
10GBASE-T

Cabling Ad Hoc Measurement Data

Chris DiMinico
MC Communications
cdiminico@ieee.org

10GBASE-T

Ad Hoc Cabling Measurements

- **Measurement Data Collection for Modeling Task Group:**
- **Class D and Class E channel characterization**
(per ISO/IEC 11801 2nd ed) : Transmission parameters required.
 - Frequency characterization required: $1 \text{ MHz} \leq f \leq 500 \text{ MHz}$
 - Frequency characterization optional: $500 \text{ MHz} < f \leq 1 \text{ GHz}$

Measurement Topologies

- Three measurement topologies: Channel Configurations:
100 meters – Class D and Class E

Step 1: Measure Cable

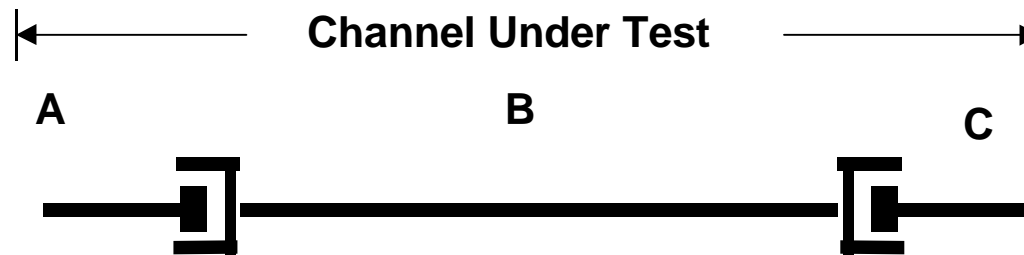
B



10GBASE-T

Measurement Topologies

Step 2: Interconnect - TO Model - 100 meters



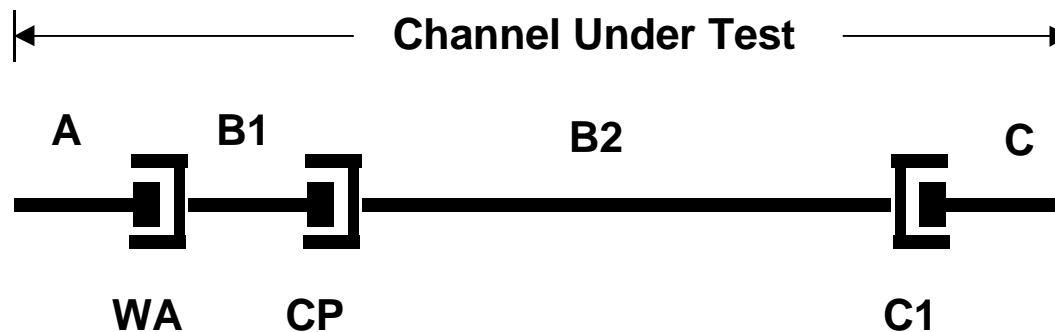
A= 5 meters, B= 90 meters, C=5 meters

A and C = work area and equipment cord:

B= 90 meters horizontal cable

Measurement Topologies

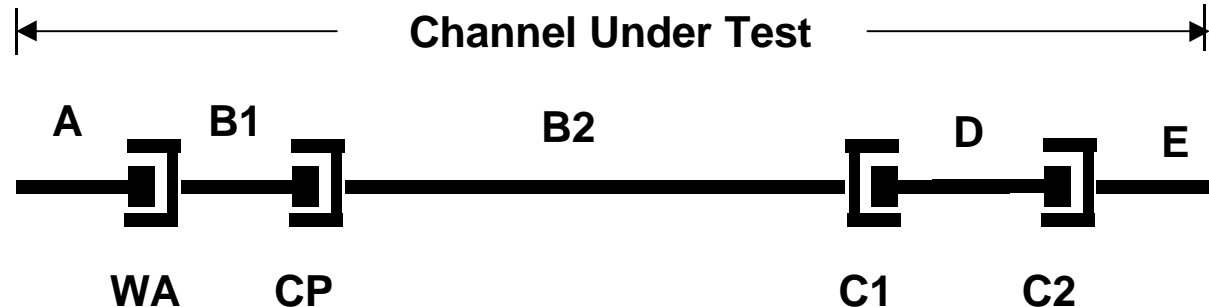
Step 3. Interconnect – CP – TO Model – 100 meters



