Keys | One Touch Keys | Dual colour LEDs | Message LED | Alphanumeric Display | Handsfree | Parallel Connection | XDP | SDXP |
|-----------|----------------------|---------------|----------------|------------------|-------------|----------------------|-----------|---------------------|-----|------|
| KX-T7050E | 12 key standard      | 12            | 4              | ✓                | ✓           |                      |           | ✓                   |     |      |
| KX-T7020E | 12 key handsfree     | 12            | 4              | ✓                | ✓           |                      | ✓         | ✓                   |     |      |
| KX-T7130E | 12 key display       | 12            | 12             | ✓                | ✓           | ✓                    | ✓         | ✓                   |     |      |
| KX-T7436E | 24 key large display | 24            | 10             | ✓                | ✓           | ✓                    | ✓         | ✓                   | ✓   |      |
| KX-T7433E | 24 key diaplay       | 24            | 0              | ✓                | ✓           | ✓                    | ✓         | ✓                   | ✓   |      |
| KX-T7431E | 12 key display       | 12            | 0              | ✓                | ✓           | ✓                    | ✓         | ✓                   | ✓   |      |
| KX-T7425E | 24 key handsfree     | 24            | 0              |                  | ✓           |                      | ✓         | ✓                   | ✓   |      |
| KX-T7420E | 12 key hand-set      | 12            | 0              | ✓                | ✓           |                      | ✓         | ✓                   | ✓   |      |
| KX-T7440E | 66 key console       | 66            | 0              |                  |             |                      |           |                     |     |      |
| KX-       | 48 key console       | 48            | 0              |                  |             |                      |           |                     |     |      |

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|                       |                |    |    |   |  |   |  |  |  |   |
|-----------------------|----------------|----|----|---|--|---|--|--|--|---|
| <b>T7441E</b>         |                |    |    |   |  |   |  |  |  |   |
| <b>KX-<br/>T7040E</b> | 32 key console | 32 | 16 |   |  |   |  |  |  |   |
| <b>KX-<br/>T7590E</b> | 3 Key DECT     | 3  | 0  | ✓ |  | ✓ |  |  |  | ✓ |

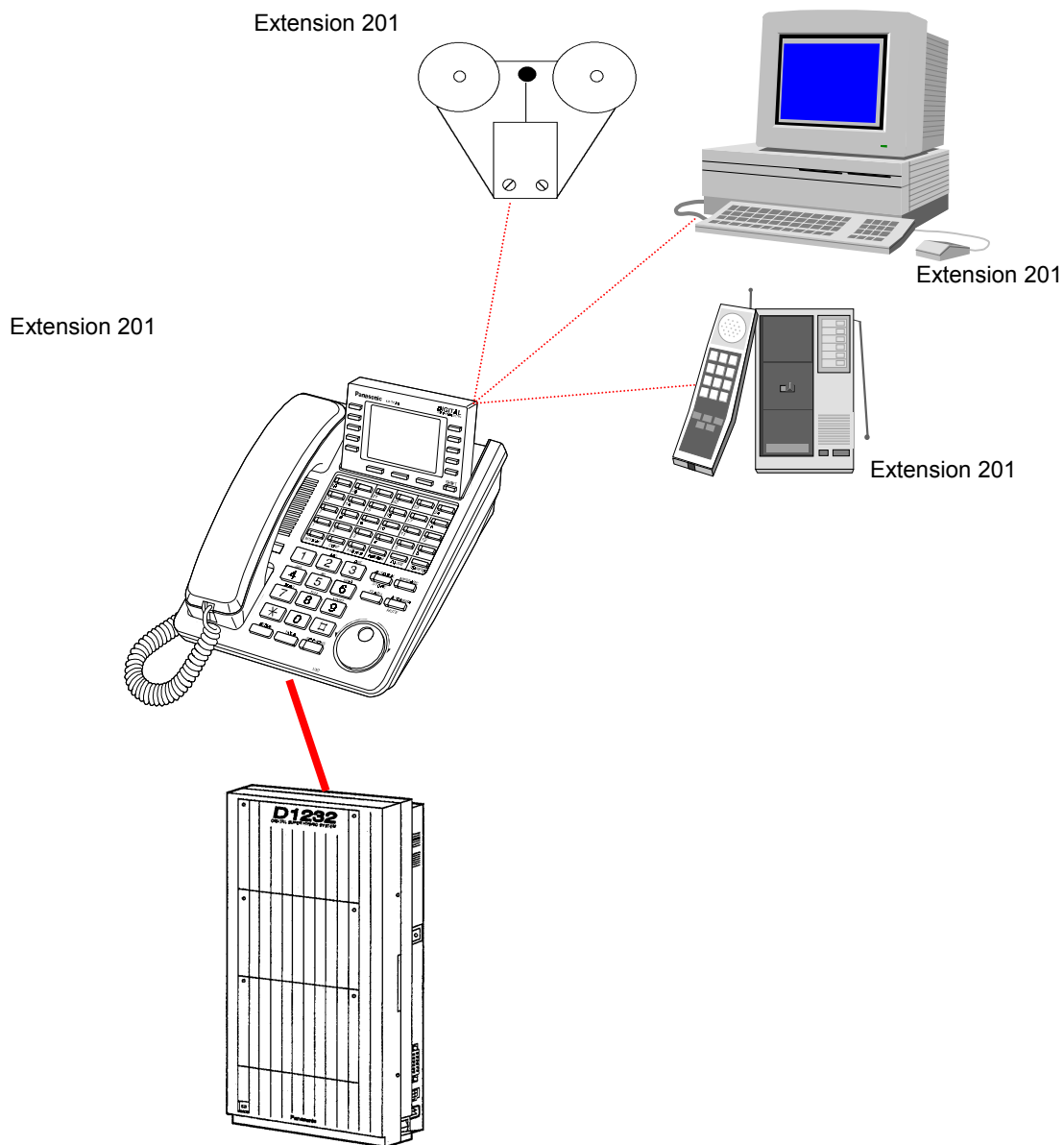
## Parallel Connection

### Description

Proprietary telephones may have an SLT (Single Line Telephone) connected to the same extension port sharing the same extension number. If the 7000 series has a paralleled SLT and both phones are off hook during a call, a three way conference is established. If the combination of telephones is digital and an SLT if one telephone goes off hook during a call the call will be transferred to it. The connection can be made simply by plugging the SLT into the back of a digital telephone. The connection can also be made by wiring the devices in parallel.

### Benefits

An extension user with a keyphone could have a loud ringing bell, PC with modem or cordless telephone connected to their extension. It can also provide a simple "dial up" LAN passing data through the system from PC to PC or out onto the network



## XDP (eXtra Device Port)

### Description

When connecting an SLT in parallel with a digital proprietary telephone the SLT may operate as a separate extension with its own extension number and programmable parameters. The SLT device can be simply plugged into a digital keyphone or wired separately to a different part of the building.

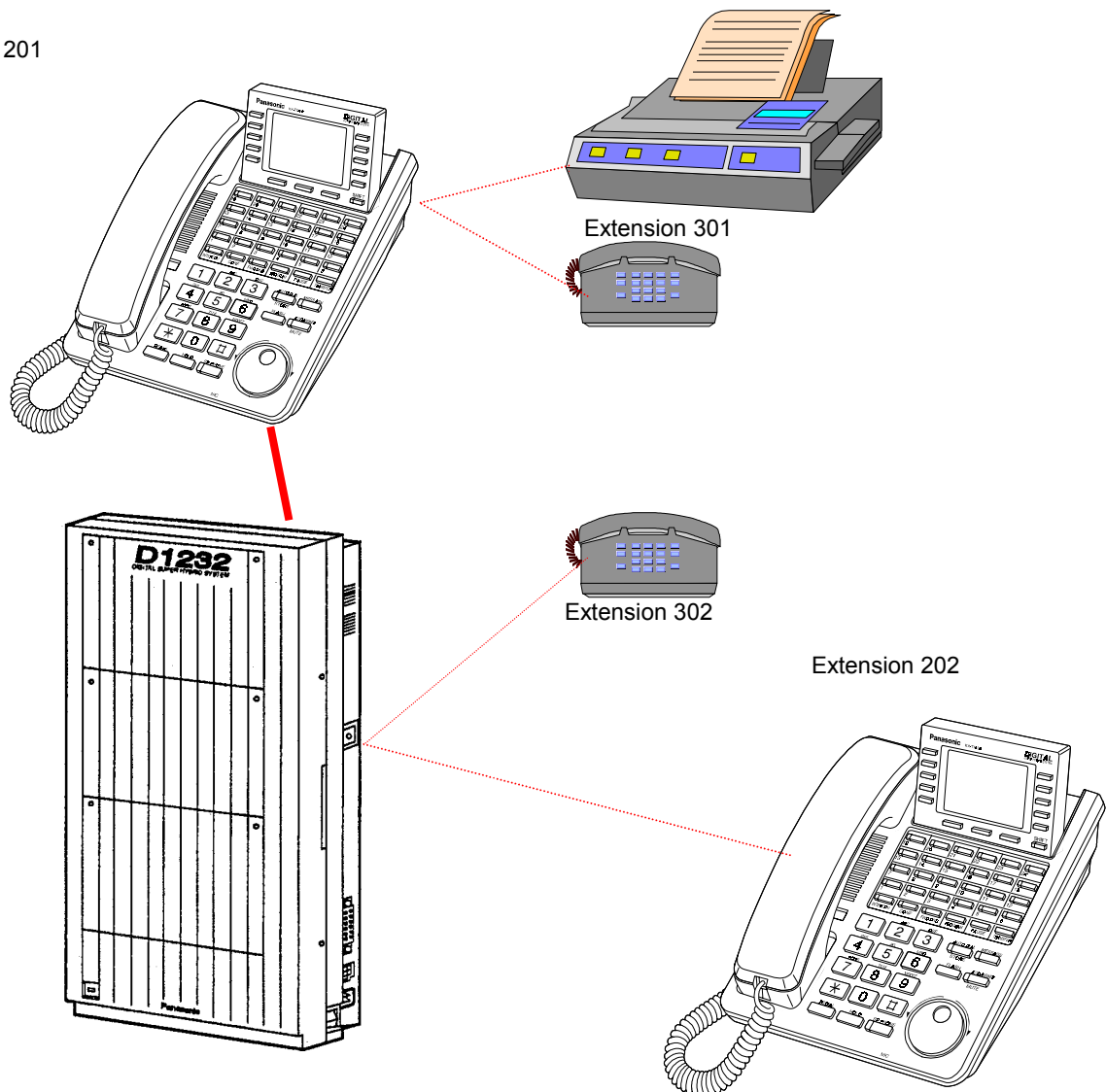
### Benefits

This feature can be used to double the maximum number of extensions which can be fitted to the available ports.  
Example:

a 24 x 64 size system could have up to 128 individual extensions. Provides an easy and inexpensive way of installing a new extension. The system offers total flexibility as to what may be connected e.g. cordless, credit card verifiers etc.

