

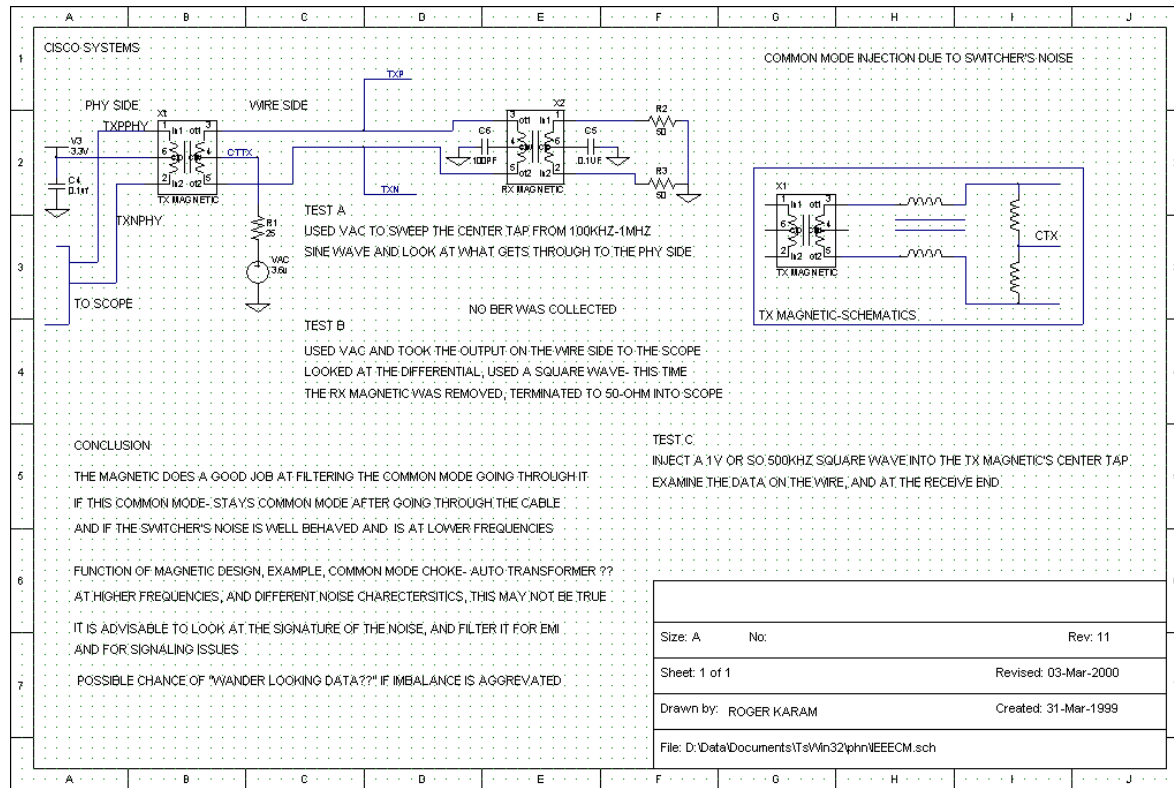


Common mode Rejection Through Center Tap of Magnetics

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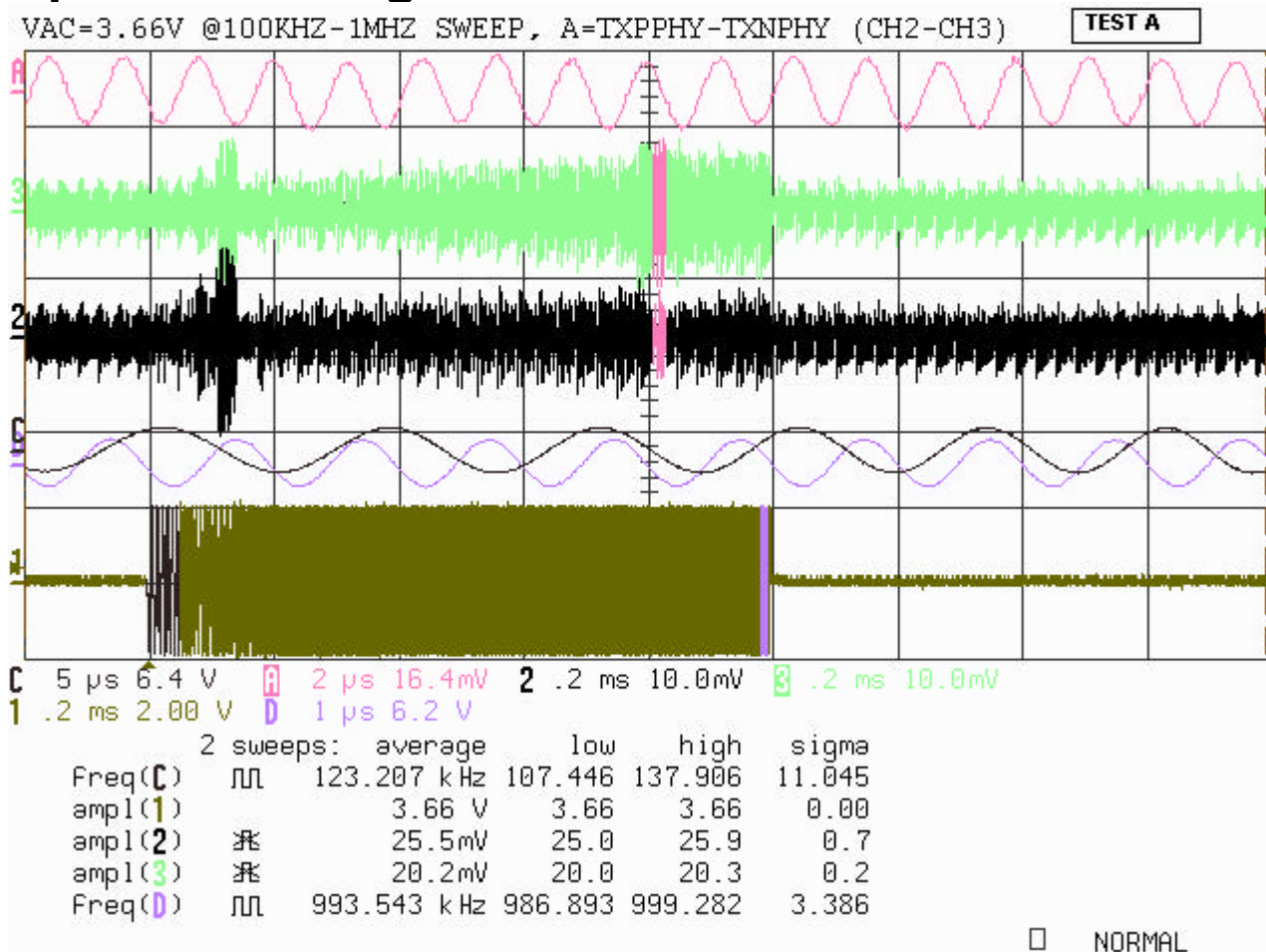


Test Schematic

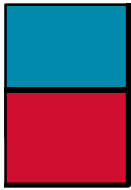




Differential Voltage at the Transmitter Due to Center Tap Noise Voltage



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Signal on the Wire w/o Noise

2-Mar-00
18:35:54

MLT3 WITHOUT NOISE

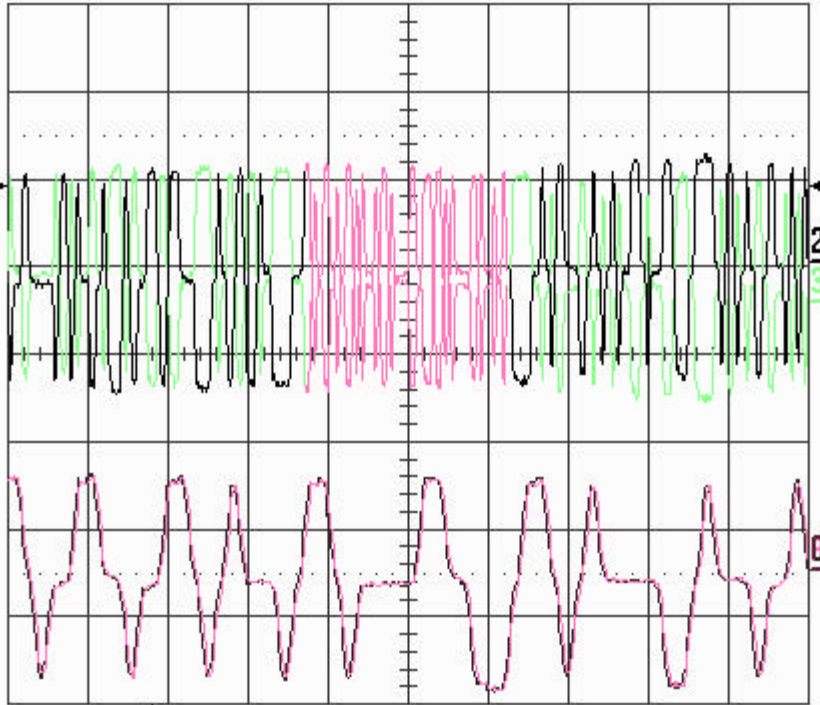
TEST B

2
.2 μ s
0.50 V

3
.2 μ s
0.50 V

2-3
50 ns
1.02 V

C:M1
50 ns
1.00 V



TXP AND TXN
DATA ON WIRE
TO SCOPE, NO
CM NOISE

.2 μ s

- 1 disabled
- 2 .5 V 50 Ω
- 3 .5 V 50 Ω
- 4 disabled



2 DC 0.44 V

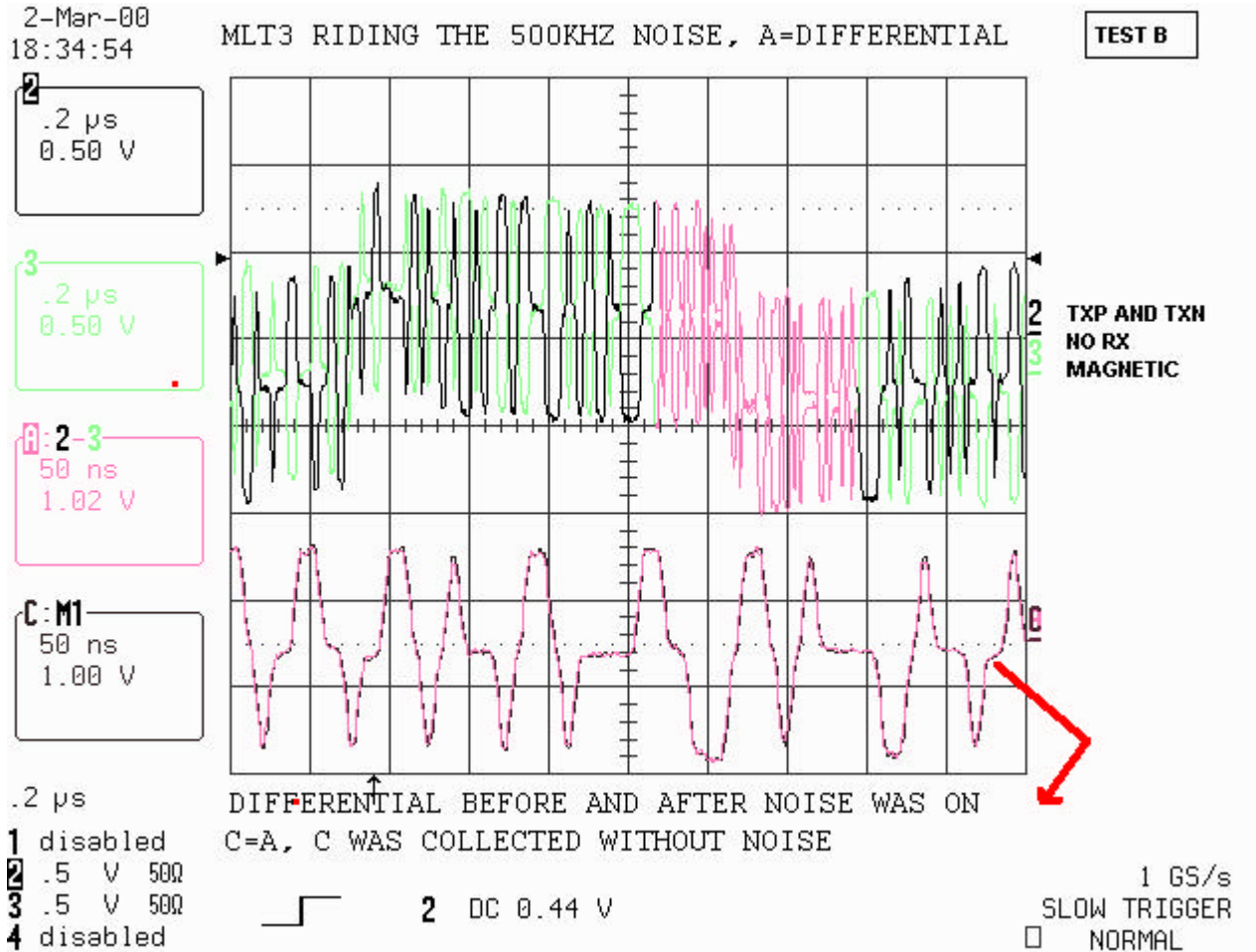
1 GS/s
SLOW TRIGGER
 NORMAL

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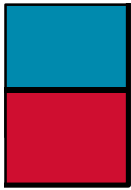


