

FYLDE MICROSYSTEMS Ltd

Technical Manual
for

TK255/355 Network Personalisation

for software Version 0.99

BETA TEST

INTRODUCTION

About this Manual

This manual is split up into three parts.

Section 1. provides an overview of the MPT1327/1343 standard. The various facilities offered by the standard which are implemented in the Kenwood portable are described.

Section 2, the "Network Operators Guide" provides the information required to generate a master file, which describes the Network to which the portable will connect to. This section also contains a list of error messages which either the P.C or the portable will display before, during or after personalisation.

Section 3. describes how the installer of the portables may personalise the facilities for a particular fleet and assign the IDENTs. If the necessary Network (.NET) files have been generated, then an installer might skip the first and second part of this document.

The NET and USER files are compatible with the TK715 personalisation files.

Appendix (i) contains a sample Network Personalisation form and additional help for the Network Operator.

Appendix (ii) contains a form for each fleet connected onto a Network. This form has space for allocated idents and active idents. The user may choose to use one form per portable or one form per fleet.

Appendix (iii) contains details of advanced features which may be triggered during Network personalisation.

This issue of manual covers portable software version 0.99.

CONTENTS

1.. THE MPT1327/MPT1343 STANDARD	4
1.1 Radio Trunking	4
1.2 Kenwood Portable Facilities	6
2. PERSONALISING THE NETWORK PARAMETERS.....	8
2.1 Radio Personalisation Software	8
2.1.1 Configuring the software.....	9
2.2.2 Generating the NETWORK file.....	10
2.2.3 Interpreting the Network Personalisation Form	12
3. GENERATING A FLEET (.FLE) FILE AND PROGRAMMING THE PORTABLE	17
3.1 Activating Facilities and [P]rogramming	17
3.2 [R]ead option	28
3.3 [E]dit directory text.....	28
3.4 [Q]uickdial index	29
4. ERROR MESSAGES	30
5..Trouble Shooting	31
APPENDIX (i) Network Operator form.....	33
Notes for the Network Operator.....	35
APPENDIX (ii) Sample form	41
APPENDIX (iii) Feature Byte	42

1. THE MPT1327/MPT1343 STANDARD

1.1 Radio Trunking

Trunking is a technique whereby a number of independent fleets of portables may share a "pool" of radio channels. The collective name for these channels is a "Network". A particular channel is assigned by the network to enable one or more radios to communicate, and when the call is completed, the channel is returned to the "pool" for use by the users of the Network. Portables may also be able to communicate using line connected services such as PABX and PSTN.

The assignment and management of the channels is performed by a "Control Channel". Unless a portable is active in a conversation, it will be continually monitoring the Control Channel. Portables have the ability to scan particular channels looking for a valid Control Channel. A Control Channel transmits data which the radios listen to. Messages may be transmitted on the Control Channel for all radios in the Network, or for particular radios. In some cases a message may require a reply from a particular radio.

Since there may be several Networks sharing a single channel, (Re-use of channels is common), radios need to know if a particular Control Channel is the one to which it subscribes. Each control channel is identified by a "System Identity Code". An equivalent System Identity Code must be programmed into each portable on installation.

Trunking Facilities

The most common facility is a speech call. Speech calls may be -

Radio to/from Radio

Radio to a group of Radios

Radio to/from line dispatcher

Radio to/from PABX

Radio to/from PSTN

Other facilities which a Network may support are

Status Calls. A 'Status' Number in the range 1 to 30 may be transmitted across the Network. In addition by using a special technique in the portable, another portable may be interrogated for its status. Status calls are transmitted using the Control Channel only.

Dispatcher Calls. This is a special case of a status=0 which may be transmitted across the Network to a 'dispatcher' radio, and means 'please call me back'. A radio fleet would be managed by this central dispatcher. The dispatcher has a 'call stack'. Radios who require service from the dispatcher transmit their 'identity' and status=0 which is stored in the dispatcher's stack. Only the dispatcher is allowed to originate a speech call to members of the fleet. It is possible but probably unusual to operate the TK250 as a dispatcher but the TK250 cannot be run as a P.C connected dispatcher.

Short Data Messages. These are text messages of up to 184 bits which may be transmitted using the Control Channel. The number of characters which may be transmitted is dependent on the number of bits/character. MPT1343 defines BCD format (44x4 bit numeric characters), TELEX (35x 5 bit characters), CCITT No 5 (25x7 bit characters). There is also a 1327 format where up to 22x8 bits characters may be transmitted. The TK250 does not support short data since there is no access for a RS232 port.

Each radio in the Network has a unique numeric identity. This identity is split up into two parts, the PREFIX and the IDENT. If a particular fleet has all of its radios sharing a Common Prefix, then the Network will process calls in a more efficient way than if differing prefix's were used. Some Networks will only support this Common Prefix working.

A portable must be 'personalised' before it can be used on a Network. This procedure implants both the Network and the fleet details into the portable. For the Kenwood unit, the personalisation is performed in two steps. The first step is to enter the information regarding the particular Network and store it into a file. The second step loads the Network information from the disk, adds the fleet details and then transmits both to the radio through a special programming KPG19 cable.

1.2 Kenwood Portable Facilities

The Kenwood portable has three menu areas where calling parties may be stored

The DiRectory

There is space in the directory for 20 prefix/idents. each entry may have a prefix which is the same as or different to the prefix for that particular portable. Note however that inter-prefix calls are less efficient, take longer to set up and are less reliable than single prefix calls. The prefix may also be written with a STATUS marker which changes the call request from a speech call to a status=0 dispatcher call. (Note that the status call will be single prefix).

The NUMeric menu

A fleet may be designated as 'large fleet' or 'small fleet'. A large fleet has three numeric digits in the range 200-999. A small fleet has two digits in the range 20-99. During personalisation, if the numeric area is not appropriate to a particular fleet, it may be suppressed completely. The portable is then less complicated to use. The numeric menu selects call requests for speech calls.

The TELephone menu

This menu has space for four PABX or PSTN numbers. For PSTN, there is space for 15 digits. In the case of PABX, the standard allows 9 digits maximum.

Status facilities

For calls to portables, a speech call may be modified to a Status call by accessing a Status menu. Any status permitted in the standard may be transmitted. In addition the displayed status of another radio may be interrogated from this menu.

Call Stack

The call stack holds -

The identity of radios who have called this portable and the call has not been answered and

The identity of the caller and status value of status calls which have been received by this portable.

There are facilities to scan through the stack, to return calls, and delete the calls from the stack. Any outgoing call scans the stack and automatically removes it.