### Example

Extension 201



## SXDP (Super eXtra Device Port)

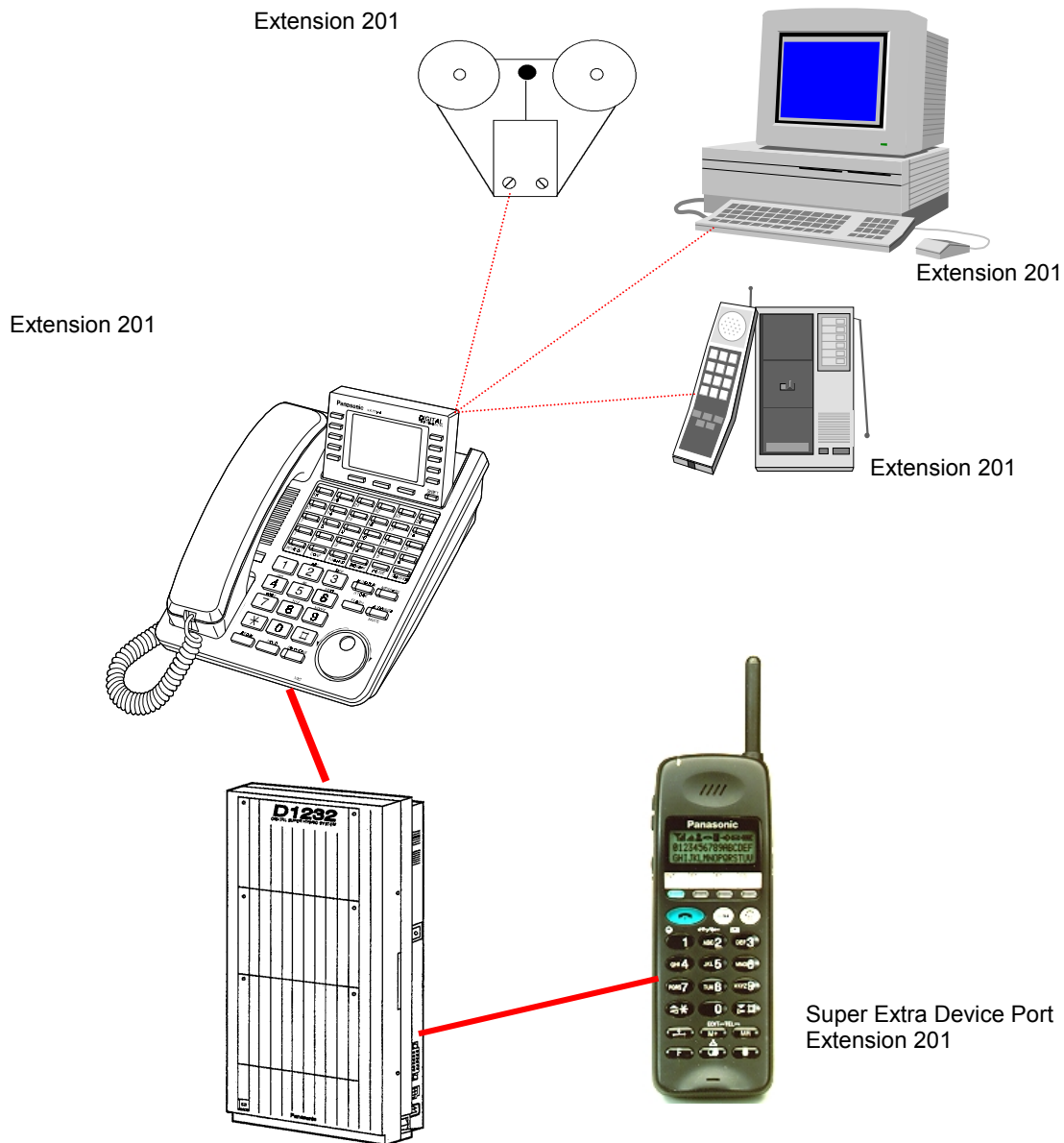
### Description

Proprietary telephones may have DECT and SLT (Single Line Telephones) connected to the same extension port sharing the same extension number. If the 7000 series has a paralleled SLT and both phones are off hook during a call, a three way conference is established. If the combination of telephones is digital, DECT and an SLT if one telephone goes off hook during a call the call will be transferred to it.

The DECT extension can be made to act as a parallel device simply by dialling a code on the DECT portable. The DECT portable may also work as a parallel to an SLT. Plugging the SLT into the back of a digital telephone can make an SLT parallel connection. Wiring the devices in parallel can also make the SLT connection.

### Benefits

An extension user with a keyphone could have a loud ringing bell, PC with modem or cordless telephone connected to their extension. It can also provide a simple "dial up" LAN passing data through the system from PC to PC or out onto the network



## Answering Calls

### ***Direct In Line (DIL)***

#### **Description**

Any number of exchange lines can be assigned as DIL lines. A line assigned as a DIL line is automatically routed to a single extension. If the extension is busy or unanswered the call can be forwarded to another extension or voicemail automatically.

#### **Benefits**

Allows internal personnel a private line, calls will arrive at the nominated extension without indicating call arrival at any other extension.

### ***Flexible Ringing Assignment***

#### **Description**

The ringing assignment is completely flexible so any line can be assigned to ring at any extension(s). The ringing assignment can be different in day and night modes depending on user requirements

#### **Benefits**

Assures coverage for outside lines, increases customer satisfaction. Allows for customisation of the system in order to meet a wide variety of applications.

### ***Delayed Ringing***

#### **Description**

The delayed ringing assignment is completely flexible so that any line can be assigned to ring at any extension(s). Extensions can be set to ring after 4, 6, or 8, rings delay. Other settings include visual indication only or no indication of call arrival. The ringing assignment can be different in day and night modes depending upon user requirements.

#### **Benefits**

Assures coverage for outside lines if unanswered at the first (immediate ringing) pattern of extensions. Increases customer satisfaction. Allows for customisation of the system in order to meet a wide variety of applications.

## ***Group Ringing***

### **Description**

The KXTD can support up to 16 ringing groups of up to 128 members each, for ISDN DDI, or analogue incoming calls.

The group is accessed by dialling the number allocated as representing the group. When a call is passed to a group ringing is presented and all idle extensions in the group ring. If an extension that was busy when the call arrived becomes idle before the call is answered it will begin to ring.

Calls can be transferred to a group from another extension.

If the group is busy and an incoming exchange line call is received the group will be continually searched until an extension becomes free or the reversion timer has elapsed. Multiple calls can be directed to a busy group.

If the call is not answered before the intercept timer has elapsed then the call will ring at the nominated extension.

## ***Uniform Call Distribution***

### **Description**

The KXTD can support up to 16 ringing groups of up to 128 members each, for ISDN DDI, or analogue incoming calls.

The group is accessed by dialling the number allocated as representing the group. When a call is passed to a group ringing is presented to the first idle extension with a higher extension number than the extension which answered the last call. If the highest extension number is reached the system will start at the lowest extension number again. This will ensure that the number of calls answered by each extension is more equal than with hunting only on busy.

Calls can be transferred to a group from another extension.

If the group is busy calls can be queued onto a group and will be answered in turn. Multiple calls can be directed to a busy group. The log-in / log-out button will flash if there are people queuing on the group.

If the call is not answered before the intercept timer has elapsed then the call will ring at the nominated extension.

## ***Login and Logout of Hunt Groups***

### **Description**

Extensions programmed as part of any type of hunt group may "Login" and become part of the hunt group. The same extensions may also "Logout" and therefore not be included as part of the hunting process. The login/logout feature key's LED will indicate the status of the extension.

Useful if the personnel answering incoming calls vary at times throughout the day.

## ***TAFAS (Trunk Answer From Any Station)***

### **Description**

Ring Tone is output to the external paging amplifiers. This allows incoming exchange line calls to be answered by any extension user even if their telephone is not programmed to ring. Any extension user can pick up the incoming call by dialling a code.

### **Benefits**

Very useful in noisy environments such as warehouses or in areas where many calls are arriving simultaneously. Easily identifies external calls from internal calls.

## ***Incoming Line Name Assignment***

### **Description**

Line ports on the KX-TD can be assigned an alphanumeric name of up to 10 characters. When a name is assigned it will be displayed as well as the line number when a call is received. If the port is an ISDN2 channel the CLI will be displayed along with the callers name (if the name is in SSD) this information will be displayed in preference to the line number / name. The display can be toggled between the two modes.

