APPENDIX A

Keyboard Layouts and Use of Conversion Tables

This appendix gives keyboard layouts for the PTS6231, 6232, 6233, 6234, 6236, 6271, and 6272 keyboards with the codes generated by the keys.

The layout of the character sets on the keyboards varies with the national version of the keyboard.

In character conversion, the first digit (bits 0-3) of the generated code is used to index the column table. The second digit (bits 4-7) is used to index the character table.

To convert the code for any one key, the source conversion table must have a non-zero entry for the column in which the key occurs, and the character table must have codes for all the keys in that column. Thus, to convert code /41, for example, there must be a fourth entry in the column table. All codes from /40 to /4F must be in the character table, except for the second entry, which must contain the character to which /41 is converted.

Only the codes for special characters shown in layouts are automatically generated. Thus, if the application requires the characters !,",%,*,/,- or the national versions of #,$,{,},|,~ the appropriate code conversion table must be supplied.

Note that the symbols shown as @,[,],\, may generate different characters on an output device, depending on the National Character Variation selected for output; whether by hardware as on displays, or software, as on some printers.

The reader should also refer to the code conversion section of driver description DRKB04. Examples on the use of conversion tables are given at the end of this appendix.

PTS6232

This is a full alphanumeric keyboard with clusters for alphabetic, numeric and function keys, plus a 2 position keylock.
The keyboard layout shows the codes generated by the keys with the keylock in position 1. With the keylock in position 2 the following codes are altered:

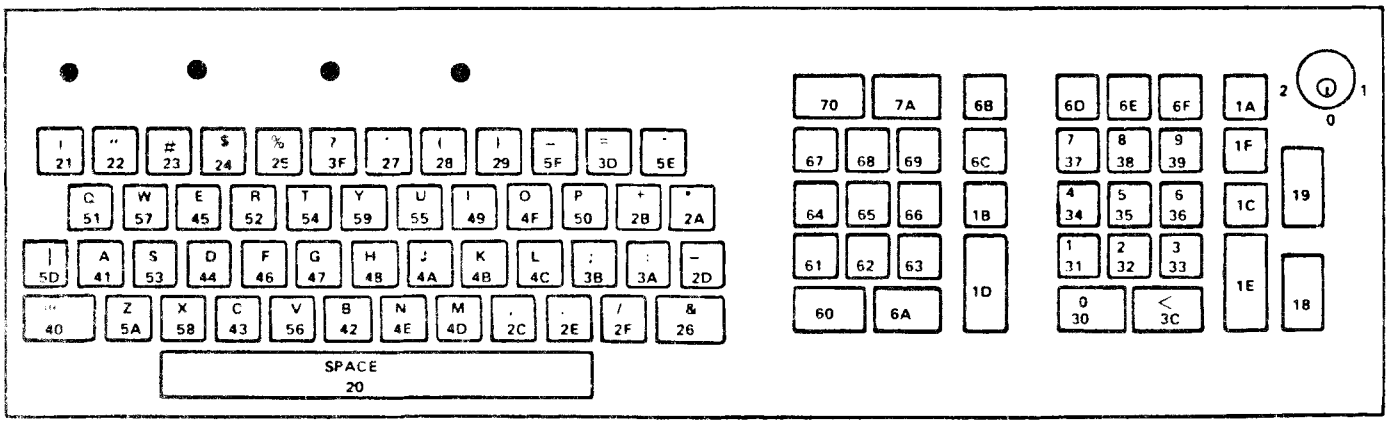
Codes /60 and /6A become /00 (nulls).
Codes /61 to /69 become /71 to /79.
Codes /6B to /6F become /7B to /7F.

All other codes are unchanged.

Code conversion.

If code conversion is required a conversion table must be set up. Only the UNSHIF section of CTAB can be used.

PTS 6232 – Keylock in position 1.