ACK Back

Ack-back is a technique whereby the recipient of a speech call may indicate to the Network that he either cannot or does not wish to receive a speech call at the moment, and will call back later. The Kenwood radio supports both manually set Ack-back and Auto-Ack-back. If permitted during network personalisation, the radio will enter Ack-back operation if powered up with the PTT held. In the case of the terminal dispatcher, ack-back may be selected from the screen menu. This is the preferred mode of operation from the dispatcher since any speech calls to the dispatcher are effectively barred.

When the radio is in Ack-back mode, any speech calls will be acknowledged with ack-back, and the call will not mature. The callers IDENT will be stacked in the called radio a confidence tone will indicate to the sender that the call has been received.

In auto-ack-back mode, the radio automatically selects ack-back when any speech calls have been stacked due to 'call in absence'. This is a great benefit to the network since the traffic channel is not allocated.

2. PERSONALISING THE NETWORK PARAMETERS

2.1 Radio Personalisation Software

The portable is personalised using a software package supplied on a floppy disk. The program is compatible with all I.B.M P.C's and clones fitted with at least one floppy disk drive and one Serial port.

The portable is connected to the P.C using a Kenwood KPG-19 cable. One end of the cable is plugged into the microphone/speaker socket of the portable and the other end into the serial port of the P.C. If the P.C. is fitted with a 9 pin serial connector, then an adaptor must be used to convert from the 25 pin connector on the KPG-4 cable. These adaptors are readily available.

The programming package is designed such that it may be used by technicians who have an in depth knowledge of MPT1327/43, and by installers who do not have such knowledge.

The information about the network to which the portable will be connected is stored in a file. Access to this file is password protected. Each separate Network may assigned a different filename. This only needs to be done once, although the file can be later edited if the Network changes for any reason. The appendix (i) contains a sample form which may be used to request the Network parameters from a Network Operator.

The customer Fleet details are stored in a separate 'Fleet' file. This file holds the portable individual ident, a list of 'directory idents', the PABX/PSTN numbers and other parameters which may be unique to that particular fleet. When personalising a radio fleet it is only necessary to identify the Network by its file name.

2.1.1 Configuring the software

```
Date : 15 Jul 96   **** KENWOOD CONFIGURATION PROGRAM ****   Time : 11:28:47
+-----+
| SYSTEM password      [SYSTEM]
| Language             [0]
| Control Channel SYNC [0]
| Emergency Call Timer [ 60]
| Com Port (COM1,2,3,4) [1]
+-----+
|
| Enter the password which will be used to enter the [G] option
|                      from the main menu
|
|                      Use a 6 digit word
+-----+
| Enter SYSTEM password [      ]
+-----+
|-----KENWOOD MPT1327 TRUNKED MOBILE/PORTABLE-----| Ver 1.03
```

The two programs supplied are KENPASS.EXE and KENWPORT.EXE. It is necessary to run KENPASS first. It is not necessary to run KENPASS if you are already using the TK715 programming software. In this case it is only necessary to put KENPORT.EXE on the same directory as KENWOOD.EXE used for the TK715.

KENPASS asks for a password which should be entered using six characters. This password will be prompted in the KENWOOD program to gain access to [G] option (Configure the Network Parameters).

The second question asked by KENPASS is the SYNC word which will be used by the Network. There are only a few networks using the French SYNC, so outside France it is most likely that the C4D7 sync will be used. Enter '0' for the C4D7 sync.

KENPASS then asks for a language code. The Kenwood portable may display messages to the user during call set-up. Eight languages are stored in the portable. The language to use is activated by a number in the range 0 to 7. Only 5 of the languages are active. Languages 6 and 7 are available for customisation, but require a modification the EPROM inside the portable.

The next question requires the default emergency call time to be entered for Emergency Priority RQS calls.

The final question refers to the COM port which will be used by the P.C. If there is only one COM port the selection will probably be COM1. If additional ports are available, say in a Windows based PC with a mouse, or a P.C with a modem, then extra devices may already be using the COM1 port and another port may have to be selected.

KENPASS stores the password, SYNC, and language code in a file named CONFIG.KEN.

2.2.2 Generating the NETWORK file

Load the personalisation software by typing KENWOOD at the system prompt.

```
Date : 14 Jul 96      ** KENWOOD U.K PORTABLE PROGRAMMING **      Time : 07:36:38
-----
Prompts are placed within brackets [  ]
Editing Keys on the Keyboard are :

    <ESC> key to quit
    DEL key to erase all input within brackets
    to delete one character

                                [nnn][vvvv]
                                ↑
When programming enter in the status box :-

nnn  - Simple single prefix or interprefix RQS call
S    - RQQ status=0 call to ident [vvvv]
-----
Read data from portable  Program the portable  Edit directory text
Generate a network configuration  Quickial index  eXit from program

Enter Option [  ]

                                **                KENWOOD CORPORATION                **
```

Select the [G] option, and enter the password when prompted.

The software will then prompt for a Network Name. The name chosen should be one which would easily identify the Network. e.g For the British National Band 3 Network, X123FGT would not be as obvious as NATB3. If the name has not been used before, a new file will be opened. If the name has been used before, that file will be loaded.

There are two screens which are presented in a similar order to the form in the appendix (i) at the end of this document.

The active entry is marked in inverse video and a prompt is displayed at the bottom of the screen with the range of values which are acceptable. If a value is not acceptable the active entry will remain unchanged.

The active entry may be changed by entering a new value and pressing the <Enter> key. If the value does not require changing then the <Enter> key may be pressed on its own. The cursor down key has the same effect. To move the active field up, then either the <ESC> key or the cursor up key may be used.

If the <ESC> or cursor up is moved past the first active field then you will return to the main menu.

If the first screen has been completed, the second screen will be prompted. When the second screen has been completed, the data entered will be stored on the disk. If several Networks are stored, each must be assigned a different file-name. The Network data may be edited later, but again selecting the [G] option and entering the original filename. (Note that all network files have the extension .NET appended to them before storing on disk).

In order to make the Network Personalisation easier, a form has been designed [see appendix (i)] for completion by the Network Operator.

2.2.3 Interpreting the Network Personalisation Form

This information on this form must be entered on the two screens. The data will require some translation (principally converting some binary values to hexadecimal) to provide the necessary syntax which the personalisation software can understand. These are taken in turn -

Network Authorisation Data

If the form has zero's or blanks, then leave the eight entries as blanks.
If there is authorisation data, this is entered as a four digit value.

