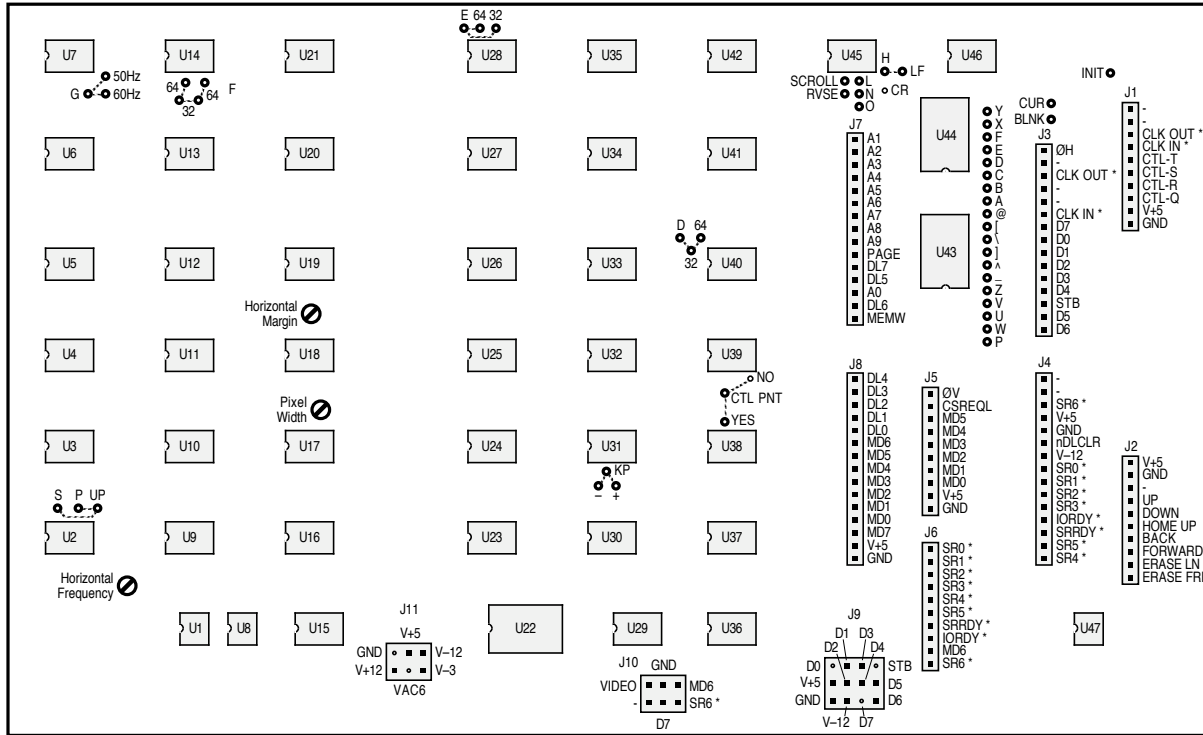


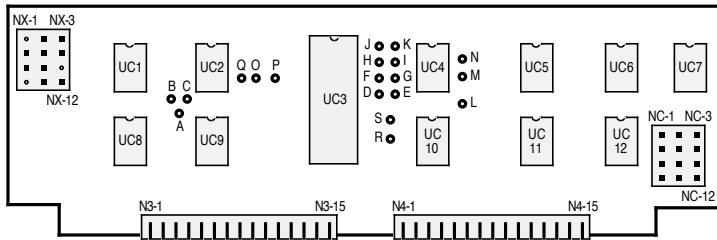
**Southwest Technical Products  
CT-64  
Video Terminal  
  
Schematic**

| <b>Contents</b>                           |      |
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**Display Board**  
(component side)



**Serial Communications Board**  
(component side)



- The symbol ▼ indicates V+5.
- The symbol ⌋ in a gate indicates Schmitt-trigger inputs.
- The symbol ⌋ in a gate indicates an open-collector output.
- Capacitance in microfarads unless otherwise indicated.

- These drawings based on original SWTP documents and examination of a physical unit.
- Display schematic drawn 2001 Oct by bh.
- Serial Comm., Screen Read and Keyboard schematics drawn 2004 Oct 4 by bh.