Signal on the Wire With Noise

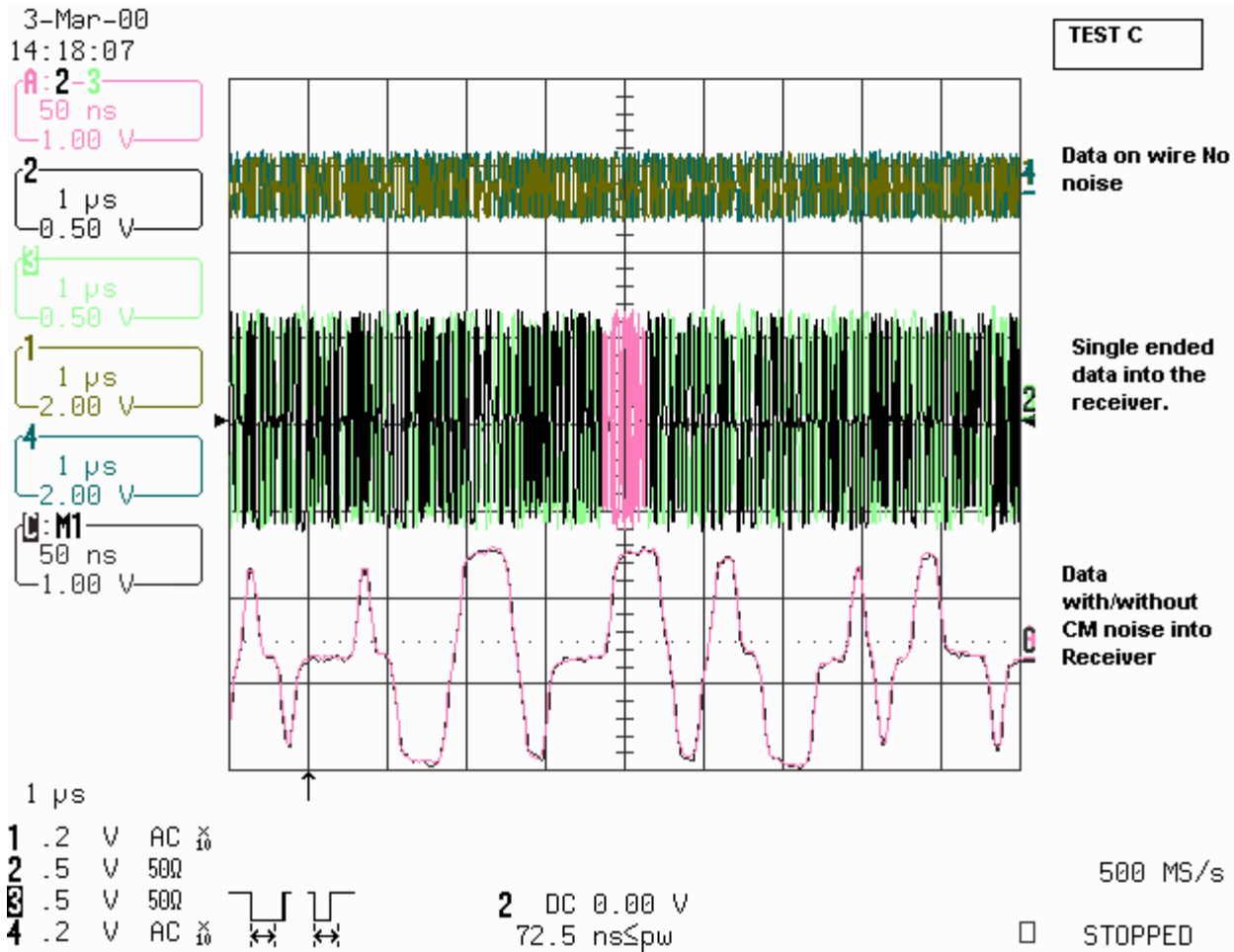


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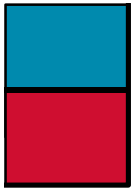


Signal into Phy RX w/o Noise



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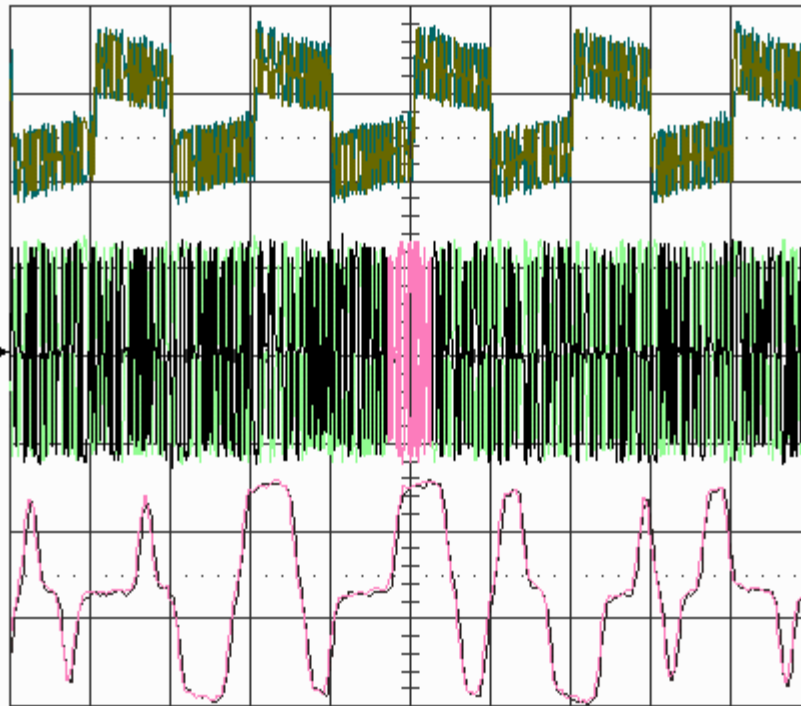
Signal into Phy RX with Noise

3-Mar-00
14:17:23

MLT3 Riding on a 1v square wave @ 500khz, IN and out of the Magnetic

TEST C

- 1 50 ns 1.00 V
- 2 1 μs 0.50 V
- 3 1 μs 0.50 V
- 4 1 μs 2.00 V
- M1 50 ns 1.00 V

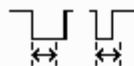


Data on the Wire

Single Ended data into the receiver

Data into Receiver with & without CM noise.

