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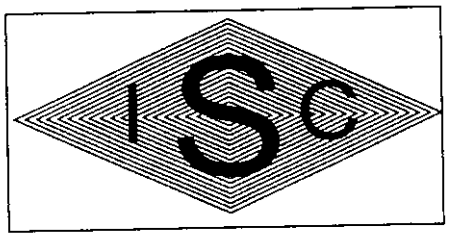
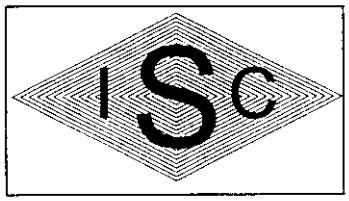


User Manual

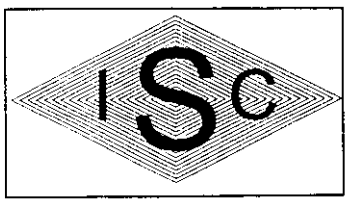
for
Hand-Held Computer HRF-35

July '98



Note : This equipment has been tested and found to comply with the limits for a Class B digital device, persuant to part 15 of FCC Rules. These limits are disigned to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate frequency to radio communications. However there is no guarantee that interferences will not occur in a particular installation. If this equipment does harmful interference to radio or television reception, hich can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the folloing measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



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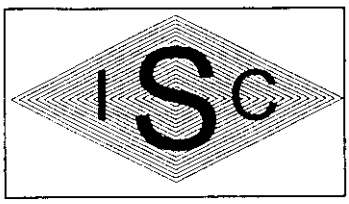
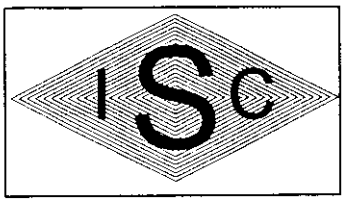


I. Introduction

The HRF-35 is a portable, handheld computer specially designed for industrial and dirty enviroment. The HRF-35 is able to log data from contactless ID-Cards (transponder), key-pad entries and other actions. So this computer is a mobile, versatile equipment for documenting and monitoring of service- and maintenance-action or if you need a „guided tour" equipment for heavy-duty applications.
The HRF-35 is fully programmable, so you can customize the log-action to your requests to get the reports you need. Every log is combined with the actual date- and time-stamp to get a maximum of information.
The HRF-35 is easly controlled with our „Control-Center" where you can adjust all parameters like time and date - you can download new programs and upload the data for your reports.
The HRF-35 is communicating with the „Control-Center" via an infra-red interface of your PC - so no disturbing cables are nessessary. If there is no infrared interface available you can use our Infrared-Adapter AD-35 for easy interfacing.

II. Key-Features

- Reads and stores the ID of contactless cards with time-stamp.
- Display with 4 Lines and 20 characters.
- Key-pad for numeric input.
- Small sized and low weight for mobile use.
- Easy programmable for your own application.
- Detailed reports.
- automatic power-down
- Low power consumption for long opoeration time.
- Communication via infrared interface.



III. Quickstart

For proper operation of the „Control-Center" you need a PC with Window95 or NT4.0 and Access95 or higher. Before you turn on your PC first check if there is an infra-red interface for the communication. If not, connect the Infrared-Adapter AD-35 with a free COM-Port. Now you can switch on your PC for further operation.
The „Control-Center" is easely installed from disk running SETUP. After that you can start the „Control-Center" clicking the icon HRH-35 in the group PROGRAMS/HRF-35.In the „Control-Center" you select the appropriate COM-Port where your infrared adapter is connected to and press „APPLY". Now the „Control-Center" starts and tries to find a HRF-35 connected to the interface.
At this point you switch on the HRF-35 pressing one of the keys. After the greeting-message appeared in the display press key „0" for the shift-operation. While you still press key „0" press key „5" additional to enter the communicationen mode. If you now face the HRF-35 towards the infrared port the communication will start and you can control the handheld computer and the message „host connected" will be displayed.