**General Notes:**

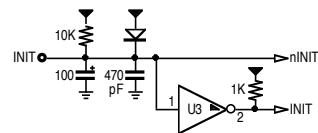
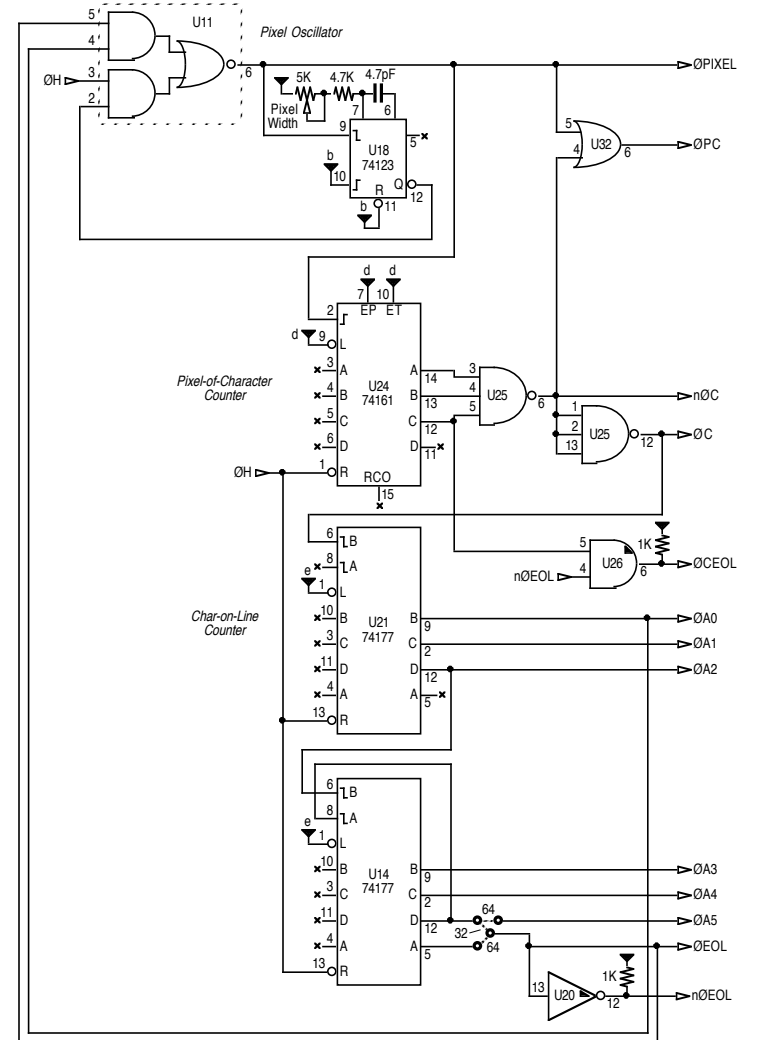
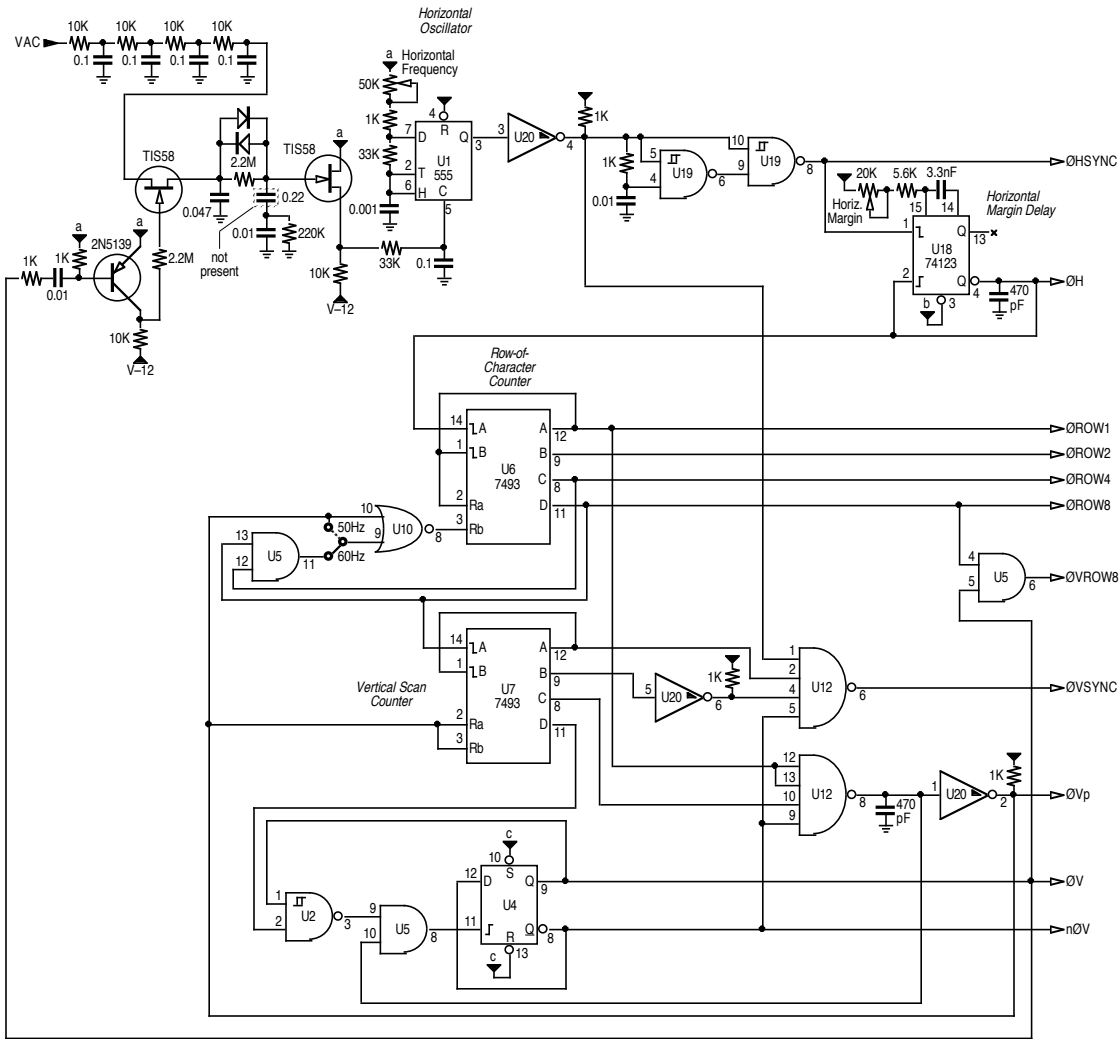
- Stop Bits: If the bit rate is set to 110 BPS, 2 stop bits are transmitted. For all other bit rates 1 stop bit is transmitted.
- The keyboard ECHO and RCV/XMT switches are inverted. Setting the ECHO switch down disables local echo. Setting the RCV/XMT switch down disables data transfer over the RS-232 port. In addition, the RCV/XMT switch must be down for local echo to function if there is no external device plugged into the RS-232 port.
- The case select (U/U+L) switch affects only transmission of characters.
- If the pixel width is set too wide, such that the line width goes beyond the horizontal scan time, the system can lock up and not accept received characters.