### **Benefits**

Exchange line names can be used for multi-tenancy working. A single operator can greet callers with the correct company name.

## ***Call Pick Up (Exchange line / Group / Direct / Busy Lamp\*)***

### **Description**

Exchange line pick up allows an extension user to only answer incoming exchange line calls by pressing either a feature button, pre-programmed flexible key or by dialling a code.

Group call pick up allows a user to answer calls for other extensions in the same pick up group by activating a feature button or dialling an access code.

Direct call pick up allows a user to answer a specific ringing extension by dialling an access code followed by the extension number. The alphanumeric display advises the extension picking up the call of the calling extension or exchange line.

Busy lamp pick up the DSS button flashes when the corresponding extension is ringing. The call may be picked up by pressing the flashing DSS button.

### **Benefits**

Provides improved call coverage by allowing extension users to answer ringing stations without leaving their desk.

## ***Off Hook Signalling***

### **Description**

When a user is talking on an outside line, they may be alerted of another incoming call by the system sending a call waiting tone.

## ***Off Hook Call Announce***

### **Description**

Allows one extension user to make an announcement over the speaker of a busy extension whilst the recipient is making or receiving a call using the hand-set.

### **Benefits**

Important calls can be handled immediately removing the need to make a call back to the caller.

## Voicemail Integration

The KXTD supports the connection of voicemail systems by providing special extension ports designed for connection to voice processing systems.

Voice systems on the KXTD can be configured in one of three ways:

|                          |   |
|--------------------------|---|
| Automated Attendant (AA) | Calls ring into the voice system which then handles them in a similar way to a central operator eventually transferring them to a required extension. |
| Voicemail (VM)           | Calls received are routed to a specified user mailbox where the caller can leave a message.   |
| Combined AA/VM           | Has ports configured to do both of the AA and VM functions on a single system.  |

The system has full integration with voicemail and automated attendant systems. It has the facility to provide the voicemail system with a DTMF string corresponding with either the extension number forwarding the call or (if different from the extension number) the extension user's mailbox number.

If the voicemail system is providing an automated attendant service the PBX can switch it to voicemail operation before delivering the mailbox number. This ensures that all calls are handled by the voicemail system in the correct manner.

If the voicemail system is not providing an automated attendant service and a call is directed to it by interception then the telephone system will switch the voicemail to automated attendant operation before connecting the outside caller. This will ensure that a caller wishing to speak to a particular person will have a chance of connecting directly to them.

## Digital Integration of Voicemail

### Description

The KXTD will integrate digitally with either the KX-TVP100E or KX-TVP200E. The KXTD will operate the voicemail as if it were a digital telephone. This provides additional functionality:

1. The KXTD will program the Voicemail with all the necessary mailboxes for the extensions equipped.
2. The KXTD will program the Voicemail with all the necessary information about numbering schemes.
3. The KXTD will provide call screening during Voicemail incoming message recording.
4. Whilst a caller is leaving a message the extension may talk to the caller by picking up their hand-set.
5. An extension user may record their conversation using their mailbox whilst speaking to the caller.

## Voicemail related commands

The following commands are used to provide interaction with voice systems.

### Message Lamps

The KXTD will allow operation of the message waiting lamps on keysets by the voice system. Message setting and cancelling must be controlled by the voice system to ensure messages are correctly set and cancelled.

## Call Forward Identification Dialling

System extensions can have a call forward ID set which will be automatically dialled when that extension call forwards to a Voicemail port. This ID is only sent to Voicemail ports when a call is forwarded, non Voicemail ports will not receive it.

The ID code can be up to 16 digits consisting of 0 - 9, \*, # or Pause

## Flexible Function Keys

### Description

The Flexible keys can be programmed to access a feature by pressing a single button. The features which can be placed under a key are as follows:

|    |                         |    |  |
|----|-------------------------|----|--|
| 1  | Exchange line key       | 16 | Loud ring bell pick-up                         |
| 2  | Direct line access      | 17 | Account code entry                             |
| 3  | Pooled / Group line key | 18 | Speed dial                                     |
| 4  | Extension selection key | 19 | Message recall                                 |
| 5  | Paging access           | 20 | Message cancel                                 |
| 6  | 'Meet me' paging answer | 21 | Save / repeat dial                             |
| 7  | Call park               | 22 | Conference key                                 |
| 8  | Message key             | 23 | Personal speed dial                            |
| 9  | Do not disturb          | 24 | BGM on/off                                     |
| 10 | Call forward            | 25 | Night transfer                                 |
| 11 | Absence message         | 26 | Exchange line answer key                       |
| 12 | Alarm                   | 27 | Forward key                                    |
| 13 | Station lock            | 28 | Conference key                                 |
| 14 | Directed call pick-up   | 29 | Voicemail transfer key                         |
| 15 | Group call pick-up      | 30 | Any feature accessible by dialling a code..... |

*NOTE: Feature keys can be programmed by the user on each telephone or by the system manager*

### Benefits

This provides the flexibility to customise a phone to the customers needs. It makes easy, one step feature access available as an alternative to feature access codes.

## Flexible Night Service

### Description

When the system is placed into night mode the extensions can be assigned to ring on a per line / per extension basis, differently than during the day mode. In addition, the call restriction can be changed. The night service can be set to turn on and off automatically at a set time per day of the week.

### Benefits

Provides flexible ringing for businesses with extended hours of operation or shift working. Enhances management control of call abuse by providing different call restriction options for night operation.

## Call Charge Management

### Description

Any phone can monitor the call charges for lines, extensions and account codes on the display and produce a printout as follows:

1. Cost of calls on a specific exchange line
2. Cost of calls on all exchange lines
3. Cost of calls on a specific extension
4. Cost of calls on all extensions
5. Cost of calls on a specific account code
6. Cost of calls on all account codes
7. Reset the cost of calls for a specific extension
8. Reset the cost of calls for all extensions
9. Reset the cost of calls for a specific exchange line
10. Reset the cost of calls for all exchange lines
11. Reset the cost of calls for a specific account code
12. Reset the cost of calls for all account codes

*Note: This facility is only provided by ISDN ETSI 300-403-1 exchange lines. Lines not fully compliant with this specification may not provide the required information to the system.*

### Benefits

Allows a simple way to monitor call abuse and exchange line usage

## Operator Features

### Description

This feature allows the operator to set and cancel the following features

Can set for use by all extensions:

---

Time and Date  
System Speed Dial Numbers  
System Speed Dial Names  
Extension Numbers  
Extension Names  
External Background Music  
Printing the System Working Report  
Clearing the System Working Report

Can set for specific extensions:

---

Extension Lock  
Check-in / Check-out  
Room Management  
Wake-up Call  
Class of Service Primary / Secondary

Can cancel for a specific extension:

---

Incoming Call Information Lock  
Extension lock  
Live Call Screening Password

The first operator is also informed if the following errors occur

---

The system programming has become corrupt  
The printer attached to the serial port of the system has run out of paper  
There is a problem with the system interconnection

The first operator can also set the following

---

Automatic overflow to operator 2 when the call queue exceeds a certain number of calls .  
Using "Hurry up transfer" - the first operator can pass queued calls to the second operator .

### Benefits

Allows the operator to monitor and update many system features.

## Holding Calls

### ***System Hold***

#### **Description**

This feature allows an extension to put a call on hold and for the call to be retrieved from any phone by pressing the associated line key. If the incoming call is an exchange line then pressing a DSS key will automatically place the call onto system hold for the purpose of transferring the call. If the incoming call is an exchange line and another exchange line key is pressed the first exchange line call will be placed on system hold\*.

#### **Benefits**

Allows a call to be held whilst another operation is carried out.

### ***Exclusive Hold***

#### **Description**

This feature permits a extension user to maintain private and exclusive access to an exchange line while the called party is on hold. Only the extension placing the call on hold can retrieve the "held" line.

When a call is placed on exclusive hold it automatically returns as "hold recall" after a predetermined period of time.

#### **Benefits**

Prevents inadvertent interruption by other extensions by providing a busy indication on other keyphones with the same line appearance

### ***Call Park / Park Pickup***

#### **Description**

Call park has 10 set hold positions. This allows a call to be held at an extension. Any user can place a call in the "park" mode which acts like an exclusive hold. Any other extension, by simply pressing a call park pick-up button, or the feature code, can pick up that parked call.

#### **Benefits**

Better call handling capabilities Applications include: A party can not be reached at his/her extension, the caller can "Park" the call and page to that person to pick up the call.

## Transferring & Intercom Calls

### *Internal Voice / Tone Calls*

#### **Description**

The KXTD can be set up to either voice call or tone call for intercom calls. With a voice call the caller's announcement is heard over the speaker of the called extension if it is not busy. The recipient can then use the handsfree answer-back if their extension supports the facility. Tone call will sound a tone at the receiving extension until the call is answered or the caller hangs up. This option is set up through extension programming.

#### **Benefits**

Allows each customer to select which method would best suit their business environment.

### *Transfer ( screened / unscreened)*

#### **Description**

The screened transfer feature requires that the called extension has answered and the call is announced before the transfer takes place.

The unscreened feature allows extension users to transfer their internal or external calls without having to announce the caller.

Unanswered calls will return to the extension that originated the transfer or to the operator.

#### **Benefits**

Provides efficient call processing  
User friendly operation

### *Conference Calls*

#### **Description**

This feature enables the user to conference up to 3 internal, 1 external and 2 internal or 2 external and 1 internal parties, as the system is digital, there is no internal loss.

NOTES: The system can accommodate up to six simultaneous conference calls.