IV. Key-pad function

You can use the key-pad in three different modi due to the operation situation. In the first mode you navigate through the programm menu that is down-loaded in the HRF-35. In the secound mode you are requested to enter a numeric input. And in the last mode you can make basic controls to the HRF-35 through a second meaning of the keys.

A. Navigation

The main action is to navigate through you program to log and /or execute the desired menu-line. To move the cursor you can use key „2" and „8" which are shaped like arrow pointing to the moving direction.
With the „Enter"-Key (left down) you select a menu-line and can continue operation.

B. Numeric input

If a menu is executed where you are requested to enter a numeric input the numbers printed on the keypads are valid. The key „ Clear" (right down) enables you to remove the last input. With „Enter" (left down) you can confirm and store your input.

C. *Control*

All keys have a second meaning which are available if you press key „0" and still keep it pressed. In this mode the meaning in the pictogram is valid. The functions are listed below:

Key „1"	increases the contrast of the display.
Key „3"	decreases the contrast of the display.
Key „4"	Buzzer off.
Key „5"	Start communication mode.
Key „6"	Buzzer on.
Key „7"	Light off.
Key „9"	Light on.
Key „C"	Enter internal menu
Key „E"	Leave internal menu

So you are able to adjust the HRF-35 to your personal requires. If the characters are displayed illegible you can change the contrast with Key 1 and 3. You can also switch on the light for the display with key 9 if nessessary.
The Buzzer can be switched on or off as it is comfortable for you.

Note: Use the light only if nessessary to save power for a longer operation..

The internal menu enables you to deal a telephone number and to connect the HRF-35 via modem to the „Control-Center". For this operation the interface adapter AD-35 is nessessary and connected to the modem.

V. Memory

The size of the available memory is displayed in the „Control-Center". It is important to download the logged data to have enough memory-space for the actual session. If the memory is exhausted, it will be displayed.

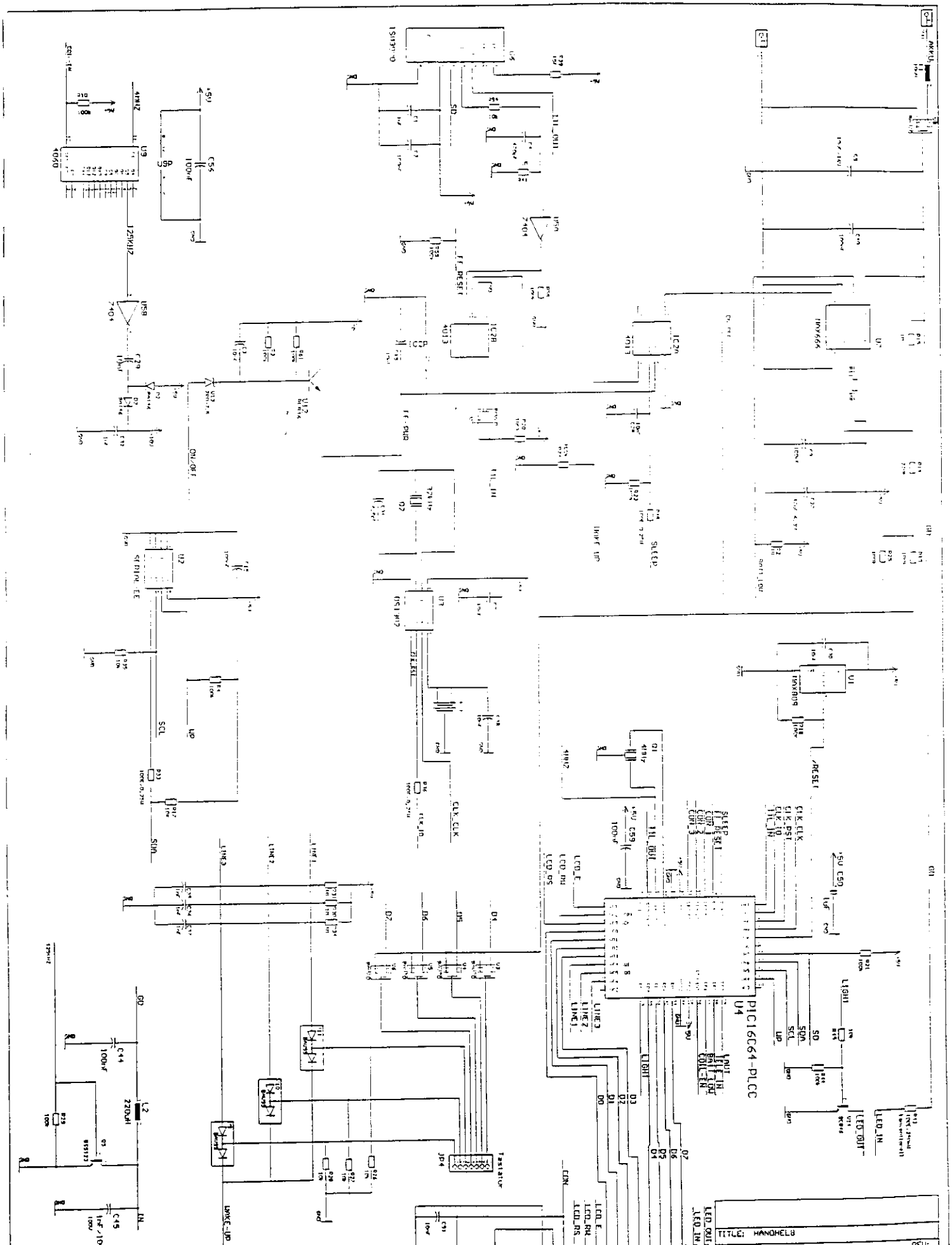
If you have not loaded a valid programm into your HRF-35 it will complain and display a appropriate message.

