



Design Specification

HA 88

*Interface Design
Of Handset HA 88 for GSM-TelePhoneUnit*

MODIFICATION	NATURE OF ALTERATION	DATE	SIGNATURE
Initial Version		2000-07-31	Ri.

Table of Contents

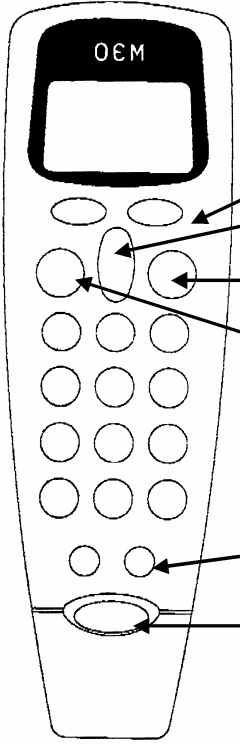
1	General Description	4
2	Handset Architecture	5
3	Display and Keys	6
4	Menu	8

1. General Description

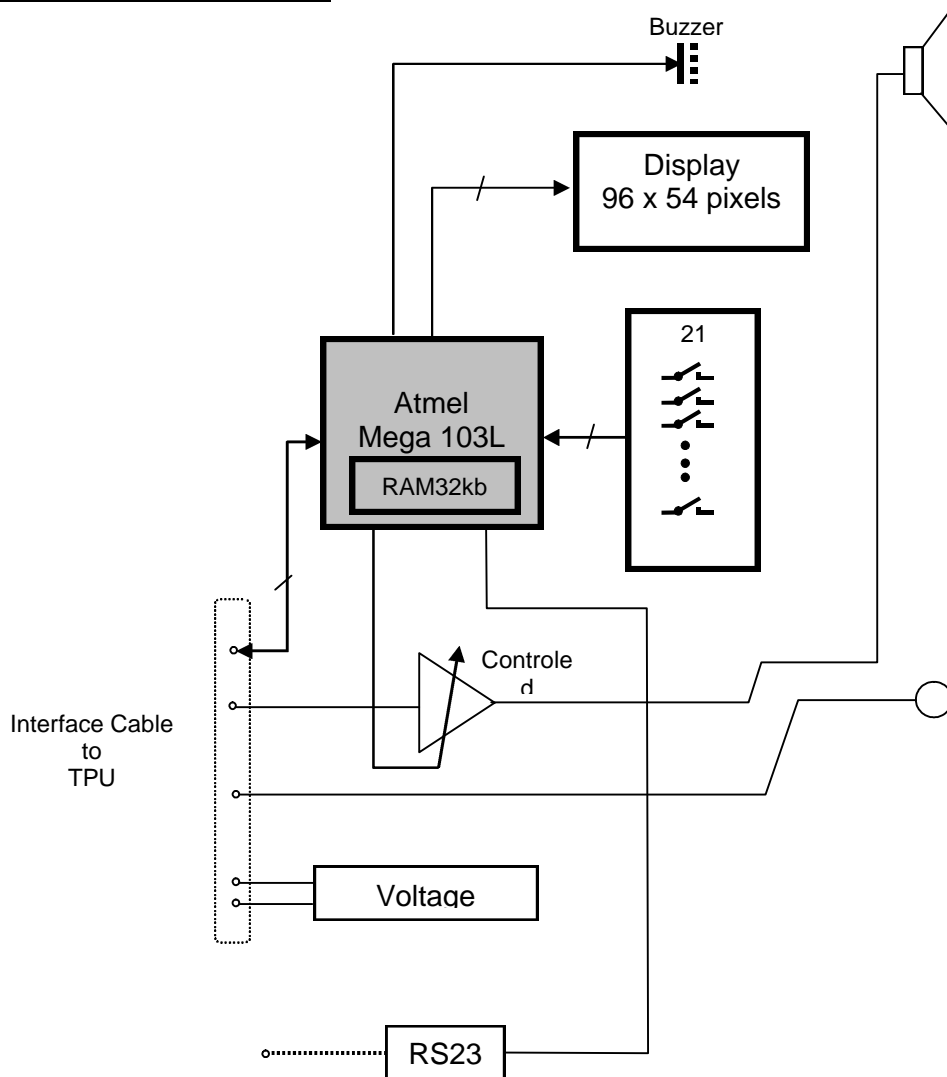
The handset is made for connecting to a GSM mobile phone module.

The handset contains 21 keys, a display with 96x54 pixels and a buzzer as man machine interface. Some keys are multifunctional (as soft keys).

Functions: • phone set-up • phone book • call handling • Short Message edit and transfer • SIM card handling

	Functions of the keys:
	<p>2 buttons , softkeys (SMS, menu, select, OK)</p> <p>2 buttons, called up and down for volume control .</p> <p>Green key to enter the "last calls made" menu, start call or accept incoming call</p> <p>Red key to end or reject a call. In operation outside a call, this key is used to reject setting or option and to escape and return to main menu.</p> <p>Left - on/off , Right – mute microphone</p> <p>optional button for example SOS/emergency call</p>

2. Handset Architecture



Interface: Western plug 10 pole

PIN	Wire Designation
1	ON/OFF switch
2	Microphone -
3	Microphone + (max. output level = 30mVrms)
4	Loudspeaker -
5	Loudspeaker + (max. input level = 0.8Vrms)
6	Hook sensor (low active)
7	TXD (RS232 - +5V/-5V)
8	RXD (RS232 - +5V/-5V)
9	GND
10	Supply voltage (+9. . +11V)

3. Display and Keys

The Display

The 96x54 pixel display should display a maximum of two rows of alphanumeric characters as well as additional information symbols.

The various elements of the display are as follows:

ABC123

Characters are used to display messages and telephone numbers



Signal strength – the more segments displayed in the bar graph, the better the signal strength.



Short Message Service – displayed when the phone has received a message. The symbol will flash when the message storage area is full.



Roam – displayed when the phone is registered on a network other than the home network.

Special Keys



Turns the phone on and off.



Mute phone on and off.



Rejects call, setting or option.



Press to accept call



OK / CLR /.. Software controlled functions as shown in the menu


How to enter alphabetic characters

The **0**, **1**, . . . **8** and **9** keys are used to enter alphabetic characters, for example when storing names in the phonebook or when creating messages.

For example, by pressing the key **5**, the first displayed character will be **J**. If this is not the required character, than by pressing the same key again **K** will be displayed. Another press will display **L**, another will display **5**. There is an continual scroll through the characters available on the selected key with each new key press.

A long press (1.6sec) of any of the keys will switch all the characters to lower case, a second long press will switch back to upper case.

To enter the next character will be done by pressing the appropriate key. If, however, the next character is on the same key as the previous character it will be necessary to press the key  first. Pressing the  key a second time will produce a space.

To go back to a character is possible by pressing . Characters can be removed from the display by pressing **CLEAR** softkey.

Press the **OK** key to store the information.

Available Characters:

1	. ? ! , @ & : " () ' 1
2	A B C Ä Å 2 a b c ä å 2
3	D E F 3 d e f 3
4	G H I 4 g h i 4
5	J K L 5 j k l 5
6	M N O Ö 6 m n o ö 6
7	P Q R S 7 p q r s 7
8	T U V Ü 8 t u v ü 8
9	W X Y Z 9 w x y z 9
0	+ - / = * # 0

4. Menu

Two soft keys are prepared to navigate the menu - divided in **MENU** and **SMS**:

