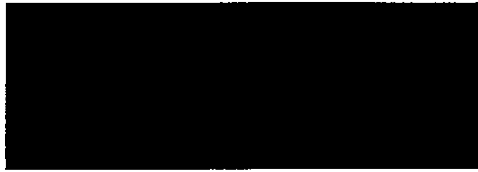# EXHIBIT C

User Manual

TELEDEX
TC305 1 Line (TR1C)
900MHz Cordless Telephone

Product Specification and Operation Manual

Issue 1   Revision 0   April, 26, 1999

1   Introduction

This document describes the product Teledex – TR1C. It is an analog cordless phone operated at the 902-928MHz ISM band, with the major features of 2 telephone lines communication and Calling Line Identification Type II at both lines.

1.1 Product Specification

1.1.1 Feature Lists

- 902-928MHz, 60 channels
- 1 telephone lines
- Caller Line Identification CID Type II (on-hook & off-hook)
- 12 numeric keys and 12 functional keys on one handset.
- 3 lines LCD display : 15 characters dot matrix display, 15 digits 7 segments display and one icon line.
- Phone book memories (20 entries with 15 digits and 15 characters each)
- Ringer Volume (Options: Hi/Low/Off)
- Pulse and Tone Dialing Selectable
- Handset Receiving Volume Control (4 Levels)
- Auto-off When H/S put on Cradle
- Handset On Cradle Dialing
- Conference Call
- Hearing Aided Compatible
- One Touch Redial (32 digits maximum)
- Pause (3.6s) and Flash (600ms)
- Temporary Tone Dialing
- Key Tone Confirmation
- Base LED Flash Ringing
- Headset Compatible - Socket in Handset 2.5mm plug
- Data Port Socket in Base

1.2.2 Specification

- Handset Transmitting Frequencies : 902 to 904MHz
- Handset Receiving Frequencies : 925 to 927 MHz
- Base Transmit Frequencies : 925 –to 927MHz
- Base Receiving Frequencies : 902 to 904MHz
- Number of Channels : 60
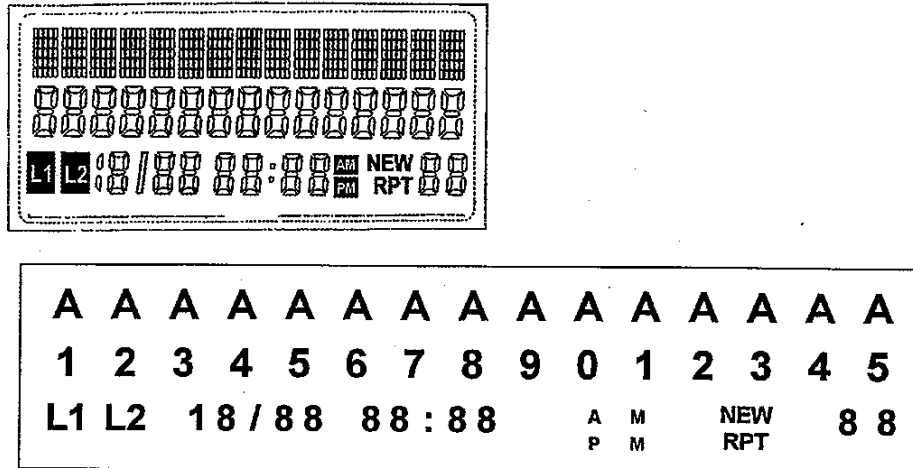- Channel Spacing : 120KHz

- Acoustic and Line Interface Specification according to EIA470B

- Calling Line Identification Type II according to Bellcore

- FCC Part 15 and Part 68 Compliance

- ETL Compliance

2 Interfaces

2.1 Visual Indicators

2.1.1 Handset LCD

Figure 1

A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5
L1 L2	18 / 88	88 : 88			A M / P M		NEW RPT		8 8					

2.1.1.1 Character Field (row 1)

This is a 5 X 5 dot matrix with 15 characters. It is used to display the name of the caller, in which instance the characters will be right justified. In the case of a name in excess of 15 characters, it will be the latter characters which are discarded. This display row is also used for prompting messages all of which will be center justified. All characters are displayed in capitals.

