

Signal degradation is used to say that changes in the amplitude or shape of a signal have occurred as a result of that signal being subjected to some unwanted process or noise pickup, while being transferred into the system .

Sometimes it is unavoidable, however good design should minimize it.

For logic circuits, wires should be kept to a minimum and as short as possible.

Most logic circuits have very high switching speeds, and they can generate very high frequency harmonics causing rounding and timing errors. Then there's cross talk which is the result of one signal causing a disturbance of another, a few methods to try and overcome these problems could be:

Decoupling the supply rails around every second IC device

Widening pcb spacing between tracks to prevent capacitive loading

Cleaning up excessive signal degradation with schmitt triggers.

Here is an example graph of load regulation of a power supply and how the efficiency starts to fail at lower resistive loads.

It shows the output voltage is quite constant and stable at varying current demands, but as the load resistance gets lower and more current is demanded, the voltage starts to drop off.

Cheap long length lower grade cables adds to the problem.

Usb cables are limited to a maximum size due to signal loss and degradation.

