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Author: Jens Peter Jacobsen

Title:

RC721/RC722 Keyboards
Technical Manual

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A/S REGNECENTRALEN
af 1979

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Abstract: This manual describes the technical data of the RC721 and RC722 keyboards.

(28 printed pages)

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PREFACE

First edition: RCSL No 44-RT1980.

Second edition: RCSL No 44-RT2066.
Up-date edition which includes new RC722 keyboard layouts. No changes in the technical issue; minor editorial changes.

Jens Peter Jacobsen
A/S REGNECENTRALEN af 1979, May 1983

1. INTRODUCTION

This paper describes the RC721 and RC722 keyboards. The first is without a numeric block, and the later is with this block. Both keyboards contain the same microcomputer and the same program. The other circuits in the boards are almost identical.

This paper is divided in the following parts:

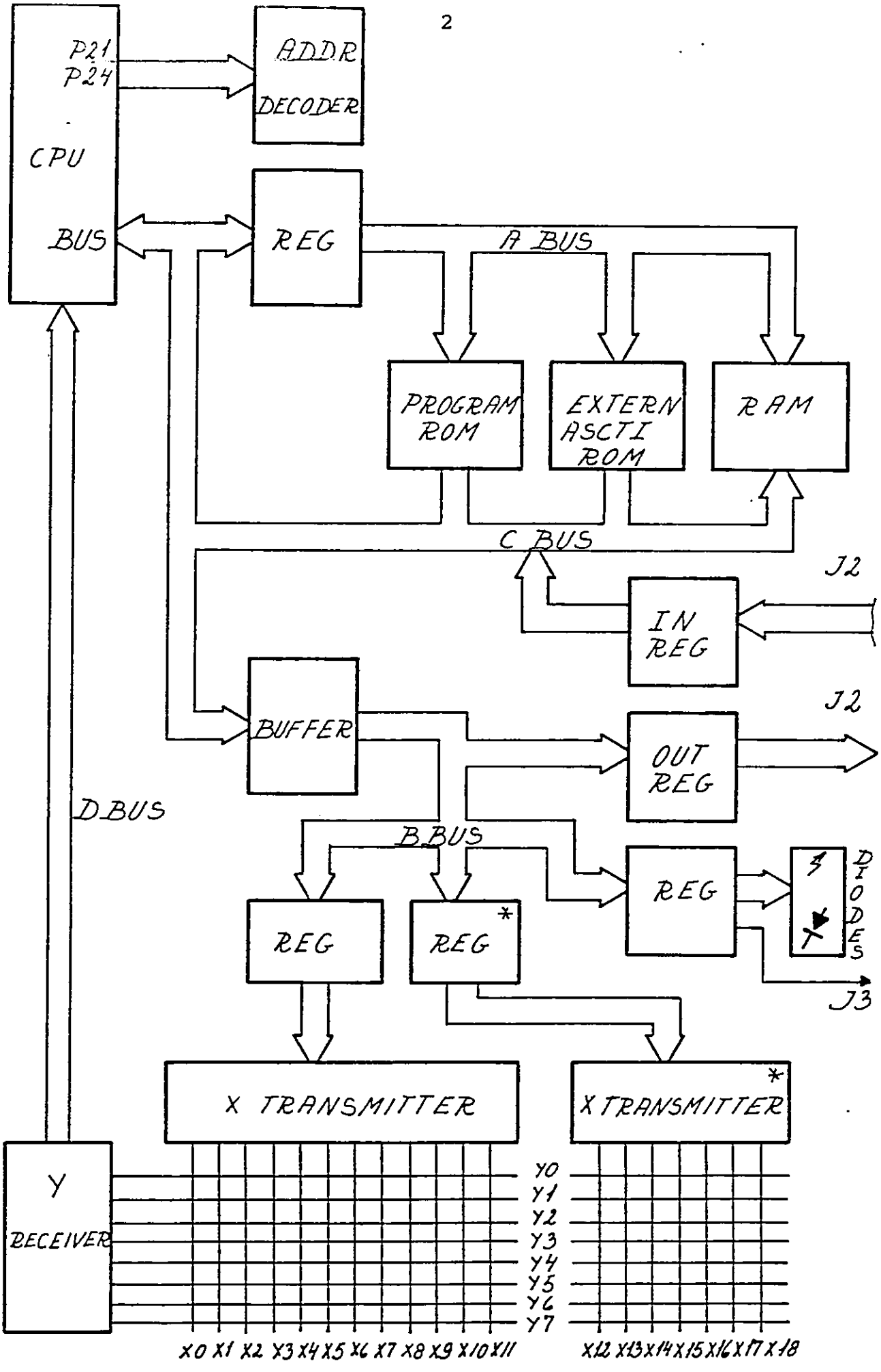
Keyboard description
Circuit diagrams
Cable CBL923
Alphabet
National variants.

1.1 Keyboard Description

The technical name for RC721 is KTC401, and for RC722 it is KTC403. The block diagram is shown in fig. 1. The circuit is controlled by a CPU from the Intel 8048 family. The block diagram for the CPU is shown in fig. 2. A more detailed description of the CPU may be obtained from the Intel manual.

When a key is pressed the capacity between the X wire and the Y wire increases. The CPU sends an address to the X transmitter, which sends a pulse on the wire addressed. When a key is pressed the pulse is received on the Y wire and information about the position of the pressed key is received by the CPU. The program takes care of any jitter which may accrue, and also of the N-KEY roll-over function. The ASCII value of the key pressed is generated by the CPU and sent to the OUT REG together with a strobe signal.

The IN REG and the EXTERN ASCII ROM are not used in KTC401 and KTC403.



* Only in KTC 403

Fig. 1 BLOCK DIAGRAM KTC 401/KTC 403.

