

Our goal :

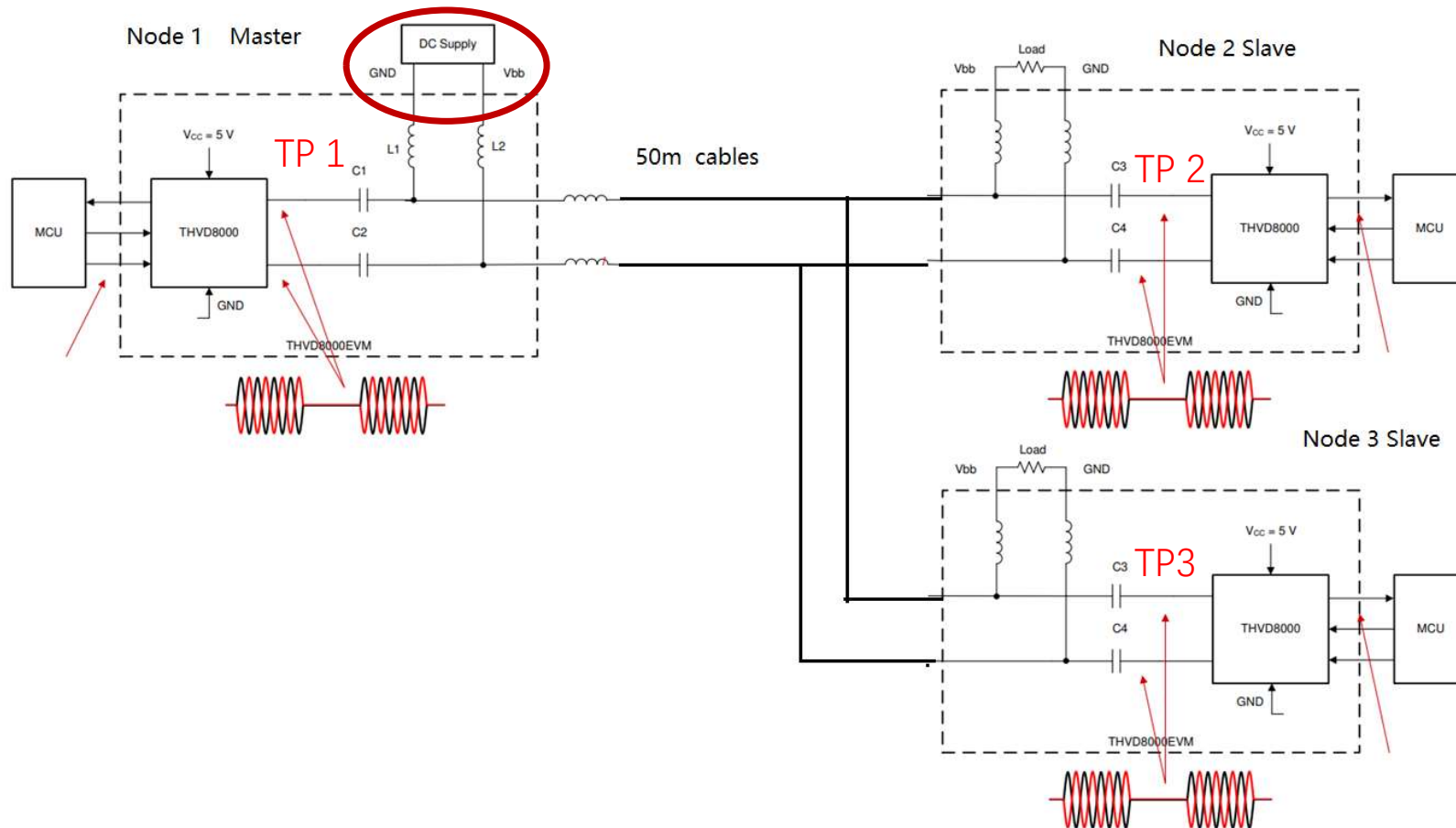
- 1 . replace 4-lines RS485, 2 power line is low cost on cable , polarity free too.
2. power is 18-32V dc on our meter. Powered and communication on 2- line cable.
3. up to 64 nodes .
4. The 2-line BUS is one master node , daisy chain. Other is slave node.
5. Communication is 9600bps, low data rate,CTC16 check
6. Cable(copper) length is up to 800-1200meters.