A= 5 meters, B1= 5 meters of CP Cable cut from B,
B2=85 meters of horizontal cable cut from B, C= 5 meters
B1= CP cable, B2 =horizontal cable ,
A and C = work area and equipment cord:

Measurement Topologies

Step 4. Cross-connect – CP – TO Model – 100 meters



A= 5 meters, B1= 5 meters of CP Cable cut from B,
B2=85 meters of horizontal cable cut from B,
D= 3 meters, E= 2 meters
B1= CP cable, B2= horizontal cable:
A,D and E= work area, patch cord, and equipment cord

10GBASE-T

Participating Companies

- Nordx/CDT- Panduit Corporation
- Siemon Company - SolarFlare Communications

LEGEND

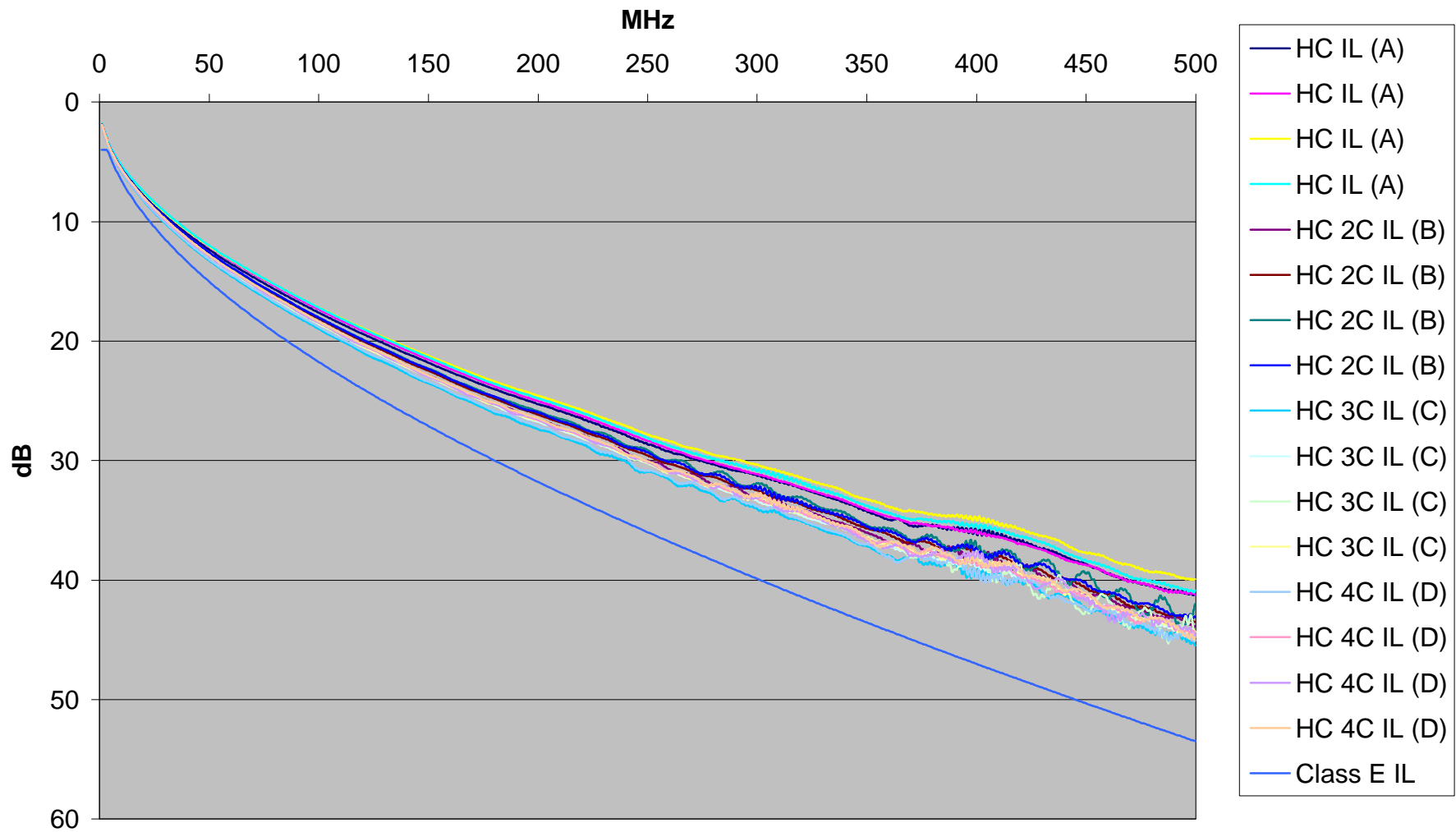
| <u>Contributor</u> | <u>Horizontal Cable</u> | <u>Number of Connectors</u> | <u>Parameter</u> | <u>Configuration</u> |
|--------------------|-------------------------|-----------------------------|------------------|----------------------|
| M4 | HC | 3C | FEXT | (C) |