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MCS - 48 . MICROPROCESSORS

I 8048 8 - BIT microcomputer with ROM.
I 8748 - - - - EPROM
I 8035 - - - - ext. MEMORY

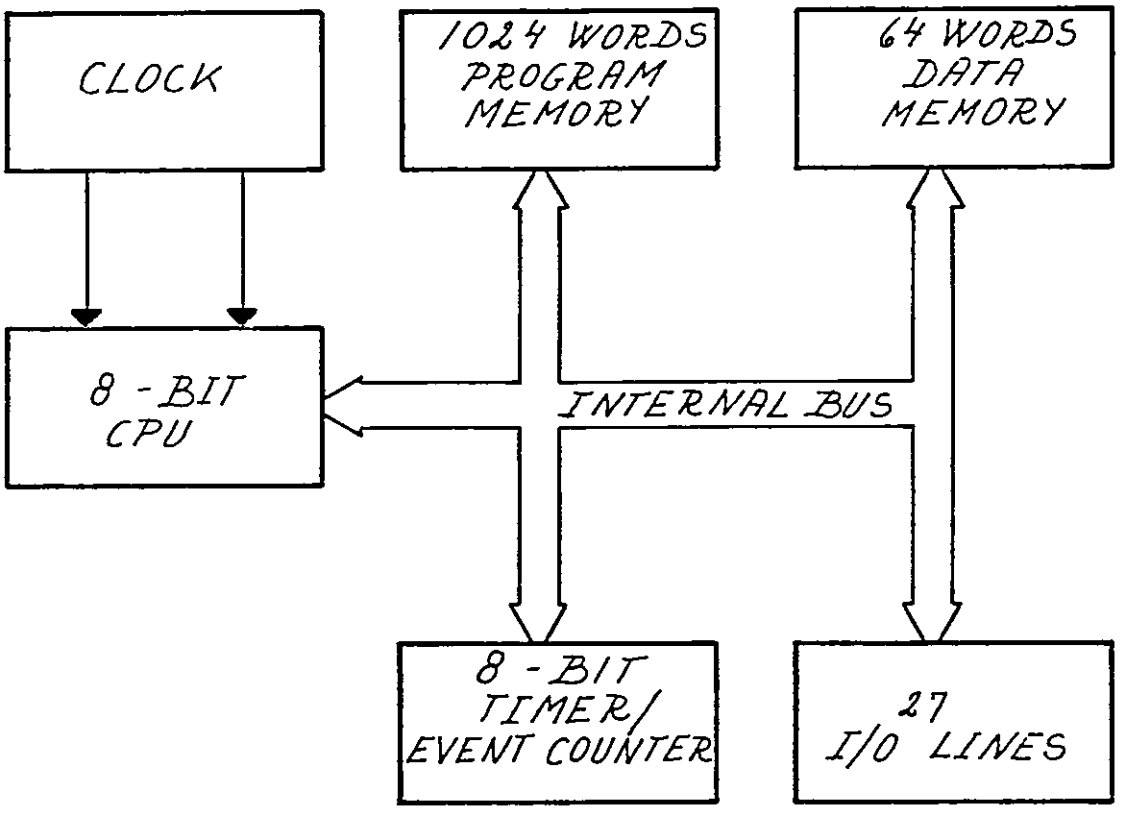

Fig. 2. BLOCK DIAGRAM for CPU- 8048.