Position 2 : Codes 60, 6A become 00 : Codes 61–69, 6B–6F become 71–79, 7B–7F : All other codes are unchanged

Keyboard Layout for PTS6232

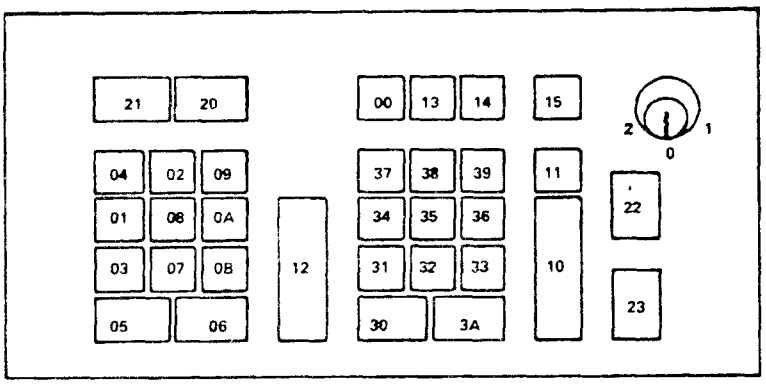
PTS6231

This keyboard has numeric and function keys, plus a single keylock.
With the keylock in position 1 normal numerics are generated from the numeric cluster (/30-/39), and the function keys generate codes as shown.
With keylock in position 2, all codes for the function keys are changed, and the codes generated by the numeric cluster are /70 to /79.
The keyboard layout is given with codes generated for keylock positions 1 and 2.

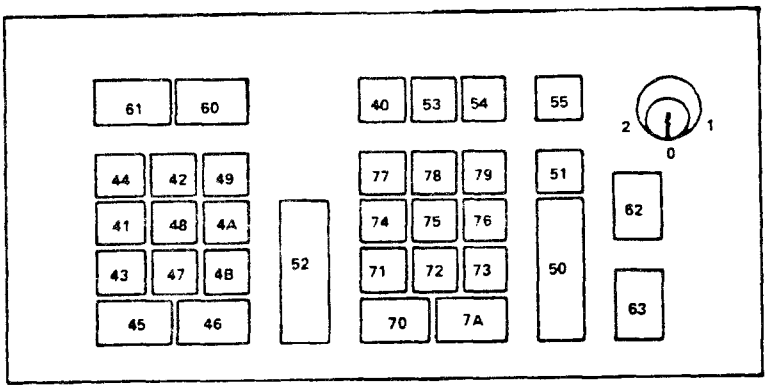
Code conversion

If code conversion is required a conversion table must be set up. Only the UNSHIF section of CTAB can be used.

PTS 6231 – Keylock in position 1.



PTS 6231 – Keylock in position 2



Keyboard Layout for PTS6231

PTS6234

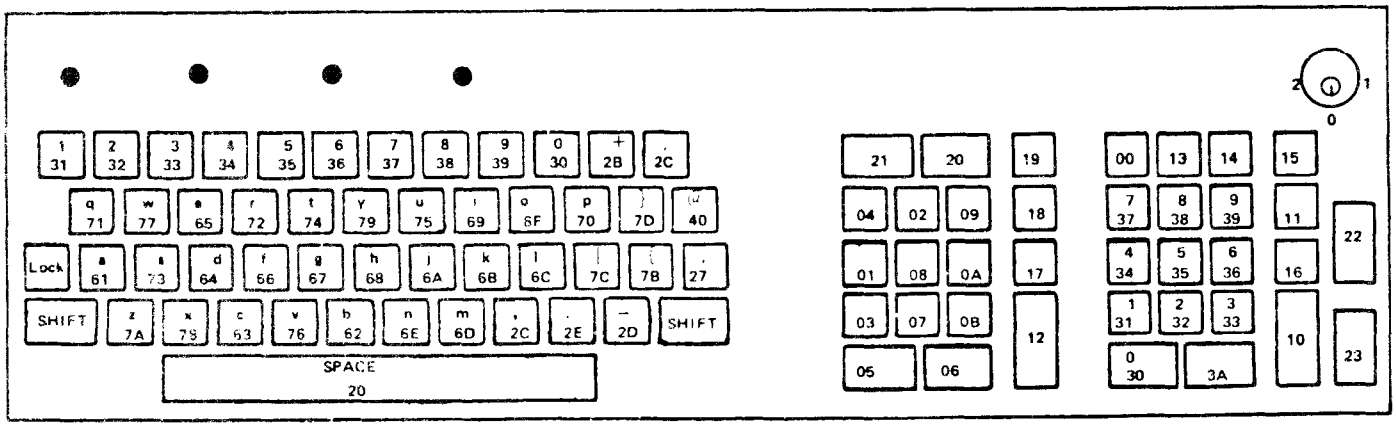
This is a full alphanumeric keyboard with alphabetic cluster and numeric/function cluster, plus a two position keylock.
The keylock position only affects the codes generated by the numeric/function cluster.
The shift key only affects the alphabetic cluster. The standard version of the PTS6234 is strapped to give codes for upper case letters irrespective of shift mode. (Note that other keys in the alphabetic cluster are affected by the shift mode).