10GBASE-T

Category 6 Measurement Data

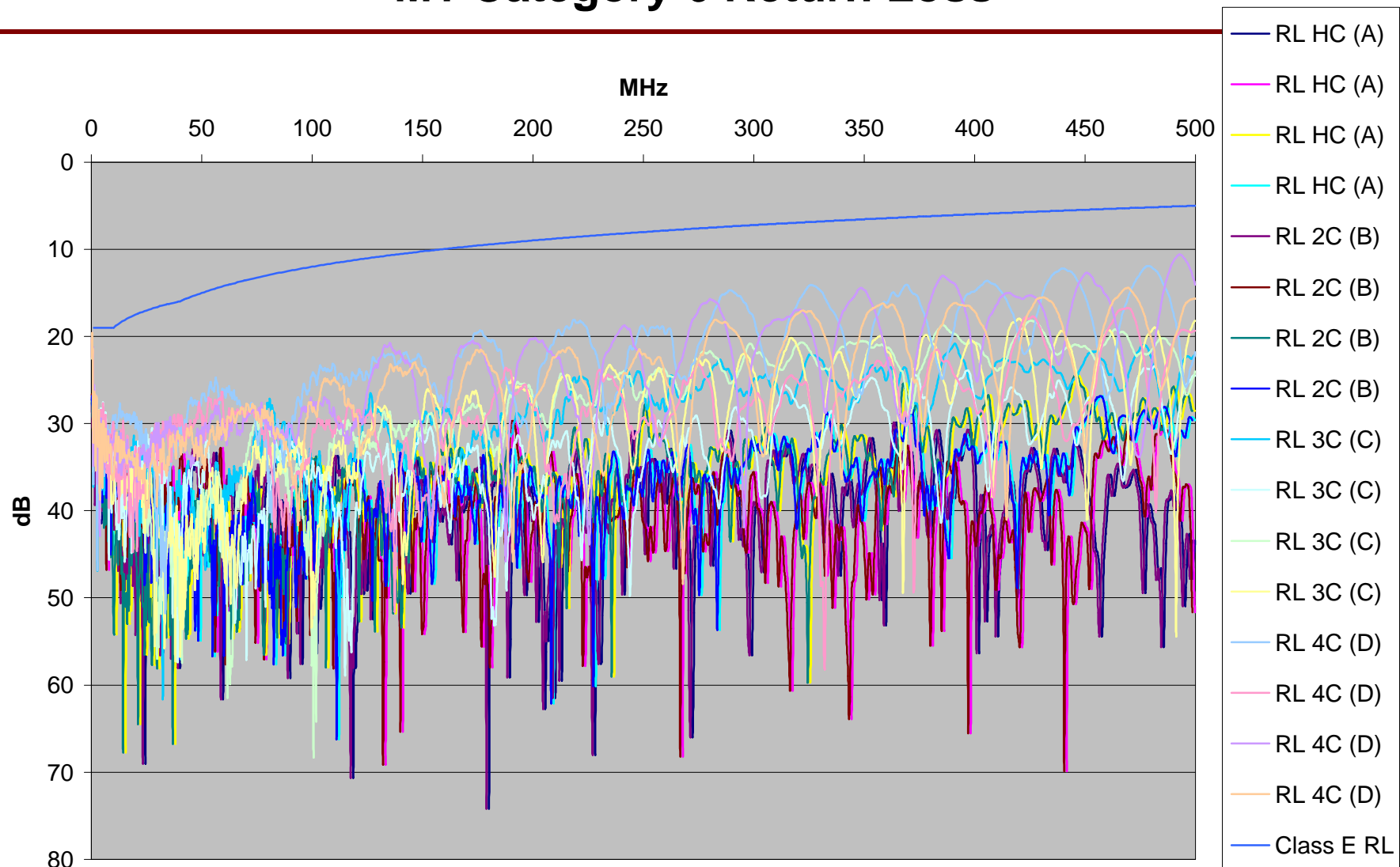
10GBASE-T

