### **Route Connect with Offset**

**Summary** - The *Route Connect with Offset* command is designed to primarily address the requirement to route with non-standard angles to help minimize impedance discontinuities while routing across fiberglass substrates. Other routing applications may include initial breakout from staggered pin connectors or route angles used on chip tester cards.

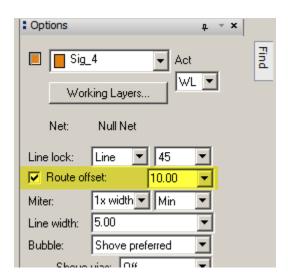
**Command** – The *Route Connect with Offset* command is invoked from the Route – Unsupported Prototypes Menu

#### **Function Keys -**

- > TAB Key use to switch between a soft bend (1<sup>st</sup> angle increment) and a hard turn (2<sup>nd</sup> angle increment). Each time that you hit the tab key, it will flip to the other angle.
- ➤ funckey a "pop flip" consider creating a user defined function assignment to help you toggle between conventional and offset routing. The letter "a" is used as an example only.

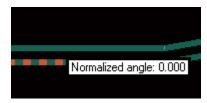
**Options Form -** The following 2 options are retained until the program (e.g. allegro.exe) exits. User entered values are not saved in the database.

- **Route offset mode**: A checkbox for Add Connect to use the route offset angle.
  - Default setting = Off
- ➤ Route offset angle: A two-decimal fill-in field for entering the offset angle. Value must be between 0 and 22.5 degrees, since this is an offset from the octolinear (45) angles.
  - o Default setting = 10.00 (degrees)

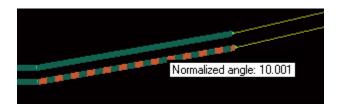


#### **Procedure**

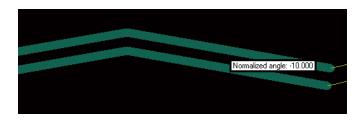
- 1. Invoke the *Route Connect with Offset* command. Initially the offset mode is "off" to permit conventional breakout angles from the source location.
- 2. Adjust the offset angle in the options form if a value other than 10 degrees is required.
- 3. During Route Connect, toggle the "Route offset" mode by either:
  - a. Use of function key "a"
  - b. Enable "Route offset" mode in the options panel
- 4. Example of Route Progression steps ...
  - a. Initial route at 0 degrees



b. Enable "Route Offset" mode pressing function key "a" or via option panel adjustment; the route angle is now 10 degrees.



c. Make a LMB pick to change direction to -10 degrees. Zigzagging is common practice when routing high speed interfaces.

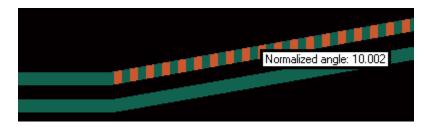


d. Press function key "a" or disable the "Route offset" mode to resume conventional routing.

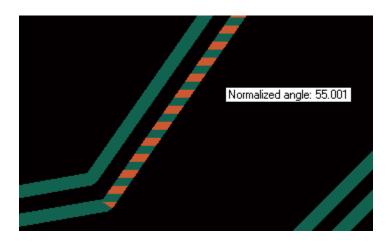
# **Functional Specification**



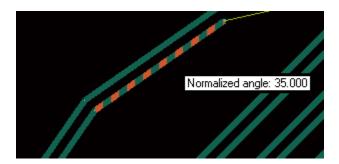
e. Press function key "a" to toggle back to "Route offset" mode. Route angle is now 10 degrees.



f. Press TAB key to make a "hard turn". Angle is now 55 degrees. (10 + 45 degrees)



g. Make a LMB pick, angle is now 35 degrees.



## **Functional Specification**

Notes – The datatip display used in the above examples requires the enabling of "normalized angle" as a function of object type "segment"