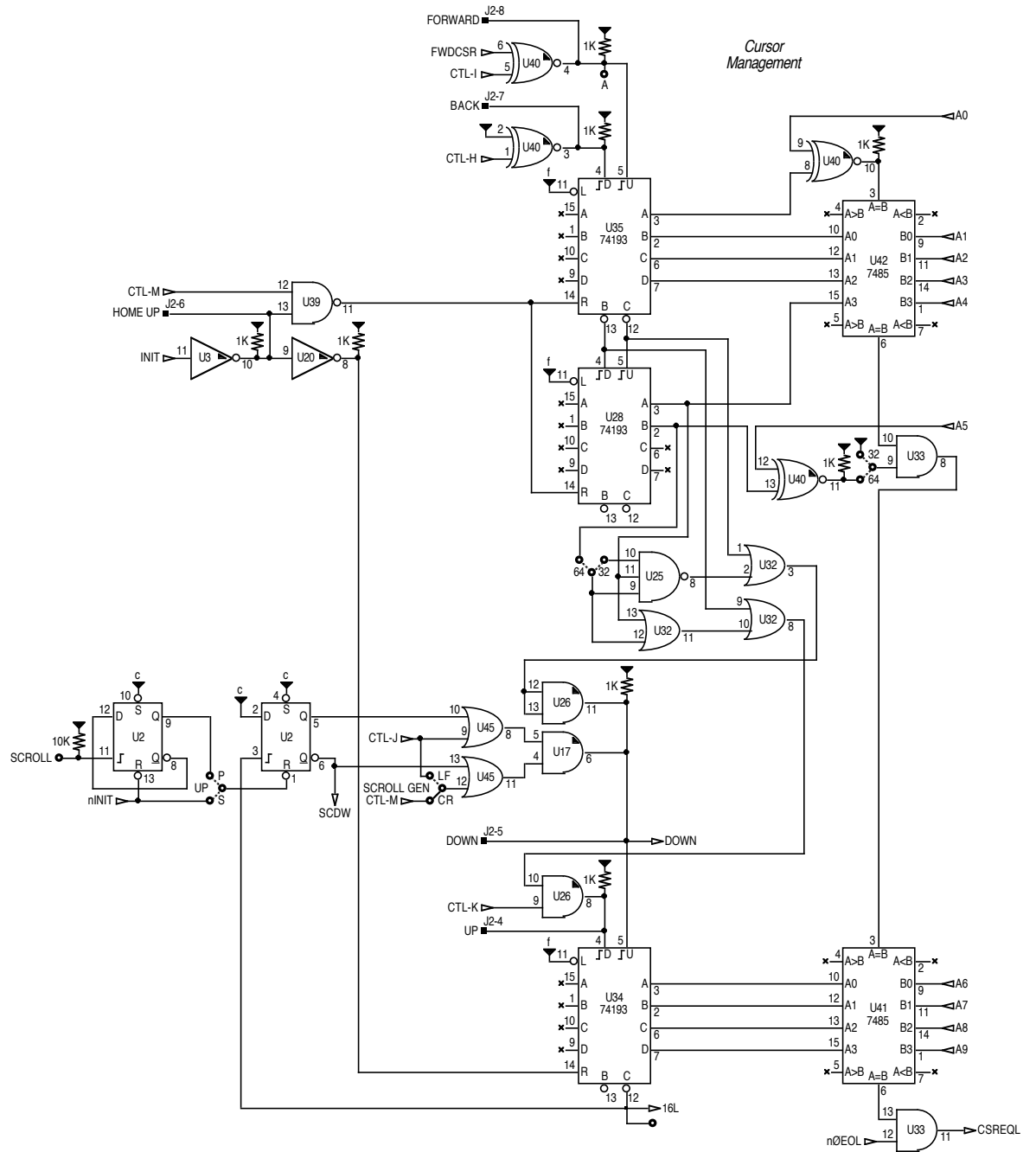
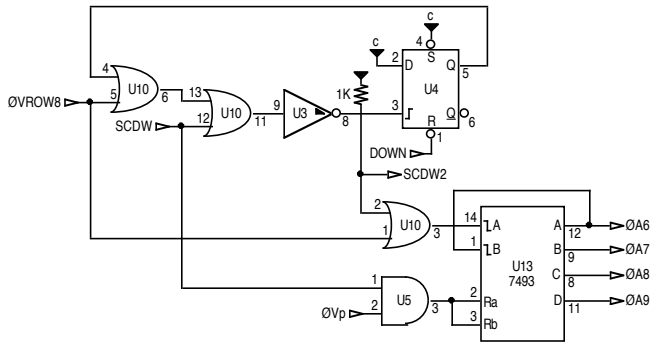
**Configuration Jumpers**