The first digit is -

1	for zone
2	for area
3	for full

The other three digits contain the access authorisation data in hexadecimal, so it is necessary to convert the entries on the form.

e.g 16.9.3.4.2.3 Aquisition Authorisation Data

Entry_No	[Z]one[A]rea[F]ull	Data (binary)
1	Z	011011
2	A	1100100
3	F	110100101
4		

The first entry would be input as 1 0 1 B

'1' for Zone _____
'01' binary = '1' hex _____
'1011' binary = 'B' hex _____

The second entry would be input as 2 0 6 4

'2' for Area _____
'110' binary = '6' hex _____
'0100' binary = '4' hex _____

The third entry would be input as 3 1 A 5

Fall Back SYS

If the Network does not support fallback, enter 0

Is this a National Network

Enter a '1' for Yes

Enter the Zone Length

For a National Network the range is 0 - 9

For a Regional Network the range is 0 - 4

Enter the Area Length

For a National Network the range is 0 - 9

For a Regional Network the range is 0 - 4

(The program will not allow a value which is invalid)

Enter the Network Identity Code

For a National Network the range is binary 00 to 11 (0-3 hex)

For a Regional Network the range is binary 0000000 to 1111111 (0-7F) hex

The value from the form must be converted to hexadecimal

e.g the value 1001101 would be entered as 4D

Lowest and Highest Channel in Network

Enter the value directly from the form (decimal value)

Suppress Comprehensive Hunt

Enter a '1' if suppress is 'yes'. 'Yes' is recommended if the total number of channels to search is not greater than 32. If Comprehensive Hunt is essential, then the portable uses an advanced search algorithm to ensure that Normal Hunt Channels are sampled during a Comprehensive Hunt.

Home Area

This value requires conversion from binary to hexadecimal. Only the Area Field from the SYS is entered. This parameter is used to encourage radios within the same fleet to acquire the same control channel. This improves the efficiency of the Network and improves the call set-up reliability.

Fall Back Channel

Enter the value directly from the form (decimal)

Home Zone

This value requires conversion from binary to hexadecimal

NC1, NC2, NX1, NX2, NZ1, NZ2

Enter the decimal values

Does the Network support ACKB

Enter '1' for Yes

Does the Network support RQQ. Does the Network support SDM-2

Enter - 0 for neither

Enter - 1 for RQQ

You may enter 2 for compatibility with TK715 personalisation fleets but the TK250 will ignore it

Site-3 field length

Enter the value from the form

Number of PON's POFF's

Enter the values from the form

CLIM Traffic Channel Timeout

The portable supports the latest CLIM traffic channel timer specification in MPT1327. If the portable is switched on, or if the radio acquires a new control channel, then the default timer will be the value stored here. The timer will count up from zero, when the traffic channel is allocated.

The timer value is obtained from this table -

Time in seconds	-	Enter in the range 10-254
Time in minutes+4	-	Enter a value from 1-9
i.e 5 mins	-	1
6 mins	-	2
7 mins	-	3
8 mins	-	4
9 mins	-	5
10 mins	-	6
11 mins	-	7
12 mins	-	8
13 mins	-	9
Timer Infinite	-	Enter 255

If a BCAST STCLIM has advised the radios on a particular site that it is using a new Call Timer, then the same rules apply as the table above. When the traffic channel is allocated however, the display will count down instead of up. This is possible because the portable is now synchronised with the Network, and knows the length of time allocated for the call.

TJ TN TS TT TC

Enter the value from the form

Does the Network support PABX Ext=1

Enter 1 for Yes, and you want the radio to use it.

System Feature

This is a single hexadecimal number which may be used to enable certain features. These are described in appendix (iii). If there is any doubt, *leave this field set to 00*. DO NOT EXPERIMENT

Normal Hunt Channel Numbers

Enter the values from the form. Note that channel numbers may be repeated to encourage radios to a particular control channel.

SECTION 3

GENERATING A FLEET (.FLE) FILE AND PROGRAMMING THE PORTABLE

The portable is connected to the P.C using a special interface cable. This cable is a Kenwood part number KPG-19. One end of the cable is connected to the SERIAL connector of the P.C. The connector supplied has 25 pins. If the serial connector of the P.C has 9 pins, then an adaptors are readily available. The radio end of the programming cable is plugged into the microphone/speaker socket of the portable.

The portable must be put into programming mode. This is done by powering up the portable while holding the CALL button. The software version number is displayed followed by 'PROG' as confirmation of programming mode.

Select the [P] option, from the main menu.

You will be prompted for a Network (.NET) file, A list will be displayed for selection. It will not be possible to proceed further unless a Network file is present. The Network file contains the parameters necessary for a portable to access the Network and also information relating to the facilities available.

When a Network file has been selected, the program will prompt for a Fleet file. If there are any fleet (.FLE) files present a list will be displayed. A suitable filename may be entered for the storage of the fleet data.

3.1 Activating Facilities and [P]rogramming

When a filename is entered, a small menu illustrated below is displayed. Not all menu items will be displayed. The program looks at the Network file to check if a particular facility exists. If the facility does exist, then you are prompted whether this particular fleet requires it.

e.g If 'RQQ Support' is entered as [N] then, when the portable has been programmed, the front panel buttons will not be able to select STATUS mode.

By limiting the users of fleets to the facilities that they require (and no more), the portables are much easier to use. As an example of an extreme case, the Kenwood radio may be programmed with just one ident. In this case the portable will only be able to call one ident, all selection buttons having no effect.

The Kenwood portable is unique in that facilities which are required or not required for a particular user may be activated as required. Thus a portable with very few facilities is very simple to use, since its menu's are automatically enabled or disabled according to the facilities.

Adjust IBI and GBI by 20(200)	[]
Continuous Telephone like ringing when call Rx'd	[]
Auto ACKB on called in absence	[]
RQQ Support (status 1-30)	[]
SDM2 Support	[N]
MPT1343 SDM2 SST's supported	[N]
high Priority RQS	[]
Enable Full Off Air Call Setup	[]
Enable PTT to Initiate Call	[]
Enable Numeric Menu (small fleet)	[]
Enable Numeric Menu (large fleet)	[]
Disable Directory Mode	[]

When working through this list, an answer 'Y' or 'N' is prompted. In order to leave the item unchanged, press the ENTER key.

Each item from this menu will now be explained in more detail

Adjust IBI and GBI by 20(200)

When using the Kenwood portable in fleets with other keypad portables, it is essential that the called party ident has the same network numbering structure for 'Small Fleets' and 'Large Fleets'. The Kenwood portable has an equivalent IBI and GBI to construct a 1327 ident from the displayed ident.