VI. Maintenance

During the period of use the battery will be discharged. If the voltage is below a given threshold a message will be generated and inform you to change the battery.
If you try to read a tag and the HRF-35 turn off and starts again this is also a symptom of a low battery.
The battery can replaced easely, if you remove the cover on back side of the HRF-35.

Note: Use only high quality batteries like alcaline types.

To garantee long life of the HRF-35 pay attention to the operation temperature - if the enviroment is to cold the internal battery for the clock will be distroyed and the HRF-35 is useless. So e.g. never leave the HRF-35 in the car during winter-time.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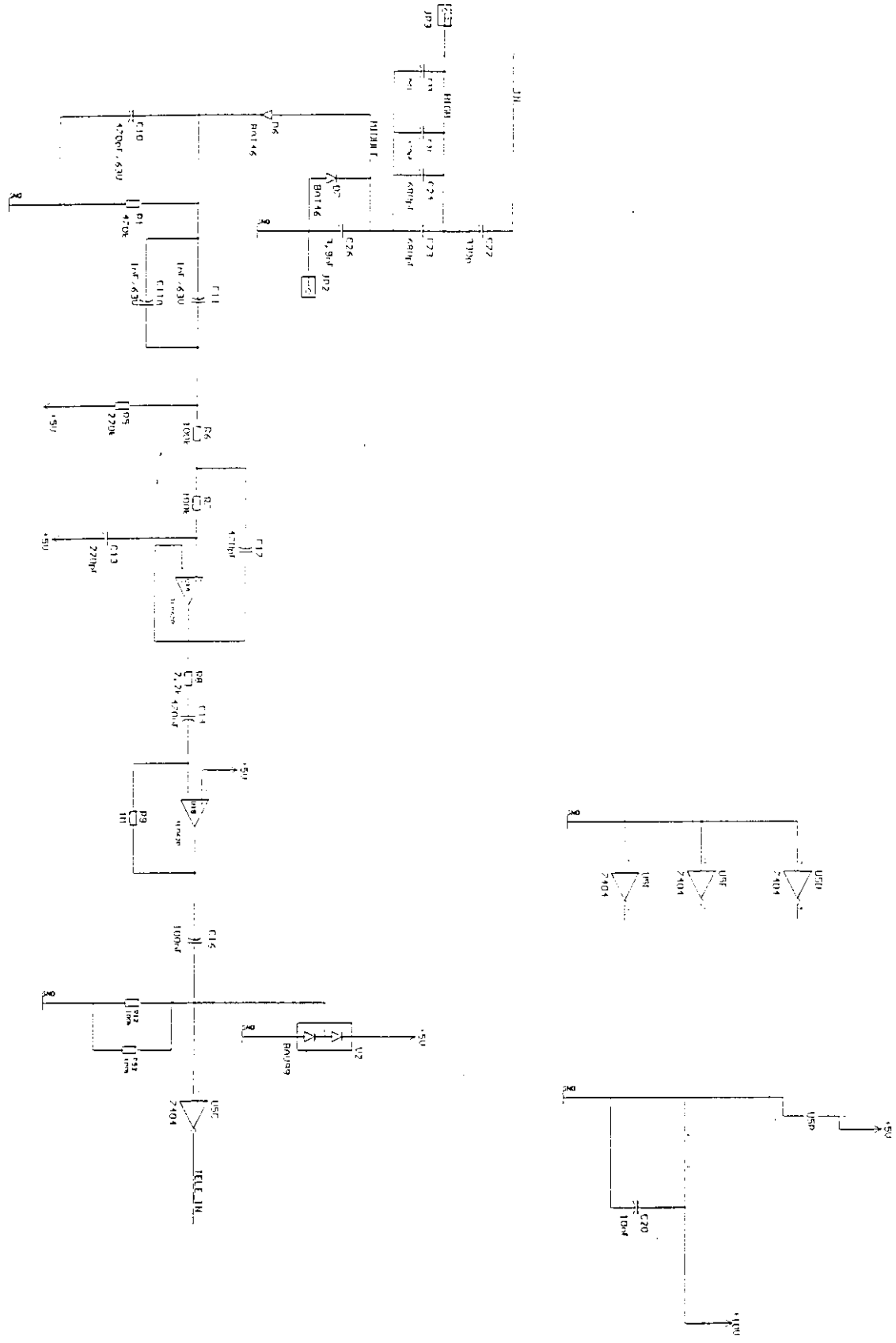
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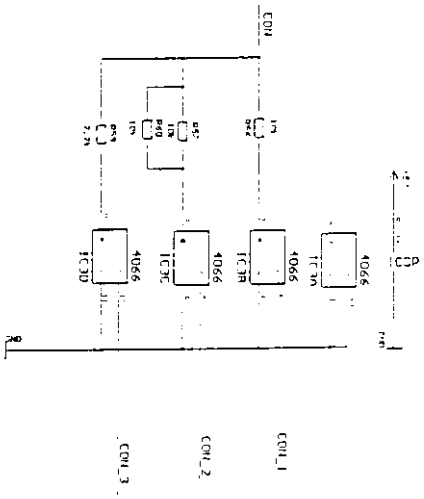