## ***Group Ringing***

### **Description**

The KXTD can support up to 16 ringing groups of up to 128 members each, for ISDN DDI or DIL incoming calls.

When a call is passed to a group ringing is presented and all idle extensions in the group ring.

Calls can be transferred to a group from another extension. The group is searched for free extensions when the extension calls the group.

If the group is busy and a forced transfer is performed the group will be continually searched until an extension becomes free or the reversion timer has elapsed. Multiple calls can be transferred to a busy group.

If the call is not answered before the recall or reversion timers have elapsed then the call will recall to the transferring extension or the operator.

## Locating Calls

### *Paging With Meet Me*

#### **Description**

The KXTD has twenty paging zones these are split into 16 internal groups and 2 (4 for double cabinet 1232) external zones. The internal groups can be paged simultaneously, the external zones may be paged simultaneously. In addition all paging groups and zones can be paged simultaneously.

Paging will not be heard from the speakers of extensions which are busy.

A "meet me answer page" allows a user upon being paged to be connected to the extension paging by entering a code.

#### **Benefits**

Improves efficiency in locating personnel by providing dial access to paging equipment and to extensions in designated paging zones.

Improves customer service by providing faster response time to calling parties.

### *Camp On*

#### **Description**

This feature allows extensions to queue calls to a busy extension.

The camp on tone can be programmed on a per extension basis.

#### **Benefits**

Saves time and improves productivity by eliminating repeated dialling to gain access to busy extensions.

### *Call Waiting*

When an outside caller or another extension "camps on" to the phone. By pressing the flashing line or intercom button you can talk to the other caller. The current call is automatically terminated unless the hold feature is used. This feature allows switching between calls.

#### **Benefits**

Allows waiting calls to be answered quickly.

### *Call Splitting*

#### **Description**

This allows you to hold a call and answer another call and to be able to swap between the two calls.

## ***OHCA (Off Hook Call Announce)***

### **Description**

When a user is busy on a call, another extension can alert him/her that another call is waiting by talking through the built in loudspeaker of the extension user's telephone. Information on the both the caller and the current call will alternate on the called extensions display.

- This feature will work with the KX-T7130E

*Note: the KX-T7130E needs to be fitted with a 6 wire cord.*

### **Benefits**

Allows internal users to alert busy stations to other calls and urgent messages

## ***Do Not Disturb***

### **Description**

Do not disturb enables any extension user to stop all intercom and exchange line calls from ringing on their extension. When activated a do not disturb signal is sent to the calling party. Any extension can also have the privileged of overriding do not disturb set through programming. Any DSS button corresponding to an extension set to do not disturb will illuminate red.

### **Benefits**

Enables user to quickly and easily initiate privacy for important meetings, etc.

## ***Call Forwarding***

### **Description**

Incoming calls (internal and external) can be routed to another extension by pressing the feature key, pressing a flexible key assigned as "call forward" or by dialling the call forward code and then the extension number or external number. The name of the extension or outside line number of the calling party appears on the display of the destination extension.

There are 8 kinds of call forward:

1. All calls
2. Busy
3. No Answer
4. Busy / No Answer
5. To external number
6. Follow me
7. ISDN Controlled
8. From Hunt Group

### **Benefits**

Ensures immediate call coverage for personnel that are out of the office and not part of a hunt group.

*Note: to allow exchange line to exchange line forwarding to operate both exchange lines must be ISDN.*

## Call Forward Indication On Display

It is possible to display the call forward indication on the display of a keyset, when an extension sets call forward. This is useful when many users will be setting forward to voicemail or another extension and wish to see where the call has been directed.

## Absence Message

### Description

This feature, when activated, sends a status message to the calling party's display. A total of nine messages of which all are user definable. The messages can be user interactive allowing a date, time of return, or some other variable to be entered.

The following is a list of default messages:

|   | Code | Message         |   |              |
|---|------|-----------------|---|--------------|
| 1 |      | In meeting      | 6 | In a Meeting |
| 2 |      | Gone Home       | 7 | Absence No.6 |
| 3 |      | At Ext ???      | 8 | Absence No.7 |
| 4 |      | Back at ??:??   | 9 | Absence No.8 |
| 5 |      | Out Until ??:?? |   |              |

These can be reprogrammed from the manager extension.

### Benefits

Makes internal office communications more efficient and minimises telephone tag.

## Hunt Groups

### Description

This feature enables calls to be directed to a specific group of extensions and for the call to "hunt" for a free extension in that group. There are up to sixteen hunt groups with up to 128 members in each group. Hunt groups may be linked so if all members of one group are busy, the call will trip onto the next designated group.

There are four types of hunt groups circular, terminate, Voicemail and Automated Attendant. Circular allows entry to the group on any extension number and hunts upward through the group to the highest number and then starts at the lowest extension number and will only give busy tone if all members are busy. Terminate will hunt upward through the group to the highest extension number in the group it will return busy if all members searched are busy. Voicemail hunting provides Circular type hunting with in-band signalling sent to the voicemail ports. It also notifies the KXTD of what mode of operation the voicemail system is providing. Automated Attendant also provides circular type hunting but notifies the KXTD of the mode of operation of the voicemail system. If any other extension is called and is busy, busy tone is sent. Group all idle extensions within the hunt group will ring. Uniform Call Distribution this mode provides circular hunting but will start hunting at the next highest extension number to that which answered the previous call to the huntgroup.

*This type face indicates a*

### Benefits

Allows calls to be routed to departments or voicemail without the need to re-dial if an extension is busy.

## Outgoing Calls

### ***Pooled Exchange Line Access***

#### **Description**

A group of outside lines can be combined together under one line key, for access to outside lines. When there are available routes the LED will remain off or green if you are currently using a line in the group, when all routes are busy the LED will show red.

#### **Benefits**

This allows for maximum utilisation of the line keys on a key telephone.

### ***Trunk Queuing (Exchange Line Camp On)***

#### **Description**

If an exchange line or line group is busy a user can dial "6" after receiving busy tone, so when the line becomes available the system will ring the extension and reserve the line for the extension.

#### **Benefits**

Increases productivity by allowing users to continue working while waiting for an available line. Eliminates the need to manually monitor lines.

### ***Speed Dialling - Personal***

#### **Description**

Any of the extensions can store up to ten personal speed dial numbers which are unique to that extension.

#### **Benefits**

Saves time and increases productivity by allowing the extension user to use abbreviated dialling to access frequently called numbers.

*Note: Personal speed dial numbers do not override call barring.*

## ***Speed Dialling - System***

### **Description**

There are 500 system memory locations. Any number up to 24 digits in length can be stored in a memory location. The system speed dial numbers can be assigned to override call restriction on a class of service basis.

### **Benefits**

All extensions can share a common list of frequently dialled numbers.

## ***Automatic Re-dial***

### **Description**

The KXTD is able to detect busy tone from the network. If busy tone is detected the digital telephone will automatically go off line. If the REDIAL button is pressed the speakerphone will activate and the number will be re-dialled and if busy tone detected will hang-up then after a pre-set period the telephone will automatically go off hook and re-dial the number. Up to 30 attempts will be made depending upon system programming.

### **Benefits**

Allows the extension user to continue to try a busy number without having to remain on the phone, allowing other tasks to be carried out at the same time.

## ***Last Number Re-dial***

### **Description**

Pressing the REDIAL key re-dials the last number dialled without having to clear the line. If the line has been cleared the re-dial key will re-seize the line and re-dial the last number dialled.

### **Benefits**

Saves time and frustration when trying to reach a busy number.

## ***Save / Repeat Dial***

### **Description**

This feature allows the extension user to store a dialled number by using the SAVE button, or a feature key assigned as a save button during an outside call and later re-dial the number even if other calls have been made since the original number was saved.

### **Benefit**

Allows other calls to be made if a called party is busy without the need to look up the number again.

## **Outgoing Call Log**

### **Description**

Allows extension users to redial any of the last five external numbers dialled. The calls are listed on the display of the KX-T7436E. The number required is redialled. The number required is redialled by selecting the relevant function key.

|    |                     |     |
|----|---------------------|-----|
| F1 | 1 Apr 11:59AM       | F6  |
| F2 |                     | F7  |
| F3 | Extension STA Speed | F8  |
| F4 | Features SYS Speed  | F9  |
| F5 | Call Log            | F10 |
|    | CONT RING BGM       |     |
|    | S1 S2 S3            |     |

|    |                      |     |
|----|----------------------|-----|
| F1 | 01344853506 11:59AM  | F6  |
| F2 | 100                  | F7  |
| F3 | 0990357357 STA Speed | F8  |
| F4 | 192 SYS Speed        | F9  |
| F5 | 01344853181          | F10 |
|    | MENU CLR BGM         |     |
|    | S1 S2 S3             |     |

### **Benefits**

No longer do you need to write down a callers number this is automatically recorded. You may also make a call back by selecting the callers information.

## Least Cost Routing (LCR)

### Description

With least cost routing feature, the system can choose the most cost-effective outgoing network based on the outside number dialled. After the outgoing destination number is dialled, the LCR stores and examines the number on the basis of area code used, the time of day and day of week.

The system will then check the restriction level of the user. If allowed the system will check the route of the dialled number.

Up to nine different carriers can be connected directly or indirectly to the KXTD. Priorities may be set for either time of day (eight sets of tables) and days of week (eight patterns).

### Benefits

Improves management of telephone expenses by providing automatic routing of outgoing calls over the most economical facility available.

## ISDN2 Interface

The ISDN2 interface and associated equipment allows the connection of Basic Rate ISDN to the KXTD. A maximum of 12 ISDN2 channels can be connected to one KXTD cabinet. Connection of the digital circuits will reduce the number of analogue lines which can be connected to the system. The ISDN interfaces on the KX-TD range of telephone systems comply with the latest European ISDN directive ETSI 300-403-1.

