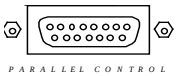
## Parallel Port



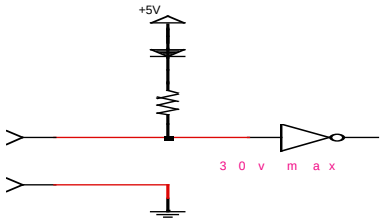

| PIN | FUNCTION |
|---|---|
| 1 | Ground |
| 2 | Output 2 |
| 3 | Status Out |
| 4 | Output 3 |
| 5 | N/C |
| 6 | Input 3 |
| 7 | Input 0 |
| 8 | +5 volts |
| 9 | N/C |
| 10 | Output 0 |
| 11 | Output 1 |
| 12 | N/C |
| 13 | Input 2 |
| 14 | Input 1 |
| 15 | N/C |

This is a female DB-15 connector which provides parallel control functions.

All *inputs* are specially treated to accept either a voltage (up to 24 Vdc), or a closure to ground, which may be provided by switches, relays, or logic outputs. The inputs are active low.

***DEEP TECH NOTE***

*The Zephyr's "universal" logic input circuit can be used with switch or relay closures, voltage levels up to 24 vdc, or logic outputs – either "totem-pole" or open-collector.*




*Parallel logic input circuit.*

*All* outputs *are open-collector closures to ground, and are also active low. These will require a pull-up resistor to function. Some equipment have the pull-ups built into their control inputs – check the device's manual to be sure. If there is no pull-up in the interfaced equipment, you'll have to add one. An appropriate value is 2.2KΩ.*

The Status Output goes active low when the condition(s) selected by the Stat Out menu item are satisfied. Options are:

- Rcv lock
- Line 1 active
- Line 2 active
- Lines 1 & 2 active
- Lines 1 or 2 active

### Status Out  Status available on logic output

(This is an advanced feature and may be ignored by most users.)

Zephyr provides a logic output that serves an in-use indicator when the Zephyr is in use and as an alarm when the connection is terminated. This output (appearing as an open-collector closure to ground on the parallel control pin on the back) can be active in the user's choice of states depending on how you use your Zephyr. You may chose to use this closure at the time of connection or disconnection to trigger a signal or to start or stop an audio recorder or other device. The status is indicated when either network interface (V.35 or ISDN) is used.

Selection of status of the logic output function is accomplished by choosing the item in the UTILITY menu and using the <YES (+)> and <NO (-)> buttons to change the mode displayed. Confirmation of the change is not required.

Available modes for activation of the logic output are:

☞ **Rcv lock**
When this mode is selected, the logic output will be active (closed-to-ground) when the receiver is locked. This indicates that a coded digital audio signal is being received and decoded by the Zephyr.

☞ **Line 1**
When this mode is selected, the logic output will be active (closed-to-ground) when only Zephyr's first data channel is connected to a compatible remote device. There is no indication of whether audio is being decoded.

☞ **Line 2**
When this mode is selected, the logic output will be active (closed-to-ground) when only Zephyr's second data channel is connected to a compatible remote device. There is no indication of whether audio is being decoded.

☞ **Line 1&2**
When this mode is selected, the logic output will be active (closed-to-ground) when both of Zephyr's data channels are connected to a compatible remote device. There is no indication of whether audio is being decoded.

☞ **Line 1or2**
When this mode is selected, the logic output will be active (closed-to-ground) when either of Zephyr's data channels is connected to a compatible remote device. There is no indication of whether audio is being decoded.

### Panic Dial  Panic Dial activation and setup selection

This menu item is only used when Zephyr has the internal terminal adapter installed.

Zephyr provides a logic input that can be used with your external equipment to automatically dial and connect to a frequently called or emergency number. This input (appearing on the parallel control pin on the back) can alternately be used as one of the four end-to-end logic closures. (For more details, see the manual section on the parallel control.)

This menu item activates this function and selects the auto-dial setup you want to use for the panic dial function. Available auto-dial setups are those stored in addresses one through 40.

Configuration of the panic dial mode is accomplished by choosing the item in the UTILITY menu and using the <YES (+)> and <NO (-)> buttons. When the display reads "NO," the panic dial mode is inactive. When set to any number between one and 40, the panic dial number is the corresponding auto-dial setup. Confirmation of the change is not required.

One application of this is to allow the Zephyr to be used in an automatic back-up application. The alarm output of a satellite receiver, for instance, may cause an automatic connection to a Zephyr at the source. A similar idea would be to use ISDN to back-up a broadcast RF Studio-to-Transmitter-Link system.

# PARALLEL PORT AND CLOSURES

Parallel outputs may be affected either by the corresponding input at the remote Zephyr, or by commands on the serial port.

Normally, the closures are simply passed-through from one end to the other, but the following commands may influence the process:

**`cc [<0000..1111>]`**

Set contact closure output value (4 bits) or select LOCK mode.

This command followed by a binary value sets the local Zephyr's parallel outputs to the value. If connected to a remote Zephyr, the values from that unit will override this value. Since an update is sent every 5 seconds, the entered value will not remain longer than this period.

**`ccmask <0000..1111>`**

Set contact closure input XOR mask (4 bits). This is used to flip the polarity of inputs to match what is available from the outside world. A value of 1 means the input is inverted from usual. When an input is not connected, this command may be used to simulate the input signal.

**`statout <rcv|1|2|1&2|1or2>`**

Select actvation mode for the parallel port STATUS output bit: on receiver lock, on line 1 connected, line 2 connected, both or either line connected.

When followed by a lock mode parameter, this command changes how the LOCK parallel output is determined, as follows:

| | |
|---|---|
| **`rcv`** | Output active when decoder is locked. |
| **`1`** | Output active when ISDN line 1 is connected. |
| **`2`** | Output active when ISDN line 2 is connected. |
| **`1or2`** | Output active when either ISDN is connected. |
| **`1&2`** | Output active when both ISDN lines are connected. |

***IMPORTANT NOTE***
*Contact closures are only passed in a transmission path set to Layer III coding mode.*

CC info is transmitted immediately if the input changes; otherwise it is sent every five seconds.

### *Motherboard: Parallel I/O*

U16 accepts the parallel inputs from the "outside world," and presents them as proper logic signals to the UART parallel input pins. This chip can take inputs up to 30 Vdc. The resistor and diode arrangement on the input allow use with voltages or closures from the driving equipment.

The ULN-2003A, U15 is a multiple open-collector darlington driver. It converts the logic signals from the UART's parallel outputs to open-collector's to ground for the outside world. These have high current drive capability – 500 ma per package.