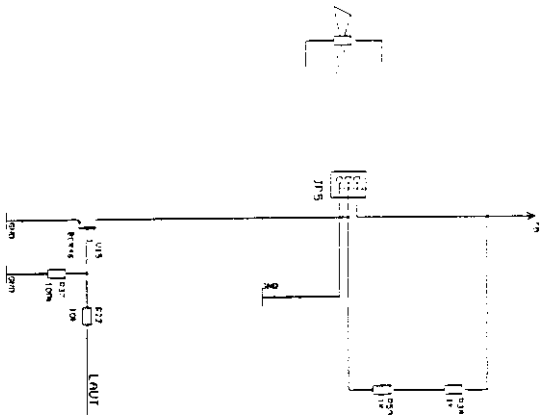

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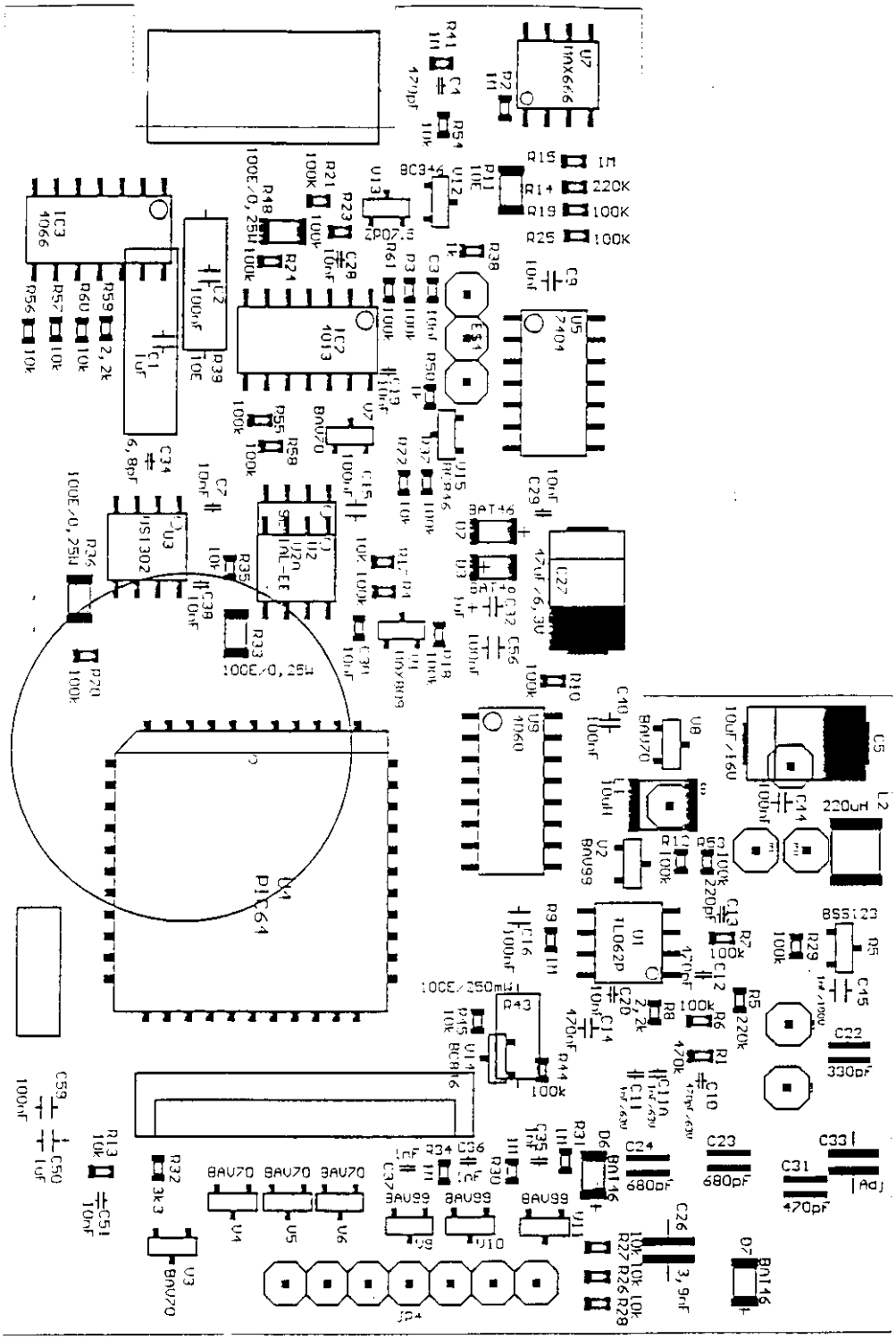

