Parallel Data Non-Sequential Count Troubleshooting Flow Chart

Apply +Vdc and slowly vary input pressure.

Does the digitizer constantly output ≈2300'?

Yes

Usually indicates power connected to pin 8 and ground to 14 or vice versa. Also may indicate power applied to a data bit pin. Opens a trace on the PCB. Request RMA from TCI.

No

Does digitizer consistently skip at the same altitude?

Yes

Determine which data bit is missing. Verify wiring harness and connectors show continuity on the missing data bit & repair.

No

Is the digitizer driving more than one receiving device?

Yes

Are receiving devices diode isolated?

No

Diode isolate all receiving devices.

Yes

No

Is the digitizer close to any EMF/EMI

Yes

Move or shield the unit and harness from the EMF/EMI sources.

No

Does keying the radio mic cause the unit to miscode?

Yes

Indicates digitizer is too close to antenna cables/fields or leaky RF connectors.

No

Does the digitizer miscount on the bench and in the aircraft?

Yes

Request RMA from TCI. Be sure to describe the problem in detail.

No

Digitizer appears to operate correctly. Review logic level requirements on receiving devices. Refer to install manual &list of known compatibility issues.

Is the pull-up voltage at least +3Vdc?

No

This indicates a receiving device issue

Yes

Does "off" voltage = "pull-up" voltage on the suspect data bit?

No

If the "off" voltage is too low on the data bit, it may indicate an incompatible or defective transponder, a bad harness, or connector. Repair/Replace component.

Yes

Does "on" voltage = +1.6 to .6 Vdc or less?*

No

Does the total current required for each data bit exceed 35mA?*

Yes

Current exceeds component power rating; reduce the current required by reducing the number of receiving devices.

No

Yes

*Note: The digitizer's outputs are the "uncommitted" collectors of discrete Darlington transistors. The collectors must be pulled up to a voltage from +3 to +40Vdc through a current limiting resistor in the receiving device. Pull-up voltages and resistors vary with the manufacturer. Common examples include:
+5Vdc/4.7KΩ
+9Vdc/10KΩ
+15Vdc/15KΩ