Plan

1. copy THVD8000EVM schematic .
2. finished 20 PCBA
- 3 .test signal in point by oscilloscope(up to 100M)
4. F-set, 32.4K 1% 0603 ~300Khz

Note :

4 nodes, No.1, master node , power consumption 50mA,, No.2 slave node , power consumption 50mA, L1~L4 4.7mH, DC supply is 20V, THVD8010 is 3.3V powered by DC supply DC-DC(LMR14010A Ti) . It is 50 meters long from No.1 to No.4. C1~C4 1uF

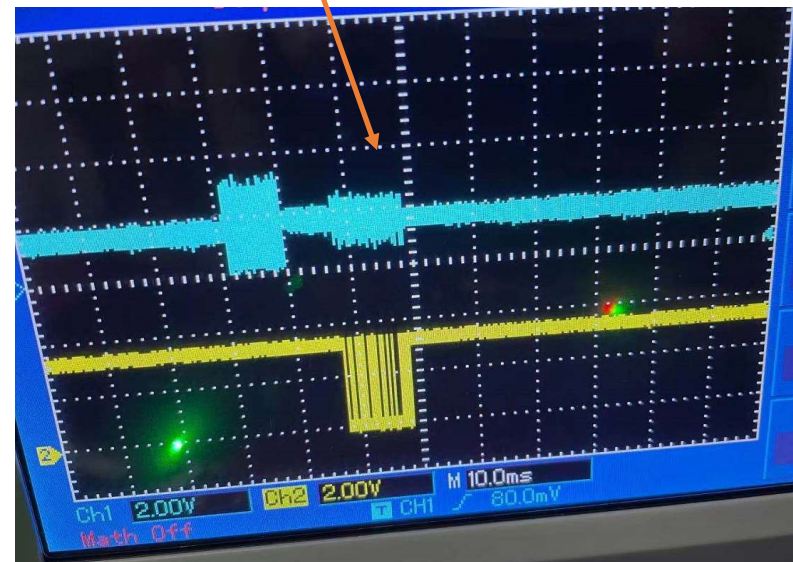


When the cable is 50 meters,

**TP1** There is a large noise signal, how to simply remove these noises?



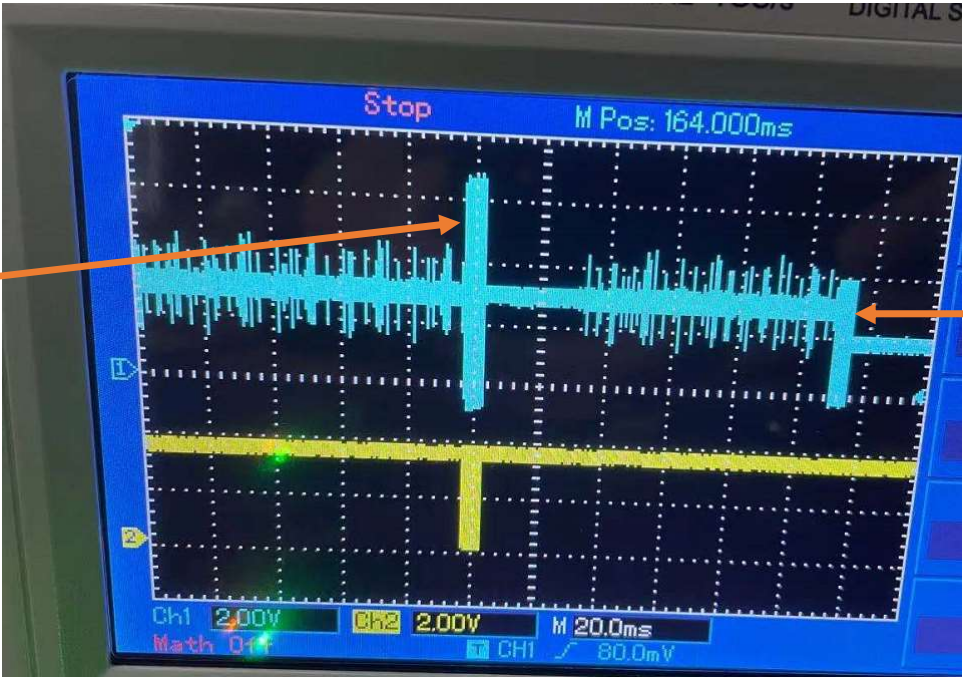
When the cable is 2 meters  
It looks much better



The power supply is near the master node, The signal sent by the master node is larger than that of the slave nodes ,

How to increase the signal strength of slave nodes? Sometimes the signal of the slave node will be lost, which is unstable when the cable is longer.

Send from master



Send from slave