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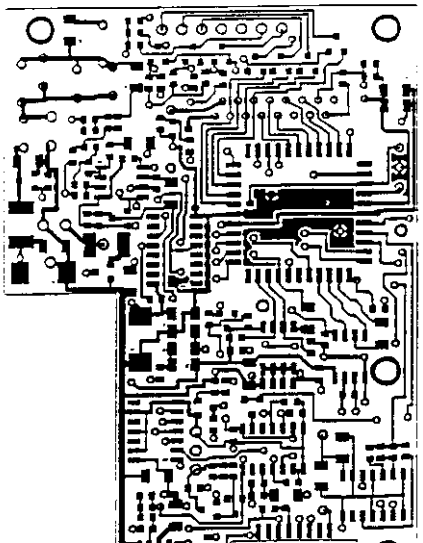

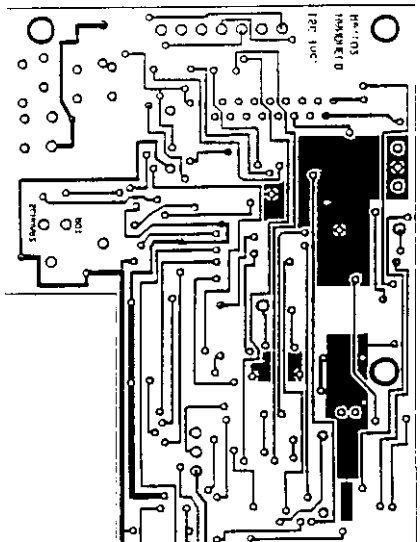

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Partlist exported from HANDHEL8.BRD at 09.02.1998 17:24:16

Part	Value	Package	Library	Position (inch)	Orientation
C1	1uF	1206-C	SMD	(1.275 1.5875)	R0
C2	100nF	1206-C	SMD	(1.125 1.69375)	R180
C3	10nF	0603	SMD	(1.15625 2.23125)	R0
C4	470pF	0603-C	TAG	(0.69375 2.3)	R270
C5	10uF/16V	7343	SMD	(2.19685 3.09449)	R270
C7	10nF	0603-C	TAG	(1.7066 1.70566)	R180
C9	10nF	1206-C	SMD	(1.13588 2.51087)	R90
C10	470pF/63V	0603-C	TAG	(2.98425 2.80709)	R90
C11	1nF/63V	0603-C	TAG	(2.91732 2.70866)	R0
C12	470pF	0603-C	TAG	(2.6841 2.86182)	R0
C13	220pF	0603-C	TAG	(2.59355 2.85364)	R90
C14	470nF	1206-C	SMD	(2.85827 2.60236)	R270
C15	100nF	1206-C	SMD	(2.66142 2.04774)	R0
C16	100nF	1206-C	SMD	(2.60005 2.44233)	R0
C19	10nF	0603-C	TAG	(2.39375 2.225)	R180
C20	10nF	0603-C	TAG	(2.77953 2.6063)	R90
C22	330pF	C-3,75	TAG	(2.84207 3.19454)	R0
C23	680pF	C-3,75	TAG	(3.09567 2.90126)	R0
C24	680pF	C-3,75	TAG	(3.10635 2.73809)	R0
C26	3,9nF	C-5	TAG	(3.37756 2.79587)	R0
C27	47uF 6,3V	7343	SMD	(2.8458 2.69529)	R180
C28	10nF	0603-C	TAG	(2.08636 1.95384)	R90
C29	10nF	0603-C	TAG	(2.61876 2.49375)	R0
C30	10nF	0603	SMD	(2.93125 2.05625)	R0