MVP 8102102

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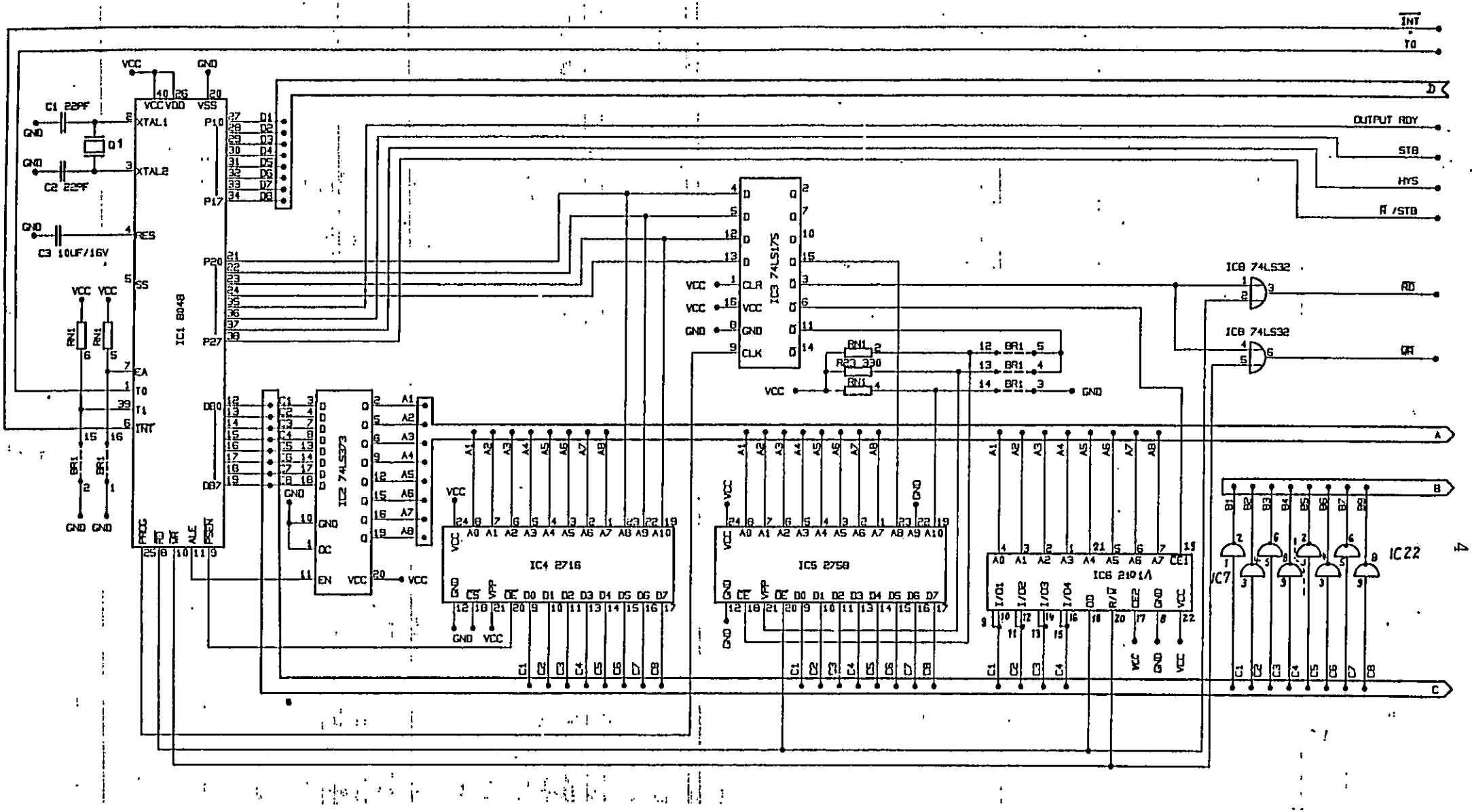
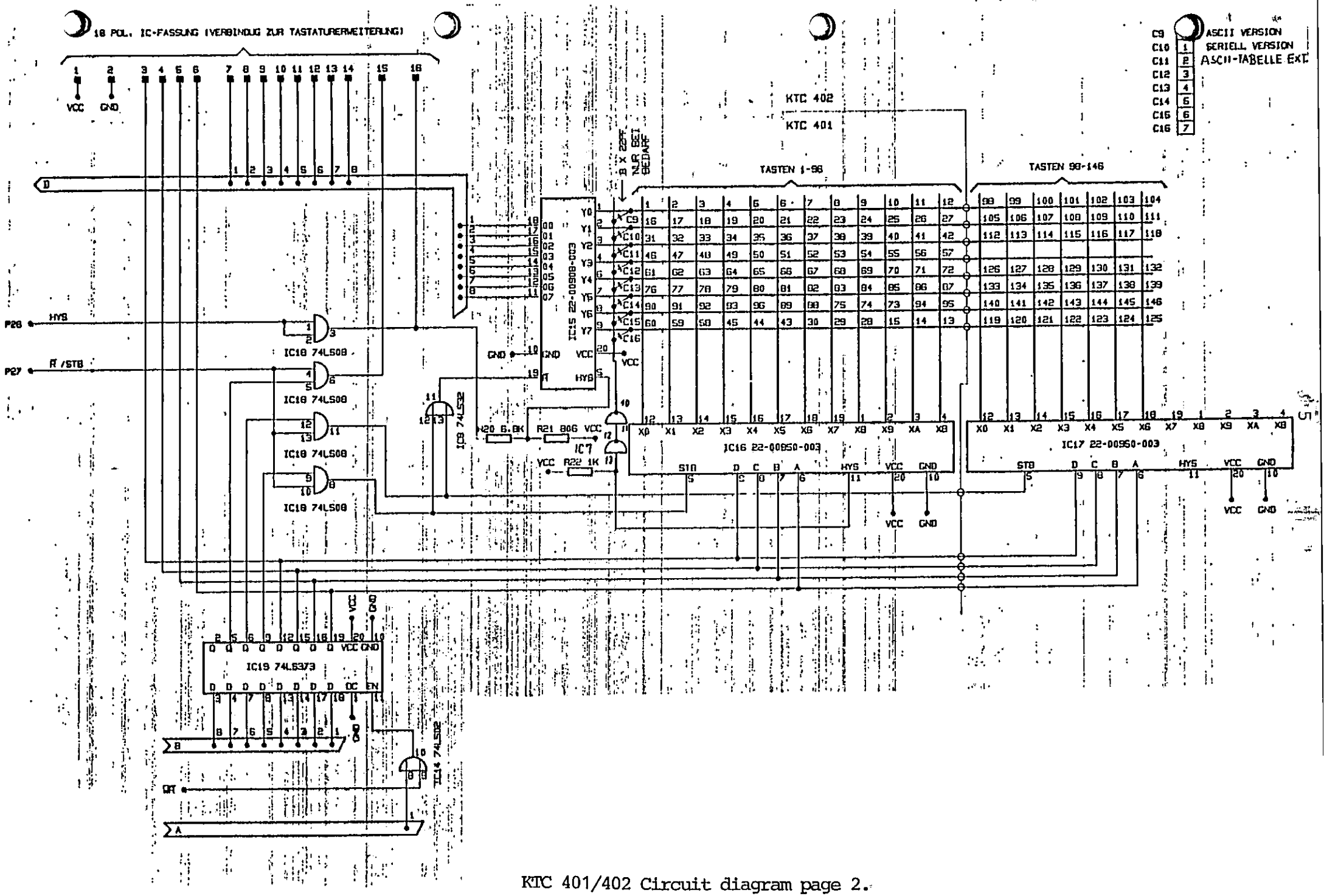
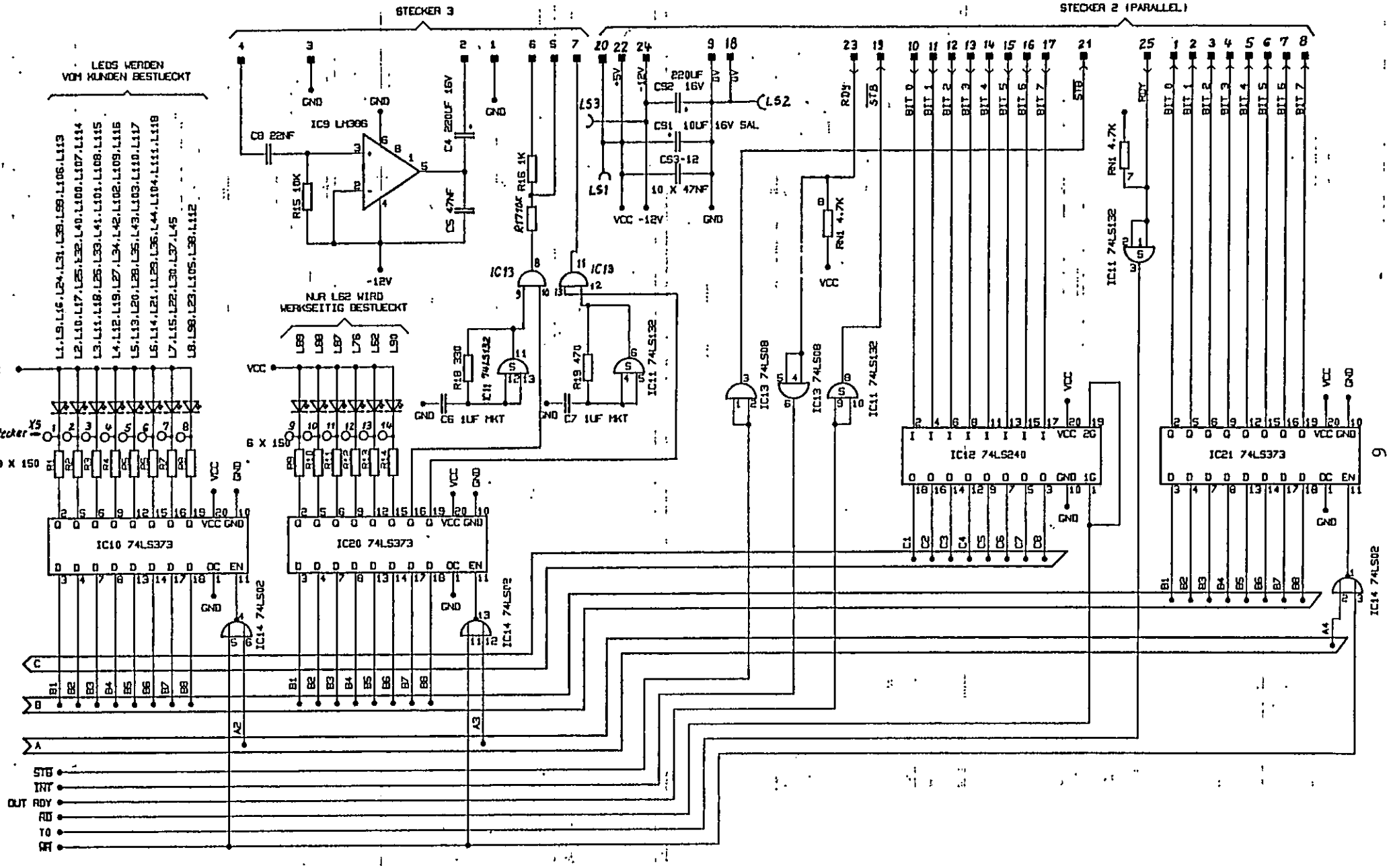