M1 Category 6 Insertion Loss



10GBASE-T

M1 Category 6 Return Loss

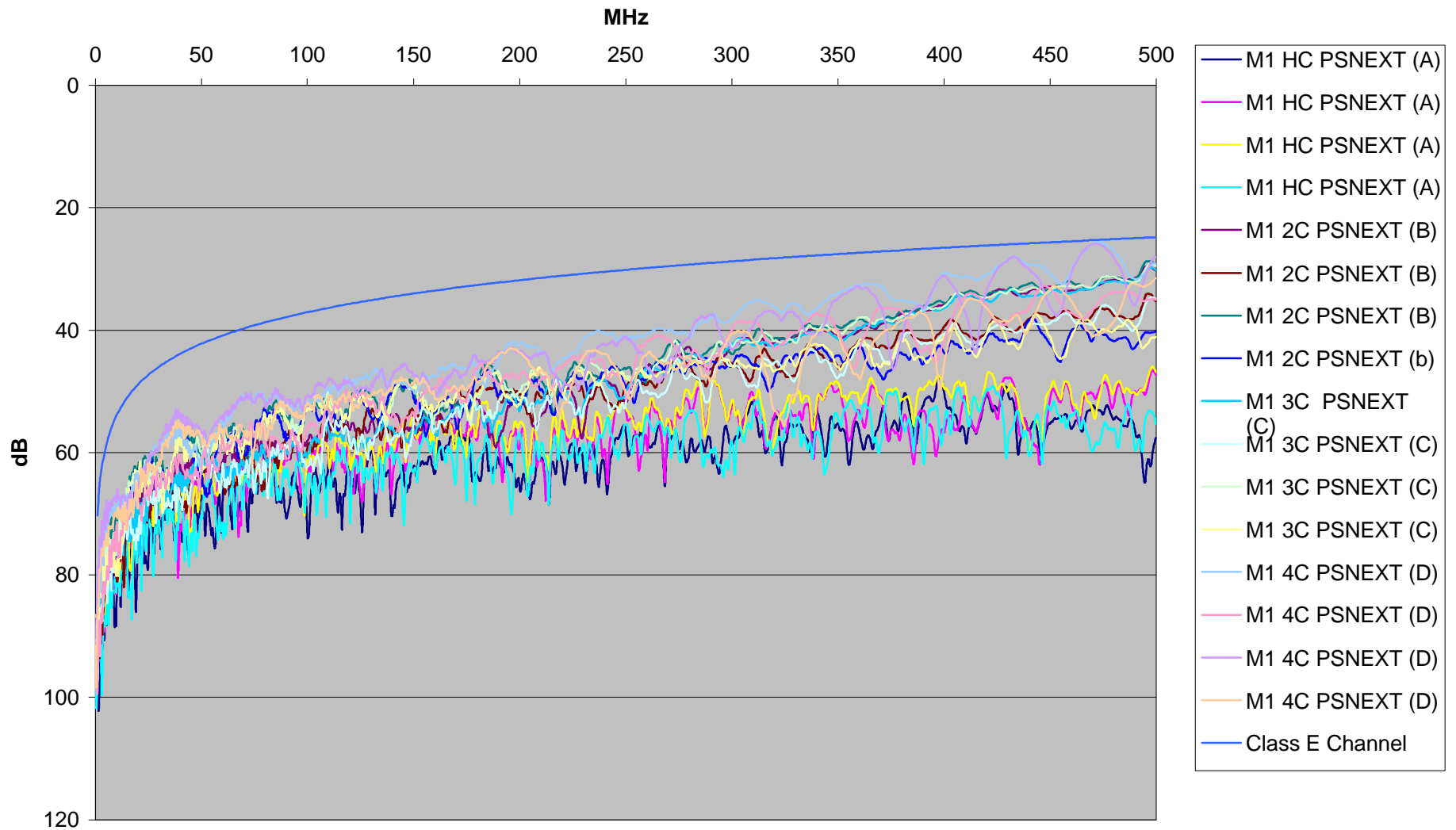