C31	470pF	C-3,75	TAG	(3.15635 3.09449)	R0
C32	1uF	1206-C	SMD	(2.88038 2.38007)	R90
C33	Adj	C-5	DISCRETE	(3.2751 3.20472)	R0
C34	6,8pF	0603-C	TAG	(2.58103 1.50684)	R90
C35	1nF	0603-C	TAG	(3.22165 2.49094)	R180
C36	1nF	0603-C	TAG	(3.22047 2.32677)	R180
C37	1nF	0603-C	TAG	(3.23622 2.1811)	R180
C38	10nF	0603-C	TAG	(2.78209 1.67722)	R0
C40	100nF	1206-C	SMD	(2.14891 2.64892)	R180
C44	100nF	1206-C	SMD	(2.33411 3.03957)	R270
C45	1nF/100V	1206-C	SMD	(2.77165 3.17323)	R270
C50	1uF	1206-C	SMD	(3.12209 1.32978)	R90
C51	10nF	0603-C	TAG	(3.26029 1.40157)	R90
C56	100nF	1206-C	SMD	(1.97618 2.38125)	R270
C59	100nF	1206-C	SMD	(3.04331 1.32677)	R90
C11A	1nF/63V	0603-C	TAG	(2.91732 2.75984)	R0
D2	BAT46	1206	SMD	(1.71113 2.3788)	R90
D3	BAT46	1206	SMD	(1.7938 2.3788)	R270
D6	BAT46	1206	SMD	(3.20354 2.61511)	R180
D7	BAT46	1206	SMD	(3.45201 2.95826)	R180
E$1		KOPF3	KNCPF	(2.2075 1.64)	R0
E$2		GND_PAD	TAG	(1.00148 1.56772)	MR180
E$3		1X01	PINHEAD	(2.3425 2.785)	R0
E$4	X	1X03	PINHEAD	(1.26722 2.31432)	R0
E$5		1X01	PINHEAD	(2.25 3.0575)	R0
E$6		PIN	TAG	(2.4 1.6)	R0
E$7		PIN	TAG	(2.59 1.9375)	R0
E$8		PIN	TAG	(1.6525 2.0325)	R0
E$9		PIN	TAG	(1.66 1.7975)	R0
IC2	4013	SO-14	40XXSMD	(1.27352 1.92992)	R270
IC3	4066	SO-14	40XXSMD	(1.02165 1.43661)	R270
		1X01	PINHEAD	(2.44488 3.09449)	R0
				(2.05039 3.05512)	R0