. Connection BR 1 to 16 for 8048

- BR 3 to 14 } ASCII TABLE from ext 2758
- BR 5 to 12 }
- BR 4 to 13 ASCII TABLE from ext 7641



KTC 401/402 Circuit diagram page 2.

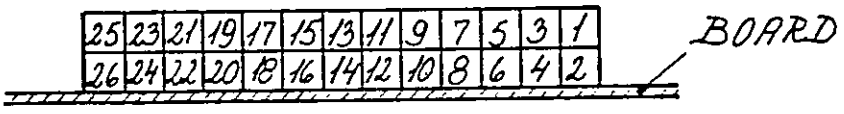

STECKER 3
STECKER 2 (PARALLEL)
LEDS WERDEN VOM KUNDEN BESTUECKT
NUR L62 WIRD WERKSEITIG BESTUECKT
IC9 LM386
IC10 74LS373
IC20 74LS373
IC21 74LS373
IC12 74LS240
IC11 74LS132
IC13 74LS08
IC14 74LS02
Prüfstecker X5
8 X 150
6 X 150
10 X 47NF
VCC
GND
-12V
STB
INT
OUT RDY
RD
TO
WR

2. CABLE CBL923

Fig. 3 shows the cable CBL923 which connects the keyboard to the computer. Power to the keyboard is supplied from the computer using CBL923.

CONNECTOR 1 TO KEYBOARD			CONNECTOR 2 TO COMPUTER
PIN NO.	SIGN. NAME KEYBOARD	SIGN. NAME RC 702	PIN No.
1	OUT 0	KEY 0	22
2	OUT 1	KEY 1	23
3	OUT 2	KEY 2	24
4	OUT 3	KEY 3	21
5	OUT 4	KEY 4	17
6	OUT 5	KEY 5	18
7	OUT 6	KEY 6	19
8	OUT 7	KEY 7	20
21	$\overline{STB}$	KEY STROBE	12
9	0V	0V	13
18	0V	0V	3
22	+5V	+5V	25

25 POL CANNON CONNECTOR



PIN LAY OUT FOR CONNECTION TO KEYBOARD.

Fig. 3. CABLE TO KEYBOARD CBL 923.

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3. ALPHABET 3.

Fig. 4 shows the ASCII Alphabet supplied from the keyboard. Note that 8 bits are used, i.e. an 'extended' ASCII alphabet is supplied from the keyboard.

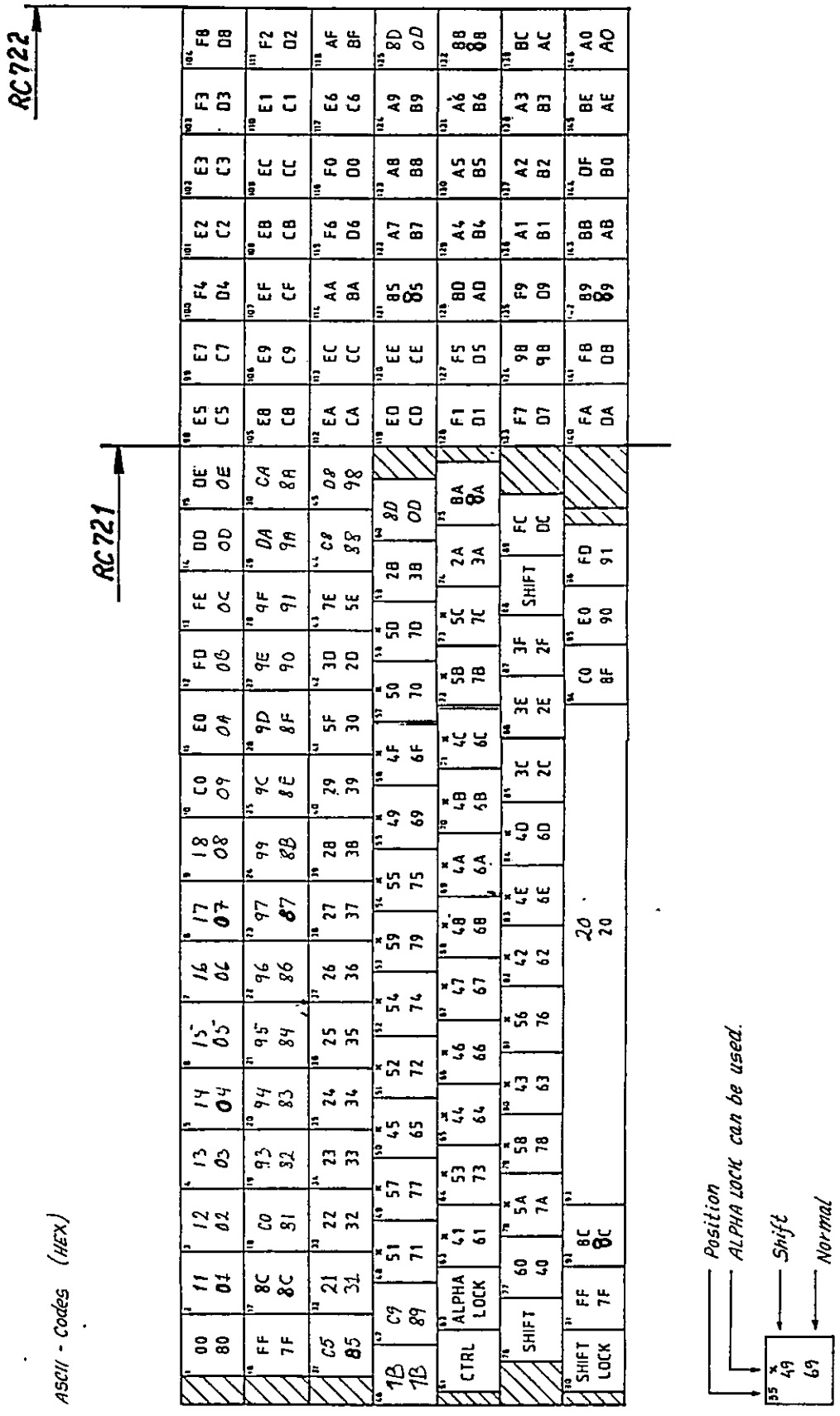


Figure 4: RC721/RC722 Keyboards; ASCII-code output and position numbers.

