

# Amiga 1000 Rejuvenator PALs "Best Guess"

I = Input, O = Combinatorial Output, R = Registered Output.

## U28

|                                |      |    |   |         |    |        |                                 |
|--------------------------------|------|----|---|---------|----|--------|---------------------------------|
| A23                            | A23  | 1  | I | +5V     | 20 | VCC    | VCC +5V                         |
| A22                            | A22  | 2  | I | O       | 19 | REJ3   | ROME?                           |
| A21                            | A21  | 3  | I | I/O     | 18 | BLS    | Blitter Slowdown                |
| Address Strobe                 | AS   | 4  | I | R - I/O | 17 | DTACK  | Data Transfer Ack               |
| ?                              | REJ1 | 5  | I | I/O     | 16 | RE     | RAM Enable                      |
| Overlay ROM over RAM           | OVL  | 6  | I | I/O     | 15 | A20    | A20                             |
| Override System Decoding       | OVR  | 7  | I | I/O     | 14 | A19    | A19                             |
| External Data Ready            | XRDY | 8  | I | R - I/O | 13 | MYRAME | ROME?                           |
| C3 Clock (3.58Mhz rising edge) | C3   | 9  | I | O       | 12 | VPA    | Valid Peripheral Address        |
| GND                            | GND  | 10 | I | I       | 11 | C1     | C1 Clock (3.58MHz falling edge) |

PAL analyser shows fixed high output for 14,15,16,18 indicating those pins are inputs.  
PAL analyser shows registered output for 13,17 indicating those pins are tri-state or feedback enabled.

## U29

|                                 |          |    |   |     |    |       |                               |
|---------------------------------|----------|----|---|-----|----|-------|-------------------------------|
| ROME?                           | REJ3     | 1  | I | +5V | 20 | VCC   | VCC +5V                       |
| A18                             | A18      | 2  | I | O   | 19 | XOE   | Enable Rejuve ROM (_ROMEN)    |
| RESET                           | RESET    | 3  | I | I/O | 18 | CDW   | Chip RAM Direction Write      |
| Processor Read/Write            | RW       | 4  | I | I/O | 17 | CDR   | Chip RAM Direction Read       |
| Upper Data Strobe               | UDS      | 5  | I | I/O | 16 | UCEN  | Upper CAS Enable              |
| Lower Data Strobe               | LDS      | 6  | I | I/O | 15 | LCEN  | Lower CAS Enable              |
| (from jumper)                   | REJ.KICK | 7  | I | I/O | 14 | RRW   | RAM Expansion RW              |
| RAM Enable                      | RE       | 8  | I | I/O | 13 | x     | n.c. (internal use equation?) |
| C1 Clock (3.58MHz falling edge) | C1       | 9  | I | O   | 12 | ROM01 | (enable MB ROMs for disk KS)  |
| GND                             | GND      | 10 | I | I   | 11 | AS    | Address Strobe                |

Even though pin 13 is n.c., the PAL analyser shows an active equation, indicating it might be used internally.

## U30

|                                 |        |    |     |         |    |         |                                   |
|---------------------------------|--------|----|-----|---------|----|---------|-----------------------------------|
| Data Transfer Ack               | DTACK  | 1  | I   | +5V     | 24 | VCC     | VCC +5V                           |
| RAM Enable                      | RAMEN  | 2  | I   | I       | 23 | REGEN   | Chip Register Enable              |
| (possibly CLKE) ?               | REJ.2  | 3  | I   | O       | 22 | RTC.WR  | Realtime Clock Write              |
| (Chip RAM Enable) DAE?          | REJ.CE | 4  | I   | R - I/O | 21 | x       | n.c. (internal use equation?)     |
| Address Strobe                  | AS     | 5  | I   | R - I/O | 20 | x       | n.c. (internal use equation?)     |
| Upper Data Strobe               | UDS    | 6  | I   | R - I/O | 19 | REJ4    | CNT?                              |
| Overlay ROM over RAM            | OVL    | 7  | I   | R - I/O | 18 | REJ1    | ?                                 |
| Override System Decoding        | OVR    | 8  | I   | R - I/O | 17 | REJ.OE2 | (LS244 output enable)             |
| Lower Data Strobe               | LDS    | 9  | I   | R - I/O | 16 | REJ.OE1 | (LS373 output enable)             |
| C1 Clock (3.58MHz falling edge) | C1     | 10 | I   | O       | 15 | RTC.RD  | Realtime Clock Read               |
| C3 Clock (3.58Mhz rising edge)  | C3     | 11 | I   | I       | 14 | PRW     | Processor RW                      |
| GND                             | GND    | 12 | GND | I       | 13 | BLIT    | Chip Memory Enable (DBR replace?) |

PAL analyser shows registered output for 16,17,18,19,20,21  
Even though pins 20,21 are n.c., the PAL analyser shows active equations, indicated they might be used internally.

## U31

|                                 |       |    |     |         |    |          |                                |
|---------------------------------|-------|----|-----|---------|----|----------|--------------------------------|
| (memory cfg jumper)             | MCFG2 | 1  | I   | +5V     | 24 | VCC      | VCC +5V                        |
| A23                             | A23   | 2  | I   | I       | 23 | MCFG1    | (memory cfg jumper)            |
| A22                             | A22   | 3  | I   | O       | 22 | RAMEN    | RAM Enable                     |
| A21                             | A21   | 4  | I   | I/O     | 21 | REJ.KICK | (kickstart select jumper)      |
| Address Strobe                  | AS    | 5  | I   | R - I/O | 20 | REJ.CE   | DAE? (Chip RAM Enable)         |
| A20                             | A20   | 6  | I   | I/O     | 19 | REGEN    | Chip Register Enable           |
| Overlay ROM over RAM            | OVL   | 7  | I   | I/O     | 18 | DTACK    | Data Transfer Ack              |
| Override System Decoding        | OVR   | 8  | I   | I/O     | 17 | x        | n.c. (internal use equation?)  |
| A19                             | A19   | 9  | I   | R - I/O | 16 | RE       | RAM Enable                     |
| C1 Clock (3.58MHz falling edge) | C1    | 10 | I   | O       | 15 | REJ.2    | (possibly CLKE)?               |
| A18                             | A18   | 11 | I   | I       | 14 | C3       | C3 Clock (3.58Mhz rising edge) |
| GND                             | GND   | 12 | GND | I       | 13 | A17      | A17                            |

PAL analyser shows fixed high output for 18,21 indicating those pins are inputs.  
PAL analyser shows registered output for 16,20 indicating those pins are tri-state or feedback enabled.  
Even though pin 17 is n.c., the PAL analyser shows an active equation, indicating it might be used internally.