The software allows the full 1343 specification Base Identity to be used as defined in section 8.2.4.2 of MPT1343. When [P]rogramming a portable, the first Configuration now has an option -

Adjust IBI and GBI by 20(200) []

If the option is answered [N] then

The ident is calculated from two digit NUmeric numbers by
 $\text{Ident} = \text{IBI} + \text{nuXX}$ (where XX is the displayed 2 digit value)
 and

The ident is calculated from three digit NUmeric numbers by
 $\text{Ident} = \text{IBI} + \text{nuZZZ}$ (where ZZZ is the displayed 3 digit value)

The problem using this algorithm is that the idents 0001-0020 or 0001-0199 are impossible to originate.

If the option Adjust IBI and GBI by 20(200) is answered [Y] then

The ident is calculated from two digit NUmeric numbers by
 $\text{Ident} = \text{IBI} + \text{nuXX} - 20$ (where XX is the displayed 2 digit value)

and

The ident is calculated from three digit NUmeric numbers by
 $\text{Ident} = \text{IBI} + \text{nuZZZ} - 200$ (where ZZZ is the displayed 3 digit value)

Note that for Group Identities, the offset is 90(900)

This conforms to section 8.2.4.2 of MPT1343. The full range if MPT1327 idents may be generated by the radio.

To avoid confusion in the main programming screen, if this feature is activated then the message 'Caution - Offset of 20(200) active' is displayed

e.g A Small Fleet radio has 1327 idents 0001 to 0020 allocated by the Network corresponding to NU20 (for ident 0001) to NU39 (for ident 0020)

The offset is activated and a small fleet defined by setting the following options

Adjust IBI and GBI by 20(200) [Y]

.

.

Enable Numeric Menu Small Fleet [Y]

Enable Numeric Menu Large Fleet [N]

To calculate IBI in the main programming screen-

Note that $\text{IDENT}(1327) = \text{displayed number} + \text{IBI} - 20$

so 0001 = 20+IBI-20

IBI = 1

i.e take the lowest ident corresponding to NU20 and also note the lowest 1327 ident that this corresponds to, then -

IBI = lowest 1327 ident

Note that MAX and MIN on the main programming screen still refer to 1327 idents so in this example MIN=0001 and MAX=0020

Continous Telephone like ringing when call received []

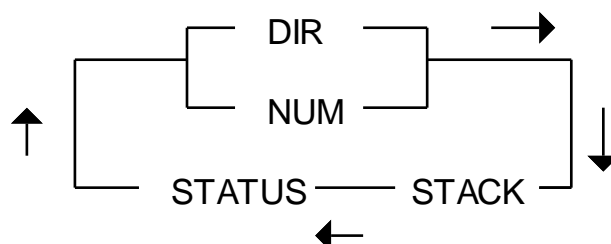
If this feature is activated, the portable will simulate the U.K telephone style ring when a call is received. If the option is disabled, the ring tone will be a short momentary warble. Note that this option is not available for a Network which uses Full Off Air Call Set-up.

Auto ACKB on called in absence []

Auto ACKB makes the Network more efficient and a [Y] to this question is recommended. If the user of a radio is absent, and an unanswered call is received, the any further calls will be acknowledged with 'ACK BACK' The calling party is put in the stack for call back. Note that the Network must support ACKB to use this feature.

RQQ Support []

This is set to [Y] if the portable is permitted to send status messages. In order to send a status message, the user first enters the recipients ident (either in DIR mode or NUM mode if active). The user then presses the FUNC key to access to the status menu



The knob can then select the desired status value, and the call button pressed to send the status.

SDM2 Support [N]

Set this to 'N' but

You may enter 2 for compatibility with TK715 personalisation fleets but the TK250 will ignore it

MPT 1343 SDM SST's Supported [N]

Set this to 'N' but

You may enter 'Y' for compatibility with TK715 personalisation fleets but the TK250 will ignore it

High Priority RQS []

If this option is set to [Y] then all RQS calls will be high priority. The Network must support high priority RQS to use this feature.

Enable Full Off Air Call Setup []

If this option is set to [Y] then the radio will use FOACSU. This is not recommended. The Network must support FOACSU to use this feature.

Enable PTT to Initiate Call []

If this option is set to [Y] then the PTT on the microphone will initiate a call attempt as well as the CALL button.

Enable Numeric Menu (small fleet) []

Enable Numeric Menu (large fleet) []

If both of these options are set to [N] then then the FUNC key on the radio will not be able to select the NUM mode.

The NUM mode satisfies the numeric specifications in MPT 1343. Fleets of radios may be split up into Small Fleets and Large Fleets.

A small fleet uses two digits to select the 'B' party ident in the range 20 to 99.

A large fleet uses three digits to select the 'B' party ident in the range 200 to 999.

Disable Directory Mode []

If this option is set to 'Y', then the DiRectory will be completely disabled. On power-up the radio will enter NUmeric mode. This is useful in fleets where other manufacturers radios have similar syntax.

The ACTUAL ident transmitted is given by

ACTUAL = DISPLAYED IDENT + IBI (-20)
for individual calls

or

ACTUAL = DISPLAYED IDENT + GBI (-90)
for group calls

Calls inbound have their idents translated back before display

An example is given later in this document.

Note

If a change in personalisation has the effect of adding or removing a menu, the change will not take effect until the radio is in service and the FUNC key has been pressed"

The main programming screen is now displayed

```

Date : 15 Jul 96      ** KENWOOD U.K PORTABLE PROGRAMMING **      Time : 15:13:54
-----
      PREFIX      INDIVIDUAL-ID      DATA      AUX-IDENT      CNTRL-CAT- (ABCD)
      [000]      [0000]      [ ]      [0000]      [A]
      GROUP IDENTs
      [0000]      [0000]      [0000]      [0000]
      IDENTITY CODES
1 [000][0000]  2 [000][0000]  3 [000][0000]  4 [000][0000]
5 [000][0000]  6 [000][0000]  7 [000][0000]  8 [000][0000]
9 [000][0000] 10 [000][0000] 11 [000][0000] 12 [000][0000]
13 [000][0000] 14 [000][0000] 15 [000][0000] 16 [000][0000]
17 [000][0000] 18 [000][0000] 19 [000][0000] 20 [000][0000]

      min 1 [0001]      max 1 [8100]      min 2 [0001]      max 2 [0001]

      IBI [0000]      GBI [0000]
Ind Fleet No 2000 Group Fleet No 2000
PSTN/PABX 1 [ ] [.....]      PSTN/PABX 2 [ ] [.....]
PSTN/PABX 3 [ ] [.....]      PSTN/PABX 4 [ ] [.....]
-----New Parameters - TEMP-----
Keys - ↑↓↔ <space bar>fills_a_box [P]rogram program_[D]ispatcher
<ESC>_to_end
(PrtSc)_to_print_screen [R]ead_numbers_from_portable [S]ave
Range is 0 - 127

***      KENWOOD U.K      ***      Ver 1.00 **

```

The cursor keys ↑↓↔ may be freely used to move the 'active' field around the screen. In order to change a field, the <space bar> is pressed. The field selected field is then blanked allowing the data to be changed. The prompt at the bottom of the screen indicates the range of values allowed in that particular field. When the new value has been entered, the active field will advance.