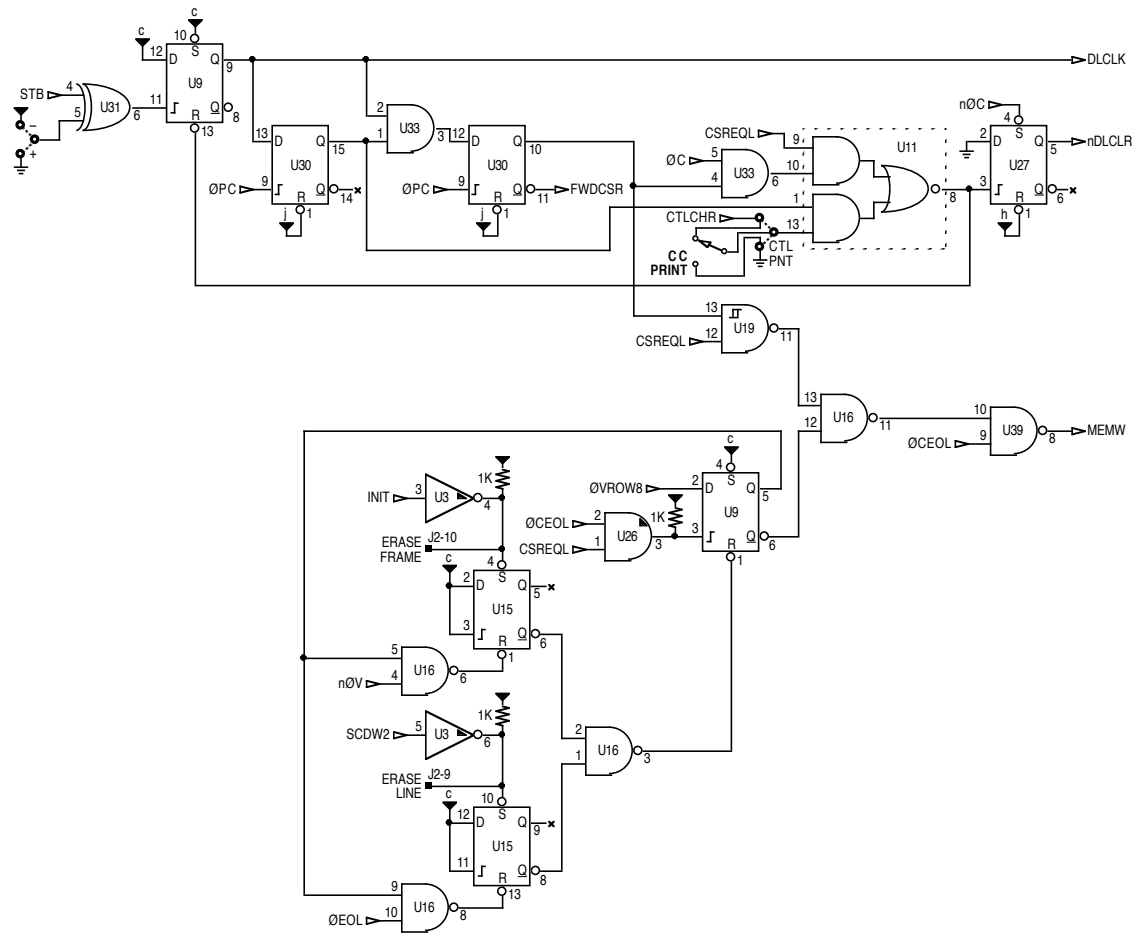
| Board                   | Option                          | Choices                                   | As wired                                  |                              |
|-------------------------|---------------------------------|---|---|------------------------------|
| Display                 | Line (frame) frequency (G)      | 50 Hz<br>60 Hz                            | *   |                              |
|                         | Characters per line (D,E,F)     | 32<br>64                                  | *   |                              |
|                         | Scroll generation (H)           | by CR<br>by LF                            | *   |                              |
|                         | Display control chars (CTL PNT) | Yes<br>No                                 | panel switch<br>panel switch              |                              |
|                         | Power-up page state (UP)        | P: page/scroll toggle<br>S: scroll always | *   |                              |
|                         | Display strobe edge (KP)        | +<br>-                                    | *   |                              |
|                         | Serial I/O                      | Bit rate                                  | AB: 110 only<br>AC: 110 thru 1200         | *                            |
| Number of data bits     |                                 | IH: 7 data bits<br>open: 8 data bits      | *   |                              |
| No parity bit           |                                 | FG: parity bit<br>open: no parity bit     | *   |                              |
| Parity odd/even         |                                 | JK: odd<br>open: even                     | *   |                              |
| XMT strobe edge         |                                 | MN: +<br>LN: -                            | *   |                              |
| XMT bit 8               |                                 | DE: always 0<br>open: as from keyboard    | *   |                              |
| RCV bit 8               |                                 | PQ: always 0<br>OQ: as received           | *   |                              |
| Screen read rcv inhibit |                                 | RS: inhibit<br>open: not inhibited        | *   |                              |
| Keyboard                |                                 | Strobe edge                               | +<br>-                                    | *                            |
|                         |                                 | Case                                      | U: uppercase only<br>U+L: upper and lower | panel switch<br>panel switch |
|                         | Parity                          | U: uppercase only<br>U+L: upper and lower | *   |                              |
|                         | BACKSPACE key                   |   | _ and DEL                                 |                              |
|                         | blank key                       |   | \ and                                     |                              |

**Display Control Codes**

| Hex | ASCII | CTL | Action             | Fixed | Hex | ASCII | CTL | Action             | Fixed |
|-----|-------|-----|--------------------|-------|-----|-------|-----|--------------------|-------|
| 00  | NUL   | @   |                    |       | 10  | DLE   | P   | Home Up            |       |
| 01  | SOH   | A   |                    |       | 11  | DC1   | Q   | reserved for AC-30 |       |
| 02  | STX   | B   |                    |       | 12  | DC2   | R   | reserved for AC-30 |       |
| 03  | ETX   | C   |                    |       | 13  | DC3   | S   | reserved for AC-30 |       |
| 04  | EOT   | D   |                    |       | 14  | DC4   | T   | reserved for AC-30 |       |
| 05  | ENQ   | E   | Cursor Blink       |       | 15  | NAK   | U   | Erase to EOL       |       |
| 06  | ACK   | F   | Cursor On/Off      |       | 16  | SYN   | V   | Erase to EOS       |       |
| 07  | BEL   | G   | BELL               | *     | 17  | ETB   | W   |                    |       |
| 08  | BS    | H   | BACK               | *     | 18  | CAN   | X   |                    |       |
| 09  | HT    | I   | FORWARD            | *     | 19  | EM    | Y   |                    |       |
| 0A  | LF    | J   | DOWN               | *     | 1A  | SUB   | Z   |                    |       |
| 0B  | VT    | K   | UP                 | *     | 1B  | ESC   | (   |                    |       |
| 0C  | FF    | L   | Page/Scroll Toggle |       | 1C  | FS    | \   |                    |       |
| 0D  | CR    | M   | RETURN             | *     | 1D  | GS    | )   |                    |       |
| 0E  | SO    | N   | Reverse Video      |       | 1E  | RS    | ^   |                    |       |
| 0F  | SI    | O   | Page 1/2 Toggle    |       | 1F  | US    | -   |                    |       |





