Studio
MMI Specification
Document 2.0

Revision History

Revision document	Author	Date	Comments
Version 1.0	Wenfei	10 Nov 05	Initial document
Version 1.1	Wenfei	24 Dec 05	Add support for RPAS menu on Base to work with DECT 10 H/S 3.1 Modify CID icon clarification 3.8.2 Change SMS service centre 4.4.5 Add Automatic SMS Registration 4.4.5.10
Version 1.2	Wenfei	10 Apr. 06	Remove Automatic SMS registration Add Remark on Call Screening 4.3.8
Version 2.0	Chester	24 Sep 08	Add ECO Add HS name & HH-MM toggle Modify Russian CID menu Add Hot Key menu

Reference

DECT 20 MMI specifications

Revision document	Author	Date	Comments
Version 1.1	Wing	11 Oct 02	Initial document
Version 1.2	Wing	15 Nov 02	Update, add answered/unanswered call icon
			3 H/S > 2H/S
Version 1.3	Wing		PAGE
Version 1.4	Wing	17 JAN 03	Delete 3 way conversation, B/U charging LED and H/S LED, changed H/S Menu setting (ear volume) and charging iron for quick charging.
Version 1.5	Wing, Derek	20 MAR 03	30 phonebook, 3 languages, 3.5.6, 4 base per H/S, CLIP operation, Menu structure, test mode, Flash display “R”, pause display “P”
Version 1.5.1	Derek	28-MAR-2003	Add a Auto Searching Function in Selection Base Menu Define the function for short and long press KEY_STAR during talk or pre-dialing and number storage mode in more details
Version 1.6	Wing	03 Apr 03	Language: English, French, German, Special caller texts display format
Version 1.7	Yamada	04 Apr 03	Change the “UNLOCK method. Down key to allow to recall CLIP list
Version 1.7a	Parag	04 Apr 03	Update Revision number on title page
Version 1.8	Wing	14 Apr 03	1.3.1 3.1 3.2 4 4.1.3 8.2
Version 1.9	Wing	24 JUN 03	1.3.1 2.2 3,2 3.2.4 3.7.1 3.3.1 Menu structure 4.1.2 4.7.2
Version 1.9a	Wing	17 JUL03	3.9.1
Version 2.0	Wing	12 Aug03	3.5.1
For DECT 9+	Yamada	25 Oct03	Modify the document for DECT 9+
DECT 9+ R1.1	Yamada	28 Oct 03	Add more explanation for features
DECT 9+	Yamada	27 Nov 03	Add the alarm activation Modify the handset paging

DECT 9+ R1.3	WP Chen	3 June 04	Update
DECT 20 R1.4	WP Chen Zhang Ye	23 Aug 04	Update: Platform to DECT20 Items:3.2.5,3.2.8,3.3.1,3.7.2,3.13,4.0,4.2 and 4.2.7,4.3.10.2
DECT 20-2/ DECT 48-2 R1.5	Ruth Wilson	13th June 05	Updated to full DSPG DECT 20-2/DECT 48-2 specification
		13th July 05	Updated Standby display, Date Format, PIN CODE entry, Charge LED

DECT 20-2-2 MMI Addendum

Revision document	Author	Date	Comments
Version 0.1	Ruth	17th July 05	Initial document
Version 1.2	Ruth	24th July 05	Support of # & * in SMS, EEPROM control of VMWI LED, EEPROM control of Flash rate on Base LED for Talk & Event, new EEPROM parameter for Flash rate of Base LED on "In Use" & "Event", Holland DTMF "SECRET"
Version 1.21	Ruth	29th July 05	Added new DATE – TIME menu, re-order languages
Version 1.22	Ruth	1st August 05	Clarification on out of range/unregistered

DECT 15/49 Telephone Answering and Recording Machine operation requirement Document

Revision document	Author	Date	Comments
Revision 1.0	Yamada	15 Sep 04	Initial document
Revision 1.1	Yamada	03 Feb 05	Add base operation and LED display on the base Add the option for without voice prompt Delete Time setting from the menu
Revision 1.2	Yamada	16 Feb 05	Describes more detail about "No Voice prompt" Describes more about Call screening and remote interrogation
Revision 1.3	Yamada	14 Mar 05	Modify for Answer delay setting Add the "DEL ALL?" on the handset display when finish playing the message. Add the option "New message playback" by Short press or Long press.
Revision 1.4	Yamada	24 June 05	Add the DECT 15 menu Add EEPROM setting for recording time limit
Revision 1.5	Yamada	01 Aug 05	Delete Time setting menu operation Add the handset TAM icon display indication description
Revision 1.6	Yamada	02 Aug 05	Change the Flashing timing for TAM icon

Contents

Feature List

		DECTStudio
	Display and Aesthetics	
1	**Primary Liquid Crystal Display**	Handset : 2-line Black and White including icons; Alphanumeric 14 segments x 12
2	**Secondary Display**	
3	**Icon set**	
4	**Key count**	Handset : CCITT keys (12), Talk (1), SMS [option] (1), Flash (1), INT (1), Phonebook/Back (1), Up (1), down (1), Menu (1), Redial (1), Clear (1); Base : Page (1), up (1), down (1), play (1), stop (1), delete (1), skip back/forwards (2), answer (1), OGM (1)
5	**Animations**	
6	**LEDs / Indicators**	Handset: in use (1 LED) (presence subject to Industrial design) ; Base : Power/in use/events (1 LED), charging (1 LED), Messages (1x 7-segment LED)
7	**Display Backlight**	Industrial design and cost Dependent
8	**Backlit keypad Options**	Industrial design and cost Dependent
9	**Set Menu Background Colour**	
10	**Screensaver in Primary LCD in power save**	
11	**Idle Display**	Handset Name / Clock (user selectable), Date
	Character Sets / Text	
1	**Font Description**	
2	**Predictive Text**	
3	**Word wrap**	YES
4	**Character type(s) supported**	Phonebook : alpha-numeric; proprietary character set; SMS : alpha-numeric; proprietary character set
ID	**General Features**	
1	**GAP Compatibility**	YES
2	**Multi-base / Handset**	4 Base / 5 Handsets
3	**Base Station / Handset System Security (PIN code)**	4 DIGIT
4	**Dialling Mode**	Tone / Standard Pulse. Pulse menu option can be hidden by EEPROM setting
5	**Paging From base to handset(s)**	YES
6	**3 way conferencing (2 internal with 1 external)**	YES
7	**3 way conferencing plus simultaneous intercom**	YES
8	**Auto-talk / Standby**	Yes, user can disable Auto-talk
9	**Recall / Flash**	Timed Break (Flash) only; Flash time user switchable
10	**Dialling Pause**	YES
11	**Pre-dialling Facility**	YES

12	**Out-of-range Warning**	Standby : visual; In Call : audible and visual
13	**PABX Access code**	
14	**Restore to Default Settings**	YES
15	**Alarm**	YES
16	**Walky Talky Feature**	
17	**Call Barring**	
18	**Low Battery Warning**	Standby : visual; In Call : audible and visual
19	**Call Timer**	YES
20	**Handset Power On/Off**	YES, on R key
21	**Microphone Mute Facility**	YES
22	**Last Number Redial**	10 entries - Delete All / Selective Delete
23	**Display Languages**	17 - English, French, German, Italian, Spanish, Danish, Swedish, Slovak, Dutch, Portuguese, Norwegian, Russian, Greek, Hungarian, Polish, Czech, Finnish
24	**Ability To Name Handsets**	YES
25	**Calendar Function**	
26	**Keypad Lock**	YES
27	**Call Transfer Between Handsets**	YES
28	**Intercom Between Handsets**	YES
29	**Handset Priority**	
30	**Resident Games**	
31	**Downloadable Games**	
32	ECO Mode	YES
33	**Other Features (L)**	
ID	**Sounds / Audio**	
1	**Resident Ringer Melodies**	Handset : 5 - Monophonic; Base : 5 - Monphonic
2	**Ringer Volume Control**	Handset : 5 Levels + OFF; Base : 5 Levels + OFF
3	**Internal Calls**	Melodies : 5 - Monophonic; Volume : 5 Levels + OFF
4	**Handset Receiver Volume Control**	5 Levels
5	**Audio clips**	
6	**Vibrating Ringer (Handset)**	
7	**Keytone on/off**	YES
8	**Audio Quality Specifications**	
9	**Echo Canceller**	
10	**Handset Amplification**	
11	**Handsfree**	
12	**Hearing Aid Compatibility**	Industrial design and cost Dependent
13	**Wired Headset Compatibility**	Industrial design and cost Dependent
	Phonebook Features	
1	**Phonebook**	Handset : 50, available in idle/during talk
2	**Copy Phonebook across handsets**	

3	**SIM Reader / Writer**	
4	**SIM PIN entry**	
5	**SIM area code programming**	
6	**Menu option to Empty Phonebook**	
7	**Save Number in pre-dial mode**	
8	**Copy Caller ID entry to phonebook**	YES
9	**Copy Redial number to phonebook**	YES
	Caller ID Features	
1	**Caller Display In Base**	
2	**Caller ID Mode**	FSK/DTMF
3	**Other Caller ID modes supported**	Bellcore / "KPN"/Russian CID
4	**Caller ID Type**	Type 1 and 2
5	**Can see both name and number on the display during incoming caller ID**	YES
6	**Calls List**	40, dynamic allocation between Received and Missed
7	**Caller ID matching to Phonebook**	Ringtones : Resident - Direct Assignment
8	**Calls List Includes Time / Date of Call**	YES
	Network Related Features	
1	**Network Services Menu**	
2	**Multi-Country Settings**	unless otherwise stated by EEPROM parameters set at factory. KPN requires specific hardware
3	**Option to Disable RPAS**	Factory setting & Menu selection
4	**Hot Keys**	Under digits 1 and 2 - can store R, P, *, # and numbers. User changeable
5	**Prefix Dialling**	Factory setting
6	**Area Code Management**	TBA
7	**Network Voice Mail Indication (FSK)**	YES
	Messaging Features	
1	**Messaging Technologies Supported**	SMS Protocol 1
2	**Supported Formats (Messaging)**	
3	**DCS coding**	TBA
4	**Message Capacity**	SMS : 15 (dynamic over all SMS mailboxes), located in the base
5	**Long Message support**	
6	**Sub Addressing to handset (multi-handset SMS)**	YES
7	**Multi-user SMS (sub-addressing to base mailbox)**	
8	**Templates**	
9	**Drafts Folder**	message buffer only
10	**Matching Incoming SMS Number to Phonebook**	
11	**Emoticons**	
12	**Dedicated New SMS Indicator**	Handset icon steady, base LED flashes
13	**Audible Alert On Incoming SMS Messages (Handset)**	YES, can be disabled by user
14	**Message Forwarding**	YES (includes editing)
15	**Reply To Messages**	YES

16	**Send SMS to email**	
17	**Send SMS to fax**	
18	**SMS Service Centres**	2 Send / 2 Receive
19	**Calling SMS Sender / Receiver**	
20	**Automatic SMS Registration**	
21	**SMS Notification (Delivery Report)**	
22	**Audible confirmation of successful SMS sent**	
23	**Send SMS from Calls List / Redial List**	
24	**Save SMS Number to phonebook**	
	Answering Machine Features	
1	**Voice Prompts**	English, French, German, Italian
2	**Outgoing Message**	1 x Answer & Record, 1 x Answer only (max recording time 3 minutes for each)
3	**Audible Message Alert**	
4	**Pre-recorded OGM**	YES
5	**Total Recording Time (excluding voice prompts)**	18 Minutes
6	**Incoming Messages**	Each ICM : Max 3 minutes; Max Number of messages : 59
7	**Call Screening**	YES
8	**Call Intercept**	YES
9	**Memo Message**	OPTION
10	**Message Counter**	1 x 7 segment LED
11	**Message Playback Features**	Skip Back, Skip Forwards, Pause, Delete, Stop
12	**Message Full Indication**	YES
13	**Private Playback Via Handset**	YES
14	**Ring Delay Selector**	2-9, Toll Saver
15	**Remote Access ID**	3digit
16	**Remote Access Options**	Messages : Play, Delete (selective and all), Skip back, skip forwards; General : Switch on/off, change OGMs
17	**Two Way Recording**	
	Technical Characteristics	
1	**Last Number Redial Memory Length**	32 Digits
2	**Phonebook Name Length**	12 characters
3	**Memory Number Length**	20 Digits
4	**Handset Name Length**	10 characters
5	**Battery Type**	NiMH

1 Features of SunCorp GAP DECT

1.1 Purpose of this document

The purpose of this document is to describe the specifications and the MMI products. It includes information about :

- Hardware and software features
- User interface description
- User settings

1.2 General features

General features
Phonebook of 50 entries
Search by name
10 last numbers redial
Different melody for internal and external calls
Automatic answering when taking the handset from the base
Automatic phone off when placing the handset on cradle
Mute key
Pre-dialling
Dialling mode changing during conversation
User friendly menu
Display length of conversation
Seventeen Languages
PIN code for set-up
Page function
Select earpiece volume (Total 5 step)
Select ringer volume (Total 5 steps)
5 different melodies
Out of range tone
Battery warning tone
Customisable name of each handset
Alarm Clock on the handset
5 Portable Parts per base
4 Fixed Parts per handset
*****Caller ID Type I & II
*CLIP type I & II FSK (ETSI) & DTMF

Display caller name*
List of last 40 calls
Time stamped calls
Redial last outgoing number
Display caller number during conversation
Intercom
Free intercom between handsets
Transfer a call to another handset
Conference call between two handset and line
Option functions (Set by EEPROM)
Two direct access keys
Prefix dialling number
SMS
Stores 15 text messages
Answer Machine
User changeable Voice prompts
Up to 18 minutes recording time
7 Segment LED message indicator
Hardware option
Head set jack
Backlight LCD
Backlight key board
LED for Talk and incoming ring

*only if the function is supported by the network and type II is option

1.3 Handset description

1.3.1 Handset keypad

Some keys have more than one usage depending on the MMI state (standby, in call, menu mode). The table hereafter gives all the possible actions for each key. In the following chapters, the reference for one key will be indicated with the main action of the key. Sometimes the second (or third) meaning will be indicated as follows: KEY_USE1/KEY_USE2.

Key name	Standby mode	Incoming call	Incoming SMS	Msg Mode	Talk mode		Menu	mode
					from incoming call	Outgoing call		Phonebook mode
KEY_MENU/OK ***MENU***	Enter menu		Confirm	Confirm			confirm	confirm
KEY_LNR ***Redial/Pause***	Enter Redial list	Redial (first key in call) Pause (after first key)		Pause	Pause	Redial (first key in call) Pause (after first key)		Pause
KEY_UP/CLIP ▲	Enter CLIP list	Ringer volume up		Choose	Receiver Volume Up	Receiver Volume Up	choose	choose
KEY_DOWN/CLIP ▼	Enter CLIP list	Ringer volume down		Choose	Receiver Volume Down	Receiver Volume Down	choose	choose
KEY_MEM/EXIT 	Enter Phonebook			Enter Phonebook	Enter Phonebook	Enter Phonebook	Exit	Exit
KEY_CLEAR ***X***			Exit	Clear / Exit	Toggle Mute	Toggle Mute	Clear / Exit	Clear / Exit
KEY_HOOK 	Go in TALK mode	Go in TALK mode			Standby mode	Standby mode		
KEY_INT ***Int***	Intercom				Transfer the call	Transfer the call		
KEY_R/POWER ***R***	Power off (hold)				Flash	Flash		
KEY_0 ***0***	Pre-dial 0 Toggle HS name and HH-MM (Long Press)			0	Dial 0	Dial 0		0
KEY_1 ***1***	Pre-dial 1 (DDK1:Long)			1	Dial 1	Dial 1		1
KEY_2 ***2***	Pre-dial 2 (DDK2:Long)			2	Dial 2	Dial 2		2
KEY_3 ***3***	Pre-dial 3			3	Dial 3	Dial 3		3
KEY_4 ***4***	Pre-dial 4			4	Dial 4	Dial 4		4
KEY_5 ***5***	Pre-dial 5			5	Dial 5	Dial 5		5
KEY_6 ***6***	Pre-dial 6			6	Dial 6	Dial 6		6

KEY_7 ***7***	Pre-dial 7			7	Dial 7	Dial 7		7
KEY_8 ***8***	Pre-dial 8			8	Dial 8	Dial 8		8
KEY_9 ***9***	Pre-dial 9			9	Dial 9	Dial 9		9
KEY_STAR/LOCK *****	Pre-dial * Toggle key lock (Hold)				Dial * Go into DTMF mode from pulse	Dial * Go into DTMF mode from pulse		*
KEY_HASH **#**	Pre-dial #			Toggle to display additional digits	Dial # Go into Conference call	Dial # Go into Conference call		#

Short press is less than 1 second
Long press is more than 1.5 second
Hold is press and hold more than 3 seconds

KEY_MEM will not be used for Exit or cancel in any mode, with the exception of Redial list, CID list and when modifying a Phonebook entry, where the functionality will remain as described in DECT 20-1 specification. In these instances, KEY_MEM will remain as Exit. In all other cases, KEY_MEM is assigned only to activating Phonebook.

KEY_CLEAR will be used as Exit for all modes, except where text entry is in progress or when KEY_CLEAR is used to delete a Redial / CID item. During text entry, a long press of KEY_CLEAR will clear all text displayed.

1.3.1.1 TIME Entry

The following rules will be applied for the user entering of Time.

- Time range is between 00 :00 – 23 :59.
- Only numeric values are permitted for entry, any other key press with emit an error beep
- The first digit will be enabled only for {0,1,2} other digits will be ignored and make and error beep
- When the first digit is set to 2, pressing 0-3 on the second digit will advance the cursor. Pressing 4-9 will not change the digit, and an error beep would be heard.
- When the second digit is greater than 3, pressing 0-1 on the first digit will advance the cursor to the second digit. Pressing 2 will not change the first digit, and an error beep will be heard. The user is expected to change the second digit before entering the first digit.
- The third digit will enable {0-5}, other digits will be ignored when pressed.
- The fourth digit will be enabled for {0-9}
- The user will not be able to enter a temporary illegal number.
- In addition, the user will be able to exit from time entry, by pressing <KEY_CLEAR>. In this case, no changes will be made to the time entry, and the user will return to the menu one level above.