Notes -

If the active field is over the IDENT field of the 20 IDENTITY CODES the "F" key becomes active. This key copies the PREFIX/IDENT to the next IDENTITY CODE but incremented by one.

If the Network permits RQQ calls, an 'S' can be entered if the active field is the PREFIX field of the 20 IDENTITY CODES.

RADIO PREFIX

Enter the radio prefix allocated by the Network Operator

INDIVIDUAL-ID

Enter the radio ident allocated by the Network Operator

DATA

Enter a '0' here

AUX-IDENT

This is reserved for special applications. Set to zero

CNTRL-CAT-(ABCD)

Enter the value advised by the Network Operator. This is normally 'A'.

GROUP IDENTS

If any group idents have been allocated by the Network Operator, enter the IDENTs.

Notes -

There must be an entry in the group table to INITIATE a group call as well RECEIVE a group call.

IDENTITY CODES

This is a table of 20 PREFIX/IDENTS in the DiRectory. (DiR mode on the radio display).

[ppp][iiii]

The prefix ppp is a numeric value to initiate an RQS speech call.

Notes -

It is more efficient and more reliable to use single prefix calls. i.e the prefix's in the IDENTITY CODES table matches the radios own PREFIX.

If the Network permits an 'S' may be entered. This converts the call type to a RQQ (status=0) call to a dispatcher. This will be assumed to be single prefix.

The ident iiii is a numeric value and may be -

- i) An individual ident to another radio
- ii) An individual ident to a dispatcher
(if the prefix ppp is marked 'ST')
- iii) A group ident (assumed single prefix)
- iv) A call to a line connected service

If the ident field is left blank, that particular directory entry will be skipped when rotating the knob on the radio in DiR mode.

To enter a number of consecutive idents (iiii), enter the first ppp,iiii, move the cursor back over the iiii field and press the "F" key until the desired number has been copied.

min1/max1 min2/max2

If the has NUMERIC mode enabled, the min1/max1, min2/max2 defines the band of idents between which the radio is allowed to make calls. The rule is

For a valid call attempt in NUMERIC mode, the ident must fall within EITHER min1/max1 OR min2/max2 OR be present in the group table.

Note that the max/min idents are AS TRANSMITTED. The IBI must be added (see the example below)

IBI,GBI

The front panel of the radio in NUMERIC mode may be set to any value from 000 to 999 for a large fleet or 20 to 99 for a small fleet. The ident is calculated by adding the displayed value on the radio to IBI for individual calls, or GBI for group calls.

i.e $\text{IDENT} = \text{displayed number} + \text{IBI} (-20)$
for individual calls

or

$\text{IDENT} = \text{displayed number} + \text{GBI} (-90)$
for group calls

Example with IBI (GBI) offset set to [N]

A Network Operator has assigned the idents 3020-3045 to a fleet, and one group ident 6037. The radio will assign some of its fleet using the DiRectory.

The NUMERIC mode may be used by deciding what NUMERIC values will be used to select

- a) the idents for individual calls
- b) the ident for the group call

Choose numeric values in NUMERIC mode (small fleet) 20 to 45 for the idents 3020-3045 and 46 for the group number.

Group number in the group table 6037

$\text{min1} = 3020 \quad \text{max1} = 3045$

$\text{IBI} = 3020 - 20 = 3000$

$\text{GBI} = 6037 - 46 = 5991$

When NUMERIC mode has been selected on the radio, a 'r' will be displayed in the right mode digit if the number selected is out of range, or a 'c' if the call is a group call. ('c' for conference)

PABX/PSTN

A four character field preceeds the actual numeric dialling field. If a '2' is entered in the four character field then the numeric value is marked as a PSTN call. A '1' marks a PABX call and a zero deletes the numeric field. Note that the 1327 standard limits PABX to 9 digits maximum.

Note -

PABX

There are two ways in which a Network may implement PABX. The Network file contains a flag to indicate which is implemented.

1. PABXI

All entered digits are passed to the Network as a single string.

2. RQS (Ext=1)

The numeric value entered must consist of 5 digits. The first digit must be a 0,1,2 or 3 and is passed to the Network as the exchange. The second digit must not be a zero. (This method only allows extensions in the range 1000 to 9181). If a value is entered which does not follow these rules, the radio will attempt to connect the call using the alternative PABXI method.

PSTN

MPT1343 assumes that all PSTN numbers will begin with a '0' (STD code) and the radio should strip this digit off. The Network adds this digit before passing the call to the PSTN. This will not work outside the UK. If the Network does add the '0', The PSTN number must have the leading '0' omitted from the string.

e.g 081 123 4567 would be entered as 811234567

If the Network does not add the '0', the full dialling string must be entered.

The Network operator will provide this information.

When all parameters have been entered they may be [S]aved on disk, or the radio [P]rogrammed. An IBM connected dispatcher may be programmed by the [D] key.

NOTES

The 20 entries in the DiR directory may contain -

PREFIX/IDENT where the prefix matches the prefix of the radio. When the radio makes a call to this particular directory entry, the call set-up will be a single prefix call.

PREFIX/IDENT where the prefix is not the same as this particular radio. The call set-up in this case is an interprefix call. Interprefix calls take longer to set up, require more signalling, and are less reliable than single prefix calls.

ST/IDENT are single prefix status calls intended for calling a dispatcher. The call is not connected straight away, but is placed in a call stack. The dispatcher will call back when free.

3.2 [R]ead option

The [R]ead option from the MAIN menu will read the personalisation data from the radio and display it on the screen. Note that the Network file name is held in the radio and displayed.

There is also a [R]ead function in the radio programming menu. The personalisation data may be extracted from the radio, edited and [P]rogrammed back, or another radio 'cloned' with the same fleet data. (But don't forget to change the individual ident. Two identical idents on the same Network is not permitted.)