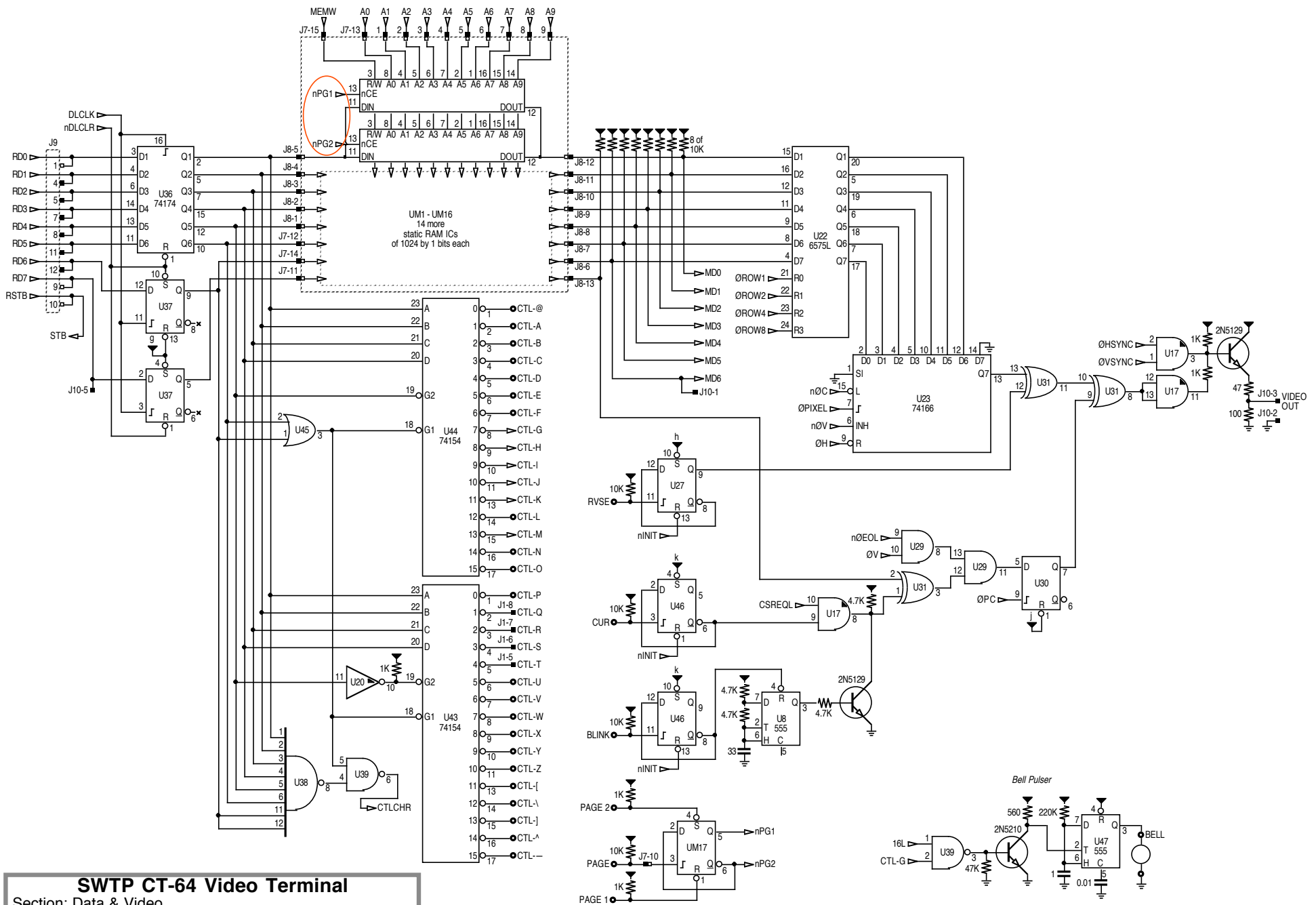


**SWTP CT-64 Video Terminal**

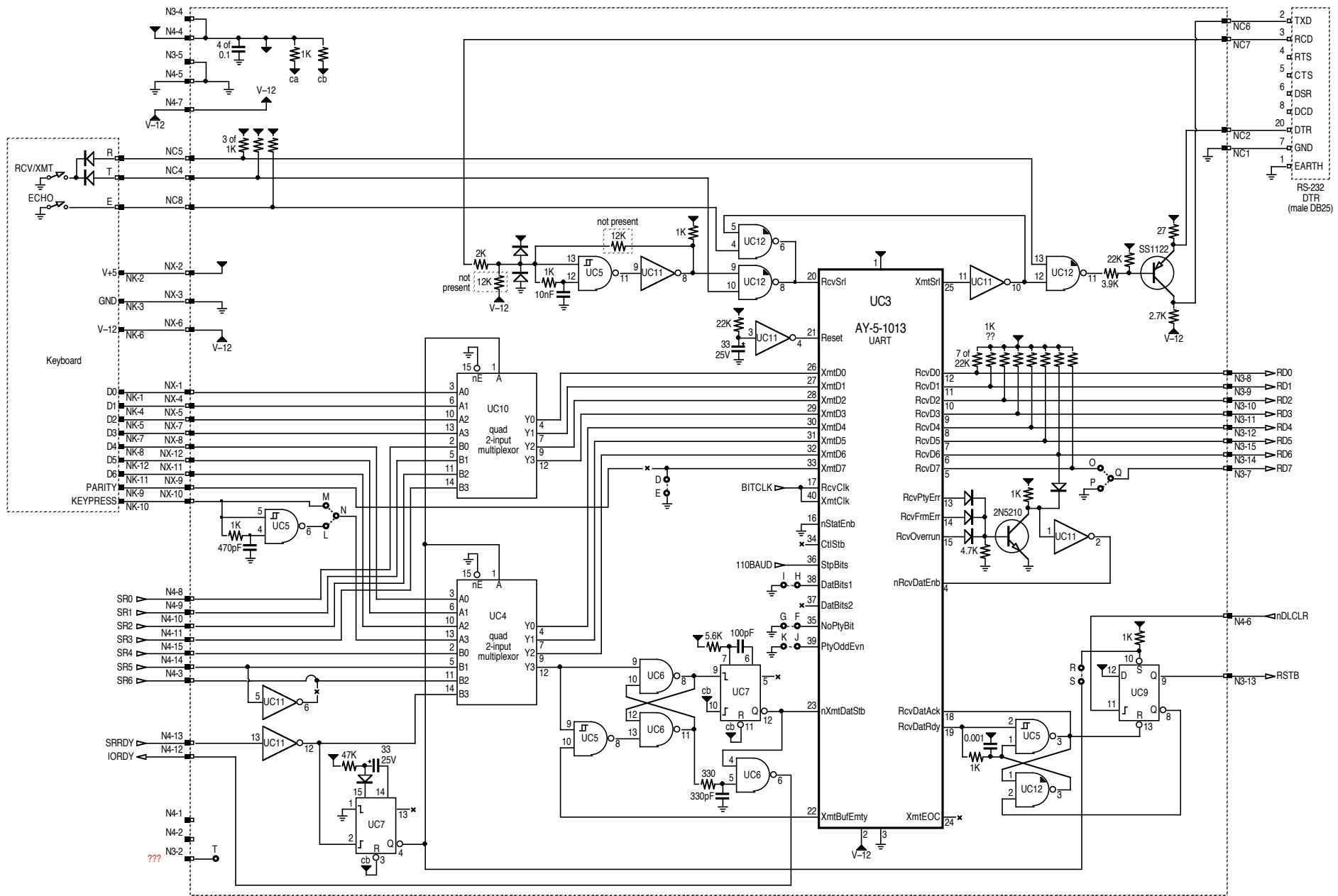
Section: Data Latch Control & Memory Write Control