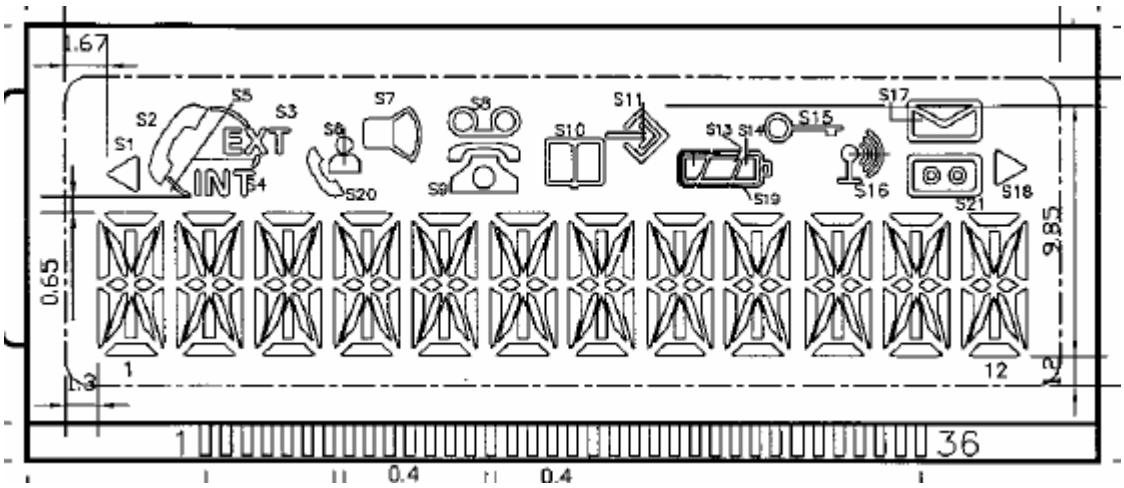
1.3.1.2 Spanish key entry

First press	Second press	Third press	Fourth press	Fifth press
Space	-	1		
A	B	C	2	
D	E	F	3	

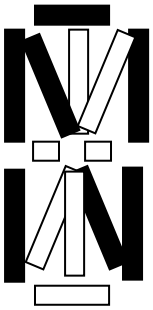
G	H	I	4	
J	K	L	5	
M	N	Ñ	O	6
P	Q	R	S	7
T	U	V	8	
W	X	Y	Z	9

1.3.2 LCD display

The LCD display is composed of 12 characters in capital letter form (12 * 14 segments alphanumeric chars) and 16 icons.



A new character will be supported for the Spanish language as shown below.



The definition of the icons is as follows:

Icon	NAME	Definition
	*HOOK_IND*	Off hook indicator
EXT	*EXT*	External call engaged
INT	*INT*	Internal call engaged
	*NEW_CLIP_IND*	Caller identification available /new numbers in call listing
	*NEW_SMS_IND*	Message waiting
	*CLIP_ANSWERED*	indicate answered call
	*CLIP_UNANSWERED*	indicate unanswered call
	*PHONEBOOK_IND*	Phonebook indicator
	*MENU_IND*	Menu indicator
	*BATTERY*	3 levels battery indicator 1 segment: weak, 2 segments: medium, 3 segments: full The segments scroll during battery recharging and stop scrolling when battery is full
	*LOCK_IND*	Handset keypad locked. When in SMS, indicates the private mailbox

	*ANTENNA*	Signal strength indicator. The icon is steady when handset is locked to its base The icon flashes when the handset is unlocked or not subscribed to any base
◄	*LEFT_ARROW*	Indicates that displayed number is longer than the screen (12 digits)
►	*RIGHT_ARROW*	Indicates that displayed number is longer than the screen (12 digits)
	*VMWI_IND*	Voice Mail Waiting indicator
	*TAM_IND*	Local answering machine

1.3.3 Standby display

In standby mode, the display shows the current time and the handset number (space and 1 digit). An EEPROM parameter, HS label, controls the display of the 'HS' text. When the HS label parameter is set the 'HS' text will be displayed as shown in Example 1, when the HS label parameter is not set, the text will be removed as shown in Example 2. The default will be to have the text displayed i.e. HS label parameter set.

EX 1(_15 – 53_HS_ 2_)
EX 2(_15 – 53____ 2_)

After Talk OFF, the display shows the handset name and the communication duration alternately for 5 seconds

EX 3(MY HANDSET)

(The "-" between hour and minute shall be flashing every second)

1.3.4 LED

- Talk LED

Action	**LED state**
Standby mode	OFF
Subscription mode	Flash
In call	Flash
Incoming call	Flash synchronized with PSTN ring pattern.

- Key backlight LED

Action	**LED state**
Standby mode	OFF
During incoming call	Flash (0.25 s ON/OFF)
External call	ON
External call on hold	Flash (0.5 s ON/OFF)

- LCD backlight LED

Action	**LED state**
Standby mode (No key press)	OFF

Press any key	ON for 8 seconds after press last key
During key lock	OFF
Incoming call	ON

1.3.5 Tones

Nr	Name
1	*Ring 1*
2	*Ring 2*
3	*Ring 3*
4	*Ring 4*
5	*Ring 5*
6	*TONE_CONFIRM*
7	
8	
9	*TONE_LOW_BATT*
10	*TONE_FREE*
11	*TONE_CALL_WAITING*
12	*TONE_BUSY*
13	*TONE_ERROR*
14	*TONE_IN_RANGE*
15	*TONE_WARNING*
16	*TONE_OFF_HOOK_WARNING*
17	*TONE_RING_BACK*
18	*TONE_ALARM_CLOCK*
19	*TONE_NEW_SMS*

1.4 Base description

1.4.1 Page Key

Key action	MMI action
Short press (<5 s)	Send a page to handsets
Long Press (>=5s)	Enters subscription mode (in use LED will flash)

1.4.2 LED

- Power/In use LED

Action	LED state
Standby mode	ON
Subscription mode	Flash
In call	Flash
Incoming call	Flash synchronized with PSTN ring pattern
New SMS	Flash slowly, 0.75s ON/OFF
New VMWI	Flash slowly, 0.75s ON/OFF

The flash rate for “In call” and “Event” (“new SMS” & “new VMWI”) will each be controlled by a parameter which defines the Flash rate of the Base LED.

- 7 Segment message indicator

Answer on with messages	Number of the messages

- Charge LED

Action	LED state
Standby mode, Handset charging in cradle	ON

Note, the Base LED will flash either when a new SMS message is received or when a new VMWI message is received, as described above.

The Base LED will continue to flash whilst there are unread SMS messages or any active VMWI messages.

For SMS, the unread messages can be removed either by reading the messages or by deleting the messages, either as single message or by deleting all of the SMS messages.
For VMWI, the active messages will be removed by a VMWI OFF message, or by deleting an individual VMWI message, or by manual override and delete of all messages by the user via a long press of the '5' key. Note that multiple servers will be handled for VMWI, so a single VMWI OFF message may only remove a specific VMWI message, with others remaining active, and the LED continuing to Flash. One exception condition is when a HS is registered to the BS, and either out of range or powered down. In this case, the VMWI OFF indication will not reach the HS, and the Base LED will continue to blink until the HS returns to within range, and the Service centre sends a VMWI OFF message. In this case, the user may over-ride the function, and turn off the Base LED, using a long press of '5'. Flashing of the BASE LED on VMWI will be controlled via an EEPROM parameter, default value will be ON.

1.4.3 Tones

The five base melodies are shown in the following table

Nr	Name
1	*Ring 1*
2	*Ring 2*
3	*Ring 3*
4	*Ring 4*
5	*Ring 5*
6	*TONE_CONFIRM*

2 Main User interface

2.1 Power up

Plug the power supply into the base. The in use LED will power on and *TONE_CONFIRM*.

Insert batteries in the handset. If battery level is enough (see Start up with low batteries chapter), the handset will start.
The display will show “BASE 1” and antenna flashing, until it locks onto its subscribed base. If the handset finds its base in the first 10 seconds, no beeps are played (see Range indication chapter). Then the display shows the standby display.

2.2 Standby mode

In standby mode, the display shows the current time and the handset number, preceded by HS.

The *ANTENNA* icon is steady. The *BATTERY* icon indicates the charge level.

Handset:

Events	Handset mode
Press **KEY_HOOK**	Enter TALK mode
Press **KEY_INT**	Enter intercom mode
Press **KEY_MENU**	Enter MENU mode
Press **KEY_MEM**	Enter phonebook mode
Press **KEY_STAR/LOCK** (hold 3 second)	Enter KEY LOCK mode
Press **KEY_LNR/PAUSE**	Enter redial list mode
Press **KEY_DOWN/CLIP**	Enter CLIP mode
Press **KEY_R/POWER** (hold 3 second)	Enter power down mode
Press **1,2,3……0,*,#**	Pre-dialling
Incoming call signal	Incoming call mode
Another handset TALK	Busy mode
Battery is low	Battery low icon
Battery is too low	Power down mode
On charging	Charging mode
Long press for **1 or 2**	Access direct pre-programmed number

Base:

Events	Base mode
Press **PAGE KEY**	Enter PAGE mode
Long press PAGE KEY	Enter SUBSCRIPTION mode
Incoming call signal	Incoming call mode

2.3 TALK mode

Refer to External outgoing call

2.4 Intercom mode

Refer to intercom

2.5 Incoming call mode

Refer to incoming call

2.6 MENU mode

Refer to MENU settings

2.7 Phonebook mode

Refer to phonebook

2.8 Redial list mode

Refer to redial features

2.9 CLIP mode

Refer to Caller ID (CLIP) feature

2.10 Charging mode

Refer to Charging conditions

2.11 VoiceMail

An indication is given to the user when voicemail is waiting, called the VMWI (Voice Mail Waiting Indication).

VWMI notifications/de-notifications can be received from multiple voicemail servers. Matching of VMWI notifications/de-notification will be done using the number field.

On receipt of a VWMI ‘ON’ message

- The VMWI notifications will be stored in the CID list.
- Each entry will show the CID of the voice mail server, including the box number if provided.
- The name of the voice mail server, as sent in the 'Name' field will also be stored in CID, along with the Date/Time of the call. The Name field can receive up to 50 characters, but the display will be truncated to 12 characters.
- Note that no additional VWMI will be added to the list, if the server number is already existing on the list, but in this case the date and time will be updated on the existing entry in the CID list. The name field will also be replaced. It may contain the number of new messages for the user
- The  icon will be flash.
- Note that the CID list will operate as a FIFO buffer. If the CID list is full, on receipt of a new notification, it will replace the oldest non-VMWI item in the CID list.
- To access the voicemail server, the user can press  whilst the VMWI is displayed in the CID list.

On receipt of a VMWI ‘OFF’ message

- If the de-notification matches an item which already exists in the CID list, then the notification will be removed from the list.
- If the item does not exist on the list, then the de-notification will be ignored.

- If no other notifications remain in the list, the  icon will be removed

The user can manually turn off the display of the VMWI icon, by a long press of '5', whilst viewing CID list. This will delete all VMWI items in CID list and turn off the icon in ALL HANDSETS

The user can manually remove VMWI notifications from the CID list using the delete function.

2.12 Incoming SMS Mode

Refer to Incoming SMS

2.13 Message Mode

Refer to SMS

2.14 Answer Machine Mode

Refer to Massage Play
Refer to TAM Settings
Refer to Answer machine features

2.15 Busy mode

When one Handset is TALK, another handset's "EXT" icon, and *TONE_BUSY* in earpiece if press **KEY_HOOK**

2.16 Power down

Make a long press on **KEY_R/POWER**, and the handset power down.
Press and hold **KEY_R/POWER** for 5 seconds to wake it up.
When the handset wakes up, the clock time data shall be transferred from base.

3 Call User interface

3.1 Incoming call

Display

The display shows "CALL" and *EXT* icon blinks (0.5 s ON/OFF), if caller ID information is available (see 3.5), caller name or number is displayed.
Both the Talk indication LED and key backlight shall be flashed during ringing. (0.25 s ON/OFF)
And LCD backlight shall be turned on.

Handset and base ringer melody and level as MENU setting.

Note 2: It is possible to change ring volume during the incoming alert by using **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys.
The ring volume will be displayed as “VOLUME n” (1<=n<=5) or “VOL OFF” during 8 s unless **KEY_HOOK** is pressed.

Incoming alert phase:

The incoming call phase begins with the first ring (ALERT_ON) signal of the handset and stops:

- If the user take the call (see operation)
- If the call is not answered and the caller release its call or another parallel phone answers. EXT icon and LEDs will stop flashing after FTXX_LINE_EXPIRY.

The Base ring alert is synchronized with the PSTN ring ON/OFF pattern.

RPAS disable:

If the first ring period is less than the RPAS length value which is define by EEPROM, the unit shall not emit the ring alert sound. The default setting shall be defined by EEPROM setting.

Note: the function of RPAS setting menu will be enabled, if DECT 10 handset registers to the DECT 20 base.

3.1.1 To answer the call:

- Press **KEY_HOOK**.
- Simply lift the handset from the cradle.

HOOK_IND icon will be displayed.
Note 1: After it goes to talk mode automatically, **KEY_HOOK** will be disabled about 3 seconds to prevent unwanted hang up.
Note 2: Once handset TALK on, another handset’s display “EXT” icon and can not TALK & *TONE_BUSY* in earpiece if press **KEY_HOOK**

3.2 External outgoing call

3.2.1 Normal dialling:

- Press **KEY_HOOK**
- Enter the called number

3.2.2 Pre-dialling:

Pre-dialling allows you to enter and modify a number before dialling.

- Dial your called number. Up to 32 digits (included pause, *,#)are allowed. If the number exceeds 12 digits, the last 12 digits are displayed and *LEFT_ARROW* is ON, Press **KEY_CLEAR** key to delete last digit.
- Press **KEY_HOOK**, the digits are dialled, digit(s)

3.2.3 Dialling PAUSE

Press **KEY_LNR** (after first key) to make a pause, which is displayed as a "P".

The time is adjustable by FP EEPROM settings

3.2.4 Flash key

During a call, press shortly **KEY_R** to perform a Flash break and displayed as a “R”.
The flash time is adjustable by FP EEPROM settings

3.2.5 DTMF dialling

DTMF tone duration (pause before, tone length, pause after, high & low group level) is adjustable by FP EEPROM settings

3.2.6 Pulse dialling

Pulse timing (make, break, pause after) is adjustable by FP EEPROM settings
Pulse dialling mode can be disabled by EEPROM settings.
(If disabled by setting, the dialling setting menu shall not be on the handset setting menu)

3.2.7 Temporary DTMF dialling

During a call or pre-dialling, when the selected dial mode is pulse and you want to dial DTMF codes,
During talk, long press **KEY_STAR/LOCK** to switch into DTMF dialling, only during this call.
During pre-dialling or number storage, long press **KEY_STAR/LOCK** is used to program the digits after the KEY_STAR going temporarily to DTMF dialling. This will be displayed as a “d”.

3.2.8 Dial tone detection

During an external outgoing call, the dial tone detection is activated. When detected the digits which have been dialled on the handset (pre-dialled or post dialled) are sent to the line.
If the dial tone is not detected, a time out expires and the digits are sent.
The time out is adjustable by FP EEPROM settings
No dial tone detection time out : selected by EEPROM data
with dial tone detection time out : selected by EEPROM data

3.2.9 Call timer display

After going off hook, the display is blank during 15 s unless you press a key. The communication duration is displayed after 15 s after the last pressed key. This delay duration can be set as an EEPROM parameters.
If you press a key (0 - 9) during the conversation, the communication duration is not reset to zero and reappears after 15 seconds. At the end of each call, the duration of communication and the handset name are displayed alternately for 5 seconds.

3.2.10 Mute

It is possible to mute the microphone during a conversation.
Press **KEY_CLEAR/KEY_MUTE** during the conversation, the microphone is then deactivated, the external correspondent is put on hold; you can talk freely without being heard by the calling party.
“MUTE” is displayed.
No digit key or **KEY_INT** can be used during mute.
And Phonebook can be reviewed but can’t be dialled out during mute.
From Mute function, the following key functions are active

- Press **KEY_CLEAR/KEY_MUTE** again to return to normal mode.
- Press TALK_OFF to finish the conversation

If call is muted before CID is received, CID will be displayed in preference to “MUTE” for 7 seconds.

3.2.11 Changing Earpiece Volume during Call

It is possible to change earpiece volume during a call using **KEY_UP/CLIP** and **KEY_DOWN/CLIP.** The earpiece volume will be displayed as “EARVOL n” (1<=n<=5) during 8 s unless a key digit (**KEY_0** to **9** + **KEY_HASH** + **KEY_STAR**) is pressed.

3.3 Incoming SMS

Incoming alert phase:

The incoming SMS indication will first check to see if message memory is available:

- If the message memory is full, then the SMS call is not taken.
  - The SMS icon blinks (0.5 s ON/OFF)
  - An error beep will be given
- If the message can be accepted
  - If a SMS is directed to a particular sub-address, the SMS will only be displayed on the HS associated with that sub-address, and shown as part of the “PERSONAL SMS” mailbox for that handset, otherwise, it will be displayed on all HS, shown as the “INBOX”.
  - The display shows "x NEW MSG" and SMS icon appears.
  - The number of new messages indicated to the user will be the total number of unread messages available, both private, shown in “PERSONAL SMS” and public, shown as “INBOX” and relevant to that HS.
  - An audible message alert will be given if the user setting is enabled.
  - The Base LED will flash.
  - Note that all symbol characters require to be translated to ‘-‘ on incoming text
  - Note that all characters require to be translated to upper case
- If the new messages are ‘private’ only, the user will drop into the ‘PERSONAL SMS’ mailbox.
- If the new messages are ‘public’ only, the user will drop into the ‘INBOX’ mailbox.
- If the new messages are both ‘private’ and public’ the user will be given the option of which mailbox they wish to access, by presenting the option of selecting “PERSONAL SMS” and scroll down to select “INBOX”

3.3.1 To read the message:

- The senders number will be displayed
- Press **KEY_OK**.
- The message will be displayed
- Scroll up and down to view complete message
- Press **KEY_OK**. To display further menu options

On incoming SMS meesage, support display of # & * characters.

3.4 Direct access memory

The product has two locations of direct access memory dial number, DDK1 and DDK2, as described in section **Error! Reference source not found.**. The number is pre-programmed to the EEPROM and user cannot change it. The maximum digits for each location are 16 digits and there is no name for this direct access dial number.

3.4.1 How to access the direct memory dial number during idle

User press and hold the **KEY_1** or **KEY_2** for more than 1.5 second (Long press), then the unit display pre-programmed number on the LCD and dial it out**. KEY_1** for location number 1 and **KEY_2** for location number 2.