### *ISDN2 Features*

The following features are supported by the KXTD ISDN2 (ETSI 300-403-1) interface

|  |         |
|--|---------|
| Direct Dial In                             | (DDI)   |
| Multiple Subscriber Numbering              | (MSN)   |
| Sub Addressing                             |         |
| Calling Line Identification                | (CLI)   |
| Calling Line Identification Presentation   | (CLIP)  |
| Calling Line Identification Restriction    | (CLIR)  |
| Connected Line Identification Presentation | (COLP)  |
| Connected Line Identification Restriction  | (COLR)  |
| Advice of Charge at Start of Call          | (AOC-S) |
| Advice of Charge during Call               | (AOC-D) |
| Advice of Charge at End of Call            | (AOC-E) |
| Call Forward Universal                     | (CFU)   |
| Call Forward Busy                          | (CFB)   |
| Call Forward No Answer                     | (CFNR)  |
| Call Completion to Busy Subscriber<br>Time | (CCBS)  |

DDI, MSN, AOC, CFU, CFB and CFNR require rental of network services.

### *ISDN2 Feature Descriptions*

#### **Direct Dial In**

The network can send the last digits of the number dialled by the caller to the KX-TD208E. This string can be 1 to 6 digits in length dependant upon configuration and network services being subscribed to by the user. The KX-TD208E will use these digits to route the call to a specific extension or group of extensions using a look-up table.

#### **MSN**

The network can send the telephone number dialled by the caller to the KX-TD. This string will be the entire telephone number including STD code but excluding the leading zero. The KX-TD208E will use these digits to route the call to a specific extension or group of extensions using a look-up table.

#### **Sub Addressing**

If provided by the network the KX-TD can pass up to 20 digits following the telephone number to the device on the S-Bus.

## **Advice Of Charge**

When using the ISDN2 interface the KX-TD can receive the cost of the call whilst in progress and display it on the LCD display. On completion of the call print the precise cost of the call as part of the call logging output. The cost of calls made by a specific extension can also be printed as a report.

The call charge is sent to the KX-TD208E during the call. This data can be printed on the call logger and displayed on the digital telephones with LCD.

*Note : This feature is not currently supported by BT.*

## **Calling Line Identity**

The calling party's number can be displayed on a keyset with LCD.

## **CLIP**

The KX-TD208E can send the telephone number that is making the call to the network. This can be displayed on the receiving telephones display. This feature is useful when DDI or MSN is used to ensure that the correct DDI or MSN number is provided as CLI to the called party.

## **CLIR**

Allows an extension user on the KX-TD208E system to withhold their CLI.

## **COLP**

The KX-TD208E can send the telephone number that is answering the call to the network. This can be displayed on the originating telephones display upon answer of the call. This feature is useful when DDI or MSN is used to ensure that the correct DDI or MSN number is provided as the connected telephones number to the calling party.

## **COLR**

Allows an extension user on the KX-TD208E system to withhold their COLP

## **CFU**

All calls to a specific MSN can be redirected from within the local exchange. The KX-TD208E can set and cancel this feature.

## **CFB**

Calls to a specific MSN can be redirected from within the local exchange when the called number is busy. The KX-TD208E can set and cancel this feature.

## **CFNR**

Calls to a specific MSN can be redirected from within the local exchange when the called number does not answer. The KX-TD208E can set and cancel this feature.

## **CCBS**

The KX-TD208E can utilise the ISDN equivalent of the analogue service "ringback when free".

## ISDN2 System Configuration Tables

The following tables show the permissible configuration combinations of analogue and digital channels.

| 816 System    |                |   |   |
|---------------|----------------|---|---|
| ISDN Channels | Analogue Lines |   |   |
|               | 0              | 4 | 8 |
| 8             | 8              | 1 | 1 |
| 7             | 7              | 2 | 2 |
| 6             | 6              | 3 | 3 |
| 5             | 5              | 4 | 4 |
| 4             | 4              | 4 | 5 |
| 3             | 3              | 3 | 6 |
| 2             | 2              | 2 | 7 |
| 1             | 1              | 1 | 8 |
| 0             | 0              | 0 | 0 |

| 1232 System   |                |    |    |    |            |    |    |
|---------------|----------------|----|----|----|------------|----|----|
| ISDN Channels | Analogue Lines |    |    |    |            |    |    |
|               | Single CCU     |    |    |    | Double CCU |    |    |
|               | 0              | 4  | 8  | 12 | 16         | 20 | 24 |
| 24            | 24             | 1  | 1  | 1  | 1          | 1  | 1  |
| 23            | 23             | 2  | 2  | 2  | 2          | 2  | 2  |
| 22            | 22             | 3  | 3  | 3  | 3          | 3  | 3  |
| 21            | 21             | 4  | 4  | 4  | 4          | 4  | 4  |
| 20            | 20             | 20 | 5  | 5  | 5          | 5  | 5  |
| 19            | 19             | 19 | 6  | 6  | 6          | 6  | 6  |
| 18            | 18             | 18 | 7  | 7  | 7          | 7  | 7  |
| 17            | 17             | 17 | 8  | 8  | 8          | 8  | 8  |
| 16            | 16             | 16 | 16 | 9  | 9          | 9  | 9  |
| 15            | 15             | 15 | 15 | 10 | 10         | 10 | 10 |
| 14            | 14             | 14 | 14 | 11 | 11         | 11 | 11 |
| 13            | 13             | 13 | 13 | 12 | 12         | 12 | 12 |
| 12            | 12             | 12 | 12 | 12 | 13         | 13 | 13 |
| 11            | 11             | 11 | 11 | 11 | 14         | 14 | 14 |
| 10            | 10             | 10 | 10 | 10 | 15         | 15 | 15 |
| 9             | 9              | 9  | 9  | 9  | 16         | 16 | 16 |
| 8             | 8              | 8  | 8  | 8  | 8          | 17 | 17 |
| 7             | 7              | 7  | 7  | 7  | 7          | 18 | 18 |
| 6             | 6              | 6  | 6  | 6  | 6          | 19 | 19 |
| 5             | 5              | 5  | 5  | 5  | 5          | 20 | 20 |
| 4             | 4              | 4  | 4  | 4  | 4          | 4  | 21 |
| 3             | 3              | 3  | 3  | 3  | 3          | 3  | 22 |
| 2             | 2              | 2  | 2  | 2  | 2          | 2  | 23 |
| 1             | 1              | 1  | 1  | 1  | 1          | 1  | 24 |
| 0             | 0              | 0  | 0  | 0  | 0          | 0  | 0  |

KXTD Analogue Lines Vs Digital Channel Configurations

## ***Euro ISDN2 Extensions***

### **Description**

The KXTD can provide up to 12 ISDN2 extension circuits for the use of devices such as Video Telephones, Group 4 Facsimile machines, ISDN2 High Speed Modems, and Video Conferencing. The ISDN2 extensions provide ISDN2 to the Euro ISDN (ETSI 300-403-1) standard. Any device capable of being connected to an ISDN2 (ETSI 300-403-1) line supplied by British Telecom may be used as an extension of this PBX. The KXTD will provide 2 channels of 64Kb each and full Euro ISDN functionality to the desk. ISDN2 devices will no longer require a line each.

Each ISDN2 extension port will support up to 8 ISDN2 terminals and provides multiple subscriber numbering to address the devices individually.

*Note : Each ISDN2 extension will reduce the number of available ISDN2 exchange line ports.*

## Incoming Call Information

### *Incoming call information Display*

#### **Description**

The KXTD will utilise calling line identification and display this information on the LCD of the digital telephones. The KXTD will compare the CLI information with the 500 numbers in system speed dialling if the same number is contained in the SSD the associated SSD name will be displayed on the LCD.

#### **Benefits**

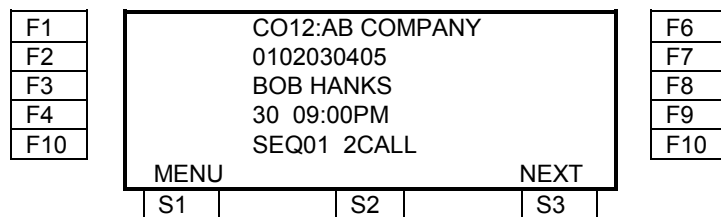
Improves call handling, the caller can be greeted personally as the system will display the callers name.

### *Incoming call information log*

#### **Description**

This feature will automatically record the incoming call information for later review. If you later wish to return a call the information can be retrieved from the log, viewed and if correct you simply pick up the hand-set or press SP-PHONE the system will automatically dial the stored callers number.

Example KX-T736 display



#### **Benefits**

No longer do you need to write down a callers number this is automatically recorded. You may also make a call back by selecting the callers information.

### *Incoming call information log lock*

#### **Description**

This feature allows you to lock your extension so that your incoming call information cannot be viewed by another person.

#### **Benefits**

Ensures the privacy of your calls.

## ***Incoming call information log mode***

### **Description**

When your incoming call information area is full this setting allows you to specify whether to retain the old information and not record new information, or to discard the oldest call information and record the new information.

### **Benefits**

Allows you to return calls if you were out of your office when the call arrived. The callers information is recorded and you can call them back.