3.3 [E]dit directory text

```
Date : 14 Jul 96      ** KENWOOD U.K PORTABLE PROGRAMMING **      Time : 07:51:38
-----
                        DOWNLOAD DIRECTORY DISPLAY MENU
-----

Directory Text - 1  [DR01]      Directory Text - 11 [DR11]
Directory Text - 2  [DR02]      Directory Text - 12 [DR12]
Directory Text - 3  [DR03]      Directory Text - 13 [DR13]
Directory Text - 4  [DR04]      Directory Text - 14 [DR14]
Directory Text - 5  [DR05]      Directory Text - 15 [DR15]
Directory Text - 6  [DR06]      Directory Text - 16 [DR16]
Directory Text - 7  [DR07]      Directory Text - 17 [DR17]
Directory Text - 8  [DR08]      Directory Text - 18 [DR18]
Directory Text - 9  [DR09]      Directory Text - 19 [DR19]
Directory Text - 10 [DR10]      Directory Text - 20 [DR20]

-----Existing File - TEST.DRT-----
Edit directory text      Save directory text
Download to portable

Enter Option or <ESC> [ ]

**                KENWOOD CORPORATION                **
```

Each DRnn may be customised with a specific 4 character message replacing the DRnn display. For example, 'DR01' may be replaced by 'JOHN'. To change the entries, [E]dit the text and then [D]ownload the text to the portable. The text may be saved on the disk using the [S]ave option.

3.4 [Q]uickdial index

For portables which are fitted with keypads, 99 quickdial stores are available. These quickdial stores may be -

- * Entered from the TK255 keypad, stored using STORE nn, and extracted from the portable using the [R]ead option
- * Saved on disk using the [S] option
- * [D]ownloaded back to the portable

Quickdials entered during personalisation from this menu and [D]ownloaded to the TK255. The cursor up/down keys may be used to move around the entries. If the cursor moves past entry 20 then a new page will be displayed etc

```

Date : 14 Jul 96      ** KENWOOD U.K PORTABLE PROGRAMMING **      Time : 08:03:44
-----
                        DOWNLOAD QUICKDIAL MENU

      1 [21              ]      11 [              ]
      2 [22              ]      12 [              ]
      3 [71234           ]      13 [              ]
      4 [012345678       ]      14 [              ]
      5 [*8*21           ]      15 [              ]
      6 [*012*21         ]      16 [              ]
      7 [32345           ]      17 [              ]
      8 [01246576354     ]      18 [              ]
      9 [                ]      19 [              ]
     10 [                ]      20 [              ]

-----Existing File - TEST.QDL-----

No for QUickDial 17 ,<RET> to keep old No, 0 to delete [      ]

                **                KENWOOD CORPORATION                **

```

The file created by this menu has the extension 'filename.QDL'. This file may be edited using a simple DOS editor such as EDIT. The structure is exactly 99 lines of text formatted as -

Quickdial Number 3 chars	Spa ce	Quickdial entries which may include the '*' and numeric characters only No spaces allowed. 20 characters maximum
--------------------------------	-----------	---------------------------------------------------------------------------------------------------------------------

0	0	1		2	1														
0	0	2		2	2														
0	0	3		7	1	2	3	4											
	.			.															
0	0	5		*	8	*	2	1											
	.			.															
	.																		
0	9	9																	

4. ERROR MESSAGES

"CONFIG.KEN not found - run KENPASS first"

The program KENWOOD has been run before the configuration program KENPASS.

"Radio did not reply"

A string of data was sent to the radio, but the radio did not reply. This might be because the programming cable was not plugged into the microphone socket, or the radio was not put into programming mode, or not switched on.

"There are no Network Files - run option [G] first"

The [P] option was entered from the main menu before any Network files were generated from the [G] option

"That name was not found. choose another or <ESC>"

A Network File name was entered but not found. Choose another from the list on the screen.

"Large Fleet and Small Fleet cannot both be [Y] "

The [Y] answer was given to both 'Large Fleet' AND 'Small Fleet'. Make one of the options [N]

"IBI must be less than or equal to INDIVIDUAL-ID"

It is impossible IBI to be greater than the individual -ID since the ACTUAL ident as transmitted is INDIVIDUAL-ID minus IBI

"There must be at least one IDENT within the 20 IDENTs"

The radio must have ONE identity stored in its DiRectory

"Radio Cable not Connected"

The special cable is not inserted into the serial port of the P.C

"The number of digits entered for PABX must be less than 10"

The MPT1327 standard does not allow PABX calls with greater than 9 digits. The number of digits must be reduced.

"Error in sending data to portable"

The data used to download the quickdial data was corrupted. Check the data

"Unknown command sent to portable"

The radio did not understand the command at all. Please report this error to Kenwood.

"There are no channel files"

The 'calculate channel data' has been selected and the radio needs file for the 'base frequency TX/RX and channel separation. This file cannot be found. The file is created using a separate channel creation utility.

"Channel 1 must have a logical channel number entered"

The [G]enerate network file needs at least one Normal Hunt Channel Number.

"IBI (GBI) must be even"

The MPT1343 Standard says that IBI and GBI must be even otherwise the Fleet Number cannot be calculated.

5..Trouble Shooting

If the radio has been personalised and will not come into service then -

1. Have the channels been programmed correctly ?

The channels may be checked using TESTMODE. Plug in the programming cable and power-up with the DGT button pressed. The radio will display ch0001. Select the channel on which the Network is transmitting control channel and listen if the control channel is heard. If the control channel cannot be received, an error has been made in the generation or downloading of the channel table. Refer to the channel table files which contain the channel number and associated frequency.

2. Is the personalisation data correct ?

Access Authorize data Hex [0000]	Home Zone (Hex) (or 0) [000]
Enter leading character [0000]	NC1 [20] NC2 [20] NX1 [2]
'1' if this entry is ZONE [0000]	NX2 [2] NZ1 [1] NZ2 [1]
'2' if this entry is AREA [0000]	ACKB Support [1] RQQ(1)SDM2(2) [2]
'3' if this entry is FULL [0000]	High Prty RQS [0] FOACSU [0]
8 possible values [0000]	Site3 Field Length (if>2) [0]
----- [0000]	PON's [2] POF's [3]
National Network (1=Yes) [0]	Carrier sample (%) [101]
Zone Length - LZ [4]	Traffic Channel Timeout [60]
Area Length - LA [4]	TJ Further sig' Timeout [30]
Net Ident NET/OPID Hex [46]	TN Traffic Ch Inactivity [7]
Lowest Network Channel [1]	TS Delay leaving cont Ch [3]
Highest Network Channel [1023]	TT Max Item Duration [20]
Suppress Compr Hunt 1=yes [1]	TC Random Access Timeout [60]
Home Area (Hex) (or 0) [000]	PABX Ext=1 [0]
Fall back Channel (or 0) [0]	System Feature [00]
-----Existing File - FYLDE.NET-----	
Enter Access Auth Data (1xxx, 2xxx, 3xxx) or <RET> to keep old value []	
***	Ver 0.0E **

Use this Network data as a model.