Code conversion

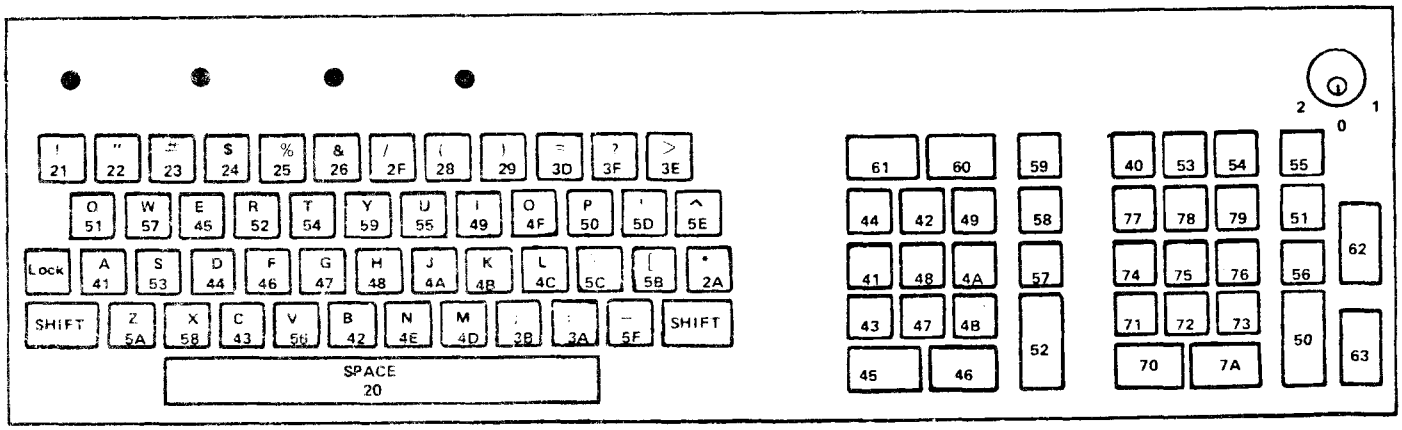
If code conversion is required a conversion table must be set up. Only the UNSHIF part of CTAB can be used. Depressing the shift key alters the codes output by the keyboard, and does not change the status of the driver.

To avoid code interference between the alphabetic and numeric clusters, the 'special' section of the code conversion table can be used. The keyboard is given 2 device addresses (one for each key cluster) and only one DWT. The key codes received from the device address given first in SYSGEN are code converted via the 'special' table. This is used for the numeric/function cluster.
Keyboard layouts with codes generated are shown for shift/unshift modes, and for keylock positions 1 and 2.

PTS 6234 – Keylock in position 1 and Unshift Mode



PTS 6234 – Keylock in position 2 and Shift Mode



Notes . Change of Shift Mode only affects the alphabetic cluster; change of keylock setting only affects the numeric/function cluster.
The standard version of the keyboard is strapped to generate shifted character irrespective of mode.

Keyboard Layout for PTS6234

PTS6233

This keyboard has only a numeric/function cluster, with a 2 position keylock. It generates the same codes as the PTS6234 numeric/function cluster, and is handled by the driver in the same way.

PTS6271, PTS6272 and PTS6236

The PTS6272 is a full alphanumeric keyboard with alphabetic, numeric and function clusters, and up to 4 keylocks.

The PTS6236 is similar to the PTS6272 but does not have the numeric shift, (Key A15 generates nulls), and does not have keys to generate codes /28 and /29.

