



**A Call for Interest to develop a Standard for a Less Complex 1 Gb/s physical layer specification that will operate over 100 meters of Category 6 cabling.**

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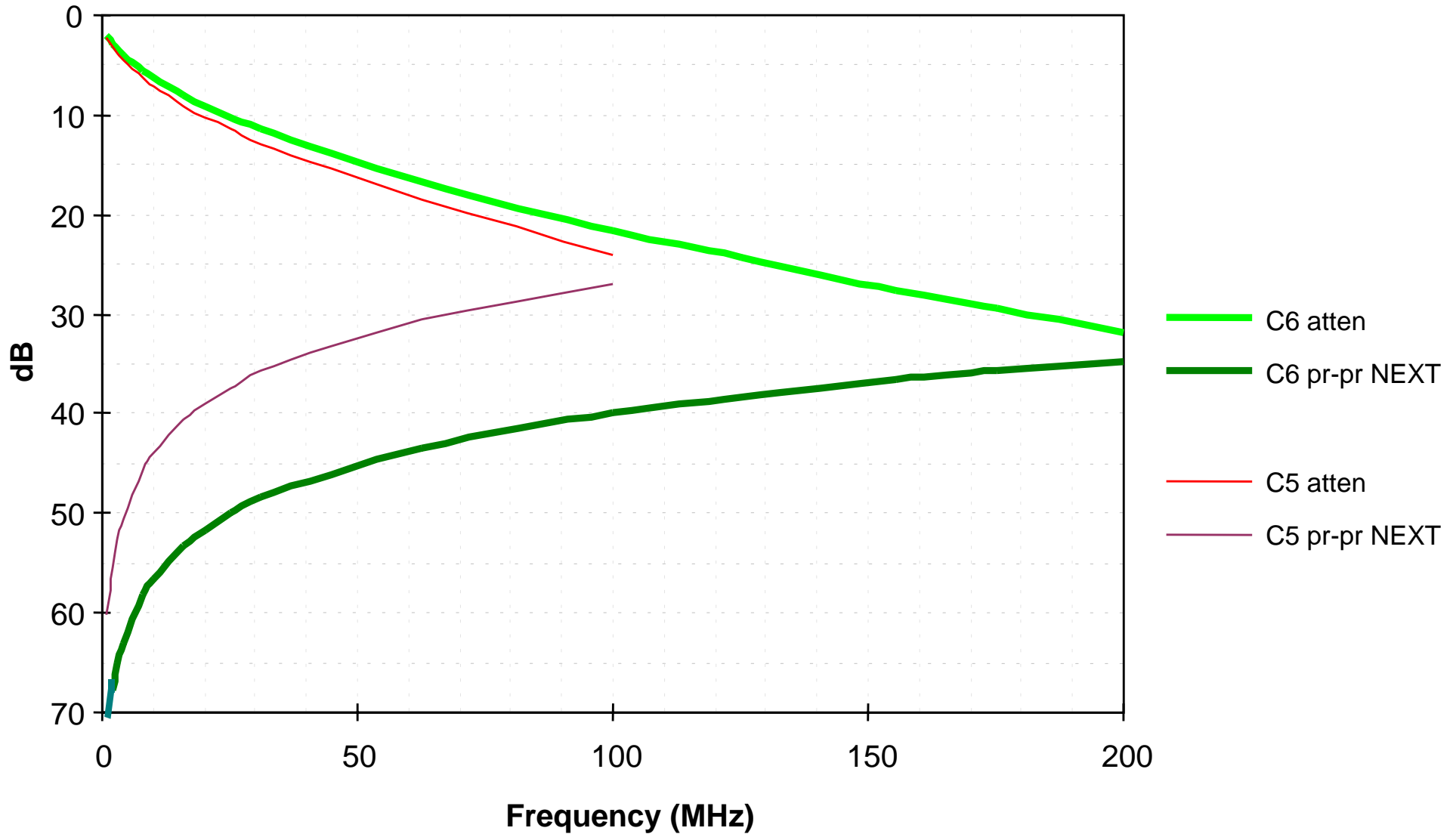


# Objectives

- **Take advantage of a new generation of cabling.**
- **Develop a simple solution for a 1 Gb/s phy.**
- **Independent transmit and receive pairs.**



# Cat 5 and Cat 6 Performance



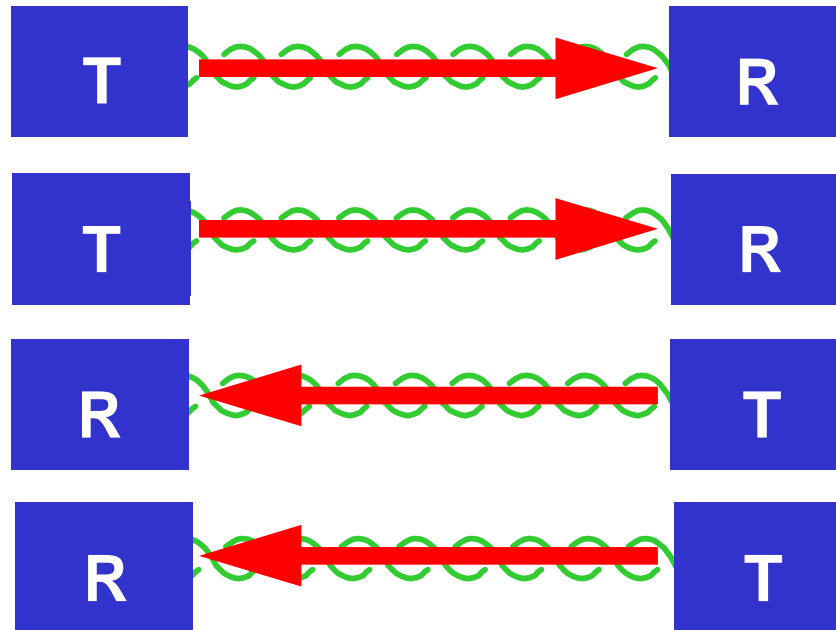


# **A new generation of cabling**

- **ISO/IEC requirements for Cat 6 are well established.**
- **One distributor has installed over a quarter billion feet of Cat 6.**
- **Most customers who have installed Cat 6 expect to run data rates in excess of 100 Mb/s.**



# 1Gb/s on Cat 6





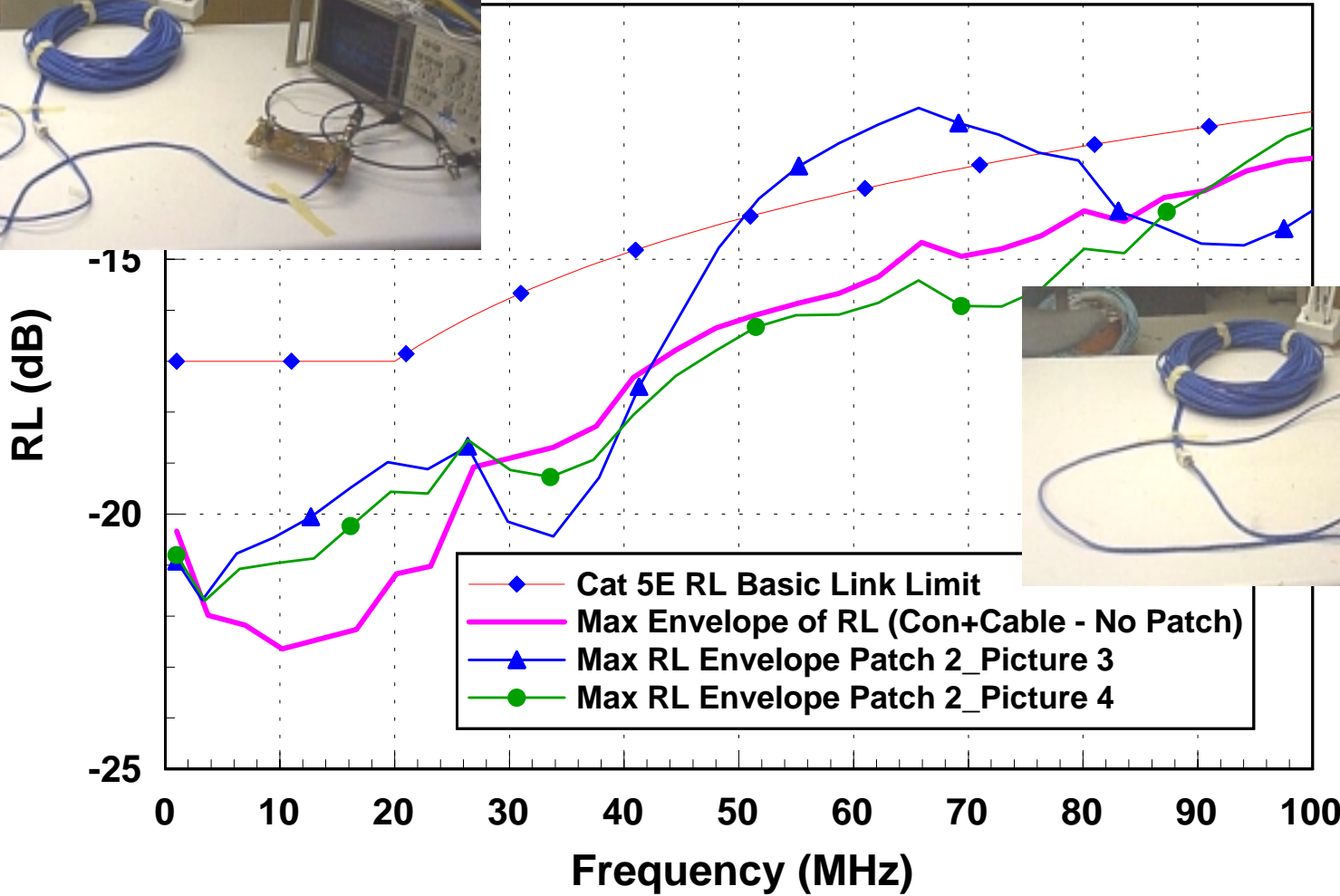
# A simple solution for a 1Gb/s phy

- **An example of one solution will be illustrated that :**
  - **Does not require Echo/NEXT/FEXT cancellation, Master-Slave clock synchronization, or any start-up procedure.**
  - **Allows for a simple "100BASE-TX-like" analog receiver implementation.**
  - **Low cost, low power, low pin number package, and allows for multi-port (dual/quad) devices.**
  - **Uses generic CMOS technology and easily supported by many vendors.**



# Return Loss

Picture 3



Picture 4





# Independent Transmit and Receive Pairs

- **Echo or Return Loss must be canceled to use the same pair for transmit and receive.**
  - **Return Loss can be very unpredictable.**
- **With the improved performance of Cat 6 use independent transmit and receive pairs.**
- **Greatly simplifies the design.**





# Conclusion

- **Customers will not be confused by a gigabit standard over Category 6.**
- **Cat 6 installations are growing.**
- **History has usually resulted in:**
  - **One Cabling Category and One Speed.**
- **A simple 1 gigabit solution over Cat 6 is reasonable.**