3.4.2 During OFF HOOK

When the unit is on OFF HOOK mode, it is only allowed to access direct access memory number when the first key in is long press for **KEY_1** or **KEY_2**.

3.5 Redial feature

3.5.1 Redial list

Up to **10** last redial numbers (32 digits) are stored in the redial list (in PP EEPROM).

The last calls appear with their name if they are stored in the phonebook.

To retrieve the entries:
On the DECT 20-2 model, Press **KEY_LNR**

If the list is already empty, then “empty” is displayed

- Scroll through the calls with the up **KEY_UP/CLIP** and down **KEY_DOWN/CLIP** arrows. The phonebook name is displayed if it exists. Otherwise it displays the first 12 digits of the number.
- Press **KEY_OK** to toggle between name and number,
- Press **KEY_MEM/EXIT** return to standby mode

To dial out number just simple press **KEY_HOOK**.

3.5.2 Dial out redial after OFF HOOK

To recall the last redial entry, just take the line by **KEY_HOOK** and press **KEY_LNR** to dial.

3.5.3 Delete a redial buffer :

- Press **KEY_CLEAR** and “DELETE ?” appears.
- Press KEY_OK to make redial number deleted, or press **KEY_MEM/EXIT** to cancel the delete operation.

To return to the previous menu, press **KEY_MEM/EXIT**

3.5.4 Delete all redial buffer :

- Long press **KEY_CLEAR** and “DELETE ALL?” appears.
- You can either press **KEY_OK** again and all redial are deleted, or press **KEY_MEM/EXIT** to cancel the delete all operation.

To return to the previous menu, press **KEY_MEM/EXIT**

3.5.5 Store a Redial list into PHONEBOOK

- Press **KEY_OK** during display the redial number which you wish to store to the phonebook. The display show “ADD ?”.
- After appearing the “ADD ?” And press **KEY_OK** to confirm. The display show “NAME ?”.
- Enter the name.
- Press **KEY_OK** after modified name.
- Press **KEY_OK** after modified number.
- Select the melody of your choice (1 to 5) and validate
- Press **KEY_OK** to confirm.

3.6 Internal call transfer

When you wish to transfer an external call to another extension:

- During a call, press **KEY_INT**
- Select the number of the internal correspondent that you wish to call; the external caller is put on hold.
- When the internal correspondent picks up, press **KEY_HOOK** to hang up and transfer the call.

If the internal correspondent does not pick-up, press **KEY_INT** again to reconnect to the external caller on line.

3.7 Conference call between two handset and external caller

When you wish to talk an external call and other handset:

- During a call, press **KEY_INT**
- Select the number of the internal correspondent that you wish to call; the external caller is put on hold.
- When the internal correspondent picks up, you can talk with internal correspondent first with external call on hold.
- Press **KEY_#** to go to Conference call.
- When one of handset press **KEY_HOOK** or press **KEY_INT**. Then the conference call is finished, but other handset still talk with external caller.

If the internal correspondent does not pick-up, press **KEY_INT** again to reconnect to the external caller on line.

3.8 Caller ID (CLIP) features

3.8.1 General features

The phone supports CLIP DTMF and FSK type I and II. See 8.1 for more details.

3.8.2 Caller ID display

Note: Caller identification is only available if you have subscribed to this service with your network operator.

The CID is decoding and display is subject to the following restrictions

1) We can receive max 50 name chars but display only first 12. CID with more than 50 name chars will not be decoded.

2) We can receive max 60 number digits but display only last 20. CID with more than 60 number digits will not be decoded.
3) We also have a max total length for CID data of 75 bytes, e.g. name length 40 and number length 40 will not be decoded

During the incoming alert:
The CLIP information is displayed if they are provided.
Order of display:

- Phonebook name and calling number alternately if the number matches with the CLIP calling number. Frequency of flash is 0.5 seconds NAME, 0.5 seconds NUMBER
- CLIP calling name and calling number alternately if the network is transmitted. However, if the number is match with one of phonebook memorized number, it shall use phonebook memorized name.
- “CALLBACK” and calling number alternately if a call is received as a response to “Recall on Busy”. Note that Phonebook matching will not occur in this case.
- CLIP calling number
- Number matching method is as follows.
    - If the one of number which CLIP or phonebook is less than 5 digits, it will not compare. (If the one of phonebook number is 1234, this number will not use for number matching)
    - If the CLID received 10 digits and phonebook number is 8 digits, CLID last 8 digits will use for the matching with that phonebook number. And if the CLID is 8 digits and phonebook number is 10 digits, Phonebook number last 8 digits will use for the matching with that CLID number.

A VMWI de-notification is never stored in the call list.

Incoming calls from or Outgoing calls to the SMS service centre will not be stored in the call list.

The following special network messages are managed and displayed at the place of calling number:

Message	CLIP type	Meanings
WITHHELD	FSK type I & II	The caller hides its identity
UNAVAILABLE	FSK type I & II	Network failure, the calling number can't be transmitted

Special caller texts display format:

Display	CLIP TYPE	Caller texts from network
WITHHELD	FSK type I & II	PRIVATE
UNAVAILABLE	FSK type I & II	UNAVAILABLE
INT NATIONAL	FSK type I & II	INTERNATIONAL
OPERATOR	FSK type I & II	OPERATOR
PAYPHONE	FSK type I & II	PAYPHONE
RINGBACK	FSK type I & II	RINGBACK

CID icon behavior:

On an Incoming call with CID, the EXT and CID icon will flash. As soon as the call is answered, the CID icon will turn off. The CID icon should not be displayed once the call is in progress, except in the case of call waiting, when the CID icon will flash. If there are missed calls remaining unread in the CID list, the CID icon will flash again after the call is completed.

Note that the CID icon is used to indicated missed calls only to the user.

There are a number of additional features implemented for CID to handle network operator variants as detailed below

- Handling for space and dash characters, according to BT specification.
    - All non-alphabetic characters are stripped out, with the exception of *, and # before storing in the CID database.
    - For the purpose of Phonebook matching, *, # and P characters can be excluded on an individual basis during the matching process. The use of each of these characters in matching is controlled by individual EEPROM bit. Default values for each character is that they are included in the matching algorithm
- Updating CID records with date/time on DTMF networks.
- CID for Telia, Sweden
- CID for Tele Danmark
- CID for Finland
- CID for Norway
- CID for New Zealand
- KPN Reverse Polarity

A number of new EEPROM parameters are provided to support multi-country CID, as described below

Parameter	Description	Default value
CidDtmfDecodeFirstPart	Decode the first or last part of DTMF CID. Example: A1234D5678C -> can be displayed as 1234 or 5678. If 1, then first part is decoded.	0
CidDtmfRejectInvalid	If set to 0, then all CID DTMF will be accepted and passed to HS. If set to 1, then an illegal DTMF CID will be rejected (without end code or timeout)	0

DTMF max delay	The maximum delay allowed between DTMF tones in a DTMF CID in multiples of 100ms (Inter-digit delay)	10 (1 second)
CidDtmfIgnoreD3	If set to 1, then CID of type D3# will be ignored.	0
CidDtmfPrefixZeros	If set to 1, then CID with length 8 or 9 will be prefixed with 0 and length 10 or more will be prefixed with 00	0
CidDtmfVmwiNumberMatch	If set to 1, then each CID is compared to a pre-defined VMWI center number	0
DTMF VMWI Match Size	Number of digits in CID DTMF VMWI matching number. Maximum value is 12.	0
DTMF VMWI Match Digits	Digits 0 to 11 of CID DTMF VMWI matching number.	0

Special caller texts display format:

Display	CLIP TYPE	Caller texts from network
WITHHELD	Holland DTMF	D0000000000C (SECRET)

3.8.3 Recall CLIP list

Unanswered and answered calls are stored in the CLIP list of each handset independently (in EEPROM).

Note: any new CLIP call will be stored in EEPROM .

Size storage

Each entry will store:

- The call number (20 digits)
- The caller name (12 digits) if the network send it
- The date and hour of the call

Storage sequence

The CLIP information that has been received during incoming alert phase (calling number, name date/hour) is stored then displayed.

If the new call entries, The  icon will flash (480ms ON/OFF) and will off after all new call is read.

Note: The new message indication is reset at power up, so the  icon is always off after a reset.

MMI operation

To retrieve the entries:

1. Press **KEY_ UP/CLIP or KEY_ DOWN/CLIP** to enter the call list. The  icon will stay ON for Unanswered Calls and the  icon will stay ON for Answered Calls. If the list is already empty, then “EMPTY” is displayed
2. Scroll through the calls using the up **KEY_UP/CLIP** and down **KEY_DOWN/CLIP** arrows.
3. You will find the different fields of the entry:

   If the call is unanswered and unviewed. The  and  icon will stay ON. The  will be turned off after it is viewed.
   If a matched number found in phonebook memory , the corresponding name will be shown otherwise if the caller name is available, the caller name will be displayed. If both are not available, the caller number is displayed first.

Press **KEY_OK**, the first 12 digits of caller number is displayed , press **KEY_OK** again to check the remaining digits (if more than 12 digits)

4. Press **KEY_OK** The date and hour is displayed if any. The date will be displayed either as DD-MM or MM-DD, depending upon the Date Format EEPROM parameter, which can be set on an individual HS basis.
5. When the CLIP found no matched number in Phone Book and Calling Number is present, when press **KEY_OK** again , CLIP data can be stored into phone book (see 3.5.6)

To select another call list, simply press **KEY_UP/CLIP** or **KEY_DOWN/CLIP** . Error tone will be sounded if reach the top or bottom of the list.
To return to the previous menu, press **KEY_MEM/EXIT**.
To dial out number just simple press **KEY_HOOK**

3.8.4 Delete one CLIP list

- Press **KEY_CLEAR** and "DELETE ?" appears.
- There you can either press **KEY_OK** and CLIP deleted, or presses **KEY_MEM/EXIT** to cancel the delete operation.

3.8.5 Delete all CLIP list

- Long press **KEY_CLEAR** and "DELETE ALL?" appears.
- There you can either press **KEY_OK** and all CLID are deleted, or press **KEY_MEM/EXIT** to cancel the delete all operation.

To return to the previous menu, press **KEY_MEM/EXIT**

3.8.6 Store a CLIP list into PHONEBOOK

- After appearing the "ADD ?" and press **KEY_OK** to confirm (after 3.6.3 step 5)
- Press **KEY_UP/CLIP** or **KEY_DOWN/CLIP** to move the cursor for edit or delete name. If the CLIP data does not have name, LCD shall display "NAME ?". And then enter the name.
- Press **KEY_OK** after modified or enter the name.
- Press **KEY_OK** after modified number.
- Select the melody of your choice (1 to 5) and validate
- Press **KEY_OK** to confirm.

3.8.7 Dial out CLIP list

To recall the number from CLIP list , pressing **KEY_HOOK** will dial out the number .

3.9 Phonebook

The phonebook contains up to **50** names of 12 characters max. and numbers of 20 digits. Phonebook is stored in PP EEPROM. One handset phonebook is independent from other locked handsets.

3.9.1 Dial a number of the phonebook list

To call a correspondent whose name you have saved in the phonebook:

- Press **KEY_MEM/EXIT** to enter the phonebook. The  will be ON.
- Press the first letter of the name; the first name that starts with this letter in the alphabet appears. For instance to find names beginning by A, press once on **KEY_2,** to find names beginning by B, press twice on **KEY_2,** to find names beginning by C, press three times on **KEY_2**

- Go through the list of names with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys the list scrolls up/down in an alphabetical order.
- Press **KEY_MENU/OK** to display the number and user can press the **KEY_MENU/OK** again to display remaining digits if the recalled phone book number is more than 12.
- Press **KEY_MEM/EXIT** returns to standby mode
  OR
- Press **KEY_HOOK** to dial the number of the correspondent whose name is displayed.

3.9.2 Dial a number of the phonebook list during Talk.

- Press **KEY_MEM/EXIT** to enter the phonebook. The  will be ON.
- Press the first letter of the name; the first name that starts with this letter in the alphabet appears. For instance to find names beginning by A, press once on **KEY_2,** to find names beginning by B, press twice on **KEY_2,** to find names beginning by C, press three times on **KEY_2**
- Go through the list of names with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys the list scrolls up/down in an alphabetical order.
- Press **KEY_MENU/OK** to display the number and user can press the **KEY_MENU/OK** again to start dialling or display remaining digits if the recalled phone book number is more than 12.
- Press **KEY_MENU/OK** again to start dialling and return to normal Talk mode.
- Press **KEY_MEM/EXIT** without dialling, then returns to normal Talk mode

3.10 Intercom

3.10.1 Internal call

- Press **KEY_INT**
- Enter the number of the internal handset (1 to 5)

The  and “INT” icons displayed, the number of the internal handset display “INT” with caller handset number and rings (INT MEL).

Remark: the caller handset go to standby mode if the number of the internal handset is not available or caller handset

3.10.2 End of intercom call

Incoming call applied then go to ring in mode.
The number of the internal handset press **KEY_HOOK** go to INTERCOM mode

3.10.3 Intercom mode

The  and “INT” icons displayed on both handsets.

3.10.4 End of intercom

Any handset (intercom) press **KEY_HOOK,** go to standby mode
Incoming call applied then go to ring in mode.

3.11 Page button

Press Page button on the base.

The handsets will ring *RING_1* at volume of Handset internal ring level setting and display INT with "□□□□"during 30s unless page key is pressed again on the base or a key is pressed on any locked handset. (When the handset set to key lock, user can be stop the paging by pressing any key)

3.12 Battery and charge management

3.12.1 Battery indicator

5 levels indicators icon for mean battery voltage:


> = EEP_BAT_FULL_LEVEL


> = EEP_BAT_HALF3_LEVEL


> = EEP_BAT_HALF2_LEVEL,

Blinking > = EEP_BAT_ALARM_LEVEL

3.12.2 Low battery conditions

If the following conditions are applied:

During a call,

- If mean battery level is less than EEP_BAT_HALF1_LEVEL,
- If battery warning tone option is ON

then a *TONE_LOW_BATT* will be emitted every minute.

In any state (standby or call), If mean battery level is less than EEP_BAT_ALARM_LEVEL, handset will enter in power down mode.

3.12.3 Charge conditions

If the following conditions are applied:

- In standby mode,
- If battery warning tone option is ON
- The handset is put on its charger (debounce time: 200 ms)

then a *TONE_CONFIRM* will be played.

Charging icon:


Scroll for display handset is charging, fast scroll when quick charging mode,

3.12.4 Quick charge

If the battery voltage below EEP_BAT_HALF2_LEVEL, the charging mode is always quick charge mode first until the following condition detect.

- If detect negative ΔV then stop quick charge
- If reach to time limit which defined by EEPROM setting

3.12.5 Start-up with low batteries

If battery level at start-up is lower than EEP_BAT_HALF2_LEVEL, the handset will stay in sleep mode (no LCD, no RF, no MMI working). You need to put the handset into charge until battery level reaches EEP_HALF2_LEVEL.

3.13 Range indication

When the handset is out of range of the Base, certain functions will not be available. On trying to access the functions, the user will be presented with an error beep. Where a function is not available, it is described in the individual menu section.

Note for all descriptions below, the TONE_WARNING will only be sounded is the option has been enabled, as described in section **Error! Reference source not found.**.

3.13.1 Out of range tone

If the following conditions are applied:

- The handset has been out of range since EEP_RANGE_OUT_DELAY s
- If range warning tone option is ON

then a *TONE_WARNING* will be played.

EEP_RANGE_OUT_DELAY : selected by EEPROM data

3.13.2 In range tone

If a *TONE_WARNING* has been played, a *TONE_IN_RANGE* is played when the handset goes into range the next time.
Note: at start-up, the handset plays the *TONE_IN_RANGE* only if it goes into range after more than 10 s.

3.13.3 Range limit tone during a call

During a call, in range limit conditions, the handset will play a *TONE_WARNING* in the Buzzer
The tone is repeated until range conditions are good
If the handset goes out of range, the call is released (on both handset and base).

3.14 Alarm activation

When the unit is set to alarm ON and the clock reach to the alarm setting time, the handset shall generate the alarm sound and display “ALARM ON” on LCD. Once the clock is reach to alarm setting time, the alarm setting shall be OFF.

3.14.1 During idle

The sound level shall follow the handset internal ring level. However, if the setting is “OFF” the alarm sound level shall be “LEVEL 1”. During generating the alarm sound, press any key to stop the alarm without any operation even the handset is “**Key Lock**” mode. For example, press **“KEY_HOOK”** to stop the alarm, however, the handset should not go to talk mode.
If do not press any key for more than one minute, the alarm shall stop automatically.

3.14.2 During Talk

The sound level shall be same as Battery Low warning tone. During generating the alarm sound, press any key to stop the alarm without any operation.

3.14.3 During ringing or paging

The alarm sound shall not active during paging or ringing.

4 MENU Settings

Menu structure

A wide range of phone settings are accessible through a user friendly menu.

- To enter the menu, press **KEY_MENU/OK**
- Scroll through the selections using the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys, the selections scroll in a loop (you return to the first after the last). To validate a selection, press **KEY_MENU/OK**
- To return to the previous menu, press **KEY_MEM/EXIT.**
- To escape a menu and return to standby mode, press and hold **KEY_MEM/EXIT**
- After 15 s without pressing any key, the handset returns in standby mode

MSG PLAY	NEW MSG:XX	MSG 1,2, ---- #1	(Press “1” or “4” key to skip backward)	(Play previous message from message number)
			(Press “3” or “6” key to skip forward)	(Play next message from message number)
			(Press Clr key to delete)	(“***Message deleted***” and then start to play next message)
	ALL MSG:XX	MSG 1,2 ---- #2	(Press “1” or “4” key to skip backward)	(Play previous message from message number)
			(Press “3” or “6” key to skip forward)	(Play next message from message number)
			(Press Clr key to delete)	(“***Message deleted***” and then start to play next message)
PHONEBOOK	ADD ENTRY	NAME ?	NUMBER ?	MELODY 1 … 5

	MODIFY ENTRY	MELODY 1 ... 5		
	DELETE ENTRY	CONFIRM ?		
TAM SETTING	ANS ON/OFF	ON	Return to idle with S_beep	(Turn ON the TAM Icon)
		OFF	Return to idle with S_beep	(Turn OFF the TAM Icon)
###	ANS MODE	ANS & REC	Return to idle with S_beep	
		ANS ONLY	Return to idle with S_beep	
	MEMO REC	(RECORDING) ----#3		
	OGM SETTING	PLAY OGM	ANS & REC ###	(Play OGM) ----- #4
			ANS ONLY ###	(Play OGM) ----- #4
		REC OGM	ANS & REC ###	(Record OGM)----#5
			ANS ONLY ###	(Record OGM)----#5
		DEL OGM ###	ANS & REC ###	(Delete OGM) ---#6
			ANS ONLY ###	(Delete OGM) ---#6

###	DAY SETTING	MONDAY		
		TUESDAY		
		WEDNESDAY		
		THURSDAY		
		FRIDAY		
		SATURDAY		
		SUNDAY		
	ANS DELAY	2	Return to idle with S_beep	
		3	Return to idle with S_beep	
		4	Return to idle with S_beep	
		5	Return to idle with S_beep	
		6	Return to idle with S_beep	
		7	Return to idle with S_beep	
		8	Return to idle with S_beep	
		9	Return to idle with S_beep	
		TS	Return to idle with S_beep	
	SEC CODE	X_X_X (X=Current code)	(Enter the new code)	
SMS	INBOX	READ	REPLY	NUMBER?
			DELETE	
			FORWARD	NUMBER?