4. NATIONAL VERSIONS 4.

The RC721/RC722 Keyboards are available in a number of national versions. On the keyboards only a number of keytops are changed, accordingly. The same changes are made to both RC721 and RC722 to obtain the national version in question. Other changes required are made in the software of the microcomputer. Layout of the following national versions is shown:

Figure	RC72x,xxx	National version
5	RC72x,001	Danish (standard)
6	RC72x,002	Swedish
7	RC72x,003	US-ASCII
8	RC72x,004	German
9	RC72x,005	UK-ASCII
10	RC722,006	Danish (special)
11	RC72x,007	French
12	RC722,008	Danish (modified std.)

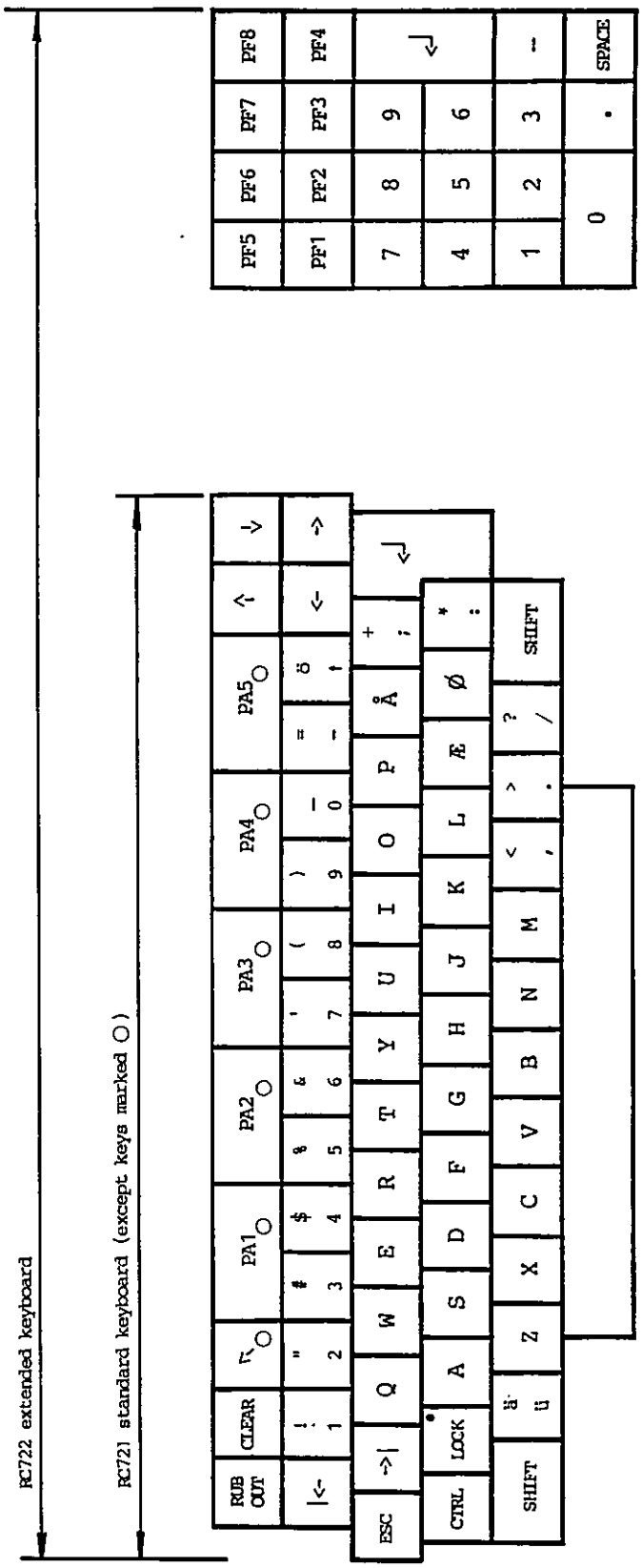


Figure 5: RC72x,001 Danish (standard) keyboard.