10GBASE-T



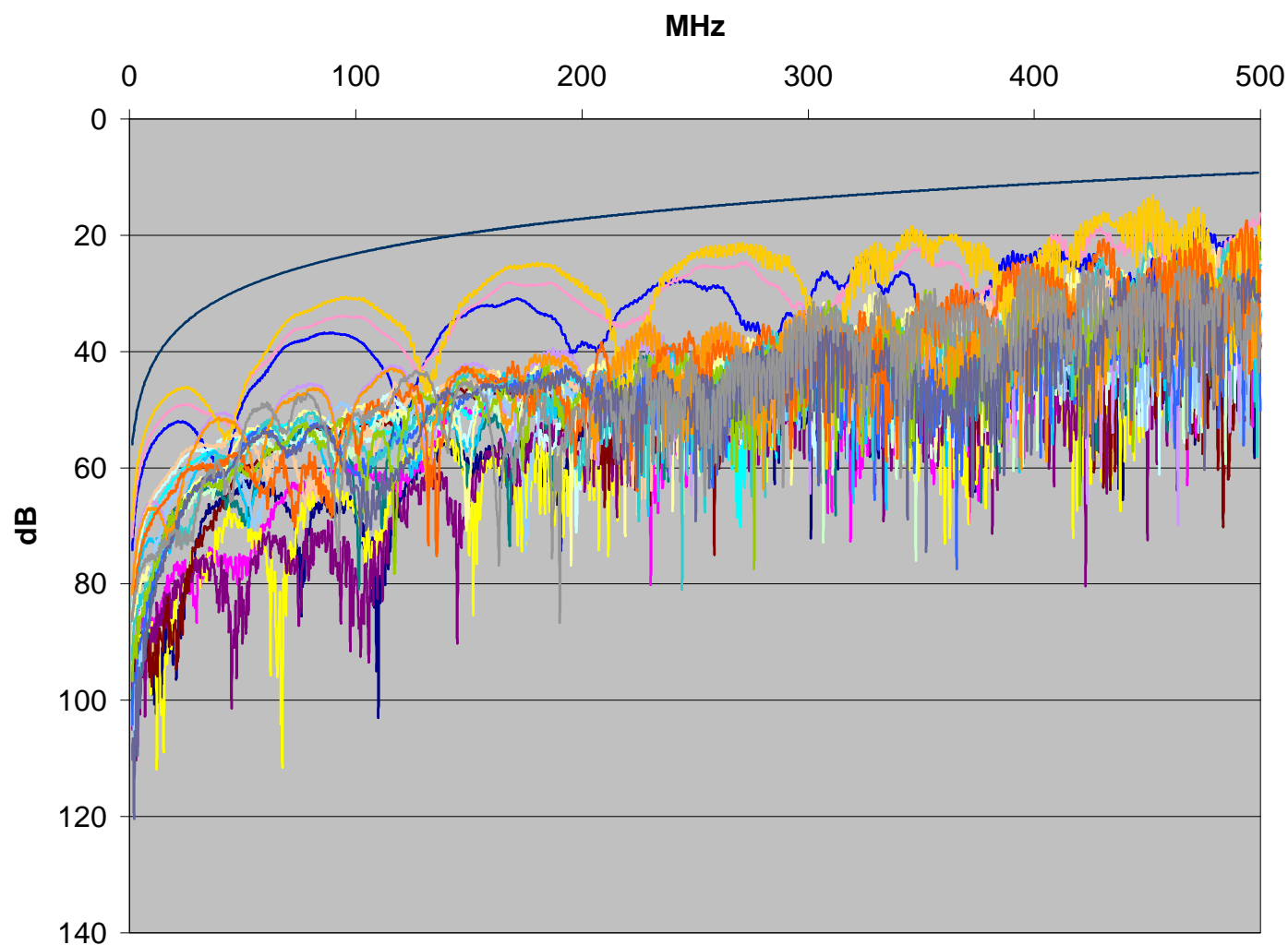
10GBASE-T

M1 Category 6 PSNEXT