## Call Barring

### Description

Call barring in the KXTD allows the control of access to outside lines on a per class of service basis. This restriction can vary in the day or night mode. The eight classes of restriction are as follows:

| Level | Restriction  |
|-------|--|
| 1     | No restrictions  |
| 2     | 20 area codes may be denied and 25 exceptions may be specified |
| 3     | 40 area codes may be denied and 20 exceptions may be specified |
| 4     | 60 area codes may be denied and 15 exceptions may be specified |
| 5     | 80 area codes may be denied and 10 exceptions may be specified |
| 6     | 100 area codes may be denied and 5 exceptions may be specified |
| 7     | 999, 112 and Intercom calls only                               |
| 8     | 999, 112 and the PBX operator only                             |

Access to dialling using the SSD may also be allowed / disallowed on a system wide basis.

For each area or exception code up to 6 digits may be entered. The level used when an extension is locked is level 7.

"\*", "#" or RECALL may be checked to ensure correct operation of the call barring system.

### Benefits

Controls call costs and prevents call abuse by providing automatic blocking of calls placed to restricted numbers.

## Call Logging Interface

### Description

By attaching a serial printer or call management system to the RS232C port , a detailed record of all incoming and outgoing calls can be kept for future reference.

The data contains information on the date and time of the call, the extension making or receiving the call, the exchange line number, the number dialled or the callers number, the time to answer, length of the call, the account code used and whether the call was forwarded or transferred.

When using the ISDN interface the KXTD can receive and print the cost of the call upon its completion, as part of its call logging output.

### Benefits

Provides accounting management tool for allocation of telephone expenses. Identifies areas for system or feature upgrade. Provides customer with record of telephone usage which can be used in making budgetary and planning forecasts. Prevents telephone abuse and misuse by identifying unauthorised outgoing calls.

## Call Logging Indication

The call logging output shows calls which have been forwarded or transferred, when modem access has occurred and incoming calls.

The condition codes are shown below:

| Condition Code | Meaning   |
|----------------|---|
| <l>            | Incoming call.  |
| <l>01344853233 | Incoming ISDN call. The number displayed after <l> is the callers calling line identification.  |
| ANS            | The time taken to answer the incoming call  |
| TR             | The call was transferred.   |
| FW             | The call was made because the extension number called was set to forward to an external number. |
| RM             | The call accessed the remote maintenance modem.   |

## Call Logging Output

| Date     | Time   | Ext | CO | Dial Number    | ANS   | Duration | Cost  | Acc Code | CD |
|----------|--------|-----|----|----------------|-------|----------|-------|----------|----|
| 24/06/96 | 9:00AM | 200 | 01 | 01344853506    |       | 00:05'12 | 12.00 | 12345    |    |
| 24/06/96 | 9:10AM |     | 01 | <l>01344853506 | 00'12 |          |       |          |    |
| 24/06/96 | 9:20AM | 200 | 01 | <l>01344853506 | 00'10 | 00:20'12 |       | 12345    | TR |

*Note: Lost calls are indicated by a ring time and no duration i.e. the system was rung but the call was not answered.*

## Other Features

### ***Flexible Line Assignment***

#### **Description**

The function keys on the keysets can be used to display lines connected to the system in a 3 different ways.

1. Direct appearance ( 1 line per key ) of each exchange line.
2. Each key representing an exchange line group.
3. Pooled line appearance (all lines unassigned to other line keys grouped under one key)

The keys can be programmed to show the lines in any order and group and single line keys can be mixed on the same extension.

#### **Benefits**

Provides for private line ability.  
Separates departments.  
Conserves the number of keys to use for other features.

### ***Idle Line Preference***

#### **Description**

Idle line preference allows a user to automatically select an idle exchange line for dialling out when the hand-set is lifted or speakerphone is activated eliminating the need to manually select a line.

Intercom calls can still be made by pressing the ICM (Intercom) button.

#### **Benefits**

Provides external dial tone for each call for any user who makes more external calls than internal.

### ***Prime Line Preference***

#### **Description**

Prime line preference allows a user to automatically select a pre-set line for dialling out on when the hand-set is lifted or speakerphone is activated, thus eliminating the need to manually select lines.

The line is specified through programming of the extension. Intercom calls can be made by pressing the ICM (Intercom) button.

#### **Benefits**

Eliminates a step for dialling out.  
Allows for better control of specific lines set for specific extensions.

## ***Account Codes***

### **Description**

This feature allows a user to enter an accounting code or a client billing code (up to 5 digits) which will print out with the call record on the printer. The account code entry can be voluntary or forced dependant upon requirements.

### **Benefits**

Provides cost accounting tool to allocate telephone expenses (outgoing call costs) to specific clients/departments.

Provides verification of correct entry by checking the account code entered against those programmed in the system.

Provides record keeping confidentiality by allowing account code entry without interruption to ongoing conversation.

Ideal for Lawyers, accountants, etc.

## ***Headset Connection***

### **Description**

All digital keyphones and the KX-T7130E are headset compatible. Headset operation can be set and cancelled through individual hand-set programming. When headset operation is activated all audio is switched to the headset, including speaker audio. The headset feature can also used with the DSS console keys to allow ease of use.

### **Benefits**

Allows headset operation at any extension thereby increasing the efficiency.

## ***Extension Lock***

### **Description**

Each telephone can be locked using a three digit code, which when entered locks the extension. External calls will be disabled except 999 and 112.

### **Benefits**

Provides added control over telephone usage.

## ***Automatic Answer***

### **Description**

All keyphones with a speakerphone, are equipped with an automatic answer button for intercom calls. When an internal call is received the extension user being called can reply to the caller without lifting the hand-set.

### **Benefits**

Simplifies call processing by allowing internal calls to be answered without having to pick up the hand-set. Ideal for hands free environments such as engineers, architects, executives, doctors etc.

## ***Automatic Recall***

### **Description**

All calls transferred through extensions and left unanswered will automatically revert back to the transferring extension (or the operator) after a set time. The KXTD has an adjustable recall timer.

### **Benefit**

Improves customer service by ensuring that calls are processed and handled within a given time.

## ***Alternative Answering Position***

### **Description**

Four DSS consoles can be installed per CCU allowing the incoming traffic to be handled by two operators or in two places at different times of day. On a system with two cabinets up to 16 DSS consoles may be connected allowing both operators visual indication of all 128 extensions.

### **Benefits**

Allows for better control of high traffic situations.

## ***On Hook Dialling***

### **Description**

There is no need to lift the hand-set when placing a call with any keyphone. When placing a call simply press the line or SP-PHONE/MONITOR key and dial the required number. Also, while in a conversation, it is possible to monitor the conversation by simply pressing the SP-PHONE/MONITOR key and replacing the hand-set. If you are using a non speaker phone simply pick up the hand-set to continue your conversation.

### **Benefits**

Increases productivity by freeing up users and allowing them to do paperwork, etc.

## ***Dial Tone Mute***

### **Description**

The external dial tone can be turned off if desired.

### **Benefits**

Useful in environments where the hands free dialling capability is important but there is too much noise generated. Telemarketing, customer service, etc.

## ***Alarm***

### **Description**

Each extension may set the system to call back at a specific time as a reminder of an event or meeting.

### **Benefits**

Provides a built in alarm function.

## ***Remote Alarm Setting***

### **Description**

Allows the operator to set an alarm call on behalf of any extension of the system.

### **Benefits**

Useful for guest house applications where the alarm call may be offered as a facility to guests.

## ***Volume and LCD Contrast Adjustment***

### **Description**

There are different volume control functions available to keysets on a per extension basis. One volume control for the speaker, another for the ringer and one for the hand-set receiver. It is also possible to adjust the LCD display contrast.

## ***Dual Colour LEDs***

### **Description**

Each exchange line key has a dual colour LED. Red is a busy line and green is the line you are speaking on. When a key is assigned as a BLF these dual colours are also utilised to indicate busy extensions, extensions that are in a DND mode, and extensions that are in a call forward mode.

### **Benefits**

Lets you know which line you are talking on, especially when a call is put on hold.  
When a call is transferred to another extension, in addition to ringing, the line will also flash green indicating which line is being transferred.  
Applications include manager /secretary operation.

## ***Microphone Mute***

### **Description**

Users have the ability to switch off their microphone for privacy.

### **Benefits**

To ensure privacy while using the speakerphone.

## ***Doorphone Interface***

### **Description**

Up to 2 door-phones can be attached to each system (4 on a double cabinet system), which may be set to ring on any combination of extensions. The doorphone interface also contains a relay to control a door release mechanism for each doorphone.

The opener can be controlled via any extension.

- The extensions which may release the door are controlled on a class of service basis.
- The call button on the doorphone can be allowed to release the door.

### **Benefits**

Provides security for companies in which entrances may be left unattended.

## ***Background Music***

### **Description**

Two external music inputs (4 on a double cabinet system) allow the user to connect music sources to the KXTD. The built-in music source can then be replaced by the users choice of music. One of these sources can be used as a background music function and be played through the speakers of keyphones and if required over the external paging equipment.

### **Benefits**

Creates a pleasant working environment.

## ***Pulse / DTMF Dialling***

### **Description**

Each of the exchange lines can be programmed for DTMF (dual tone multi frequency) or loop disconnect (pulse) dialling on a per line basis.

### **Benefits**

This allows for different types of lines to be attached to the system without the need for special equipment.

## ***Message Waiting Ringing***

### **Description**

Any single line telephone can have message waiting notification indicated not only by interrupted dial tone but also by periodic ringing. The telephone will be rung briefly at intervals of between 1 minute and 64 minutes depending upon system programming.

This ringing will provide a much more obvious signal to the extension user therefore messages will be responded to more efficiently.

## ***Exchange Line to Exchange Line Transfer***

### **Description**

Incoming or outgoing ISDN exchange line calls may be transferred by an extension to another external telephone number.

### **Benefits**

A very useful facility if the business has personnel who may be working from home. The business will not need to give callers the home workers number to dial direct they can simply transfer the call. To the outside caller the home worker will appear as if they were an extension on the KXTD.