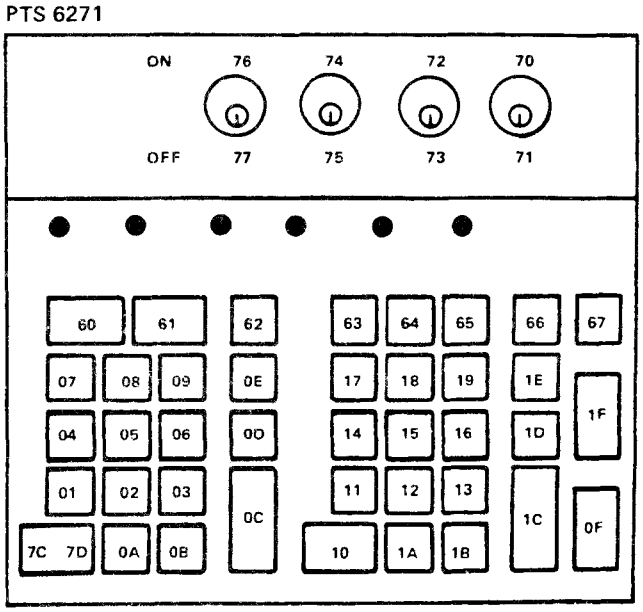
The PTS6271 has only numeric and function clusters, and these are handled by the driver in the same way as the numeric and function clusters of the PTS6272.

Code Generation

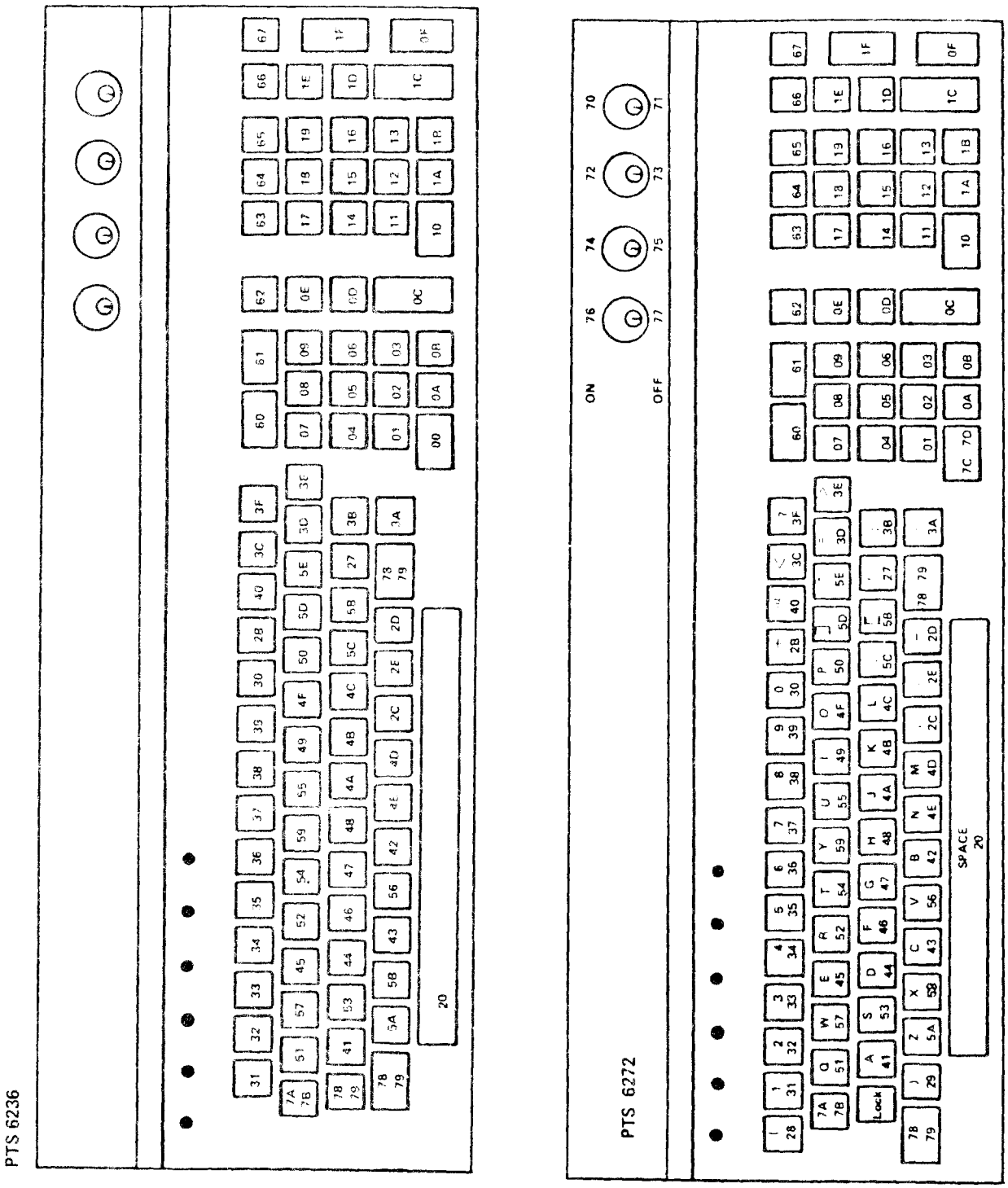
- Refer to keyboard layout for the PTS6272. The codes shown in the lower half of each box give the hexadecimal codes generated by the keys. Where possible the character equivalent is given in the upper half of the box. For the PTS6271 and PTS6236 only codes generated are shown.
- Where 2 hexadecimal codes are shown, the upper or leftmost is generated when the key is pressed, and the other is that generated when the key is released (SHIFT, CONTROL and NUMERIC SHIFT). These codes are not passed to the application buffer. They are used to alter the internal status of the driver to switch to different parts of the code conversion table.
- Keylock codes (/70 to /76) are reported by way of the ECB Control Word 1, and are passed to the application buffer.