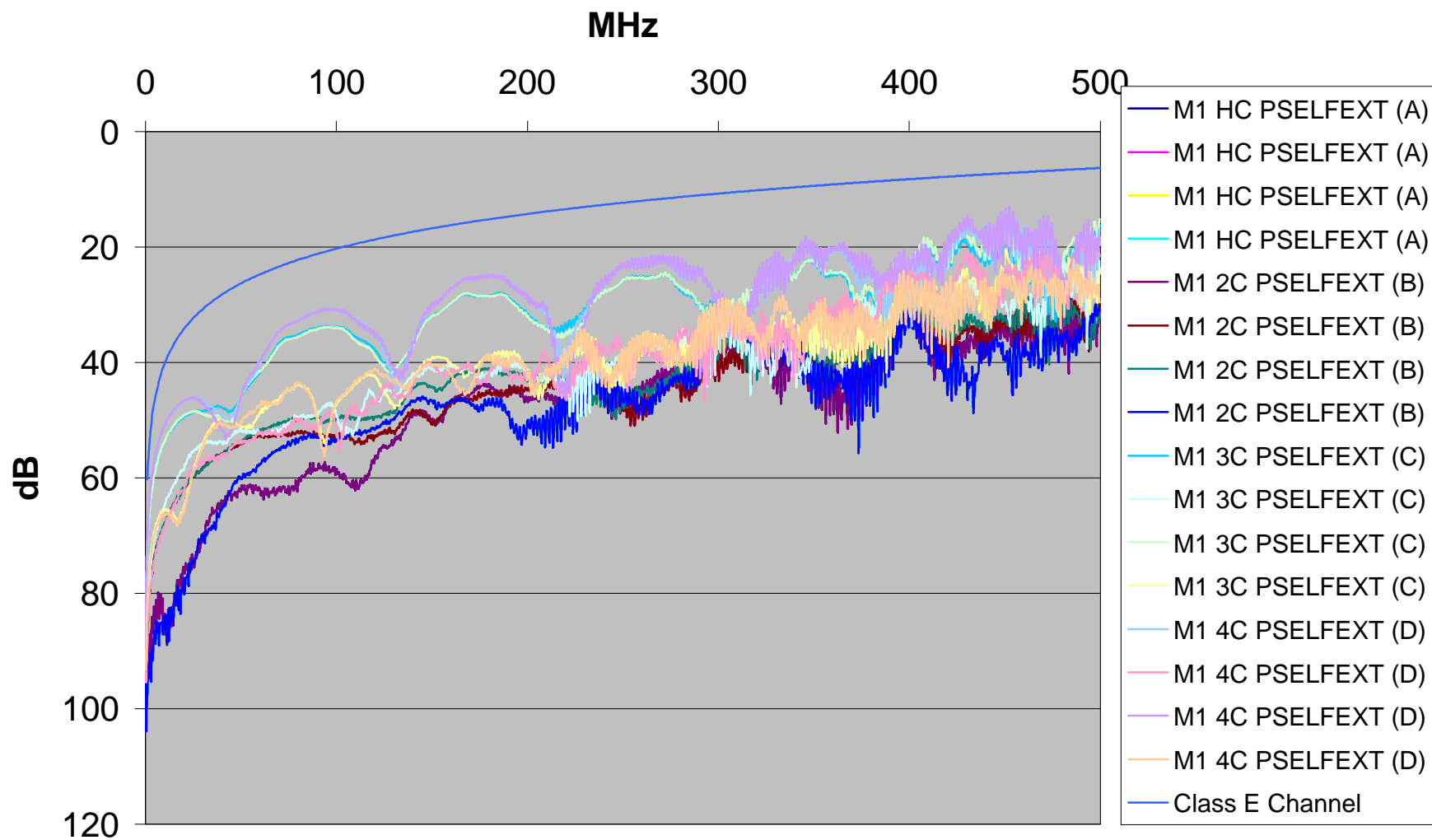
10GBASE-T

M1 Category 6 ELFEXT



10GBASE-T