2.1.1.2 Number Field (row 2)

This row is a 15 digits and 7 segments display. It display the digits pressed on the keypad whilst the telephone is in its scratchpad or off hook state. It also displays numbers recalled from caller-id memory or phonebook memory, and in some instances is used to set some variables in the options menu, such as the local area code.

2.1.1.3 Icon Field (row 3)

- Icon L1

Shows which external lines are engaged. The line indicators will be on steadily for ringing lines or lines in use. The indicators flash slowly for lines on hold. The indicators will be off when a line is idle.

- Date/Time Display

"18/88 88:88", shows in the format of "Month"/"Date" "Hour":"Minute"

- Icons AM/PM

- Icons NEW and RPT

These icons are in use when caller-id information is recalled from memory. The new icon is an indication that the call has not previously been viewed. Whereas the repeat icon shows that more than one call from the same number has been received since viewing of the caller-id memory (in other words, more than one new call originating from the same number). However this data is stored as a single entry.

- Icons Message Counter "88"

2.1.2 Base (Figure 2)

The only indicators on the base are 5 LEDs.

2.1.2.1 POWER

Is illuminated whenever a power source is connected to the base.

2.1.2.2 CHARGE

Indicates that the handset is on the cradle and being charged.

2.1.2.3 TALK

Indicates line is in use.

2.1.2.4 PAGE

Paging to Handset.

2.1.2.5 DATA LINE IN USE

Indicates that DATA line is in use.

2.1.2.6 MESSAGE WAITING

At the right corner of the base, it will flash when the base is ringing and it will light up when there is un-reviewed Cid message received.

2.2 Description of Keys and Buttons

2.2.1 Handset (Figure 3)

2.2.1.1   ON key <ON>

The ON key is used in a customary fashion to engage telephone line.

2.2.1.2   OFF Key <OFF>

The OFF key is used in a customary fashion to disengage telephone line.

2.2.1.3   Caller ID Key <CID>

In on-hook idle mode, pressing the caller-id key initiates the caller id review function.

2.2.1.4   Numeric Key Pad <1.2....0, *, #>

Numeric keys are used in the conventional manner for dialing. A number can be pre-dialed or dialed after going off-hook.
Numeric entries for programming functions are made in a manner similar to dialing.
The numeric keys are also used for input of alphanumeric data for name storage. In alphanumeric entry modes, sequential pressing of a numeric key sequences through the available letters and number assigned to that key.

2.2.1.5   Flash Key <FLASH> & Enter Key <ENTER>

The flash key is dedicated to performing a timed loop break (600ms) while off-hook. The flash key does not cause any special alternation of Call Waiting CID (CWCID) information after an incoming CWCID event. Flashes can be stored in memory dial sequences.

2.2.1.6   Hold Key <HOLD>

.The Hold key is used to put an engaged line on hold.   If a single line is already on hold, pressing hold releases that line from hold.   If both lines are on hold, pressing hold has no action.

2.2.1.7   Menu key <MENU>

The Menu key is a multifunction key used together with <HOLD>, a single press of less than 1.5 seconds will activate the options menu, subsequent presses of less than 1.5 seconds advance the list item within the options menu. A key-press of more than 1.5 seconds within the options menu results in all states being stored and returning the telephone to its idle state. Another feature of the options key is, if pressed for more than a second and a half from the idle or on-cradle state, the phonebook menu will be initiated. Entries can first be viewed and then altered by either scrolling through the entries one by one using the up/down (∧,∨) cursors , or by directly accessing an entry by entering a number between 1 and 20. The phonebook entry being viewed will be displayed in the two digits usually reserved for displaying the number of caller-id calls in the memory. An empty display will have no digits and the accompanying text will read empty.