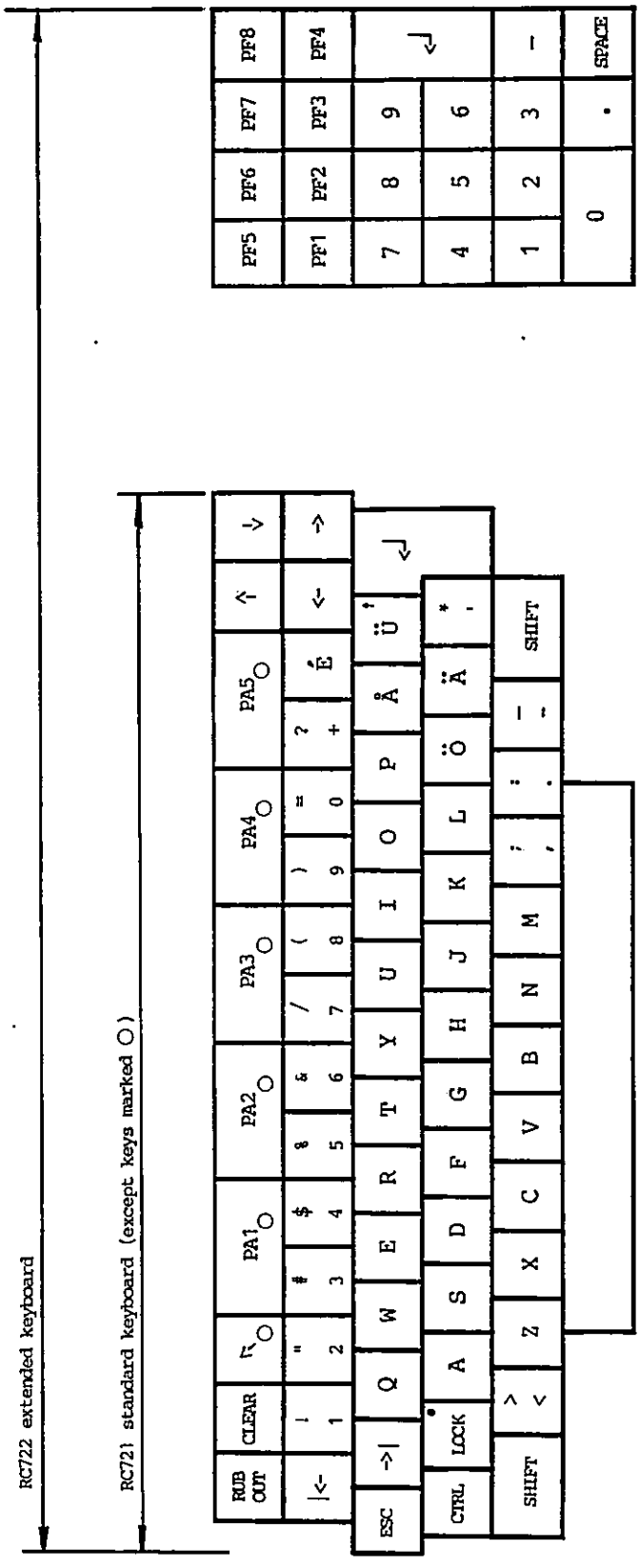


Figure 6: RC72x,002 Swedish keyboard.

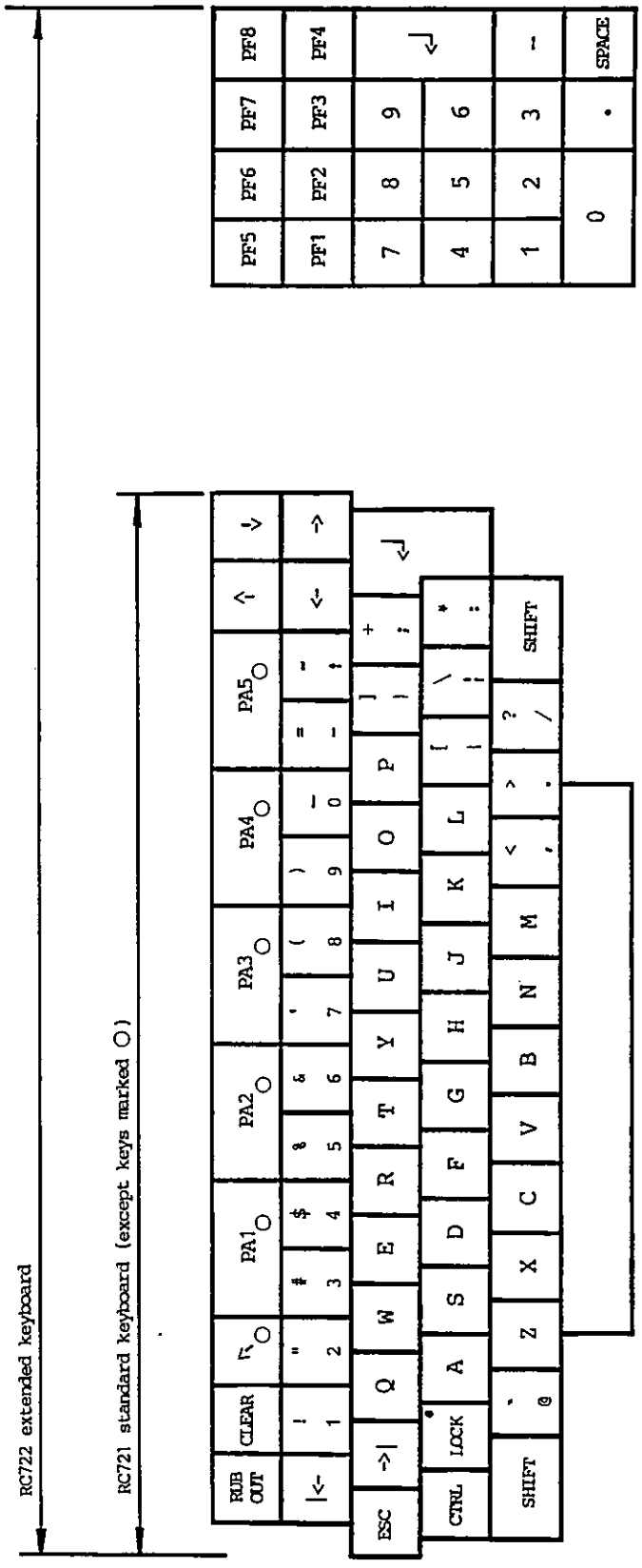


Figure 7: RC72x,003 US-ASCII keyboard.