M1 Category 6 PSELFEXT

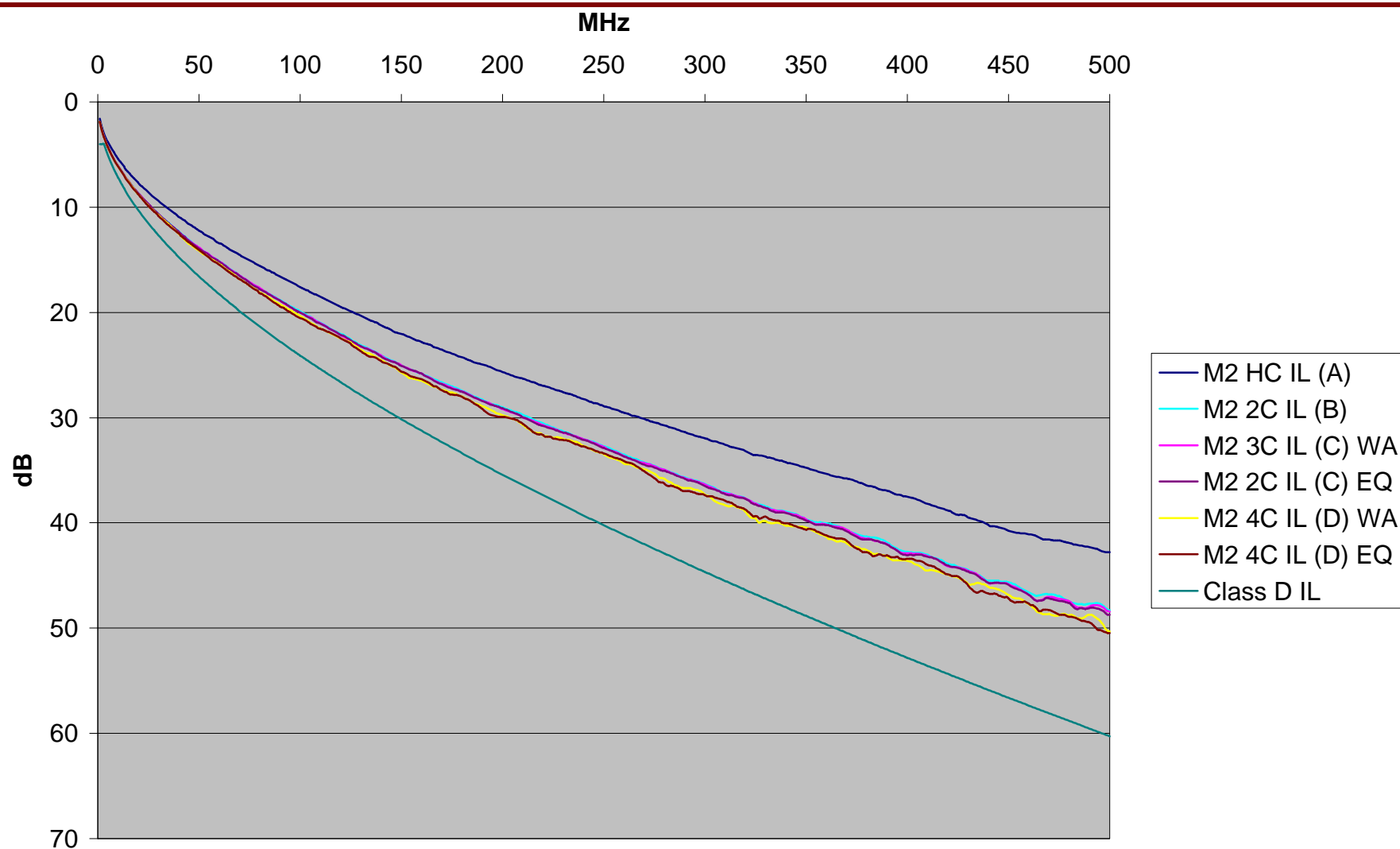


10GBASE-T