JP4	Tastatur	1X07	PINHEAD (3.45157 2.18543)
JP11		1X01	PINHEAD (2.44488 2.98031)
L1	10uH	1812	SMD (2.33927 2.7691)
L2	220uH	1812	SMD (2.44682 3.20866)
Q1	4MHz	RESONAT	TAG (2.62505 1.30709)
Q2	32kHz	Q_CLK	SPECIAL (1.4628 1.52072)
Q5	BSS123	SOT-23	SMD (2.67323 3.1811)
R1	470k	0603	TAG (2.9252 2.90551)
R2	1M	0603	TAG (0.69483 2.40207)
R3	100k	0603	SMD (1.15625 2.175)
R4	100k	0603	TAG (1.84813 2.06595)
R5	220k	0603	TAG (2.74316 2.94419)
R6	100k	0603	TAG (2.84158 2.80246)
R7	100k	0603	TAG (2.64867 2.95364)
R8	2,2k	0603	TAG (2.77168 2.75197)
R9	1M	0603	TAG (2.60236 2.51575)
R10	100k	0603	TAG (2.05251 2.56909)
R11	10E	1206	SMD (0.92953 2.41742)
R12	100k	0603	TAG (2.51969 2.81102)
R13	10k	0603	TAG (3.1938 1.40118)
R14	220K	0603	TAG (0.92195 2.5123)
R15	1M	0603	TAG (0.86289 2.61073)
R17	10K	0603	TAG (1.78071 2.06236)
R18	100k	0603	TAG (1.89664 2.05156)
R19	100K	0603	TAG (0.97313 2.61467)
R20	100k	0603	SMD (1.99439 1.40976)
R21	100K	0603	SMD (0.95355 1.95103)
R22	10k	0603	TAG (1.54818 2.16398)
R23	100k	0603	TAG (1.02323 1.95393)
R24	100k	0603	TAG (1.09055 1.89612)
R25	100K	0603	SMD (1.03219 2.66742)
R26	10k	0603	TAG (3.43701 2.5748)
R27	10k	0603	TAG (3.37008 2.5748)
R28	10k	0603	TAG (3.5 2.5748)
R29	100k	0603	TAG (2.61811 3.07087)
R30	1M	0603	TAG (3.24409 2.42913)
R31	1M	0603	TAG (3.22047 2.85118)
R32	3k3	0603	TAG (3.23583 1.58583)
R33	100E/0,25W	1206	SMD (1.94385 1.76102)
R34	1M	0603	TAG (3.24528 2.2689)
R35	10k	0603	TAG (1.84366 1.74636)
R36	100E/0,25W	1206	SMD (1.86398 1.39478)
R37	100k	0603	TAG (1.64739 2.22013)
R38	1k	0603	TAG (1.06718 2.37589)
R39	10E	R-10	DISCRETE (1.14434 1.68504)
R41	1M	0603	TAG (0.64375 2.3)
R43	100E/250mW	R-7,5	DISCRETE (2.87795 2.44094)
R44	100k	0603	TAG (2.90738 2.49587)
R45	10k	0603	TAG (2.79094 2.34769)
R48	100E/0,25W	1206	SMD (1.02303 1.86685)
R50	1k	0603	TAG (1.35197 2.22643)
R53	100k	0603	TAG (2.42126 2.87008)
R54	10k	0603	TAG (0.83125 2.25625)
R55	100k	0603	SMD (1.45517 1.81565)
R56	10k	0603	TAG (1.19951 1.27446)
R57	10k	0603	TAG (1.19591 1.3374)
R58	100k	0603	SMD (1.5159 1.84183)
R59	2,2k	0603	TAG (1.29434 1.45157)
R60	10k	0603	TAG (1.29823 1.39719)
R61	100k	0603	SMD (1.15625 2.125)
ST1	LCD	LCD	TAG (3.11299 1.5315)
			SMD_IC (2.68504 2.69291)