Page: 5

Rendition: 2014 Jan 6



**SWTP CT-64 Video Terminal**  
 Section: Data & Video  
 Page: 6  
 Rendition: 2014 Jan 6

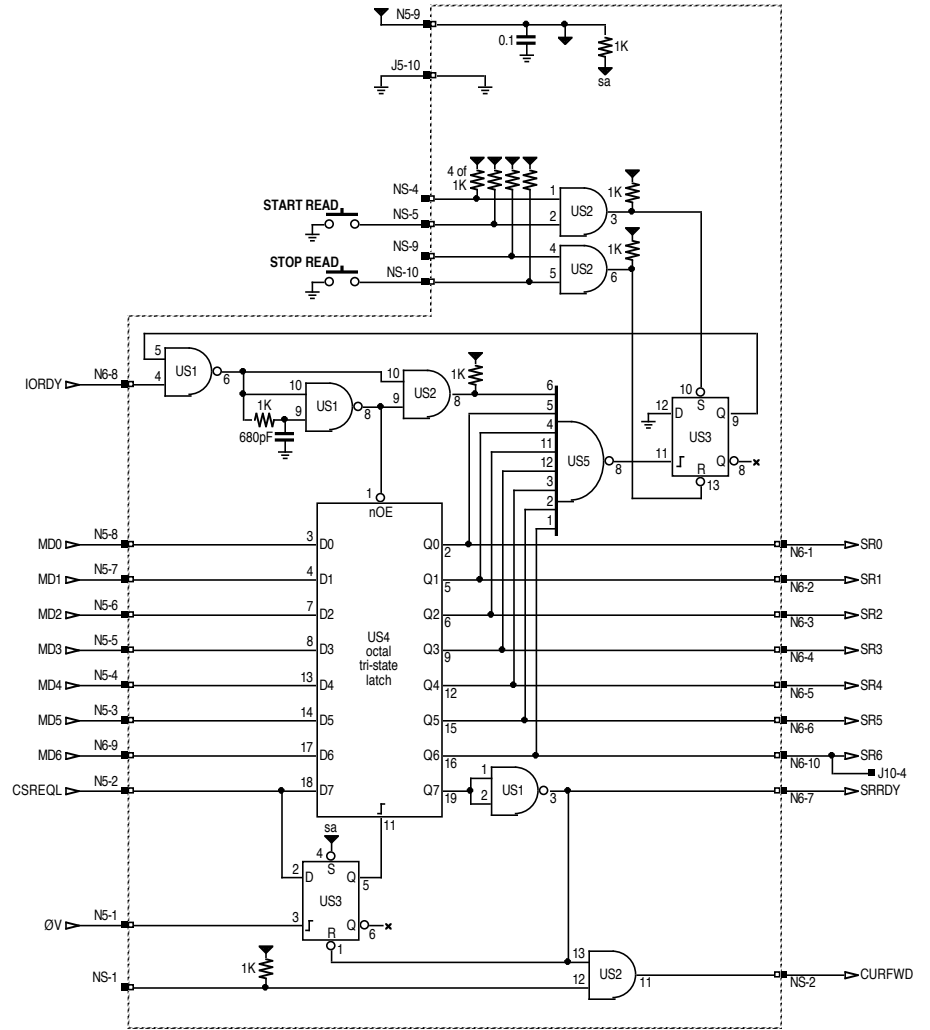
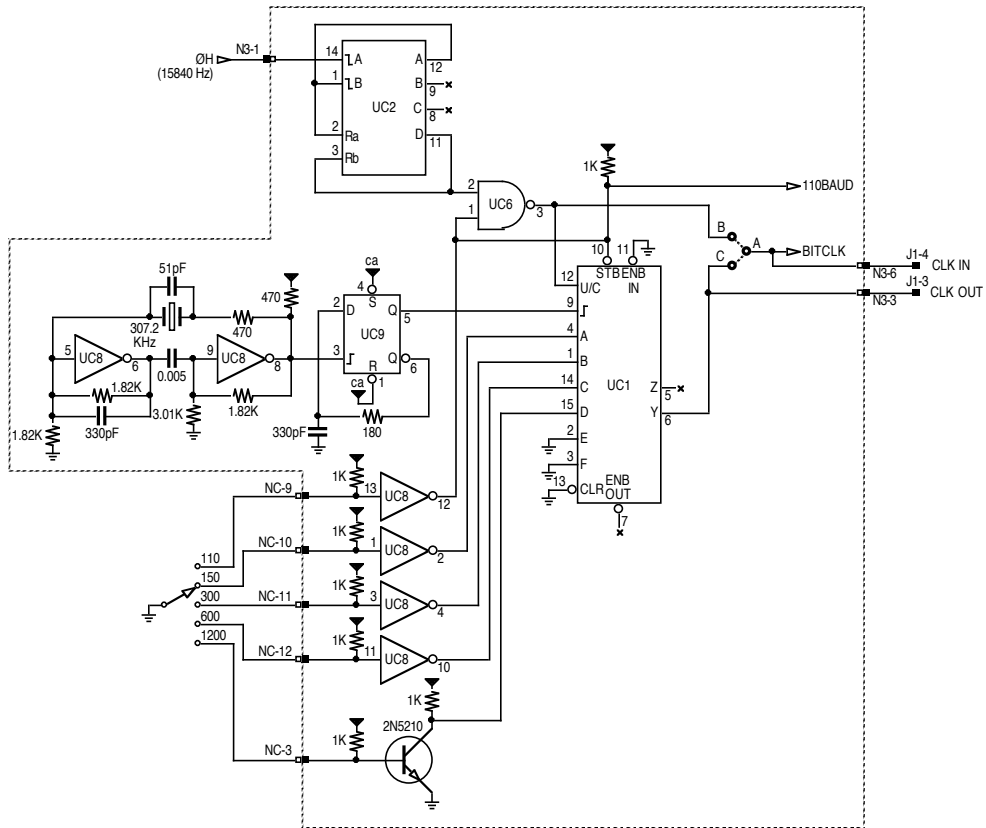