- 1 μs
- 1 .2 V AC 10
- 2 .5 V 50Ω
- 3 .5 V 50Ω
- 4 .2 V AC 10



2 DC 0.00 V
72.5 ns≤pw

500 MS/s

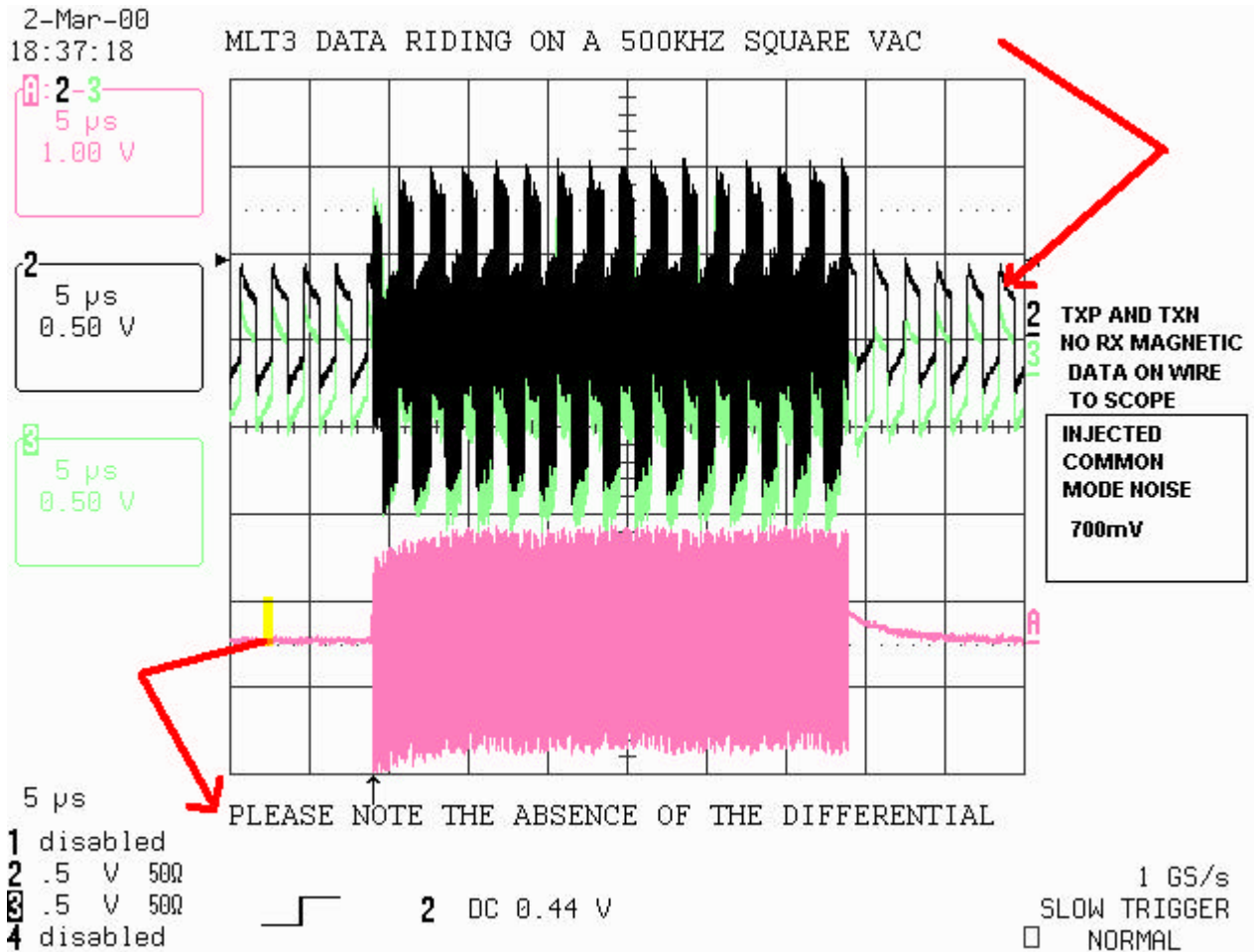
STOPPED

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Signal on the Wire with Noise



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Conclusion

- **AC Filter the DC Power Supply into the Center Tap, a clean DC power will insure that no common mode to differential conversion can affect the receiver.**
- **Along with our past presentation of the ability of the magnetics to deliver up to 300ma without any effects on the MLT3 signal, this insures that a signal-pair powering solution has the potential of accommodating the 1000BT and the cables with only 2-operational pairs.**