			DETAILS	
	PERSONAL SMS	READ	REPLY	NUMBER?
			DELETE	
			FORWARD	NUMBER?
			DETAILS	
	WRITE	NUMBER?		
	DELETE ALL	INBOX		
		PERSONAL SMS		
	SMS SETTINGS	MSG ALERT	ON	
			OFF	
		SEND SERVICE	SEND 1	
			SEND 2	
		RCV CENTRE	RECEIVE 1	NUMBER?
			RECEIVE 2	NUMBER?
		SEND CENTRE	SEND 1	NUMBER?
			SEND 2	NUMBER?
		TERMINAL NO		
SETUP	BASE VOLUME	VOLUME OFF		
		VOLUME 1 ... 5		
	BASE MELODY	MELODY 1 … 5		
	DEL HANDSET	PIN ?	HANDSET ?	
	PIN CODE	PIN ?	NEW PIN	
			RETYPE	
	DIAL MODE	TONE DIAL		
		PULSE DIAL		
	RECALL	RECALL1		
		RECALL2		
	DEFAULT	PIN ?	CONFIRM ?	
	++RCID	ON / OFF	ON	
			OFF	
		NUM LENGTH	7	
			6	
			5	
		RING DELAY	0 … 9	
	ECO MODE	ON		
		OFF		
HANDSET	BEEP	KEYTONE	ON	
			OFF	
		LOW BATTERY	ON	
			OFF	
		OUT RANGE	ON	
			OFF	
	INT RING VOL	VOLUME OFF		
		VOLUME 1 … 5		

	EXT RING VOL	VOLUME OFF		
	INT MELODY	MELODY 1 … 5		
	EXT MELODY	MELODY 1 … 5		
	AUTO ANSWER	OFF		
		ON		
	NAME			
	LANGUAGE	ENGLISH		
		FRANCAIS		
		ESPANOL		
		ITALIANO		
		DEUTSCH		
		NEDERLANDS		
		PORTUGUES		
		DANSK		
		SUOMI		
		SVENSKA		
		NORGE		
		ΕΛΛΗΝΙΚΑ		
		РУССКИЙ		
		POLSKI		
		ČESKY		
		SLOVENCINA		
		MAGYAR		
	HOT KEYS	HOT KEY 1… 2	NUMBER?	
	KEY LOCK ?			
DATE - TIME	DATE SET			
	CLOCK SET			
	ALARM SET	ON		
		OFF		
REGISTER	SELECT BASE	*+BASE 1 2 3 4	NEW BASE X	
		AUTO		
	REG BASE	+BASE 1 2 3 4	SEARCHING X	PIN ?

Notes : * Only registered base number will be shown.
Notes : + Registered Base Number will blinking
Notes : ###: Those menus will not be appeared when the EEPROM setting is “No Voice prompt”

1: After press **KEY_Menu/OK**, then the unit start to play with following order.

1. “*You have XX new messages*”. (XX=number of messages, if no message, then “*You have no messages*”)
2. “*Message 1*”
3. Day announcement
4. Time announcement
5. Start to play message
6. During playing message, the LCD shall indicate “MSG X” (X=message number)
7. After finish all message play back, then “*End of message*”, “*To delete all messages, press delete*”
8. There will be 8 seconds waiting period for message deletion. And LCD shall indicate from 8 to 0 count down by one second step.
9. If press **KEY_Clr**, the unit shall announce “*All messages deleted*” and then return to idle.
10. If no operation during count down, after finish count down, then go to idle with S_beep.

2: After press **KEY_Menu/OK**, then the unit start to play with following order.

11. "You have XX messages". (XX=number of messages, if no message, then "You have no messages")
12. "Message 1"
13. Day announcement
14. Time announcement
15. Start to play message
16. During playing message, the LCD shall indicate "MSG X" (X=message number)
17. After finish all message play back, then "End of message", "To delete all messages, press delete"
18. There will be 8 seconds waiting period for message deletion. And LCD shall indicate from 8 to 0 count down by one second step.
19. If press KEY_Clr, the unit shall announce "All messages deleted" and then return to idle.
20. If no operation during count down, after finish count down, then go to idle with S_beep.

3: After press **KEY_Menu/OK,** then the unit announce "*Please speak after the tone, to end recording press #*". During recoding, the LCD shall flash "RECORDING". After press **#**, the unit shall return to idle.

4: Play the outgoing message. If there is no user recorded outgoing message, the default message shall be played. After play back, the unit shall return to idle with S_beep.

5: After press **KEY_Menu/OK,** then the unit announce "*Please speak after the tone, to end recording press #*". During recoding, the LCD shall flash "RECORDING". After press **#**, the unit shall play back the recorded outgoing message. After play back, the unit shall return to idle with S_beep.

6: After press **KEY_Menu/OK,** the recorded outgoing message shall be deleted. And start to play default outgoing message. If there is no recorded outgoing message, it will not delete the message and just play the default outgoing message. After play, the unit shall return to idle with S_beep.

4.1 MESSAGE PLAY

Select "MSG PLAY" from the main menu and press **KEY_Menu/OK.** There are two sub menu for message play.

- New messages play
- All messages play

The first menu shall be "New messages play" and then press **KEY_UP/DOWN** to change to "All messages play". The LCD display shall be as follows.

- NEW MSG: XX (XX=Total number of new messages)
- ALL MSG: XX (XX= Total number of messages)

Select menu and press **KEY_Menu/OK** to start playback the messages. During message playing, the LCD shall indicate the current playback message number such as MSG 1, MSG 2 ---.

During message play, it is possible to skip forward or skip backward by pressing **KEY_1/3/4/6.** The current message will be replay if pressing **KEY_1** or **KEY_4** during message play. If pressing **KEY_1** or **KEY_4** twice within one second, play will skip back to the start of previous message during message play. Pressing **KEY_3** or **KEY_6 to** skip to next message playing. The messages will be selectively deleted if press **KEY_Clr** during playing message. Confirmation that the message has been deleted will be by the unit announcing, "*Message deleted*" and skipping forward to play the next message, or to the end of message sequence. Messages are marked for deletion at this stage but are only actually deleted after return to idle.

At end of the message play, all messages may be deleted if press **KEY_Clr** within 8 seconds of the end of the prompt *"End of messages. To delete all messages, press delete"*. If press **KEY_Clr** at this stage, "*All messages deleted*" shall be announced and all the messages just played shall be deleted (new messages only when only new messages have been played). If no instruction is received within 8 seconds the unit shall return to idle with S_beep. During above count down period, it is preferable to have a indication "DEL ALL ?" and "8->0" on the display.

During playing messages, it is possible to adjust the play back sound level by pressing **KEY_UP/DOWN**.

During playing messages, it is possible to exit and return to idle by pressing **KEY_Menu/OK.** All deletion marked messages shall be deleted.

4.2 PHONEBOOK

- Select "PHONEBOOK"

4.2.1 Add a name

- Select "ADD ENTRY"
- Enter the new name and validate.
- Enter the new telephone number and validate
- It is possible to enter the following data for number entering.
  - **KET_1** to **KEY_0**
  - **KEY_STAR and KEY_#**
  - **KEY_LNR** (Pause)
  - **KEY_R** (Recall, Flash)
- Select the melody of your choice (1 to 5) and validate
- Press **KEY_OK** to confirm.

With your telephone you can write text as well as figures. This is useful for entering a name into the address book, giving a name to a handset, …
To select a letter, press the corresponding key as many times as is necessary. For example to select an 1, press 2 once, to select a B, press 2 twice and so on. To select A and then B consecutively, select a 1, wait until the cursor moves on to the next character, then select a B.
To select an empty space, press 1.
To select a dash, press 1 twice
During text entry, a long press of **KEY_CLEAR** will clear all text displayed.

The keypad characters are as follows:

First press	Second press	Third press	Fourth press	Fifth press
Space	-	1		
A	B	C	2	
D	E	F	3	
G	H	I	4	
J	K	L	5	
M	N	O	6	
P	Q	R	S	7
T	U	V	8	
W	X	Y	Z	9

4.2.2 Delete a name

- Select "DELETE ENTRY"
- Move through the list of names using the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys the list scrolls down in alphabetical order.

- Press **KEY_OK** when you find the name you wish to delete
- "CONFIRM ?" appears, press **KEY_OK** to confirm.

4.2.3 Modify a name or number

- Select "MODIFY ENTRY"
- Move through the list of names with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys. The list scrolls down in alphabetical order.
- Press **KEY_OK** when you find the name to modify
- Press **KEY_UP/CLIP** or **KEY_DOWN/CLIP** to move the cursor for edit or delete name.
- Press **KEY_OK** after modified name.
- Press **KEY_CLEAR** to delete number.
- Press **KEY_OK** after modified number.
- Select the melody of your choice (1 to 5) and validate
- Press **KEY_OK** to confirm.

4.3 TAM SETTING

Select “TAM SETTING” from the main menu and press **KEY_Menu/OK.** There are the following sub menus.

- ANS ON/OFF
- ANS MODE
- MEMO REC
- OGM SETTING
- DAY SETTING
- ANS DELAY
- SEC CODE

And then select the menu by pressing **KEY_UP/DOWN**.

4.3.1 Answer ON/OFF

Select “ANS ON/OFF” from the menu and press **KEY_Menu/OK.** There are two items under this menu.

- Answer ON setting
- Answer OFF setting

The LCD display shall be “ON” and “OFF”. (The current setting shall be first and then change to other by pressing **KEY_UP/DOWN**)

If select “ON” and then press **KEY_Menu/OK,** the unit will answer the call.
If select “OFF” and then press **KEY_Menu/OK,** the unit will not answer the call.
(Please see the “Call answering and message recording” section)
After selected by **KEY_Menu/OK**, the unit shall return to idle with S_beep.

4.3.2 Answer mode

The unit has two-operation mode for answering the call. One is answer and record mode and other is answer only mode.
Select “ANS MODE” from the menu and press **KEY_Menu/OK.** There are two items under this menu.

- Answer and record
- Answer only

The LCD display shall be “ANS & REC” and “ANS ONLY”. (The current setting shall be first and then change to other by pressing **KEY_UP/DOWN**)

If select “Answer and record” and then **KEY_Menu/OK**, the unit will be answer and record mode and “Answer and Record” OGM will be selected.

If select “Answer only” and then **KEY_Menu/OK**, the unit will be answer only mode and “Answer only” OGM will be selected.

After selected by **KEY_Menu/OK**, the unit shall return to idle with S_beep.

4.3.3 Record Memo

A personal memo may be recorded and left as a message for another user. The memo shall be recorded through the handset microphone.

- Select "Record Memo" from menu and then press **KEY_Menu/OK**.
- After press **KEY_Menu/OK,** then the unit announce “*Please speak after the tone, to end recording press #*”. Then start to record a memo.
- Press **KEY_#** or **KEY_CLEAR** to end recording.
- After press **#**, the unit shall return to idle.

The memo may be any length up to memory capacity and this shall only occupy the memory space needed for the recording.
During recording, the LCD shall flash “RECORDING” and recording continues until the **#** button is pressed or the maximum message length is reached.

Memos are played back using the procedure for incoming message play.

4.3.4 Outgoing message

The product shall be supplied with two pre-recorded announcements.

A&R *Hello, your call cannot be taken at the moment so please leave your message after the tone.*

AO *Hello, your call cannot be taken at the moment and you cannot leave a message, so please call later*

Under the “OGM SETTING” menu, there are following menus.

- Play outgoing message (PLAY OGM)
- Record outgoing message (REC OGM)
- Delete outgoing message (DEL OGM)

Pressing **KEY_Menu/OK** will cause the handset to show the currently selected OGM for recording/checking and deleting (Answer and record or Answer only).

- Select “Answer And Record” or “Answer Only” by using “Answer mode” setting.

Record Outgoing message

- Under the selected Record outgoing message menu (Answer and Record or Answer Only), pressing **KEY_Menu/OK** causing the unit announces, *“Please speak after the tone. To end recording, press #”*. The user is then informed that recording can commence by a long beep. Once recording has started, the previous user OGM cannot be retrieved.

- During recording, the LCD shall flash “RECORDING”.

- Recording continues until **KEY_#** or **KEY_CLEAR** is pressed, the maximum OGM length is reached, or the memory capacity is full. The unit terminates recording with a long beep. If an incoming call is received during recording, the recording will be interrupted: the product will present the incoming call screens and progress the call as normal. Any OGM already recorded will be retained.

- At the end of recording, the unit shall play recorded outgoing massage through the handset receiver for checking.

The outgoing message may be checked by

- Under the selected Play outgoing message menu (Answer and Record or Answer Only), pressing **KEY_Menu/OK** causing the unit to play outgoing massage.
- Press **KEY_Menu/OK** can be used to stop the outgoing message play.

Note that recording/checking an OGM does NOT select it as the current OGM to be played to line when the answering machine takes a call. (See Answer mode setting).

The outgoing message may be deleted by

- Under the selected Delete outgoing message menu (Answer and Record or Answer Only), pressing **KEY_Menu/OK** causing the unit to delete recorded outgoing message and play the default outgoing massage.
- Press **KEY_Menu/OK** can be used to stop the outgoing message play.

It can be deleted the outgoing message during playing the OGM under PLAY OGM menu. During playing OGM, press **KEY_CLEAR**, The outgoing message play will stop (if being playing) and a beep tone will be heard, then start to play default outgoing message.

4.3.5 Day Setting

- Select "Day Setting" from TAM Settings menu.
- The handset LCD displays the current setting.
- Select the desired day by press **KEY_UP** or **KEY_DOWN** then press **KEY_Menu/OK**.

4.3.6 Answer Delay

- Select "Answer Delay" from TAM Settings menu then press **KEY_Menu/OK.**
- The handset LCD displays the current setting.
- Select the desired answer delay by press **KEY_UP** or **KEY_DOWN** then press **KEY_Menu/OK**.

4.3.7 Security Code (PIN)

A customer programmable 3 digit PIN protects entry to the remote interrogation feature. It can only be changed via the handset menu.

The product shall be supplied with a factory set PIN of 000. The code can only be changed via the handset menu when the unit is idle.

- Select "Security Code" from TAM settings menu and press **KEY_Menu/OK** to confirm will cause the handset to show the currently selected security code.
- The user can then enter a new code or press **KEY_Menu/OK** to confirm the current setting.

4.3.8 Call Screening

When the unit have a call, and the answering machine has answered the call, the handset shall indicate “SCREEN?” after TAN takes the line. Then user can press **KEY_Menu/OK** to screen the call. If user wants to take a call, just press **KEY_TALK.**

During screening the call, user can take a call by pressing **KEY_TALK** or stop screening by pressing **KEY_Clr.**

During screening the call, the handset shall display “SCREEN” on that handset and other handset return to idle screen with “EXT” icon on.

When the user stop screening the call, all handset display “SCREEN?” again.
Any valid message already recorded shall be retained.

Remark: Once the TAM takes the line, simply lifting the handset from the base does not take the line directly, even if the auto answer set to ON.

4.4 SMS

SMS functions will not be available when the handset is either out of range or unregistered.

- Select “SMS”
- For all text entry or modification, to select a letter, press the corresponding key as many times as is necessary. For example to select a A, press 2 once, to select a B, press 2 twice and so on. To select A and then B consecutively, select a 1, wait until the cursor moves on to the next character, then select a B. To select an empty space, press 1. To select a dash, press 1 twice. The keypad characters are as follows:

First press	Second press	Third press	Fourth press	Fifth press
0				
Space	-	1		
A	B	C	2	
D	E	F	3	
G	H	I	4	
J	K	L	5	
M	N	O	6	
P	Q	R	S	7
T	U	V	8	
W	X	Y	Z	9
#				
*				

To move through the message text, the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys will move the cursor the corresponding left/right for edit or delete text. Text entry will continue from the new cursor position.

KEY_CLEAR can be used to delete characters. When there is a character present above the cursor, the displayed character will be deleted e.g ABCDE => ABCE. When there is no character above the cursor, press **KEY_CLEAR** will delete the character to the left of the cursor e.g. ABCDE_ => ABCD.

Long press of **KEY_CLEAR** will delete the entire text.

- For all number entry, the following keys are valid
  - **KEY_1** to **KEY_0**
  - **KEY_LNR/PAUSE**

  .Press **KEY_CLEAR** will delete the digit to the left of the cursor. Long press of **KEY_CLEAR** will delete the entire number.
  KEY_MEM will enter the phonebook.

    - The  will be ON.
    - Press the first letter of the name; the first name that starts with this letter in the alphabet appears. For instance to find names beginning by A, press once on **KEY_2,** to find names beginning by B, press twice on **KEY_2,** to find names beginning by C, press three times on **KEY_2**
    - Go through the list of names with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys the list scrolls up/down in an alphabetical order.
    - Press **KEY_MENU/OK** to select the number and return to the SMS phone number edit. Number can then be edited as described above.

4.4.1 PERSONAL SMS

- Select “PERSONAL SMS”
- Display  icon.
- Note, only ‘private’ message associated with that HS and its sub-address will be displayed in the INBOX
- Move through the list of messages with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys. The list scrolls down in date/time order, more recent messages at the top.
- The CID of the sender will be displayed
- Messages which have not been read will have an * in front of the first digit
- If the CID number is greater than 11 digits, the ▶ icon will be displayed.. **KEY_HASH** can be used to display the additional digits.
- Messages which have been read will have a space character in front of the first digit
- Press **KEY_OK** when you find the message required
- The text message will then be displayed. Note only the text string will be displayed, no details.
- Move through the message text with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys.
- Press **KEY_OK** will display further options.
- Press **KEY_CLEAR** to return to upper menu.
- Move through the options with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys.
- Press **KEY_CLEAR** to return to text message.