U4	PIC64	PLCC-44	SMD-IC	(2.49213 1.80433)	R90
U5	7404	SO-14	SMD-IC	(1.37028 2.51954)	R0
U6	ISM3000	IRDA1	TAG	(0.5625 2.1)	R270
U7	MAX666	SO-8	TAG	(0.71845 2.44931)	R90
U9	4060	SO-16	SMD-IC	(2.28228 2.42594)	R0
U2A		SO-8	SMD-IC	(1.79409 1.92933)	R270
V1	MAX809	SOT-23	SMD	(1.93644 2.16115)	R270
V2	BAV99	SOT-23	CLDSMD	(2.47638 2.70079)	R180
V3	BAV70	SOT-23	CLDSMD	(3.36614 1.61811)	R90
V4	BAV70	SOT-23	CLDSMD	(3.26378 1.75984)	R90
V5	BAV70	SOT-23	CLDSMD	(3.26378 1.88976)	R90
V6	BAV70	SOT-23	CLDSMD	(3.26378 2.01575)	R90
V7	BAV70	SOT-23	CLDSMD	(1.49114 2.03341)	R270
V8	BAV70	SOT-23	CLDSMD	(2.19946 2.78898)	R180
V9	BAV99	SOT-23	CLDSMD	(3.3189 2.18504)	R90
V10	BAV99	SOT-23	CLDSMD	(3.3189 2.33071)	R90
V11	BAV99	SOT-23	CLDSMD	(3.32293 2.50394)	R90
V12	BC846	SOT-23	SMD	(2.95626 2.25)	R180
V13	ZPD7.5	SOT-23	SMD	(2.96878 2.11876	R270
V14	BC846	SOT-23	CLDSMD	(2.90913 2.3937	R0
V15	BC846	SOT-23	CLDSMD	(1.48789 2.26752	R0