## ***Call Forward Exchange Line to Exchange Line***

### **Description**

Any extension user on the KXTD may set their extension to direct their ISDN calls to an external telephone number i.e. a mobile number when they are out of their office. Internal, DDI, DIL and transferred calls will be redirected to the mobile telephone.

### **Benefits**

Makes personnel who are out of the office appear as if they were an extension on the KXTD.

## ***Remote Setting of Alarm Calls***

### **Description**

The Operators and Manager extensions of the KXTD can set an alarm call on behalf of any extension of the KXTD.

## ***Automatic Call-back Busy***

### **Description**

If the extension or exchange line selected is busy it is possible to use the automatic call-back busy feature so that when the extension or line becomes free your extension will ring. Upon lifting your receiver or pressing speakerphone the other extension will ring or you will receive external dial tone from the exchange line. Using your telephone whilst having automatic call-back busy set will not cancel the feature. If you wish to cancel automatic call-back busy this can be done by means of a code.

### **Benefits**

Saves time making repeated attempts to access an extension or line, or monitoring the status of a line or extension you are automatically alerted when it becomes free.

## ***Budget Management***

### **Description**

The system can be set so that extension users are disconnected from their exchange line call when the cost of that call reaches a certain limit.

### **Benefits**

Controls the cost of calls made by users of the KXTD system.

*Note: requires call charge information to be provided real time by the ISDN exchange line.*

## ***Class of Service***

### **Description**

Each extension is allocated a class of service. The class of service determines the following:

1. Call barring level day
2. Call barring level night
3. Exchange line call duration limit
4. Whether the extension is permitted to transfer calls to an external number
5. Whether the extension is permitted to call forward calls to an external number
6. If the extension is allowed to override do not disturb
7. If the extension is forced to enter an account code to make external calls.

### **Benefits**

Controls the level of facilities and features available to extensions.

## ***Primary / Secondary Class of Service***

### **Description**

Each extension has two classes of service assigned to it. The operator can alter which class of service applies to an extension and therefore control the facilities available.

### **Benefits**

Useful for controlling calls made by any extension. If the user of the extension is absent calls of a certain type can be controlled by the operator.

## ***Data Line Security***

### **Description**

When enabled data line security prohibits the intrusion of unwanted tones into a call. It allows data transmissions to be free of the corruption which would otherwise result if tones such as call waiting were to interfere with the transmission.

- When enabled intercept routing no-answer will not operate\*.

### **Benefits**

Ensures the integrity of data (or fax) transmissions and ensures that they are free from corruption.

- Ensures that the operator does not receive data (or fax) calls\*.

## ***Department Codes***

### **Description**

A code of up to 5 digits can be assigned to each extension on the KXTD. This code number is included on the call logging output to indicate which department the extension belongs to.

### **Benefits**

Allows calls made by extensions to be easily allocated to departments for billing purposes.

## ***Direct Dial In (DDI)***

### **Description**

Direct dial in is an ISDN feature. The user of the KXTD will rent a series of numbers from the network provider. The network provider sends some of the number dialled to the KXTD. The KXTD in turn translates the number dialled to a specific extension.

- An incoming DDI call can be translated to reach the operator, MODEM, Extension group or TAFAS\*.

### **Benefits**

Allows callers to dial direct to the person (or facility\*) they require.

## ***Do not disturb (DND)***

### **Description**

Do not disturb may be set by an extension user. When an internal call is made to an extension with this set the caller can hear a specific tone which indicates that this feature has been set on it. Incoming exchange line calls also will not cause the extension to ring.

- A backup extension can be set-up so that when a call is made to an extension set to DND it will automatically be forwarded to the backup extension.

### **Benefits**

Allows the extension user to choose when they are able of unable to take calls. For example it would stop calls arriving at your extension whilst you are in a meeting.

## ***DND for DDI calls***

### **Description**

If allowed in the extension user's class of service they may set do not disturb for their direct dial in calls. In this mode the extension user's calls are all directed to the operator.

### **Benefits**

Ensures that DDI calls never need go unanswered. If the extension user is absent from their telephone or unable to take calls they can be re-directed so that the caller can be helped by someone else.

## ***Extension Connection***

### **Description**

Allows any unused extensions to be disabled

### **Benefits**

Ensures that non working extensions cannot be called or used.

## ***Hotel Application - Check-in / Check-out***

### **Description**

This feature controls the type of calls which can be made by an extension by altering the class of service applied to an extension.

### **Benefits**

Stops anyone other than a guest from using the telephone to make outgoing calls.

## ***Hotel Application - Room Management***

### **Description**

Allows the operator to print out the status of each room. The following information can be printed:

1. Call charges (requires ISDN CCI)
2. Cleaning status of the room
3. Minibar charges

### **Benefits**

The KXTD can provide very useful features for a hotel.

## ***Hotel Application - Wake-up Call***

### **Description**

Allows the system operator to set, cancel and confirm the details of an alarm call for any extension.

### **Benefits**

Allows the KXTD system to provide a valuable facility when installed in a hotel.

## ***Day / Night Service***

### **Description**

The day / night service modes can be set by an operator. The features which can differ between day and night service are:

1. DIL 1:1 (Direct In Line) Ringing pattern
  2. DIL 1:N Normal Ringing Pattern
  3. Intercept Extension
  4. Call barring level for extensions
  5. Outgoing Lines
  6. Doorphone ringing pattern
- Any extension may set the day / night mode if this facility has been allowed in it's class of service.

### **Benefits**

The facilities available during normal working hours can be restricted at night. For example callers can be directed to answering devices and outgoing calls can be restricted.

## ***Notebook Function***

### **Description**

This feature allows the extension user to store a number into their save button during a conversation.  
- A number may be stored into the save button when the handset is on-hook.

### **Benefits**

Allows a number to be stored to be dialled later but still allows calls to be made in between.

## ***Paging Deny***

### **Description**

Any extension user may prohibit paging calls from being heard through their extension's loudspeaker.

### **Benefits**

This feature excludes those telephones which do not wish to receive "page all" announcements.

## ***Pre-dial***

### **Description**

An extension user may enter the telephone number before going off-hook. The number dialled can be checked before dialling. Once a number is entered going off hook causes the call to be made.

### **Benefits**

Reduces the risk of mis-dialling

## ***Private Call***

### **Description**

By entering a pre-set account code the dialled number may be omitted from the SMDR output.

### **Benefits**

Useful if the number being called should not be disclosed.

## ***Quick Dialling***

### **Description**

This feature allows single digit access to extensions.

### **Benefits**

Allows single digit access to personnel providing a specific function to internal callers. For example room service.

## ***Terminate Button***

### **Description**

A flexible key when programmed as a terminate button, when used will disconnect the current call and return internal dial tone.

### **Benefits**

Allows another call to be made without needing to replace the receiver and then pick it up again or having to press the speakerphone button twice.



## ***Extension Group***

### **Description**

Up to 16 extension groups may be assigned an extension may be in more than one extension group simultaneously. The extension groups are separate from the hunt groups. The extension groups are used for paging and call pickup.

### **Benefit**

Extensions may be grouped by department so that personnel with a specific function may be paged and also able to pickup calls within their section.

## ***Hunting - No Reply***

### **Description**

Calls which arrive at a hunt group will ring at an extension for a programmable period of time and if unanswered will begin to ring at the next extension within the group. The order in which the extensions are searched may be set through programming.

### **Benefit**

A useful feature for locating personnel able to answer enquiries when the personnel concerned are not always at a fixed location.

## ***DDI (Improved Feature)***

### **Description**

Direct Dial in may be set for day mode and night modes separately.

### **Benefit**

When staff are present during the day DDI may be in operation. At night for example it may be preferred to ring multiple extension when an incoming call arrives so that calls may be answered by a smaller number of personnel.

## ***CO Incoming Call Display***

### **Description**

The initial display on the extension telephone may be selected on incoming exchange line calls. The options are Callers CLI and name, Exchange line number and exchange line name or (New Feature) DDI number dialled and extension name

### **Benefit**

Assists personnel to answer the telephone correctly depending upon the caller and the purpose of their call.

## ***CLIP/COLP***

### **Description**

CLIP (Calling Line Identification Presentation) / COLP (Connected Line Presentation). The number transmitted to persons called and to those who call your extension may be selected. The number presented may be set as any of the following:

1. The main telephone number.
2. Your personal DDI number.
3. Any other DDI number within your numbering range.

### **Benefit**

If you wish to withhold personal DDI numbers from people who call or are called by your organisation. You may instead provide a return telephone number which is either the main number of a group DDI number.

## ***CLIR/COLR***

### **Description**

The number transmitted to persons called and to those who call your extension may be withheld.

### **Benefit**

If you wish to withhold your telephone number from the called or calling party you may do so to ensure your privacy.

## ***Intercept Routing***

### **Description**

Each trunk group can have an extension assigned which will receive calls if they are unanswered by the receiving extension. (New Feature) Each extension may have an extension assigned to receive unanswered calls for that extension. (New Feature) Each hunt group may have an extension assigned to receive unanswered calls to that hunt group.

### **Benefit**

Ensures that calls never go unanswered, extensions or groups where personnel may not always be present may have their unanswered calls diverted automatically to an operator.

## ***Call Forwarding to ISDN Extension***

### **Description**

An ISDN port may be nominated to receive forwarded calls

### **Benefit**

Improves the integration of ISDN extensions in line with normal digital, analogue or SLT extensions.

*Note: If the ISDN port has multiple devices connected all the devices will be rung on diverted calls.*

## ***Call Forwarding to CO Line***

### **Description**

Door-phone calls may be set to forward to an external telephone number.