4.4.1.1 REPLY

- Select “REPLY”
- Enter the Reply text message and validate
- Press **KEY_OK** to confirm
- The original send number will be displayed
- **KEY_MEM/EXIT** will enter the phonebook
- Modify & validate the number to which to send the message
- Press **KEY_OK** to confirm
- Note last message sent will be saved.
- On failure to successfully send the message, a SEND FAIL will be displayed and the user presented with the option of to re-try.

4.4.1.2 DELETE

- Select “DELETE”
- Press **KEY_OK** to confirm

4.4.1.3 FORWARD

- Select “FORWARD”
- Original message text will be displayed, edit cursor should be placed at the end of the message. Modify the text message and validate.
- Press **KEY_OK** to confirm
- Enter the number to which to send the message
- **KEY_MEM/EXIT** will enter the phonebook
- Modify & validate the number to which to send the message
- Press **KEY_OK** to confirm
- Note last message sent will be saved.
- On failure to successfully send the message, a “SEND FAIL” will be displayed and the user presented with the option to re-try.

4.4.1.4 DETAILS

- Select “DETAILS”
- The CID of the sender will be displayed.
- The date and time of the call will be displayed.
- Move through the information with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys.
- Press **KEY_OK** or **KEY_CLEAR** to exit

4.4.2 INBOX

- Select “INBOX”
- Note, only ‘public’ messages, not associated with any HS or specific sub-address will be displayed in the INBOX
- Move through the list of messages with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys. The list scrolls down in date/time order, more recent messages at the top.
- The CID of the sender will be displayed
- Messages which have not been read will have an * in front of the first digit
- Messages which have been read will have a space character in front of the first digit
- If the CID number is greater than 11 digits, the ▶ icon will be displayed.. **KEY_HASH** can be used to display the additional digits.
- Press **KEY_OK** when you find the message required
- The text message will then be displayed. Note only the text string will be displayed, no details.

- Move through the message text with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys.
- Press **KEY_OK** will display further options.
- Press **KEY_CLEAR** to return to upper menu.
- Move through the options with the **KEY_UP/CLIP** and **KEY_DOWN/CLIP** keys.
- Press **KEY_CLEAR** to return to text message.

4.4.3 WRITE

- Select “WRITE”

- Note that last sent message text will be displayed
- Enter the text message and validate
- Press **KEY_OK** to confirm
- Enter the number to which to send the message
- **KEY_MEM/EXIT** will enter the phonebook
- Modify & validate the number to which to send the message
- Press **KEY_OK** to confirm
- Note last message sent will be saved.
- On failure to successfully send the message, a “SEND FAIL” will be displayed and the user presented with the option to re-try.

4.4.4 Delete All

- Select “DELETE ALL”
- Select “INBOX” or “PERSONAL SMS”
- Press **KEY_OK** to confirm.

4.4.5 SMS Settings

- Select “SMS Settings”

4.4.5.1 . NETWORK TYPE (Hidden in the EEPROM)

The type of the network determines whether the network supports sub-addressing. A ‘Network type’ parameter will be stored for each of RECEIVE 1 and RECEIVE 2, SEND 1 and SEND 2.

When this value is set (i.e 1), the interpretation of the RECEIVE CENTRE number will assume that no sub-address is present, and only the DMI is appended to the receive centre.

When the value is not set (i.e. 0), the RECEIVE CENTRE number will be interpreted assuming both SA and DMI are appended.

When this value is set (i.e 1), the interpretation of the SEND CENTRE number will assume that no sub-address should be appending on SEND number. Note that this parameter will over-ride the SEND MODE parameter setting

When this value is not set (i.e 0), the interpretation of the SEND CENTRE number will assume that sub-addressing is in use, and that the number should be sent according to the SEND MODE parameter setting

For each of RECEIVE 1, RECEIVE 2, SEND 1 and SEND2, the default value for this parameter will be 0.

4.4.5.2 SMS Timers (Hidden in the EEPROM)

A number of new EEPROM parameters will be available to adjust SMS Timing parameters as described below.

Parameter	Description of Function	Range of values	Default
Validity Period	Length of time the SC shall guarantee the message existence in the SC memory before delivery to the recipient has been carried out.	0 to 143 (VP + 1) x 5 minutes (i.e. 5 minutes intervals up to 12 hours) 144 to 167 12 hours + ((VP -143) x 30 minutes) 168 to 196 (VP – 166) x 1 day 197 to 255 (VP – 192) x 1 week	7 days

VPF	Defines Format of Validity Field	0-3	2
PID	Protocol Identifier	0-255	0
Address type	Bits 6, 5, 4 specify Type-of-Number Bits 3, 2, 1, 0 specify Numbering-Plan-Identification	N/A	0x80
Timer T10	Minimum delay time between the accepting of the call and the sending of the first FSK-Frame. T10min = n x 100 ms;	n = 1..256	10
Timer T11	Minimum delay time between two successive FSK-Frame. T11min = n x 100 ms; ETSI recommedation minimum 100ms	n = 1..256	2
Timer T12	Packet response timer during a call; T12min = n x100ms; ETSI recommendation 4000 ms	n = 1..256	40
Call Setup Timer	Packet response timer when the phone has Dialed out and is awaiting a response from the service centre. The timeout is a multiple of 1s.	1..256	30

4.4.5.3 MSG ALERT

An audible alert can be selected on receiving and/or sending of text messages

- Select “MSG ALERT”
- Select “ON” or “OFF” and validate

Note: No audible alert tone on message sent required

4.4.5.4 SEND SERV

The user has the ability to select the send centre to be used for the transmitting of messages.

- Select “SEND SERVICE”
- Select “SEND1” or “SEND2” and validate

However, if both send centre numbers are identical when shipped from the factory, then neither the SEND SERVICE selection menu, nor the SEND 2 option sub-men under the SEND service menu will be displayed to the user. Only the SEND 1 number will be available for the user to change. In this case the SMS SETTINGS menu option will be as shown below.

SMS SETTINGS	MSG ALERT	ON	
		OFF	
	RCV CENTRE	RECEIVE 1	NUMBER ?
		RECEIVE 2	NUMBER ?
	SEND CENTRE	SEND 1	NUMBER ?
	TERMINAL NO	NUMBER ?	

Note that the menus will not be disabled if the user changes the SEND numbers to be identical at a later date. In this case the menus will remain.

4.4.5.5 RCV CENTRE

The number of the ser e centre from which ve messages can be entered. A maximum of two service centres will be min es. Note bo service centres will be active to r eive message

- Select “RCV C

- Select ”RECEIVE 1” or “RECEIVE 2” and validate
- Modify & validate the service centre number
- Press **KEY_OK** to confirm

On entering either Receive 1 or Receive 2 Centre numbers, the user should have the ability to clear the previously entered number i.e. a zero length string will be permitted.

A new EEPROM parameter will be defined to hide the SMS service centre menus. A single parameter will be maintained which effects both of the RCV CENTRE numbers as well as both of the SEND CENTRE numbers.

In addition, if both RCV CENTRE numbers are identical when shipped from the factory, then RECEIVE 2 option under the RCV CENTRE menu will not be available to the user. Only the RECEIVE 1 option w

In

SMS SETTINGS	MSG ALERT	ON	
		OFF	
	SEND SERVICE	SEND 1	
		SEND 2	
	RCV CENTRE	RECEIVE 1	NUMBER ?
	SEND CENTRE	SEND 1	NUMBER ?
		SEND 2	NUMBER ?
	TERMINAL NO	NUMBER ?	

D

Note that the menus will not be disabled if the user changes the RECIEVE numbers to be identical at a later date. In this case the menus will remain.

4.4.5.6 SEND CENTRE

The number of the service centre from which to receive mess
service centres will be supported for outgoing messages.

- Select “SEND CENTRE”
- Select ”SEND 1” or “SEND 2” and validate.
- Modify & validate the service centre number
- Press **KEY_OK** to confirm

A new EEPROM parameter will be defined to hide the SMS service centre menus. A single parameter will be maintained which effects both of the RCV CENTRE numbers as well as both of the SEND CENTRE numbers.

In this case the SMS SETTINGS menu option will be as shown below.

SMS SETTINGS	MSG ALERT	ON	
		OFF	
	SEND SERVICE	SEND 1	
		SEND 2	
	TERMINAL NO	NUMBER ?	

Default value will be that the display of the service centre menus will be ENABLED.

4.4.5.7 TERMINAL NUMBER

The user can enter the network specific default sub-address.

- Select “TERMINAL NO”
- Modify the terminal number, the values can be 0, 6..9
- Press **KEY_OK** to confirm

A new EEPROM parameter will be defined to hide the Terminal number menu.

In this case the SMS SETTINGS menu option will be as shown below.

SMS SETTINGS		ON	
		O	
	SEND SERVICE	SEND 1	
		SEND 2	
	RCV CENTRE	RECEIVE 1	NUMBER ?
		RECEIVE 2	NUMBER ?
	SEND CENTRE	SEND 1	NUMBER ?
		SEND 2	NUMBER ?

Default value will be that the display of the Terminal Number menu will be ENABLED.

4.4.5.8 SENDING MODE (Hidden in the EEPROM)

The number used to dial the sending service centre will be generated according to a sending mode parameter. The dialed number is generated from a combination of the SEND CENTRE number, selected either from SEND 1 or SEND 2, the terminal sub-address, and the default DMI value. The parameter will be stored in EEPROM, but will not be changeable by the user. The sending mode will define

- whether the last two digits of the SEND CENTRE number will remain or be removed
- whether the sub-address of the terminal will be appended
- whether the default DMI value of zero will be appended

The default sending mode will be to keep the last two digits of the SEND CENTRE number, and append both the sub-address of the terminal and the default DMI.

4.4.5.9 RECEIVING MODE (Hidden in the EEPROM)

The number used to compare the incoming SC number will be generated according to a receiving mode parameter from the selected RECEIVE CENTRE number. The parameter will be stored in EEPROM, but will not be changeable by the user. The receiving mode will define whether the last two digits of the RECEIVE CENTRE number will remain or be removed during the number comparison.

The default receiving mode will be to use the last two digits of the RECEIVE CENTRE number in the comparison.

4.5 SETUP

- Select "SETUP"

- In idle, all the handsets which registered to the same base can enter the “SETUP” menu in the same time, and the last setting will be validated.

4.5.1 BASE VOL

This menu enables you to adjust base ring volume

- Select "BASE VOLUME" and validate
- Select the desired volume (VOLUME OFF or VOLUME 1 to 5) and validate

4.5.2 BASE MEL

This menu enables you to select base ring melody

- Select "BASE MELODY" and validate
- Select the melody of your choice (1 to 5) and validate

4.5.3 DEL HS

You can cancel a handset’s association with a base to allow another handset to be associated

- Select "DEL HANDSET" and validate
- Enter the PIN code and validate
- Select the handset to be cancelled and validate

4.5.4 PIN CODE

The base PIN code is used in subscription operation or to modify some critical parameters in the base.

To change the PIN code:

- Select "PIN CODE" and validate
- Enter the old 4 figure confidential code and validate
- Enter the new 4 figure confidential code and validate
- Enter the new confidential code a second time and validate
- The user may cancel out of the PIN code entry, using a long press of the <KEY_CLEAR>

4.5.5 Dial mode selection (This mode will not appear when set the Pulse dialling disable by EEPROM)

Two types of dialling are available:

1. DTMF tone dialling
2. Pulse dialling

To change the dialling mode:

- Select “DIALMODE” and validate
- Select “TONE” or “PULSE” of dial mode and validate

FTXX_DIAL_MODI : selected by EEPROM data

Note: the Dial mode selection menu can be hidden to lock the base into pulse or DTMF dialling by the CONFIG_ENA_MENU_DIALMODE flag (see various factory settings).

4.5.6 Recall duration selection

- Select "RECALL"
- Choose RECALL 1 to select short flash time
- Choose RECALL 2 to select long flash time

RECALL 1 & 2 timing : selected by EEPROM data

Note: not recall select function in if RECALL 1 & RECALL 2 is same timing. The recall menu will be hidden from the user in this case.

4.5.7 Default settings

This function will not be available when the handset is out of range of the base or unregistered.

This menu enables you to reset both handset and base with default settings.

By SET UP menu,

- Select "DEFAULT"
- Enter the base PIN code and validate
- "CONFIRM ?" appears, press **KEY_OK** to confirm

By quick default,

- Press and hold * key when insert the battery for 5 seconds, “DEFAULT” appears, then “CONFIRM?”, press **KEY_OK** to confirm

Then the handset and base will apply default parameter settings and make a software RESET.

Default parameter	**Value**
Handset name	TBD
Low battery indicator	ON
Out of range indicator	ON
Key click	ON
Auto answer	ON
INT melody	1
INT volume	3
EXT melody	1
EXT volume	3
ear volume	3
Language	English
Phonebook	Empty
CLID list	Empty
Redial list	Empty
PIN CODE	0000
PAUSE	3 s
dial mode	DTMF(Tone)
Key lock	OFF
CLOCK	00 :00
ALARM	OFF
RECEIVE 1	tbd
RECEIVE 2	tbd
SEND 1	tbd
SEND 2	tbd
SEND SERVICE	SEND 1
MSG ALERT	ON
TERMINAL NO	0
SENDING MODE	3 (Dial SMS-C number + senders SA digit + DMI mode 0)
RECEIVING MODE	0

Default values in handset and base are defined by EEPROM settings [1]. So they can be adjusted for each country.

The following table contains the default values to be used for new EEPROM parameters, see also CID parameter defaults and SMS Timing Default values.

Default parameter	**Value**
RECEIVE 1 Network Type	0
RECEIVE 2 Network Type	0
SEND 1 Network Type	0

SEND 2 Network Type	0
Date	01-01
PB Match with #	ENABLED
PB Match with *	ENABLED
PB Match with 'P'	ENABLED
VMWI Base LED Flash	ON
"In call" Base LED Flash Rate	500ms
"Event" Base LED Flash Rate	750ms

4.5.8 RCID (MENU can be enabled or disabled by EEPROM)

This feature provides the opportunity to enable or disable Russian CID. Menu can be enabled or disabled by EEPROM.

- Select "RCID"
- Select "ON" for enabling Russian CID mode
- Or select "OFF" for normal CID only
- If the Russian CID mode is selected, the number 255 will be sent to the line atuomatically. Furthermore, the following submenu is available:

NUM LENGTH	5 … 7
RING DELAY	0 … 9

Note:
1. If RCID is set to on, it is equal to select Russian CID auto mode. In this case, user is able to set RING DELAY. Incoming CID will be shown on the display after certain rings set by user.
2. If RCID is set to off, it is equal to select Russian CID manual mode, in this case, RING DELAY will not be significant. The incoming CID information is only shown on the display after user take the line or TAM seize the line.
3. When the answering machine answers the call and the incoming number is identified, the display should show this incoming number instead of "SCREEN?". When the caller leaves a message, "SCREENING" is displayed.

4.5.8.1 RCID ON (AUTO MODE)

- If to set auto mode in RUS CID, so Ring delay will follow RING DELAY setting. The ring delay in answering machine is set to e.g. 2, so after 2 rings the answering machine will switch on, RCID procedure starts, the incoming number will be displayed and start OGM.

4.5.8.2 RCID OFF (MANUAL MODE)

- If to set manual mode in RUS CID, so Ring delay will be 0. The ring delay in answering machine is set to e.g. 4, so if after 2 rings the recipient will pick up the handset, RCID procedure starts, the incoming number will be displayed but answering machine won't switch on.
- If to set manual mode in RUS CID, so Ring delay will be 0. The ring delay in answering machine is set to e.g. 4, so if after 2 rings the recipient will pick up the handset on the parallel connected terminal equipment, RCID procedure starts, the incoming number will be displayed but answering machine won't switch on.

4.5.8.3 NUM LENGTH

- Select number length between 5 … 7, the max number length of CID received will be limited to the selected value.
- Number with length longer than the set value will be ignored.

4.5.8.4 RING DELAY

- Select ring delay between 0 … 9, the answering machine will switch on after the corresponding number of rings if RCID is set to ON.

Technical requirement for the RUS CID:

1. For the terminal equipment, which forms and transfers in the communication line a frequency signal «Search» with the purpose of automatic definition of number of the causing subscriber, the following requirements should be carried out:
1.1. Frequency of a signal «Search» should be (500±2,5) Hz.
1.2. The level of a signal «Search» in points of connection to the communication line should not exceed 0 dBm.
1.3. The signal «Search» should have the sine wave form.
1.4. Transfer of a signal «Search» to the communication line should occur in one of the following modes:
- At removal a microtelephone tube by the subscriber;
- At imitation answer of the caused subscriber by an answering machine, the modem or the fax - modem;
- At the answer of the caused subscriber to parallel connected terminal equipment.

Technical requirement for the answering machine:

2. If the terminal equipment provides the automatic answer to an entering call in this mode the following requirements should be carried out:
2.1. The terminal equipment should close a train of the communication line at receipt no more than six parcels of a calling signal.
2.2. After short circuit of communication line train the terminal equipment should transfer the causing subscriber the proceeding message. If during transfer of the proceeding message or during recording the entering message the terminal equipment is going to a colloquial mode, the answering machine should be disconnected.
2.3. The release and clearing of the communication line on the part of terminal equipment should occur at receipt of a signal «Is busy» or upon termination of time of recording of the entering message established by the manufacturer.
2.4. In a mode without recording the entering message the release and clearing of a line on the part of the terminal equipment should occur upon termination of reproduction of the proceeding speech message.

4.5.9 ECO MODE

- Select “ON” or “OFF” and validate
- When “ON” is selected, ECO Mode in Base will be activated.