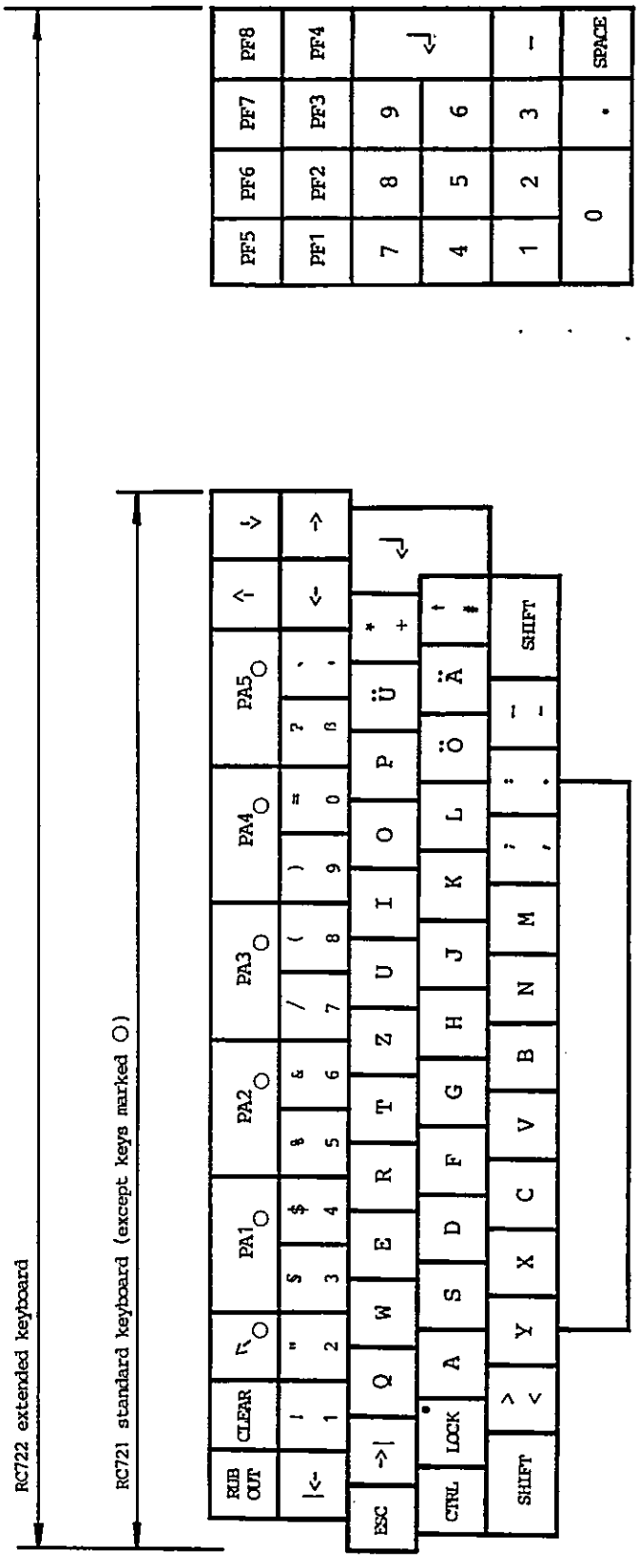


Figure 8: RC72x,004 German keyboard.

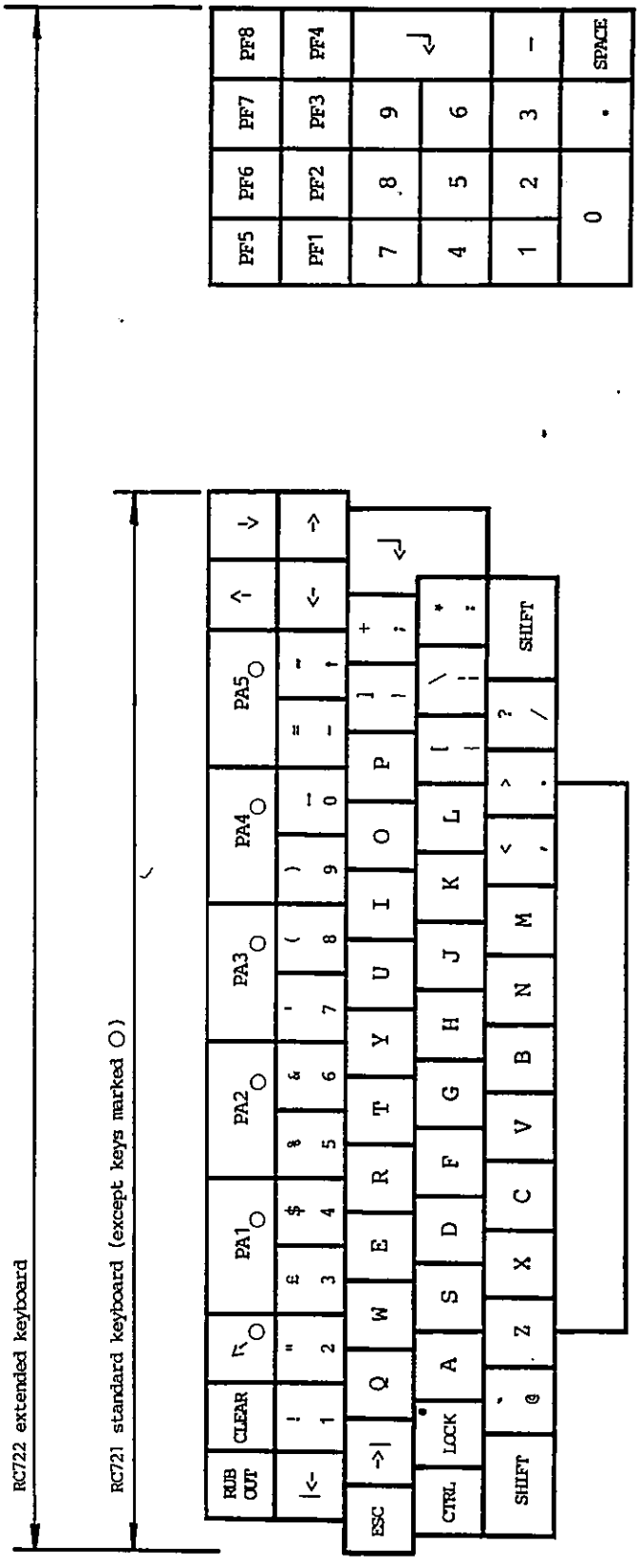
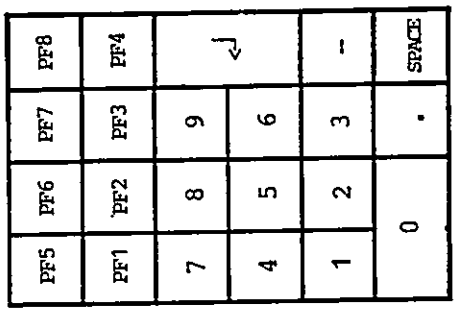


Figure 9: RC72x,005 UK-ASCII keyboard.



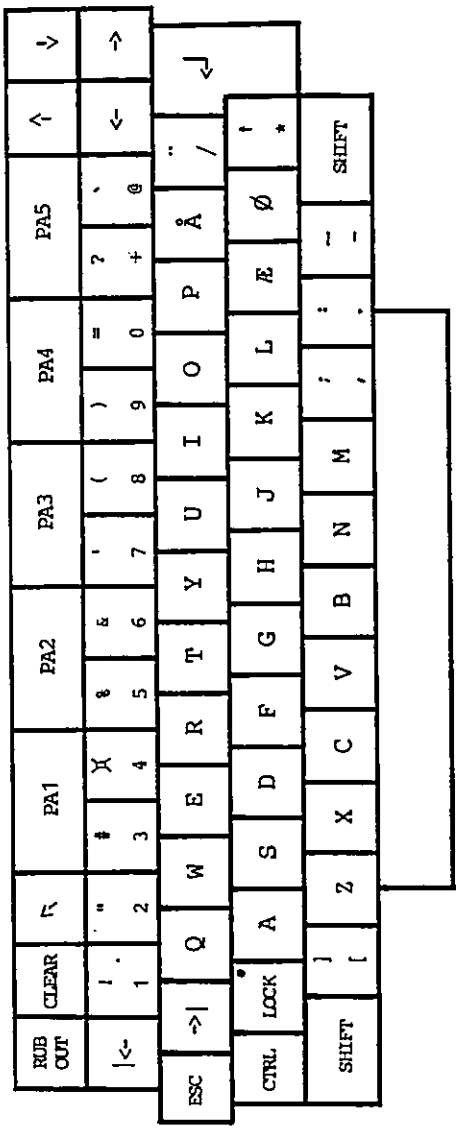


Figure 10: RC722,006 Danish (special) keyboard.