Options Manual Sequence: WHICH LANGUAGE
                                SET TIMES
                                CALL LIST ORDER
                                LOCAL AREA CODE
                                CALL HISTORY
                                REPEAT CALLS
                                HOME AREA CODE

2.2.1.9   Redial Key <RDIAL>

When this key is pressed, the last numbers dialed will be recalled.
Redial can be accessed for either pre-dial or off-hook dialing.
Redial does not recall previous call caller ID name information
Redial does nothing if the previous call exceeded the redial buffer memory.

2.2.1.11 Mute Key <MUTE>

In the off-hook condition, the mute key mutes handset microphone but continues to allow receiver audio to pass.
Mute is a toggle function. An LCD message indicates mute in effect.

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2.2.1.11 Volume/Scroll Up/Down Keys <∧> <∨>

While off-hook, the up/down keys control receiver audio level over a 15 dB range.
When in a list review mode (caller-id, phonebook or options) the Up/Down keys are used to scroll through entries in the list. In the caller ID list, the up key calls up the recent callers. In other lists, the up key calls up entries with higher index numbers.

2.2.1.12   Memory key <MEM>

Can be used for quick recalling of memory entries to the scratchpad once there and by first accessing a line they can be dialed using the Line key.

2.2.1.13   Channel Change Key <CHAN>

Enables the user to make a selection from 20 channels to provide the user with the best possible reception while off hook.

2.2.1.14   Pause Key <PAUSE>

It is a multifunction key used together with Redial Key <RDIAL>. The pause key can be used to enter a break of 3.6 seconds into a dialing sequence that is being entered from the off hook state or in phonebook numbers to be recalled and dialed.

2.2.1.15   Cancel Key <CANCEL>

It is a multifunction key used together with the conference key <CONF>. The cancel key is used to delete either single or multiple entries from either the phonebook or the caller-id menu. In all cases confirmation will be required in the form of an appropriate text message followed by another press of the cancel key. All other keys pressed at the point to the initial remove key-pass. By pressing the <CANCEL> key for less than 1.5 seconds each time, single records can be cleared or deleted one at a time. A key-press of more than 1.5 seconds will enable the user to delete all entries, previously reviewed caller-id or previously answered entries.

2.2.2 Base

2.2.2.1   Page Key <PAGE>

A key on the base initiates a handset page.   Pressing it while a page is ongoing cancels the page.

2.2.2.2   Rear Panel Switches
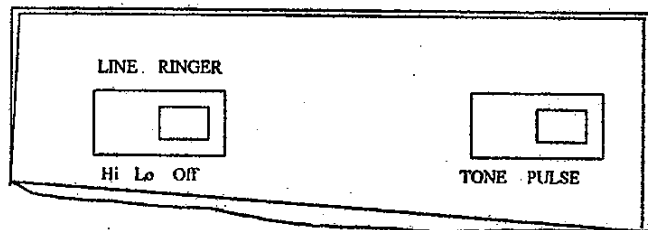
The ring switch to provide three different settings: high, low and off.

A two position switch on the base selects between DTMF and pulse dialing.

Note: The base will inform handsets via radio whenever this switch changes states.

2.3 Audio Alerts

2.3.1 Table of Summary of the Audio and Visual Alerts

	Handset		Base
	LCD	SOUND	LED
Battery Low	"BATT LOW"	Two beeps of 50ms separated by a 100ms silence and repeated every 5min	None
Keypress	None	50ms beep	None
Out of Range	" OUT OF RANGE"	Two beeps of 50ms separated by a 100ms silence and repeated every 4 sec until 12sec and then every sec until cutoff at 18 to 20 seconds	None
Invalid Entry	"INVALID ENTRY"	Two beeps of 50ms separated by a 100ms silence	None
Timeout	None	50ms beep	None
Power on	None	50ms beep	Power on

2.3.2 Base Ringer

The base ringer operates identically to the handset ringer except that it is defeated using a mechanical switch and it does not change behaviour if a line engaged.