Technical requirement of ECO mode:

1. ECO Mode in Handset
   Handset will be automatically in ECO mode according to the RSSI value during communication with base. For example, if handset talking with external line, handset will monitor the Received Signal Strength (RSS) of the traffic channel. If the RSS value is larger than RSSI threshold which set in EEPROM, handset will enter ECO mode automatically, handset MCU will control RF transceiver to decrease the transmit power.
   - Handset will check ECO mode when find the registered base in first time.
   - Handset cannot toggle ECO mode in idle and standby mode.
   - Handset will try to enter ECO mode when handset is talking with base, entering Base setting, access TAM and enter SMS menu.
   - Handset ECO mode will not be affected by base, that means if there is more than one handset register to base, different handsets enters to ECO mode based on their RSSI received.
   - Handset ECO feature can be disabled if RSSI threshold is set to MAX value in EEPROM.
2. ECO Mode in Base through operating the menu in Handset
   There is one Low Power menu in Base Setting to let user enable or disable Base ECO mode manually. Base cannot enter ECO mode automatically like handset.
   - If ECO mode is enabled in base by factory default, base will enter Low Power mode when power up.
   - If ECO mode is enabled in base, there is ECO icon in handset LCD dashboard to replace normal antenna icon.
   - If ECO mode is disabled in base, base will be in normal TX power mode.
   - If there is any one Handset is talking with base, Base ECO mode cannot be accessed by any

other Handsets.
- Base ECO mode feature can be disabled by base EEPROM.

4.6 HANDSET

- Select "HANDSET"

4.6.1 BEEP

Beep features
The handsets may or may not emit beeps while the keys are pressed , the batteries are low and when the handset is out of range of the base.

4.6.1.1 KEYTONE

- Select "KEYTONE" and validate
- Select “ON” or “OFF” and validate

4.6.1.2 LOW BATTERY

- Select "LOW BATTERY" and validate
- Select “ON” or “OFF” and validate

4.6.1.3 OUTRANGE

- Select "OUT RANGE" and validate
- Select “ON” or “OFF” and validate

4.6.2 INT RING VOL

This menu enables you to adjust handset ring volume (intern melody)

- Select "INT RING VOL" and validate
- Select the desired volume (VOLUME OFF or VOLUME 1 to 5) and validate

4.6.3 EXT RING VOL

This menu enables you to adjust handset ring volume (extern melody)

- Select "EXT RING VOL" and validate
- Select the desired volume (VOLUME OFF or VOLUME 1 to 5) and validate

4.6.4 INT MELODY

This menu enables you to choose a different melody for internal call

- Select "INT MELODY" and validate
- Select the melody of your choice (1 to 5) and validate

4.6.5 EXT MELODY

This menu enables you to choose a different melody for external call

- Select "EXT MELODY" and validate
- Select the melody of your choice (1 to 5) and validate

4.6.6 CLOCK SET

Clock setting is 24-hour format.

- When enter Clock setting mode, LCD display current time with flashing hour indication.
- Enter the current time by 24-hour format and validate. And same time, the update data send to base to keep for all the handset to have same clock.

- If the CLIP data has time data, the clock shall be updated by CLIP time data.
- The time data shall be kept at base unit and when the handset turned on, the time data shall be transferred from base to handset.

4.6.7 ALARM SET

This menu makes the handset to have alarm clock feature.

- Select ON or OFF and validate
- If select ON, then the menu go to alarm time setting mode
- Time setting is same as Clock setting

4.6.8 AUTO ANSWER

When there is an incoming call and the handset is on the base, the phone automatically takes the line.

- Select "AUTO ANSWER" and validate
- Select "ON" to activate "OFF" to deactivate and validate

4.6.9 NAME

This function allows you to personalise each handset.

- Select "NAME" and validate
- Enter the name and validate (max 10 chars)

4.6.10 LANGUAGE

The function allows you to personalise the language.

- Select "LANGUAGE" and validate
- Select the language of your choice and validate

The languages, which require to be supported, are listed in priority order below. The number of languages supported will be 17.

- English
- Dutch
- French
- German
- Italian
- Spanish
- Greek
- Russian
- Danish
- Finnish
- Swedish
- Norwegian
- Polish
- Czech Rep
- Slovakia
- Portuguese
- Hungary

4.6.11 DATE SET

- Select "DATE SET" and validate
- Entering the date will be according to the DATE FORMAT setting for the handset i.e DD-MM or MM-DD

- The current date will be displayed as 01-01
- Enter the new date and validate. Note that during date entry, the user will be prevented from entering an invalid date in each of the DD or MM parts. For DD, the values 01-31 are valid and for MM, the values 01-12 are valid. Date validation will be performed for each month. An error beep should be given to the user on each invalid number entry and the user will be required to re-enter a valid number. The user can cancel out of date entry at any point, by the use of the <KEY_CLEAR>
- Note that when in using a HS with previous Base version, this menu will not appear. When using a previous HS with the new Base version, the old handset will not use the new date setting, even though it is supported by the base.
- Note also that this function will not be available when the handset is out of range or unregistered.

4.6.12 HOT KEYS

This function allows you to edit the 2 Hot Key number.

- Select Hot Key 1 … 2 and validate
- Enter the number to be stored and validate
- The Hot Key will be automatically enabled after storing the number.

4.6.13 KEY LOCK

This function allows you to lock the key

- Select "KEY LOCK?" and validate
- Press **KEY_MENU/OK** to lock key,  icon displayed and go to standby mode.

Note :Press **KEY_HOOK** key can be OFF HOOK during incoming call and KEY LOCK is on.

4.6.13.1 Quick KEY LOCK

Simply press and hold **KEY_STAR/LOCK** 3 second

4.6.13.2 To unlock key:

- Press any key “PRESS ✳” is displayed, within 5s time out
- Press **KEY_STAR/LOCK** to unlock key

4.7 REGISTER

- Select "REGISTER" and validate
- Select “SELECT BASE” or “REG BASE” by KEY_UP or KEY_DOWN
- Press KEY_OK to confirm

4.7.1 SELECT BASE

- Select "SELECT BASE" and validate
- “BASE 1 2 3 4” is displayed (only the registered base number will be shown and current base number will be blinking)
- Press 1 - 4 to confirm the selection or KEY_UP/KEY_DOWN + KEY_F to select auto searching.
- Valid tone is sounded if valid base is found
- “NOT REGISTER” is shown and error tone sounded the selection is invalid

4.7.2 REG BASE

- Select "REG BASE" and validate
- “BASE 1 2 3 4” is displayed (only the registered base number will be blinking)
- Press 1 - 4 to confirm the selection
- It is now searching the base in subscription mode and “SEARCHING…” is displayed

- Valid tone is sounded and “PIN ?” is shown if valid base found
- Enter subscription PIN code and verified by base
- Valid tone sounded if subscription is successful and back to standby mode.

On the base:

- Put the base into subscription mode, by pressing and holding **PAGE_KEY**
- The base will then emit a beep, the Line LED will flash. It is now ready to be associated with a new handset, during the 90 seconds after pressing the button only.

If the handset has located the base, a valid tone is played.
If the handset does not locate the base, it will return to the previous configuration after 1 minute. Try again by changing the base number and check that you are not in a environment where there is interference

When a handset is associated with a base, it is given a handset number by the base. It is this number which is displayed on the handset after the name and must be used for internal calls.

5 Answer machine features

5.1 Base description

5.1.1 One digit 7 segment LED Display on the base unit

5.1.2 LED

- In sue indication

5.1.3 Buttons for TAM control

- Answer On/Off
- Volume Up
- Volume Down
- Skip Backward
- Skip forward
- Stop
- Delete
- OGM
- Play

5.1.4 Supervisory tone duration

- Long beep ---------- 700mS
- Short beep ---------- 125mS
- Error tone ---------- 4 times Short beep with 100ms pause
- Message alert tone ---------- 300mS

5.1.5 Voice prompts (It is available by EEPROM setting)

All of the prompts are played to line or handset or both.

Table 1 Audible Indications

Nr	Context	Prompt	To line?	To H/S ?
Message recording and play back				
1.	Message recording	*"Hello, your call cannot be taken at the moment so please leave your message after the tone"*	Y	Y
2.	Message recording	*"Hello, your call cannot be taken at the moment and you cannot leave a message so please call later"*	Y	Y
3.	Message recording	*"Please speak after the tone"*	Y	Y

Nr	Context	Prompt	To line?	To H/S ?
4.	Message recording	*"To end recording press #"*	Y	Y
5.	Message playback	*"You have no/one/'n' (new) messages"*	Y	Y
6.	Message playback	*"Message 'x'"*	Y	Y
7.	Message playback	*"Message deleted"*	Y	Y
8.	Message playback	*"End of messages"*	Y	Y
9.	Message playback	*"To delete all messages, press delete"*	Y	Y
10.	Message playback	*"All messages deleted"*	Y	Y
Line remote interrogation				
11.	Remote access	*"Please enter your security code"*	Y	
12.	Remote access	*"Incorrect security code"*	Y	
13.	Remote access	*"To hear main menu, press 1"*	Y	
14.	Remote access	*"To delete all messages, press 5"*	Y	
15.	RA Main menu	*"To play all messages, press 2"*	Y	
16.	RA Main menu	*"To play new messages, press 3"*	Y	
17.	RA Main menu	*"To skip back during messages, press 4"*	Y	
18.	RA Main menu	*"To delete during messages, press 5"*	Y	
19.	RA Main menu	*"To skip forward during messages, press 6"*	Y	
20.	RA Main menu	*"To set Answer on or off, press 7"*	Y	
21.	RA Main menu	*"To hear the outgoing message menu, press 8"*	Y	
22.	RA Main menu	*"To set a new security code, press 9"*	Y	
23.	RA Main menu	*"To hear main menu again, press 1"*	Y	
24.	RA Main menu	*"To set new security code, press Star. To hear your security code, press #"*	Y	
25.	RA Main menu	*"Please enter new security code after the tone"*	Y	
26.	RA OGM menu	*"To Play outgoing message, press 2"*	Y	
27.	RA OGM menu	*"To record answer and record outgoing*	Y	

Nr	Context	Prompt	To line?	To H/S ?
		message, press 3”		
28.	RA OGM menu	*“To record answer only outgoing message, press 4”*	Y	
29.	RA OGM menu	*“To select answer and record outgoing message, press 5”*	Y	
30.	RA OGM menu	*“To select answer only outgoing message, press 6”*	Y	
31.	RA OGM menu	*“To hear the outgoing message menu again, press 8”*	Y	
32.	RA OGM menu	*“To hear main menu again, press 1”*	Y	
33.	Various	*“zero” (as in security code)*	Y	Y
34.	Various	*“oh” (as in "three oh five pm")*	Y	Y
35.	Various	*“one” to “fifty nine”*	Y	Y
36.	Various	*“Sunday" to "Saturday”*	Y	Y
37.	Various	*“On”*	Y	
38.	Various	*“Off”*	Y	
39.	Various	*“am”*	Y	
40.	Various	*“pm”*	Y	

5.2 Base unit operation

5.2.1 Display

(7 segment LED)

- No messages ----------→ “0”
- Answer on with messages (Less than 9) -→ Number of messages
- Answer on with messages (More than 9)--→ “9” flashing
- Answer off ----------→ “-“ and “X” flashing slow
- Answer off with more than 9 message ------→ “-“ and “9” flashing slow
- Memory full ----------> “F“ and “X” flashing slow
- Memory full with Answer off ----------> “-“ and “F“ flashing slow
- During Play back ICM ----------→ Message number (If more than 9, just indicate “9”)
- During Play back OGM ----------→ OGM number and “P” flashing
- During remote interogation----------→ “A” flashing (Line and Handset)
- During recording OGM, ICM and Memo --→ “r” Flashing
- Without time setting ----------> “F” or “X” or “-“ and “C” flashing slow

- During volume control ----------> “0” “1” ----“9” “H”

Flashing slow: 1.75S / 0.25S
Flashing : 0.5S/0.5S
X=number of messages

5.2.2 In sue LED indication

- Power on the unit ----------> Turn on
- During OFF HOOK ----------> Flashing (0.5S/0.5S)

5.2.3 Key Operation

Answer On/Off: Answer On/Off setting only
Volume Up: Loud speaker volume control only
Volume Down: Loud speaker volume control only
Skip Backward:
Short press during idle: Play the message alert setting or no action
Short press during play: Skip backward the message
Long press during idle: Go into Message alert On/Off setting or no action
Long press during play: same as short press

Skip forward:
Short press during idle: Play the current Ring delay setting
Short press during play: Skip forward the message
Long press during idle: Ring delay setting mode
Long press during play: same as short press

Stop:
Short press during idle: Play the current day and time setting
Short press during play: Stop to play message
Long press during idle: No action
Long press during play: same as short press

Delete:
Short press during idle: Play the current security code setting
Short press during play: Delete the message
Long press during idle: No action
Long press during play: same as short press

OGM:
Short press during idle: Play the current setting OGM
Short press during play: No action
Long press during idle: Go into OGM selection and recording mode or OGM recording mode
Long press during play: No action

Play:
Short press during idle: Start to play the new messages
Short press during play: Pause to play messages
Long press during idle: Start to play all messages
Long press during play: same as short press

5.2.4 Stop

When the unit is carrying out an operation started at the base, operation of the STOP button shall generally cause the unit to abandon the function and reset to the previous answer mode. One short beep will be heard. *Examples* of functions affected and the effects are:

Message play	Unit abandons message play with all messages saved.
Message paused	Unit abandons message play with all messages saved.
OGM Play	Unit abandons outgoing message play.
ICM record	STOP is ignored.

Pressing STOP on the base will NOT affect operations started from the handset.

Remark: The messages are deleted during playing messages. The message cannot be recovered by any means.

5.2.5 Volume control

- An electronic volume control shall be provided on the base unit. Eleven different settings (0 – 9+H) shall be provided to regulate the loudspeaker volume level. If the base has seven-segment, the LED display shall show “0” for off, then “1” - “9” and “H” for the maximum setting.

- When the volume control is set at its minimum (0) position there will be no audible output during call screening and during remote interrogation, but there will be a level 1 (audible) output from the loudspeaker during other operations (examples are outgoing message check, message play etc). After such operations (played at level 1), the volume shall retain its previous 0 setting for call screening (and remote interrogation) if the volume control has not been adjusted.

- During outgoing message check, message play (including the wait period at the end of playback), and voice prompts, any adjustment of the volume control by the user will cause the volume to increase or decrease from the low volume setting. When the operation is completed, the new setting for the volume control shall be stored.

- If the volume control is adjusted during the idle mode, the unit shall emit a short beep for each step in the volume setting. As the volume control is increased, the beep gets louder and as the volume control is decreased, the beep gets quieter. At the quiet and loud end-stops, the unit emits two beeps (H level for maximum setting).

- If the volume up or down button is held down the settings will change at the rate of two steps per second. If the button is pressed and released rapidly then the settings will change at the same rate as the button presses.

- The base loudspeaker volume control is only for base and handset receiver volumes shall be independent.

5.2.6 Answer delay

The unit shall have a selectable delay of between 2 and 9 rings or Time Saver by press and Hold “SKIP FORWARDS” button. Press “SKIP FORWARDS” button for check the setting of Answer delay.

- The default setting at power up or hard reset shall be 6 rings. (According to EEPROM setting)

- The Time Saver protocol shall answer calls after 6 rings if no new messages have been recorded or 2 rings if new messages have been recorded.

- When enter to the Answer delay setting mode by hold press “SKIP FORWARDS” button, after that, each short pres “SKIP FORWARDS” button to increase one step for answer delay with announcement. The order shall be as follows.

  2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - TS - 2 - 3 -------

- No action for about 2 second, the unit shall announce “Calls will be answer after X rings” and return to idle.

- If keep pressing “SKIP FORWARDS”, the unit count up the setting about one to two step per second until release the button.

5.2.7 Message Alert setting (If set “No Voice prompt, this function shall not be available)

The unit shall have the facility to sound an audible alert when new messages have been received. This shall be at the volume set by the control for the base unit tone caller.

The Message Alert shall default to OFF at power up and can be turned “On” or “Off” by press and Hold “SKIP BACKWARDS” button. Short press “SKIP BACKWARDS” button for check the setting of Message alert.

When the Message Alert feature is ON, the alert tone will be played only when the product is idle on condition that there is new message or memo has been recorded.

The message alert tone shall stop sounding as soon as the user starts message play at the base or handset. After message play the message alert will not sound (even if switched on) if all new messages have been partly played back (i.e. part of each actual message). The message alert tone shall then stay silent until a new message is received even if messages are saved.

If the Message Alert feature is set to ON and new messages are waiting to be played (i.e. the tone is sounding), playing part of each new message through remote interrogation shall silence the sound.

5.2.8 Answer on/off setting

The default setting is Answer on. When switched to Answer On, the product shall answer calls according to the answer delay setting. As the unit is supplied with a two type of pre-recorded outgoing message, it shall always be possible to switch the unit to Answer on mode.

When the unit is idle and set to Answer On, the 7-segment LED shall indicate the number of messages recorded. If the recording capacity is full, the display will flash “F” slowly alternating with the number of messages and Handset displayed “Answer machine on" icon.
When the unit is idle and set to Answer Off, the 7 segments LED shall indicate one bar in the mid-position flashing slowly alternating with the number of messages.

- **Switching Answer on/off at base** The product shall be capable of being switched to and from the answer mode by means of the Answer on/off button on the base. In the idle state, operation of the Answer on/off button shall toggle the unit to and from the Answer On mode. When the unit is set to Answer Off and the user presses the button the unit shall announce “*Answer on*” followed by the current outgoing message and switch to Answer on. When switching to Answer Off the unit shall announce just “*Answer off*”.

- **Switching Answer on/off remotely**. This is described under "Remote Switch On" below in this document.

- If the unit was set to Answer On before a call but the memory capacity is full then the unit will continue to answer normally but will play the Answer Only message *"Hello, your call cannot be taken at the moment and you cannot leave a message, so please call later".* It will only revert to Answer and Record answering after the user deletes some messages (locally or remotely).

- If the unit is “No voice prompt” and memory capacity become full then the unit will change to Answer OFF mode. It will change back to Answer ON mode by deleting messages. To delete messages, it is possible to delete by Local, Handset remote or line remote interrogation.

Remark: The unit shall normally revert to the previous answer setting at the end of any answered call. However, if a caller remotely accesses the machine and sets it to Answer Off or On then it shall stay in that mode.

If set to “No voice prompt”. The operation will be as follows

The default setting is Answer OFF. When switched to Answer On, the product shall answer calls according to the answer delay setting. It shall always be possible to switch the unit to Answer on mode when there is recorded OGM. However, if user does not record the OGM, it is not possible to set to Answer ON mode. There will be error tone when user try to set to Answer ON mode without OGM.

When there is OGM and set to Answer On, the unit shall play recorded OGM and set to Answer ON.

5.2.9 Outgoing message

5.2.9.1 Recording OGM.

It shall be possible to record the outgoing message by pressing and holding the OGM button to enter the OGM selection mode first and then press and hold the Skip backward or Skip forward button. The skip backward is for “Answer and record” OGM, the Skip forward is for “Answer only” OGM. The operation of the button causes the prompt *“Please speak after the tone. To end recording, release the button”* to be given. The user is then informed that recording can commence by a long tone. Once recording has started, the previous user OGM cannot be retrieved.

(If set “No Voice prompt, this function shall be as follows)

It shall be possible to record the outgoing message by pressing and holding the OGM button The user is then informed that recording can commence by a long tone and stop recording by release the button. Once recording has started, the previous user OGM cannot be retrieved.

If the memory is full when try to record the OGM, the unit shall emit the error tone. If during recording the OGM, the memory capacity reach to full, the unit shall emit the L_beep and stop recording.

5.2.9.2 Checking OGM.

Pressing and releasing the OGM button briefly the unit shall announce, *“ Your answer and record outgoing message is”* or *“Your answer only outgoing message is”,* then the OGM message. The display on the base shall show “P” and OGM number (Answer and record is 1, Answer only is 2) during these prompts and the outgoing message playback (Only for Category 2). STOP can be used to stop the outgoing message play.

If set to “No Voice prompt”, the operation shall be as follows.

Pressing and releasing the OGM button briefly the unit shall play current recorded OGM. If the unit does not have recorded OGM, it will be error tone. The display on the base shall show “P” during playing OGM or if no OGM, it shall indicate “E”

Deleting OGM. **(If set “No Voice prompt, this function shall not be available)**

The current (user's own) outgoing message can be deleted by pressing the Del button on the base whilst the OGM is playing. The outgoing message will stop and a single short beep will be heard, then *"Your answer and record outgoing message is",* if answer and record outgoing message is being deleted, followed by the default outgoing message. If the default OGM is playing the Del button will be ignored.

Selecting OGM (If set “No Voice prompt, this function shall not be available)

Pressing and hold the OGM. On/Off button, the unit will announce, *"Please select outgoing message*". Then, the user may press Skip forward to select Answer Only Outgoing message or Skip backward to select Answer and Record Outgoing Message. Then, the unit will play the OGM as same as checking OGM.

5.3 Call answering and message recording

- When switched to the answer ON mode, the product shall answer calls according to the selected answer delay and the outgoing message shall be played 1 second after the line has been seized. If the default outgoing message (Answer and record mode) is being used it shall be *"Hello, your call cannot be taken at the moment so please leave your message after the tone"*.

- The OGM can be skipped by detecting # DTMF tone. So, during playing the OGM, if the unit detect # tone, the OGM playing shall stop immediately and an invitation to record tone shall be given.

- After the outgoing message, an invitation to record tone shall be given after which recording shall commence immediately.

- The unit shall stop recording, send L_beep, and release the line when any of the following conditions are detected:

  - Silence for more than X seconds. (X is defined by EEPRON setting)

  - Network tone for more than "X" seconds. ("X" is defined by EEPRON setting)

  - The maximum message length is reached. (The maximum message length is defined by EEPRON setting)

  - Exhaustion of memory

  - End of call signal (ECS)

  The unit shall also stop recording and release the line when an extension off-hook (BPR) signal is detected, but no voice prompt will be played.

- In the case of maximum message length the unit shall send L_beep and release the line.

- If the recording capacity is exhausted during recording, the unit shall send L_beep to line and release the line. Valid messages (see below) shall be indicated and saved.

- All messages and memos will be day and time voice stamped at beginning or end of each message depended on EEPROM setting.

- When a CLI is received containing the current time, the time stamp will be updated to the time delivered in the CLI information. The day part of the stamp will remain unaltered.

- At the end of the call, the unit shall automatically reset to the previous answer mode unless the memory capacity is full. In these circumstances, the unit shall revert to answer only mode and play the outgoing message *"Hello, your call cannot be taken at the moment and you cannot leave a message so please call later"*.

- The sequence of playing message and day and time stamp is country dependent.

- When switched to the answer ON mode with Answer only mode, the product shall answer calls according to the selected answer delay and answer only outgoing message shall be played after the line has been seized. If the default outgoing message is being used it shall be *"Hello, your call cannot be taken at the moment and you cannot leave a message so please call later"* and will wait 8 seconds to allow remote interrogation before release the line.

- If the unit is in Answer Off mode before a call then it will answer after Answer OFF Ring delay setting, then play the outgoing message and record any incoming message. It will only revert to Answer On after the call if the caller sets it to Answer On during remote access. If set to Answer Off and the memory capacity was full before the call then the unit will answer after answer OFF ring delay setting to allow remote access. It will play the Answer only outgoing message, then wait for 8 seconds to allow remote access before releasing the line.

- If the unit is set to "No voice prompt", all announcements shall not play except recorded OGM play. If the memory is full, the unit shall send the error tone and then release the line.

5.4 Memory full

- The definition of memory full is less than 15 seconds recording capacity available before start to record the message. However, if there is more than 15 seconds recording capacity available when start to record the message, it will be memory full during recording the message when use up all the memory.
- If the memory becomes full while the caller is leaving a message the unit shall send "memory is full" announcement and then L_beep and disconnect the line. The unit will switch to memory full mode (see below).
- On releasing the line the unit will also switch to memory full mode if the remaining recording capacity is less than 15 seconds, or there are a total of 59 messages.
- **Memory full mode. (This function is not available if the setting is "No voice prompt")**
  If the memory is full, the unit after seizing the line and playing the memory full (Answer only) outgoing message and will wait 8 seconds to allow remote interrogation. If no interrogation instruction is received, the unit will send L_beep and release the line. If the call is terminated after messages have been deleted so that more than 15s recording capacity is available, the unit reverts to the normal answer mode.
- **Memory full mode for "No voice prompt"**

  If the memory is full, the unit become Answer OFF mode. After the number of ringes for Answer OFF mode, the unit takes line and sending the L_beep message and will wait 8 seconds to allow remote interrogation. If no interrogation instruction is received, the unit will send L_beep and release the line. If the call is terminated after messages have been deleted so that more than 15s recording capacity is available, the unit reverts to the previous answer mode that is before memory become full.

5.5 Message playback

5.5.1 Playback

- When messages have been recorded a long press of the PLAY button on the base shall cause the product to announce *"You have 'n' messages"* (where "n" is the number of the messages) and to commence replay from the start from oldest message recorded. All messages shall be played.

- At the start of each message, the unit shall announce the message number in the recorded sequence e.g. "message 1"
- During message play, the 7 segment displays shall indicate the order number of the message being played: "1" to "9" then "9" flashing for messages 10 onwards.
- Once playback has commenced, a short operation of the PLAY button shall cause the messages to be paused. In the pause mode the 7-segment display flashes “P” and a short beep shall be heard every 10 seconds.
- Replay is continued if the PLAY button is pressed again, but if no instruction is received for 60s the unit automatically reverts to the previous answer mode with all messages saved.
- Functions accepted during the pause mode are summarized below.

    - Press PLAY: The unit continues playback
    - Press STOP: The unit abandons pause and resets to the Answer On mode with the messages saved.
    - Press DELETE: The unit selectively deletes the current message as described below.
    - Press |< SKIP: The unit skips backwards as described below and continues playback.
    - Press SKIP >|: The unit skips forwards as described below and continues playback.

5.5.2 Skip forwards and backwards.

- Skip forwards is controlled by the SKIP >| button. Each time the button is pressed and released, the unit shall stop the current message being played and skip forwards to the start of the next message. If the current message is the last message, the unit shall respond as described under “End of message” below.

- Replay the current message is controlled by the |< SKIP key. During message playback, brief press the |< SKIP key will cause the unit to replay the current message.

- Skip backwards is controlled by the |< SKIP key. During message number playback, pressing the |< SKIP key will cause the unit to play the previous message. However, if after the message number playback, the unit will replay those messages from message number playback.

5.5.3 Fast play

- If the SKIP >| key is pressed and held during the actual message playback, it will play continue at 1.5 times normal speed. If the key is still pressed at the end of a message then the Day/Time stamp and message number will be announced at the normal speed but the next message will be played at 1.5 times normal speed. When the key is released the messages will continue at the normal speed.
- If messages are played and no other key is pressed then all the messages will automatically be saved and indicated on the 7-segment displays. The audible message alert will not sound (even if switched on) if all new messages (including mailbox messages) have been partly played back. Similarly the Time Saver answer delay (if selected) will answer after 6 rings if all new messages have been partly played back.
- If the STOP button is pressed during replay, message play is abandoned and the unit resets to the previous answer mode with all messages saved as described above under “Stop”.

5.5.4 Deleting messages during playback

Messages may be selectively deleted during replay by pressing the DEL button during replay. The unit shall announce, “*Message deleted*” and mark the current message for deletion but not actually delete the message until after the 8-second decision period described below. After

a message is marked for deletion, the unit skips to the start of the next message. If the current message is the last message the unit shall continue as described below.
The message has deletion mark will be deleted when press the stop button or end of the 8 seconds decision period. There is no way to recover it.

5.5.5 End of message play

- At the end of message play and messages remain which are NOT marked for deletion, the unit announces “End of messages. To delete all messages, press delete”. The 7 segment display counts down from “ 8” to “ 0” in one second steps (Category 2 only). During this period pressing the DEL button marks all messages for deletion (unit announces “All messages deleted”) but the countdown continues. If the user does not press DEL before the counter reaches “0” only those messages previously marked for deletion shall be deleted. Pressing STOP at any time during this 8-second period abandons the countdown. The messages will be deleted which have marked for deletion.
- The volume control keys will function during the 8-second wait period at the end of message play but no beeps will be generated as the volume is adjusted.
- At the end of the 8-second decision period the unit will generate one short beep (1S), any messages not deleted by the user are automatically saved and indicated on the message counter and the unit reverts to the previous answer mode.
- If the PLAY button is pressed during the idle mode when there are no messages to be played, the unit announces, *"You have no messages"* and reverts to the previous answer mode.

5.5.6 Playing new messages

It shall be possible to play new messages only by short pressing the PLAY button. The unit shall announce, *“You have ‘n’ new messages”* (or *“You have no new messages”* if this is the case). Where there are new messages to play only these will be played back and shall be paused, skipped, deleted, etc. as above. As an example, if there are 5 messages of which the last 2 are new, the unit will announce, *“You have 2 new messages”*

5.5.7 Setting is “No voice prompt”

If the unit is set to “No voice prompt”, the following function and announcements are not play during playing message.

- Time Day stamp
- Message number announcement
- Delete message instruction
- “You have N (New) message” announcement

5.6 Remote interrogation.

The remote interrogation facilities, which shall be protected by the security code. During remote interrogation from the line, the handset shall display “REMOTE” and only **KEY_TALK** is valid during this mode to interrupt the remote interrogation.

5.6.1 With Voice prompt

- Access to the remote interrogation feature shall be via a break-in instruction at any time following the start of the outgoing message. The break-in code (DTMF *). A maximum of two attempts at entering the correct security code shall be allowed in one call.

- Following acceptance of the break-in code (*), the unit shall suspend its current operation, announce to line "*Please enter your security code"*, and prepare to accept the first digit of the PIN. If no further digits are entered within a further 8-second period, the unit send L_beep and releases the line.

- If less than three digits are entered within an 8-second period, following any DTMF '*', the unit shall announce to line *"Incorrect security code, please enter your security code"*. It shall then prepare to accept the whole PIN again, within a further 8-second period as on the first attempt. The process is as for the first attempt but if the second attempt is unsuccessful then the unit shall announce *"Incorrect security code"* and send L_beep and then release the line.

- When the unit recognises the third DTMF digit the unit shall check the validity of the PIN. If the PIN is incorrect, (and if this is the first attempt), the unit shall announce to line *"Incorrect security code, please enter your security code"*. It shall then prepare to accept the first digit of the PIN again, within an 8-second period as on the first attempt. The process is as for the first attempt but if the second attempt is unsuccessful then the unit shall announce *"Incorrect security code"* and send L_beep and then release the line.

- If the PIN was correct and the unit has new messages, the unit announces "*You have 'n' new message(s)*" and the new messages are played to line. If the caller clears the line during Remote Interrogation, the unit will not hold the line indefinitely. If the caller has cleared the unit shall, at worst, clear after the 8-second period at the end of message playback.

- If the unit does not have any new messages then the unit announces "*You have no new messages"* then *"To hear main menu, press 1"* waits 8 seconds and if no DTMF instructions are received and send L_beep before releasing the line.

- After message play, all messages may be deleted if DTMF 5 is keyed within 8 seconds of the end of the prompt *"End of messages. To delete all messages, press 5. To hear main menu, press 1"*. If DTMF 5 is detected at this stage, "*All messages deleted* "*To hear main menu, press 1*" shall be announced and all the messages just played shall be deleted (new messages only when only new messages have been played). If no instruction is received within 8 seconds the unit shall and send L_beep and release the line.

- If DTMF 1 is received the unit shall play the menu:

  To play all messages, press 2
  To play new messages, press 3
  To skip back during messages, press 4
  To delete during messages, press 5
  To skip forward during messages, press 6
  To set Answer on or off, press 7
  To hear the Outgoing message menu, press 8
  To set a new security code, press 9
  To hear main menu again, press 1

- If DTMF 2 is detected at this stage, "*You have 'n' message(s)"* shall be announced then the messages are played. At the end of the replay the unit shall offer the opportunity to delete all messages as above. In this case, *"All messages deleted"* will include new and old messages. If there is no messages to play the unit shall announce, *"You have no messages".*

- If DTMF 3 is detected at this stage, "*You have 'n' new message(s)"* shall be announced then the messages are played. If there is no new messages to play the unit shall announce, *"You have no new messages".*

- During message play, messages will be paused if DTMF 2 is received. The confirmation tone will be heard after 10 seconds, which is repeated every 10 seconds.

- While message play is paused, it will resume if DTMF 2 is received. Confirmation that the DTMF 2 has been detected will be by the user hearing the messages.

- If a message is left paused for more than 60 seconds, all messages shall be saved (except those deleted before the last *"End of messages"* prompt), and send L_beep and then line released.

- During message play or message pause, the current message will be replay if a single DTMF 4 is received during message play. If DTMF 4 is received during message number playing will skip back to the start of previous message. Messages will be selectively deleted if DTMF 5 is received. Confirmation that the message has been deleted will be by the unit announcing, "*Message deleted*" and skipping forward to play the next message, or to the end of message sequence described above. Messages are marked for deletion at this stage but are only actually deleted after the line is released.

- During message play, messages will skip forwards if DTMF 6 is received. Play will skip forward to the start of the next message.

- It shall be possible to interrupt an operation or the remote interrogation menus by sending an appropriate DTMF signal. If the remote menu is being playback, pressing invalid DTMF has no effect (No 4 short beeps). The menu is being played without any interrupt. After the menu is played to end, it waits the user enter the DTMF for 8 seconds, if a DTMF instruction is received which is not valid, then 4 short beeps will be played to line and the count down counter (8 seconds) keeps counting down. After 8 seconds time out, the unit will send L_beep.

- If the end of messages is reached during skip forwards, "*End of messages*" will be played after the DTMF 6 is recognised.

- If the line is released by the unit for any reason prior to the voice prompt signifying the end of messages for current replay, all messages shall be saved (except those previously marked for deletion).

- If the line is released for any reason after the voice prompt signifying the end of messages but before a further replay is initiated, all messages shall be saved (except those previously marked for deletion).

- After the line is released any messages that have not been deleted shall be saved and indicated on the message counters.

- During remote interrogation, the handset shall display "REMOTE" flashing.

- If DTMF 7 is detecting during main menu, the unit shall announce, *"Answer OFF"* if the previous setting is answer on. If the previous setting is answer OFF, the unit shall announce *"Answer On"* followed by current setting OGM play.

- Any valid message recorded before remote interrogation is attempted (successfully or not) shall be saved and indicated after the line is released (unless deleted during remote interrogation).

5.6.1.1 Recording and checking outgoing messages in remote interrogation

- If DTMF 8 is detected at this stage, the unit shall announce:
  To play outgoing message, press 2

To record answer and record outgoing message, press 3
To record answer only outgoing message, press 4
To select answer and record outgoing message, press 5
To select answer only outgoing message, press 6
To hear the outgoing message menu again, press 8
To hear main menu again, press 1

- If DTMF 2 is detected at this stage, the unit shall announce, *"Your outgoing message is"* and play the currently selected OGM.

- If DTMF 3 or 4 is detected, the unit shall announce, *"Please speak after the tone. To end recording, press square"* then play the invitation to record tone to line and start to record. At the end of recording it will announce, *"Your answer and record outgoing message is"* (DTMF 3) or *"Your answer only outgoing message is"* (DTMF 4) as appropriate and play the new message. The answer mode will remain unchanged after the recording: that is, the latest outgoing message recorded will not affect the current answer mode. However, if the memory is full during OGM recording, the unit will announce "Sorry, the memory full". Then, wait the remote interrogation without replay the recording OGM.

- If DTMF 5 is detected, the unit shall announce, *"Your answer and record outgoing message is"* and play the current A&R OGM.

- If DTMF 6 is detected, the unit shall announce, *"Your answer only outgoing message is"* and play the current AO OGM.

- Following any of the outgoing message menu functions as a result of detecting DTMF 2, 3, 4, 5, 6 the product shall announce:

  To hear main menu again, press 1
  To hear the outgoing message menu again, press 8

- If DTMF 8 is detected, the unit shall announce the outgoing message menu.

- If DTMF 1 is detected, the unit shall announce the main menu.

5.6.2 Without Voice prompt

All the operation shall be same as above except voice prompt and some menus as follows. So the operation shall be as follows.

DTMF 2 ------ Play all messages
DTMF 3 ------ Play new messages
DTMF 4 ------ Skip back the message playing (This is only valid during playing messages)
DTMF 5 ------ Delete the message (This is only valid during playing messages)
DTMF 6 ------ Skip forward the message playing (This is only valid during playing messages)

The following functions are not for "No voice prompt"

Answer ON/OFF setting
Outgoing message menu
Security code setting
Main menu

If the unit detect the Digits 1, 7, 8, 9, 0, # or * during remote interrogation, the unit shall send the Error tone to the line.

5.7 Technical requirement

The unit shall have the following function and parameter for EEPROM setting.