### **Benefit**

Useful if you wish to be able to speak to visitors when you are away from your premises. Calls may be forwarded to a security company out of normal office hours.

## ***Call Transfer to Extension***

### **Description**

When a call is transferred to an extension with automatic answer set, the intercom caller may speak to the called extension through the speakerphone of the called party. When the calling extension goes on hook to transfer the exchange line call the call will revert to ringing at the called extension.

### **Benefit**

Ensures that the called party is aware of when the intercom call ends and the exchange line call starts.

## ***Night Button***

### **Description**

An exchange line key may be used as a night button. Going off hook and pressing the button will alternate the system between day mode and night mode. The status of the system is displayed by the LED. The LED will be lit whilst the system is in night mode and extinguished during day mode.

### **Benefit**

Allows the status of the system to be seen at a glance and changed at the press of a button.

## ***P-MP***

### **Description**

Point to multi-point operation can be supported on exchange lines using multi subscriber numbering. The incoming MSN can be used to direct the call to any of the following:

1. Extension
2. Operator
3. External Pager
4. Hunt Group
5. Phantom Extension (New Feature)
6. Modem (1232 Only)

### **Benefit**

Allows access to many devices on the system without the need to subscribe to DDI

## ***Intercom Call***

### **Description**

The selection of ringing tones which are available to exchange line keys can be assigned for intercom ringing.

### **Benefits**

Allows identification of which extension is ringing in areas where many extensions are in close proximity.

## ***DND***

### **Description**

The Do Not Disturb feature may be set without the need to register an extension to receive calls. When setting DND is possible either to block calls or have them diverted to a nominated extension.

### **Benefit**

Allows you to prohibit non urgent calls from ringing at your extension.

## ***Station Speed Dialling***

### **Description**

The station speed dialling memories may be programmed to contain DTMF. These DTMF tones may be send during intercom calls.

### **Benefit**

Sending DTMF tones internally may be useful for controlling voicemail systems. It becomes possible to program your KX-T7436E with commonly used voicemail features i.e. the code to delete a message. replay a message exit the voicemail etc. This feature can be used for other devices on the telephone system which are controlled by DTMF tones.

## ***Phantom Extension and Button***

### **Description**

Up to 128 phantom extension may be assigned on the system. Incoming exchange line of intercom calls can be directed to the phantom number. The call will be presented at any extension which has a button assigned to the particular phantom button. The receiving extension may choose whether their extension will ring or only flash the phantom button when a call arrives.

### **Benefit**

Allows "Boss/Secretary" working. Allows any extension to have more than one extension number. Extension users may know the purpose of the call before answering the telephone.

## ***VM Integration***

### **Description**

When the KX-TVP100E or KX-TVP200E is connected and the Auto-Configuration feature is used mailboxes will only be created for those extensions which are registered in programming as connected to the system.

### **Benefits**

Mailboxes will only be created for extensions which are used. This allows the addition of extensions and mailboxes at a later date without having to re-allocated mailboxes to other numbers/extensions etc.

## ***CFU/CFNR/CFB***

### **Description**

Extensions may use the ISDN call forward facilities. The type of call forwards supported are CFU (Call Forward Unconditional), CFNR (Call Forward No Reply) or CFB (Call Forward Busy)

### **Benefit**

Complements the KX-TD call forward to CO feature. The KX-TD feature does not require payment of any additional subscription to the service provider. However the ISDN call forward facility will re-direct calls without use of two exchange lines to do so.

## ***DECT***

The KXTD DECT (Digital Enhanced Cordless Telephony) facility provides digital proprietary telephone functionality within a cordless telephone. the cordless hand-sets will have a range of up to 50m indoor / 400m outside from the base station. The hand-sets feature a two line 10 digit LCD display and 3 programmable exchange line keys.

| Model                     | Cell Station Interface | Cell Station | DECT Handsets | Wired Ports (With XDP) | Maximum Number of Extensions |
|---------------------------|------------------------|--------------|---------------|------------------------|------------------------------|
| KX-TD816E                 | 1                      | 6            | 16            | 12 (24)                | 40                           |
| KX-TD1232E                | 2                      | 12           | 64            | 24 (48)                | 112                          |
| Double Cabinet KX-TD1232E | 2                      | 12           | 64            | 56 (112)               | 176                          |

## ***Least Cost Routing***

The least cost routing has been improved so that the KX-TD may now route local calls over alternative carriers. The user can just dial the local number without the STD code. The KX-TD now supports alternative carrier whose network is analogue via ISDN for example those carrier which need the dialling to be in DTMF. This new feature allows the transmission of cost centre codes via an ISDN connection to an analogue carrier.

## ***Whisper off hook call announce***

Voice announcements may be made to a busy extension through the ear-piece of the busy extension the other party external or internal will not hear the announcement (7400 series only).

### ***Off Hook Monitor***

Allows other persons to listen to an ongoing conversation whilst the telephone user converses using the handset.

### ***7400 Series Support***

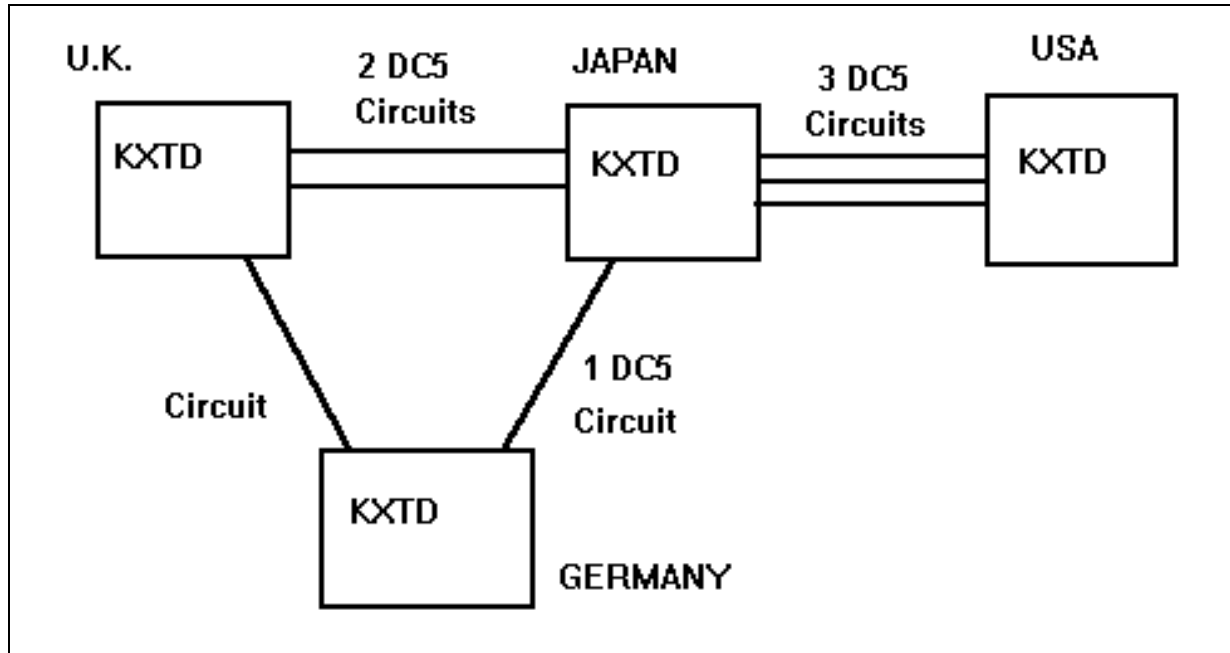
The system fully supports the new features of the 7400 series telephones for example jog/dial.

## DC5 (New Feature)

### Description

DC5 is a signalling system to facilitate PBX to PBX connections. The inter-linked systems may have different extension numbering schemes. This facility will allow direct desk to desk dialling - simply pick up the hand-set dial the extension number you require, and if the extension is on another PBX on the network, the KXTD will connect you automatically. In addition to this functionality the KXTD can also include the DC5 circuits as part of the Automatic Route Selection (ARS) function it will use the DC5 circuits if the call is cheaper over the network.

For example



If an extension user on any system dials an international number where there is a PBX on the network the call will be routed via the network and then out onto the PSTN within the country of the country code dialled. This will mean that the call would only cost the local or national rate rather than the full international rate. This facility can also be used on a nation-wide basis to avoid national call charges.

## TAPI 2.1(New Feature)

The TAPI 2 interface provides call information to a network application to control call routing from the PBX to the extension telephones. The applications for this feature are virtually limitless. The most common forms of applications include call centres where incoming calls are answered by a number of operators. The calls are received by the PBX, call information is passed to the network and the receiving extension has information about the caller displayed on their terminal. Another type of application is "Power Dialling" where calls are generated by the network.

## CCBS (New Feature)

CCBS (Call Completion to Busy Subscriber) is the ISDN equivalent of the analogue call-back service. It allows an extension user to set a ring-back when free against an external number. The network will return the call to the PBX using the DDI number of the extension that originated the CCBS request.

### ***Uniform Call Distribution Message (New Feature)***

Callers to a UCD group can now hear up to 4 user recorded messages advising them about the status of their call in the queue.

### ***Remote (New Feature)***

The KX-TD remote programming option is now capable of 33,600bps. This is an increase of 14 times the original modems maximum speed. This new modem can be fitted to the KX-TD816 providing the 816 with the same remote programming and diagnostics as the 1232.

### ***DECT Interface (improved Feature)***

The KX-TD146E increases the number of cell stations per module to 6. This will allow up to 6 cell stations to be connected to a KX-TD816 and using two KX-TD146E interfaces connected to a KX-TD1232E system up to 12 cell stations may be connected.

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