### SWTP CT-64 Video Terminal

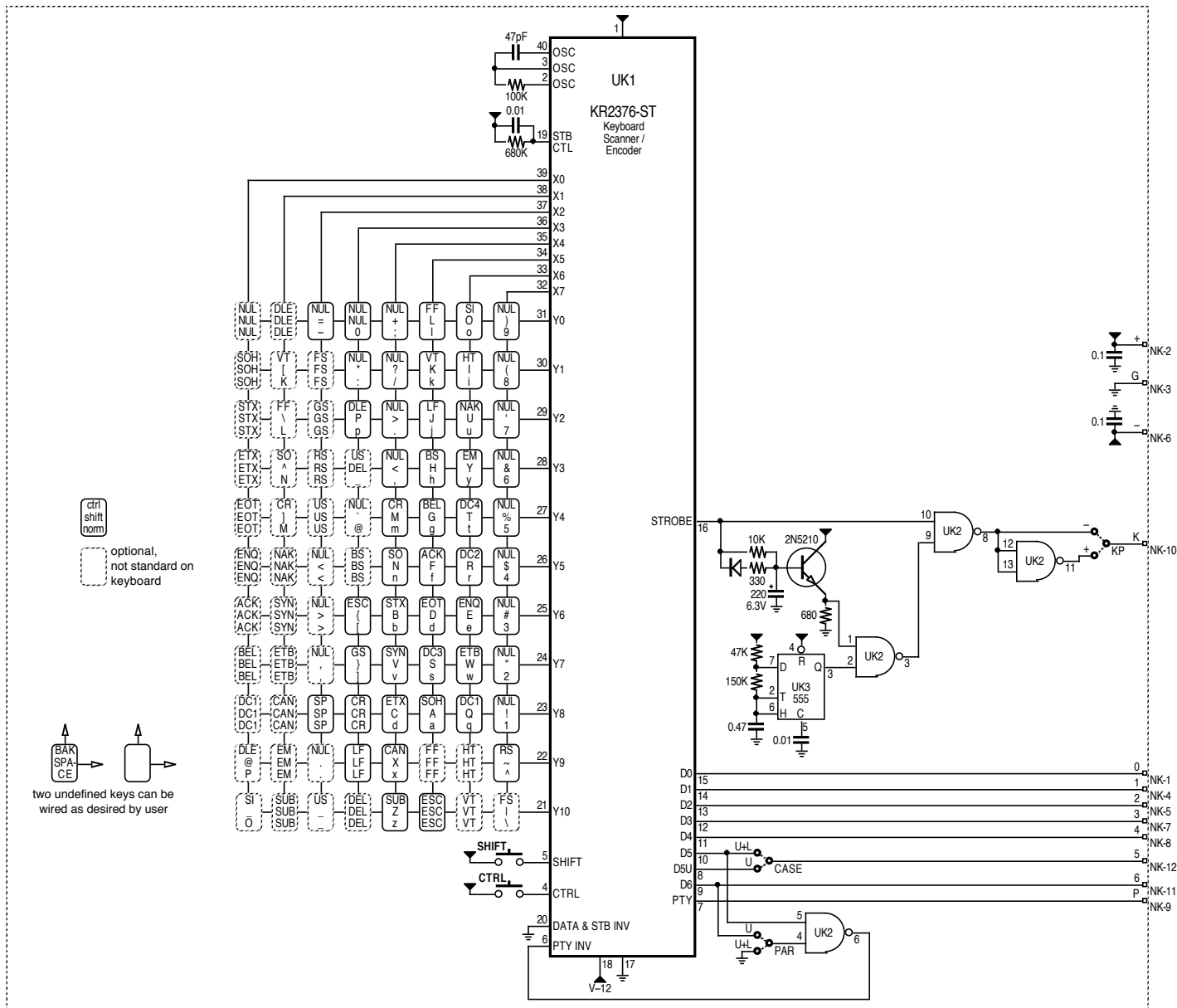
Section: Serial Communications

Page: 7

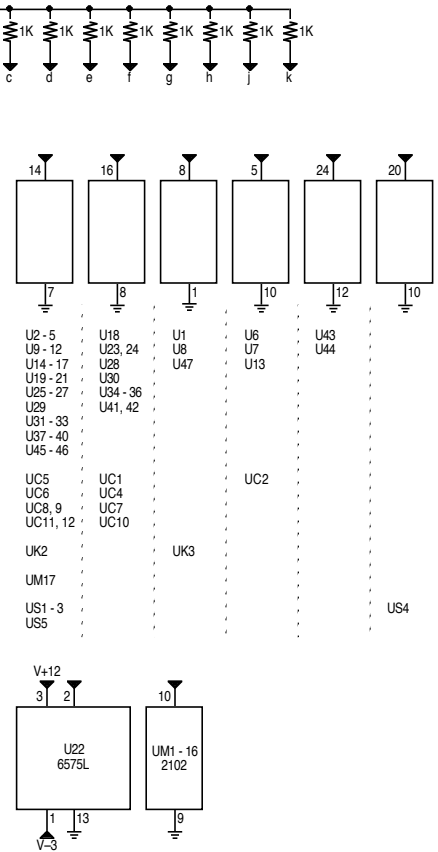
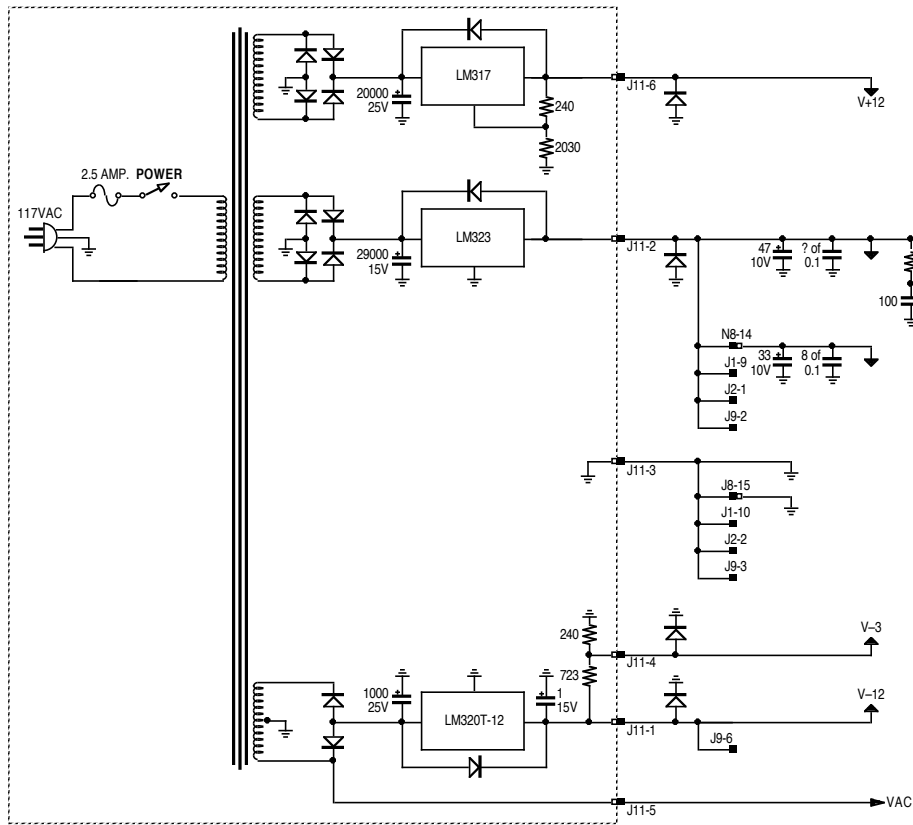
Rendition: 2014 Jan 6







**Note:**  
 • The standard keyboard configuration is missing the ASCII characters “@”, forward single quote, underscore, DEL, backslash and vertical bar.



| Uxx | Type    | UCxx   | Type       |
|-----|---------|--------|------------|
| U1  | 555     | UC1    | 7497       |
| U2  | 7474    | UC2    | 7493       |
| U3  | 7405    | UC3    | AY-5-1013A |
| U4  | 7474    | UC4    | 74157      |
| U5  | 7408    | UC5    | 74132      |
| U6  | 7493    | UC6    | 7400       |
| U7  | 7493    | UC7    | 74123      |
| U8  | 555     | UC8    | 7404       |
| U9  | 7474    | UC9    | 7474       |
| U10 | 7432    | UC10   | 74157      |
| U11 | 7451    | UC11   | 7404       |
| U12 | 7420    | UC12   | 7403       |
| U13 | 7493    |        |            |
| U14 | 7486    | UKxx   | Type       |
| U15 | 7474    | UK1    | KR2376-ST  |
| U16 | 7400    | UK2    | 74LS00     |
| U17 | 7409    | UK3    | 555        |
| U18 | 74123   |        |            |
| U19 | 74132   | UMxx   | Type       |
| U20 | 7405    | UM1-16 | 2102-1     |
| U21 | 74177   | UM17   | 7474       |
| U22 | 6575L   |        |            |
| U23 | 74166   | USxx   | Type       |
| U24 | 74161   | US1    | 7400       |
| U25 | 7410    | US2    | 7409       |
| U26 | 7409    | US3    | 7474       |
| U27 | 7474    | US4    | 74LS273    |
| U28 | 74193   | US5    | 7430       |
| U29 | 7408    |        |            |
| U30 | 74175   |        |            |
| U31 | 7486    |        |            |
| U32 | 7432    |        |            |
| U33 | 7408    |        |            |
| U34 | 74193   |        |            |
| U35 | 74193   |        |            |
| U36 | 74174   |        |            |
| U37 | 7474    |        |            |
| U38 | 7430    |        |            |
| U39 | 7400    |        |            |
| U40 | 74LS266 |        |            |
| U41 | 7485    |        |            |
| U42 | 7485    |        |            |
| U43 | 74154   |        |            |
| U44 | 74154   |        |            |
| U45 | 7432    |        |            |
| U46 | 7474    |        |            |
| U47 | 555     |        |            |