For a National Network enter

National Network (1=Yes)	[1]
Zone Length - LZ	[9]
Area Length - LA	[9]
Net Ident NET/OPID Hex	[enter the net-id here]

For a Regional Network enter

National Network (1=Yes)	[0]
Zone Length - LZ	[4]
Area Length - LA	[4]
Net Ident NET/OPID Hex	[enter the net-id here]

In the Normal Hunt List, enter the candidate control channels and include one which has been identified in TEST MODE.

3. Radio finds a suitable control channel, comes into service then immediately hunts again ?

The control channel frequency and channel number do not correspond. The radio therefore abandons the control channel (this is because the control channel transmits part of the channel number as a check).

4. When first switched on, the radio finds a control channel and attempts to register (the TX light flashes). The radio then continues to hunt and does not make any further registration attempts. ?

The base station sent ACKX(Qual=0) to the radio (Registration denied). This is probable due to the radio not being valid on the Network.

5. When first switched on, the radio finds a control channel and attempts to register (the TX light flashes). The radio continues to hunt and then make further registration attempts. ?

Either the base station sent ACKX(Qual=1) which is registration refused, or there is no FFSK deviation on the portable

6. Radio enters service correctly. The SERV icon is displayed. When a call attempt is made the radio immediately displays FAIL ?

Either the radio identity or the called identity is not valid on the Network.

APPENDIX (i)

This form is designed from completion by a Network Operator to enable the Kenwood Radio to access and use the facilities provided by that Network. Notes for help are included at the back

MPT1343 Item No	MPT1343 Ref	ITEM		
16	9.3.4.2.3	Aquisition Authorisation Data		
		Entry No	[Z]one[A]rea[F]ull	Data (binary)
		1		
		2		
		3		
		4		
		5		
		6		
		7		
		8		
19	9.3.4.2.3	Is this a National Network Y/N		
17	9.3.4.2.3	Zone Sub-field Length		
18	9.3.4.2.3	Area Sub-field Length		
19	9.3.4.2.3	Network Identity Code NET/OPID		
23	9.2.1	Lowest Channel in Network (Chan field representation)		
24	9.2.1	Highest Channel in Network (Chan field representation)		
31	9.3.3.5	Suppress Comprehensive Hunt Y/N		
		Home Area		
41	13.2	Fall Back Channel		
42	13.2	Fall Back SYS		
82	10.2.1	Home Zone		
48	9.3.4.3	NC1		
49	9.3.4.3	NC2		
52	9.3.4.3	NX1		
53	9.3.4.3	NX2		
54	9.3.4.4	NZ1		
55	9.4	NZ2		
		Does the Network support ACKB		
		Does the Network support RQQ		
		Does the Network support SDM-2		
		Does the Network support High priority RQS		
		Does the Network use FOACSU AND does the Network Operator wish the radios to select it		
65	9.3.4.2.2	Site3 field length (or 0 if the Network does not support it		
56	!!9.2.3.1!!	Number of PON's		
57	!!9.2.3.1!!	Number of POFF's		
84	11.9.2.3.6	CLIM Traffic Channel Timeout		
70	App B	TJ Further Signalling Timeout		
71	App B	TN Traffic Channel Inactivity Timeout		
72	App B	TS Delay leaving Control Channel		
73	App B	TT Max Item Duration		
66	App B	TC Random Access Timeout		

		Does the Network Support PABX Ext=1 and do you want the radio to use it in place of PABXI		
21	9.2.1	Normal Hunt Channel Numbers (Chan field representation)		
		Entry No	Channel Number	
		1		
		2		
		3		
		4		
		5		
		6		
		7		
		8		
		9		
		10		
		11		
		12		
		13		
		14		
		15		
		16		
		17		
		18		
		19		
		20		
		21		
		22		
		23		
		24		
		25		
		26		
		27		
		28		
		29		
		30		
		31		
		32		

NOTES FOR THE NETWORK OPERATOR

Aquisition Authorization Data

If the Network does not have any Network Authorisation data, leave the eight entries blank. If there are entries, the number of bits in the authorisation data must be the same as the field length. e.g if the Zone length is 4 and the Area length is 5, then :

if an entry were made for [Z]one then the number of bits for the authorisation data must be 4

if an entry were made for [A]rea then the number of bits for the authorisation data must be 5

if an entry were made for [F]ull then the number of bits for the authorisation data must be 4 for a Regional Network or 9 for a National Network

	Entry_No	[Z]one[A]rea[F]ull	Data (binary)
VALID	1	Z	0110
VALID	2	A	10010
VALID FOR NATIONAL	3	F	1010

	Entry_No	[Z]one[A]rea[F]ull	Data (binary)
INVALID	1	Z	00110
INVALID	2	A	0010
INVALID	3	F	010

Is this a National Network

This just requires the answer Y or N

Enter the Zone Length

For a National Network the range is 0 - 9

For a Regional Network the range is 0 - 4

Enter the Area Length

For a National Network the range is 0 - 9

For a Regional Network the range is 0 - 4

Enter the Network Identity Code

For a National Network the range is binary 00 to 11

For a Regional Network the range is binary 0000000 to 1111111

Lowest and Highest Channel in Network

The radio uses this data if it enters a comprehensive hunt sequence. By limiting the range of channels, then the radio is never searching for Control Channels which are out of range.

Note that the representation is the CHAN field representation. (e.g for band III the lowest channel is channel 1 NOT channel 58)

Suppress Comprehensive Hunt

It is strongly recommended that Comprehensive Hunt is suppressed. Comprehensive hunt considerably reduces the ability of a radio to find a valid Control Channel.

Home Area

The efficiency of a Network is considerably enhanced if most calls are single site. Multisite calls require two traffic channel pairs whereas single site calls only require one traffic channel pair. In a multi-site system, with overlapping coverage, it is possible that some radios will register onto a different site even though they are within range of their 'home' site.

Home hunt encourages radios within a particular fleet to register on to a preferred site (the site within their normal coverage area).