Code Conversion

If only upper case characters are required, and only the numerics from the top row of the alphabetic key cluster, then it is not necessary to provide a code conversion table.
If lower and upper case are required, and/or numerics from the numeric cluster a code conversion table must be supplied.



Keyboard Layout for PTS6271.



Keyboard Layouts for PTS6236 and 6272.

Conversion examples

Source of a typical conversion table for PTS6236 or PTS6272 is as follows:

```
      ENTRY CTAB01
CTAB01 DATA   UNSHIF,SHIFT,0,0,0,

UNSHIF DATA   0,0,U2,0,0,U5,0,0,0
SHIFT  DATA  0,0,0,0,S4,S5,0,0,0

U2       DATA  /2021,/2223,/2425,/2618,/2829,/2A2B,/2C2D,/2E2F
U5       DATA  /5051,/5253,/5455,/5657,/5859,/5A08,/0D5D,/5E5F
S4       DATA  /4061,/6263,/6465,/6667,/6869,/6A6B,/6C6D,/6E6F
S5       DATA  /7071,/7273,/7475,/7677,/7879,/7A5B,/5C5D,/5E5F
```

This table converts the key codes:

```
/27 to /18,
/5B to /08,   in unshift mode.
/5C to /0D
```

Lower case characters are generated when the Shift key is pressed (codes /41 - /5A are converted to /61 - /7A).

Conversion of keycode /5C in Unshift mode, to /0D occurs in the following manner:-

```
      ENTRY CTAB01
```

The UNSHIF column table is accessed.

```
CTAB01 DATA  UNSHIF,SHIFT,0,0,0
```

The first digit of keycode, 5, is displacement in column table:

```
UNSHIF DATA   0,0,U2,0,0,U5,0,0
SHIFT  DATA   0,0,0,0,S4,S5,0,0
U2     DATA   /2021,/2223,/2425,/2618,/28291/2A2B,/2C2D,/2E2F
```

The second digit of keycode, C, is displacement in character table:

```
U5       DATA  /5051,/5253,/5455,/5657,/5859,/5A08,/0D5D,/5E5F
S4       DATA  /4061,/6263,/6465,/6667,/6869,/6A6B,/6C6D,/6E6F
S5       DATA  /7071,/7273,/7475,/7677,/7879,/7A5B,/5C5D,/5E5F
```

In this example, conversion is not needed for Control and Shift/control modes, and the corresponding entries in CTAB01 are zero.

To convert keys pressed when the Control key is pressed, to the same codes as keys pressed in Shift mode, the address of the SHIFT column table must also be specified in the Control position (the third entry) in CTAB01, as follows:

```
CTAB01 DATA  UNSHIF,SHIFT,SHIFT,0,0,
```

In the same way, different ranges of keycodes can be converted to the same character codes, by specifying the addresses of the same character tables in the corresponding entries in the column tables. For example, the keycodes in the range /20 - /2F will be converted to the same codes as keycodes /40-/4F, in Shift mode, if the SHIFT column table contains the same character table address in the third entry:

```
SHIFT  DATA  0,0,S4,0,S4,S5,0,0
```