5.7.1 Default setting data

The following default data setting shall be inside the EEPROM

- Number of ring cadences for answering the call when the TAM is set to on (XX times)
- Ringer period of incoming call for answering the call when the TAM is set to off (XX S)
- Message alert on/off default setting
- Default OGM (Answer and record or Answer only)
- Default Day setting
- PIN code default data
- Answer and record OGM recording time limit (1- X minutes and no limit)
- Answer only OGM recording time limit (1- X minutes and no limit)
- Incoming message recording time limit (1- X minutes and no limit)
- Memo recording time limit (1- X minutes and no limit)

5.7.2 Setting for countries variance and type of product

- The day and time voice will be stamped at the beginning of each message or end of each message.
- 7 segment LED or single LED for message indication
- With voice prompt or not
- Setting for Message play operation
  - Short press “PLAY” button for New message play and Long press “Play” button for All message play
  - Short press “PLAY” button for All message play and Long press “Play” button for New message play

5.7.3 BPR detection (Branch Phone Detection)

The product shall detect the branch phone OFF_HOOK during answering the call. Once detect the OFF_HOOK, the unit shall release the line. The detection conditions are as follows.

- If the line current to the unit is changing more than 2mA
- The BPR detection shall not enable for “X” ms after TAM has been on line.
- The BPR signal shall be persisted more than “Y” ms for the BPR signal to be valid.

X and Y are defined by EEPROM setting.

X= 0ms - 2000ms (The setting shall be less than 100ms step or less)
Y= 100ms - 1000ms (The setting shall be less than 100mS step or less)

5.7.4 CPC (ECS) detection (End of call signal)

The product shall detect the CPC (ECS) signal during answering the call. Once detect the signal, the unit shall release the line. The detection conditions are as follows.

- Detecting CPC signal duration is more than “X “ ms.
- The CPC detection shall not enable for “Y” second after Tam has been on line.

X and Y are defined by EEPROM setting.

X= 0ms - 200ms (The setting shall be less than 2ms step or less)
Y= 100ms - 1000ms (The setting shall be less than 100mS step or less)

5.7.5 Silence detection

The product shall have silence detection for detecting the silence. If the unit detect silence for more than “X” second during recording the messages, the unit shall release the line. The silence mean if the signal level is below “Y” dB at in put of the device.

The signal frequency is more than 4Khz and less than 250Hz is not treat as voice signal. Therefore, if there is signal that is more than 4Khz or less than 250hz, but the unit still need to detect silence if the voice band signal level is less than “-Y” dB. According to this requirement, it shall have the following LPF and HPF after the AGC. The filet parameter shall be as follows.

- LPF ------ Fc (Corner frequency) ---- about 3.4Khz
  Frequency response ------ more than 18dB OCT

- HPF ------- Fc (Corner frequency) ---------- About 300 Hz
  Frequency response ---------- more than 24 dB OCT

“X” and “Y” are defined by EEPROM setting.

X= 3 seconds - 10 second (1 second step or less)
Y= 0 dB - 40dB (1dB step or less)
(This value is relative value to reference AGC output level)

5.7.6 Tone detection

The product shall have tone detection for detecting the network tone. If the unit detect network tone for more than “X” second during recording the messages, the unit shall release the line. The tone detection parameters are as follows.

- Detecting frequency is “Y” Hz to “Z” Hz
- Tone detector shall detect continues tone and also ON/OFF tone such as busy tone

“X”, “Y” and “Z” are defined by EEPROM

X= 3 seconds - 10 second (1 second step or less)
Y= 300Hz - 500Hz (10Hz step or less)
Z= 500Hz - 750Hz (10Hz step or less)

5.7.7 DTMF detection

The product shall have DTMF signal detection for remote interrogation. The detection parameters are as follows.

- The duration of valid DTMF signal ---------- 50 ms
- The duration of valid inter digit pause ------ 50 ms
- Maximum twist level for detection ---------- +/- 10dB
- DTMF detection sensitivity is as follows
  - If the level is more than “X” dB then it shall be detected
  - If the level is less than “X” -10dB then it shall not be detected

“X” is defined by EEPROM setting

X= 0dB - 20dB (1dB step or less)
(This value is relative value to reference AGC output level)

5.7.8 AGC for recording

The product shall have the following AGC circuit for recording the message.

- Attack time ---------- “X”
- Decay time ---------- “Y”
- Line input level versus AGC output
  Input level ------ 0dBm - -40dB
  AGC output level needs to be less than 6dB level changing
  It is better to have the AGC level control starting level “Z” setting.

“X”, “Y” and “Z” are defined by EEPROM

X= 50ms -300mS (10ms step or less)
Y= 100mS - 2000ms (10ms step or less)
Z= -30dB - -40dB (1dB step or less)
(“Z” is line input level)

5.7.9 Audio out put level setting

The product shall have the following independent level control setting by EEPROM.

- Voice prompt playback audio output level for Base speaker (Volume control position “5”)
- Voice prompt playback audio output level for the line
- Voice prompt playback audio output level for Handset
- Recorded message playback audio output level for Base speaker (Volume control position “5”)
- Recorded message playback audio output level for the line
- Recorded message playback audio output level for Handset
- Supervisory tone audio output level for Base speaker (Volume control position “5”)
- Supervisory tone audio output level for the line
- Supervisory tone audio output level for Handset

5.7.10 Supervisory tone

The characteristics of the main tone shall be as follows.

- Level ---------- defined by section 5.8 setting
- Frequency ---------- 1400Hz +/- 50 Hz
- Duration defined by ----- individual product MMI specification

5.7.11 Tail cut

The product shall have the setting for define the tail cut length for detecting the silence or network tone during recording the message.

5.7.12 Ring signal detection

The product shall detect the Ring signal with the following conditions.

- Detection frequency --------- 13.5 Hz - 70Hz
- Ring ON detection period -------- “X” ms
- Ring OFF detection period ------ “Y” ms
- Call hung up the telephone ------ “Z” ms

(If product detect Ring ON and Ring OFF then it will count ‘1 cycle of Ring input“)

(Z is to define that caller hung up the phone without answer the call)

“X” and “Y” are defined by EEPROM setting.

X= 200ms - 800ms (10ms step or less)
Y= 200ms - 2000ms (10ms step or less)
Z= 3s - 10s (0.5s step or less)

5.7.13 LED flashing

LED flashing speed shall be as follows.

- Flashing fast ---------- 0.5s ON/OFF
- Flashing slow ---------- 1.75s / 0.25s alternatively

5.7.14 Data storage

The recorded data, voice prompt data and voice prompt combination table shall be stored to the data Flash memory.
The product will be for any countries and therefore the voice prompt language will be different.

6 Prefix dialling

There are two data for prefix dialing. One is Detect string and other is Replace string. If user enter the number and first several string match with the pre-programmed string data, then the string will be replaced by pre-programmed Replace string data. This function can be enabled or disabled by EEPROM setting. Prefix dial feature should default to disabled.

6.1 Detect string

The pre-programed detect string is 5 digits inside the EEPROM. The data is 1 to 0 and F (F is for blank) If the Detect string need to be 003 then the data shall be F,F,0,0,3

6.2 Replace string

The pre-programed replace string is maxmum 10 digits inside the EEPROM. The data is 1 to 0

6.3 Detecting and replacment

The prefix dialing is only working when the dialing is prepared dialing which mean enter the dial number during idle mode and then OFF HOOK. The prduct will check the first few digis (maximum 5 digits depended on Detect string data) and if match with detect string, then replace the detected string to the replace string. If the detect string is all F, there will be no matching and add the replace string to the dialed number except the dialed number starting from not 1 to 0.

EX 1
Detect string : FFF00
Replace string : 1234567
Dialing number : 00567456
The product will dial ---- 1234567-567456

EX 2
Detect string : FFFFF
Replace string : 1234567
Dialing number : 00567456
The product will dial ---- 1234567-00567456

EX 3
Detect string : FFFFF
Replace string : 1234567
Dialing number : 13567456
The product will dial ---- 1234567-13567456

EX 4
Detect string : FFFFF
Replace string : 1234567
Dialing number : #13567456
The product will dial ---- #13567456

EX 5
Detect string : FFFF0
Replace string : 1234567
Dialing number : 00567456
The product will dial ---- 1234567-0567456

EX 6
Detect string : FFFF0
Replace string : 1234567

Dialing number : 0567456
The product will dial ---- 1234567-567456

EX 7
Detect string : FFF00
Replace string : 1234567
Dialing number : 0567456
The product will dial ---- 0567456

7 Quick default settings

If you have lost your PIN code, the following procedure allows you to restore default settings on handset and base.
Press **KEY_STAR** on handset when power up (insert and remove batteries). The display shows “DEFAULT”. Press **KEY_OK**. When the handset locks onto its base, both will restart.

8 Subscribe a new handset

Refer to MENU mode's REGISTER page

Note that if a handset fails to register to the Base, certain functions will not be available. On trying to access the functions, the user will be presented with an error beep. Where a function is not available, it is described in the individual menu section.

The base can support a maximum of 5 handsets. If you already have 5 handsets, and you wish to change one of them, you must firstly delete a handset, then associate the new handset.

For SMS
On Handset registration, a sub-address equating to the handset number will be assigned and a private mailbox created for that handset.

On Handset de-registration, the mailbox associated with that Handset will be automatically deleted.

9 Test modes

9.1 Handset test modes

Refer to document of TEST MODE

9.2 Base unit test modes

Refer to document of TEST MODE

The product shall have at least the following test mode.

- Continuous recording mode for line and local
- Continuous recorded message playback mode for line and local
- Continuous voice prompt playback mode for line and local
- All voice prompt playback mode
- Co tenuous supervisory tone play mode
- Silence detection indicator
- Network tone indicator

10 Specifications

10.1 CLIP Standards

The phone supports the following CLIP features defined by the identified standard:

Feature	Country	Standard
FSK type I FSK type II	All applicable	ETS 300 659-1 ETS 300 659-2

Note : No impedance matching is required

British Telecom S4005 Requirements for Caller Display Products, Version 1, February 2005

Telia, CID Requirement Specification, 1056-1B, 2001-01-12

Transfer of number information on analogue exchange line, incoming call, 8211 A-331 E, 92-12-14

Tele Danmark, PSTN Supplementary Services, Call Waiting with CLIP DTMF Supplementary Services, TDK-TS 900 268, April 1998

Tele Danmark, Sending of A-subscriber number on B-Subscriber line in PSTN, TDK-TS 900 216, April 1998

Tele Danmark, User-network access protocol specification for MWI notification using DTMF signalling, TDK-TS 900 231-2, April 1997

GFI 9502 “CLIP DTMF” Protocol 12.12.95

Telenor, FSK Signalling towards Analog PSTN interfaces, A21-1, Edition 2, 990812

Dutch Telecom, Calling Line Indication Presentation, T11-12E, 28th Sep 1995

KPN, Fixed Network Access Terminations, Part II, Analogue Network Terminations (PSTN), version 3.3, November 2003

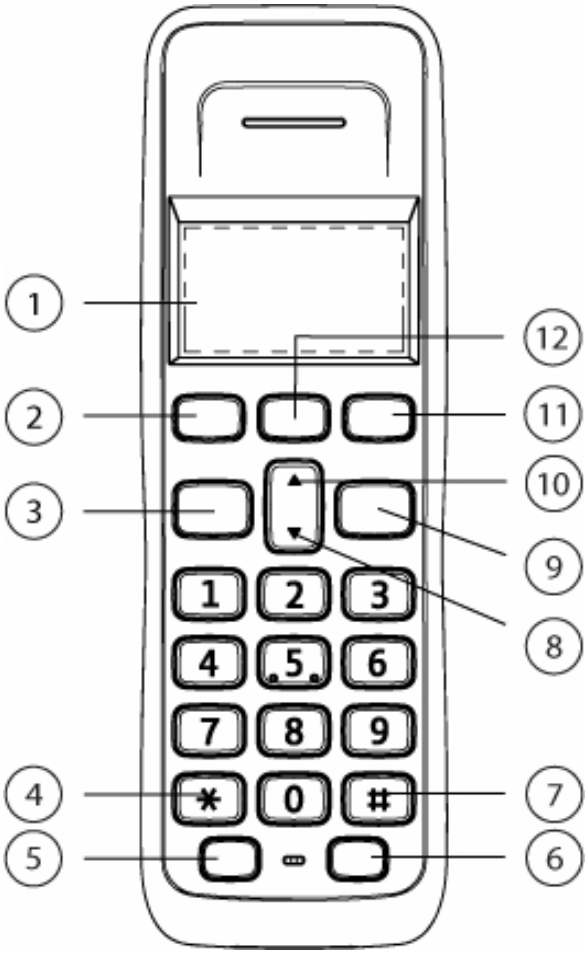
10.2 DECT Specifications

The phone complies with the following standards

Part	Standard
DECT Radio	EN301 406
DECT GAP	TBR 22
Analog Telephone Network	TBR 21 and TBR 38
EMC	EN301 489-1 and EN301 489-6
Safety	EN 60950

2 Panel Layout

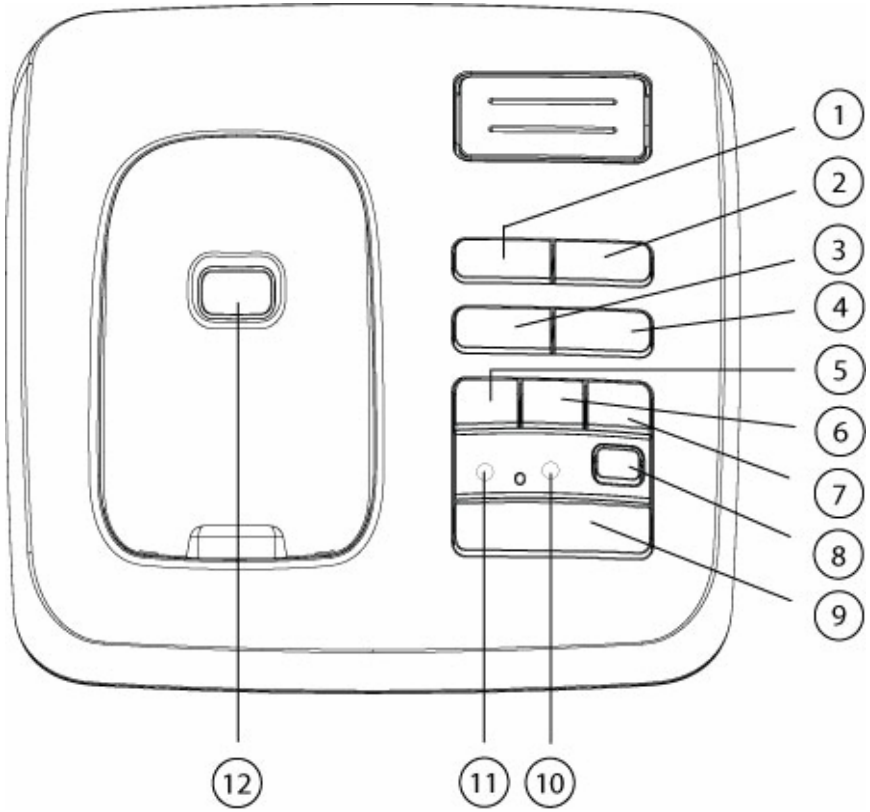
2.1 Handset

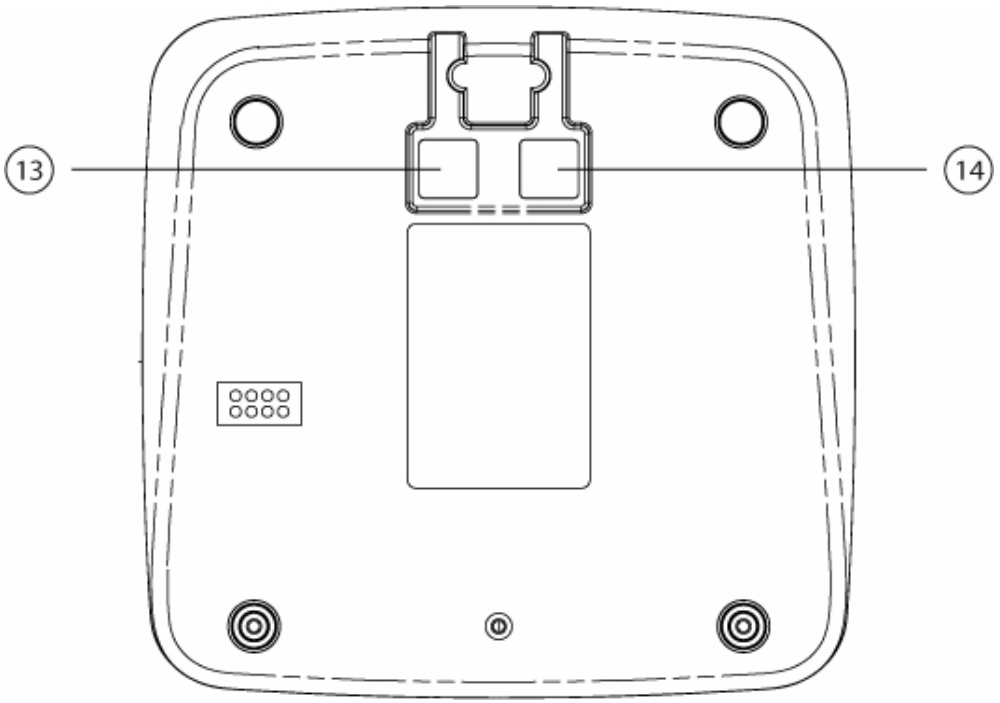


1	1-line Black and White excluding icons; Alphanumeric 14 segments x 12
2	Phonebook / Clear / Back
3	Talk On
4	* / Switch from Pulse to Tone / Engage Key Lock
5	Recall / Intercom
6	Last Number Redial
7	# / Enter Pause
8	Enter Calls List / Volume Down / Scroll Down
9	Talk Off / Power On/Off
10	Volume Up / Scroll Up
11	Menu / OK / Mute
12	GOOGLE 411 key

Note: Space is on KEY_1.
Note 2: Long press on KEY_0 will toggle idle screen between the Handset Name and number and the HH:MM time display.

2.2 Base





1	Volume Down
2	Volume Up
3	Answer On/Off
4	OGM
5	Skip Backwards / Set Answer Alert
6	Stop
7	Skip Forward / Set Answer Delay

8	Delete
9	Play / Pause
10	New TAM Message Indicator LED (Red)
11	Power / In use / Events Indicator LED (Green)
12	Page Key
13	Telephone Line connector port
14	Main Power connector port

Warning:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Privacy of communications may not be ensured when using this telephone!