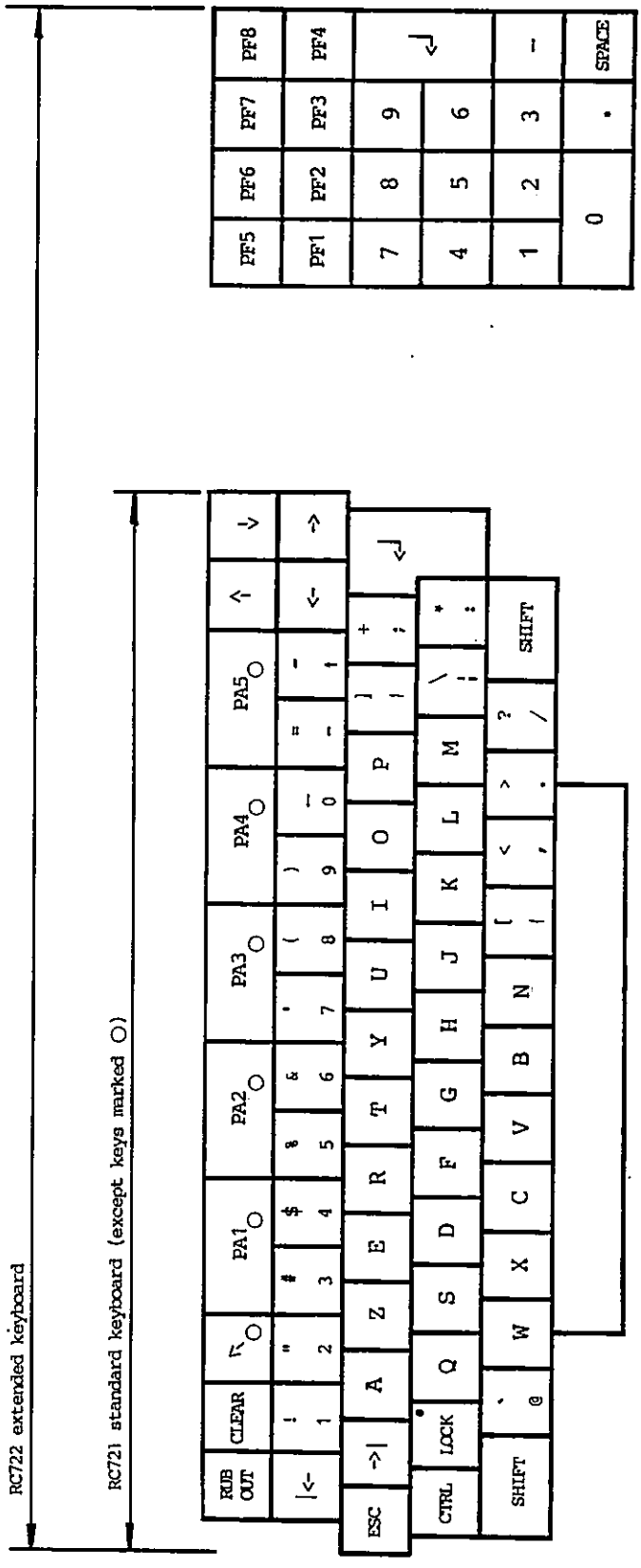
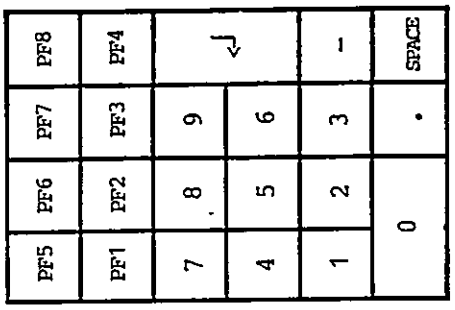


Figure 11: RC72x,007 French keyboard.



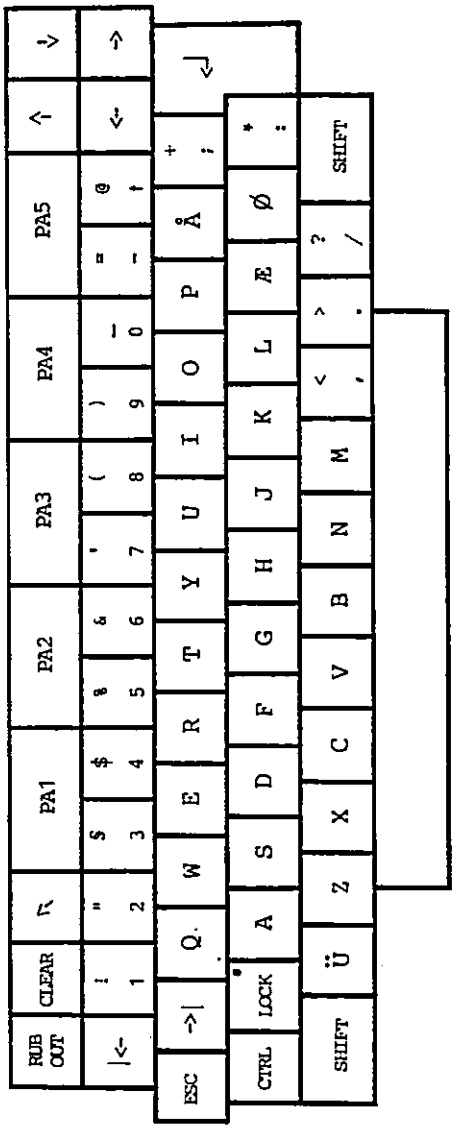


Figure 12: RC722,008 Danish (modified std.) keyboard.

RETURN LETTER

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