If home site is not required, a 0 should be entered. If home site is required, then the Area Field bits for the preferred site should be entered.

e.g A regional system has three sites. The parameters are

SYS CODE (site 1)	0 0 0 1 0 1 1 1 0 0 0 1 0 0 1	
SYS CODE (site 2)	0 0 0 1 0 1 1 1 0 0 1 0 0 0 1	
SYS CODE (site 3)	0 0 0 1 0 1 1 1 0 0 1 1 0 0 1	
Regional Network	<div style="border: 1px solid black; width: 100px; height: 15px; display: inline-block;"></div>	
OPID	<div style="border: 1px solid black; width: 200px; height: 15px; display: inline-block;"></div>	CAT
NDD	<div style="border: 1px solid black; width: 200px; height: 15px; display: inline-block;"></div>	

Length of Area Field = 4

To encourage a fleet of radios to 'home' on to site 1 then 0001 is the area field and '1' (hex for 0001) would be entered in the Home Area field.

To encourage a fleet to 'home' on to site 2 then 0010 is the area field and '2' (hex for 0010) would be entered in the Home Area field.

To encourage a fleet to 'home' on to site 3 then 0011 is the area field and '3' (hex for 0011) would be entered in the Home Area field.

Fall Back Channel

If the Network uses fallback, enter the fallback channel number. Note that the representation is the CHAN field representation. (e.g for band III the lowest channel is channel 1 NOT channel 58)

If the Network does not use fallback enter 0

Fall Back SYS

If the Network uses fallback, enter the full SYS code (15 bits) for the fall back site.

Home Zone

If the Network does not require 'Home Zone' then enter 0

NC1, NC2, NX1, NX2, NZ1, NZ2

Enter the decimal values

Does the Network support ACKB

The use of ACKB reduces the allocation of traffic channels when the 'B' party is not present. The radio also supports 'Auto ACKB' which forces the radio into ACKB mode if there is a 'call in absence' in its stack. It is essential that the Network supports ACKB for the radio to use it. The ACKB facilities in the radio may only be activated if the answer to this question is 'Y'.

Does the Network support RQQ

The radio will not activate any of the RQQ features if this is 'No' (The exception is the RQQ to support FOACSU)

Does the Network support SDM-2

If the Network does support SDM-2, any data messages with less than 23 characters will be transmitted using SDM's rather than long data.

Site-3 field length

There are messages within MPT1327/43 (such as clear messages) which do not carry any bits which identify the Network. In the earlier release of the standard, the reception of messages from a remote Network might cause problems such as cleardown. The September 1991 issue of the standard improved this shortfall by using some spare bits which could be checked against part of the SYS. The position of these bits is defined by the Site-3 field length. Enter the decimal value.

Number of PON's POFF's

There is no acknowledgement to these messages so repeats for reliability are allowed. The number recommended are

	PON's	POFF's
VHF Low Band (50-80MHz)	2	3
VHF High Band (150-180MHz)	2	3
UHF (400-470MHz)	4	5

CLIM Traffic Channel Timeout

The radio supports the latest CLIM traffic channel timer specification in MPT1327. There is a BCAST in the September 91 issue of the standard which enables the traffic channel timeout to be broadcast to all radios in the network. If this Network does not use this feature then the default is entered here according to this table -

Time in seconds

- Enter in the range 10-254

Time in minutes+4

- Enter a value from 1-9

5 mins	-	1
6 mins	-	2
7 mins	-	3
8 mins	-	4
9 mins	-	5
10 mins	-	6
11 mins	-	7
12 mins	-	8
13 mins	-	9

Timer Infinite

- Enter 255

The default will also be used if a radio has received a Go To Channel message before the traffic channel broadcast.

If a BCAST STCLIM has advised the radios on a particular site that it is using a new Call Timer, then the same rules apply as the table above.

TJ TN TS TT TC

Enter the value in seconds

Does the Network support PABX Ext=1

There are two mechanisms for PABX speech calls, PABXI and RQS(Ext=1). If the Network supports RQS(Ext=1) and you wish the radios to use it if possible, enter Y.

Note: When the radios are programmed with the PABX numbers, and Ext=1 then

- i) The number of digits must be 5
(The first digit = exchange. Second, third, fourth, fifth PABX number)
- ii) The first exchange digit must be in the range 0-3
- iii) The second digit must not be a 0

The radio will look at the numbers and only use RQS(Ext=1) if all of the above conditions are met.

Normal Hunt Channel Numbers

Note that any numbers may be put in any order. There may also be gaps which will be skipped by the radio. (It is good practice to keep the channels in one contiguous block).

Channels may be entered more than once to give a preference to a particular site. This might be used with home hunt where one site was the major coverage site, other sites being used for infill.

Note that the representation is the CHAN field representation. (e.g for band III the lowest channel is channel 1 NOT channel 58)

There must be at least one entry.

Unused entries may be left blank

APPENDIX (ii)

FLEET DETAILS

[illegible]

CUSTOMER			
NETWORK		CAT (ABCD)	
NETWORK FILENAME			
FLEET FILENAME			
ALLOCATED PREFIX			
ALLOCATED IDENTs		to	
GROUPS		+++++	
1			
2			
3			
4			
NUMERIC MODE ENABLED (y/n)			
max/min for NUMERIC	to	to	

INDIVIDUAL BASE IDENT		
GROUP BASE IDENT		
AUXILLIARY IDENT		
PSTN/PABX	+++++	
1 PSTN PABX		
2 PSTN PABX		
3 PSTN PABX		
4 PSTN PABX		

APPENDIX (iii)

The 'feature' byte allows some additional facilities to be enabled in the Kenwood Radio. Each bit of this byte enables or disables a separate feature. If in doubt, DO NOT EXPERIMENT.

Bit - '0'	Reserved - Leave at zero
Bit - '1'	Some Networks are non-standard in that any acknowledgement from the radio is not expected in the next slot. These Networks are usually hand radio networks. If this bit is set non-zero then all transmitted codewords are delayed one slot.
Bit - '2'	The Kenwood radio receiver is VERY sensitive. If the base station is located on a site with a high noise floor, then the base will not hear the radio. There may be a better site to acquire, but the radio will not leave its existing site. If this bit is set non-zero, then FFSK decode is gated on squelch. The squelch setting will then determine the FFSK sensitivity.
Bit - '3'	Reserved. Set to '0'
Bit - '4'	Reserved. Set to '0'
Bit - '5'	Reserved. Set to '0'
Bit - '6'	Reserved. Set to '0'
Bit - '7'	Reserved. Set to '0'