M2- Category 5e Measurement Data

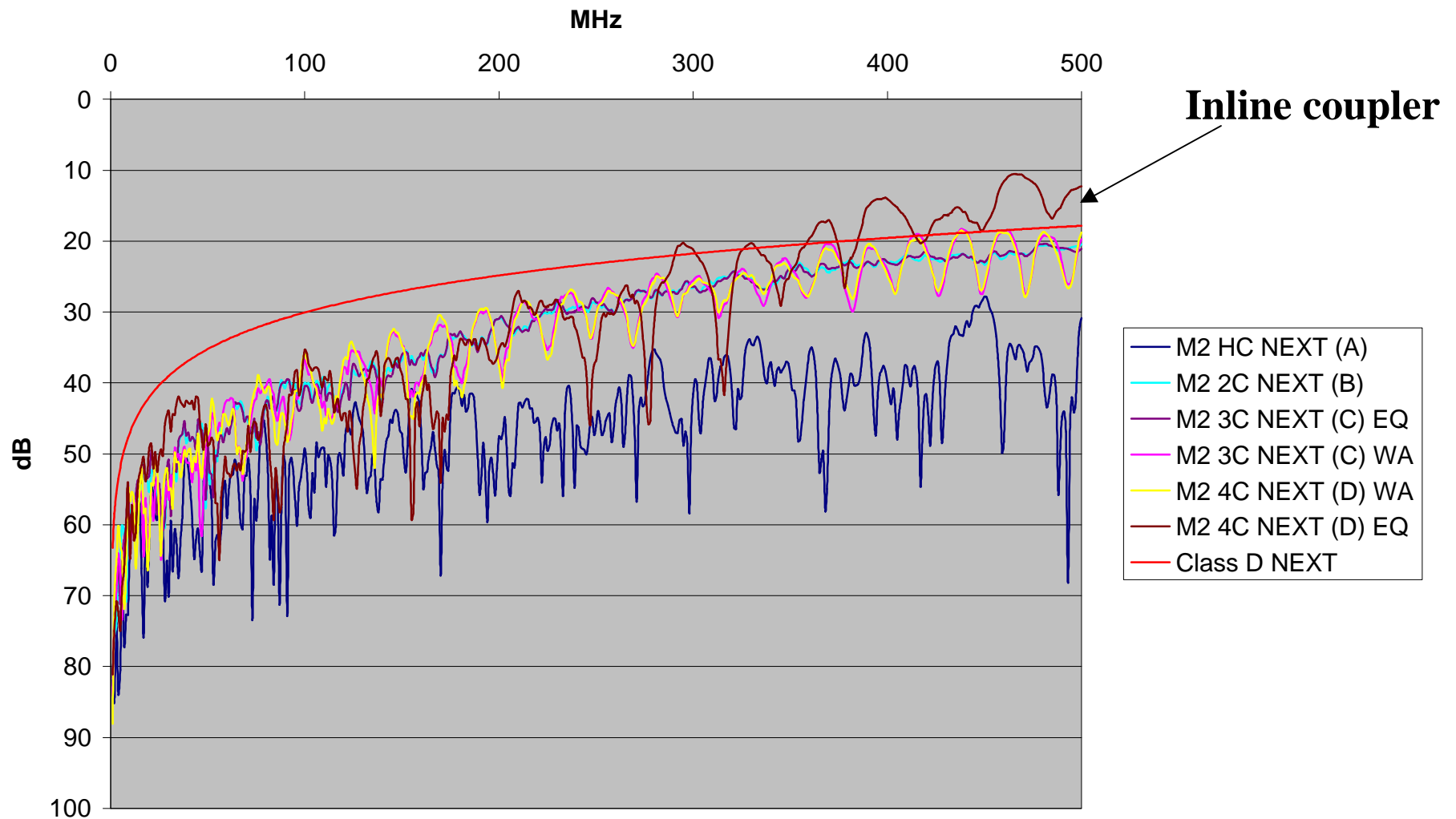
10GBASE-T

M2 Category 5e IL



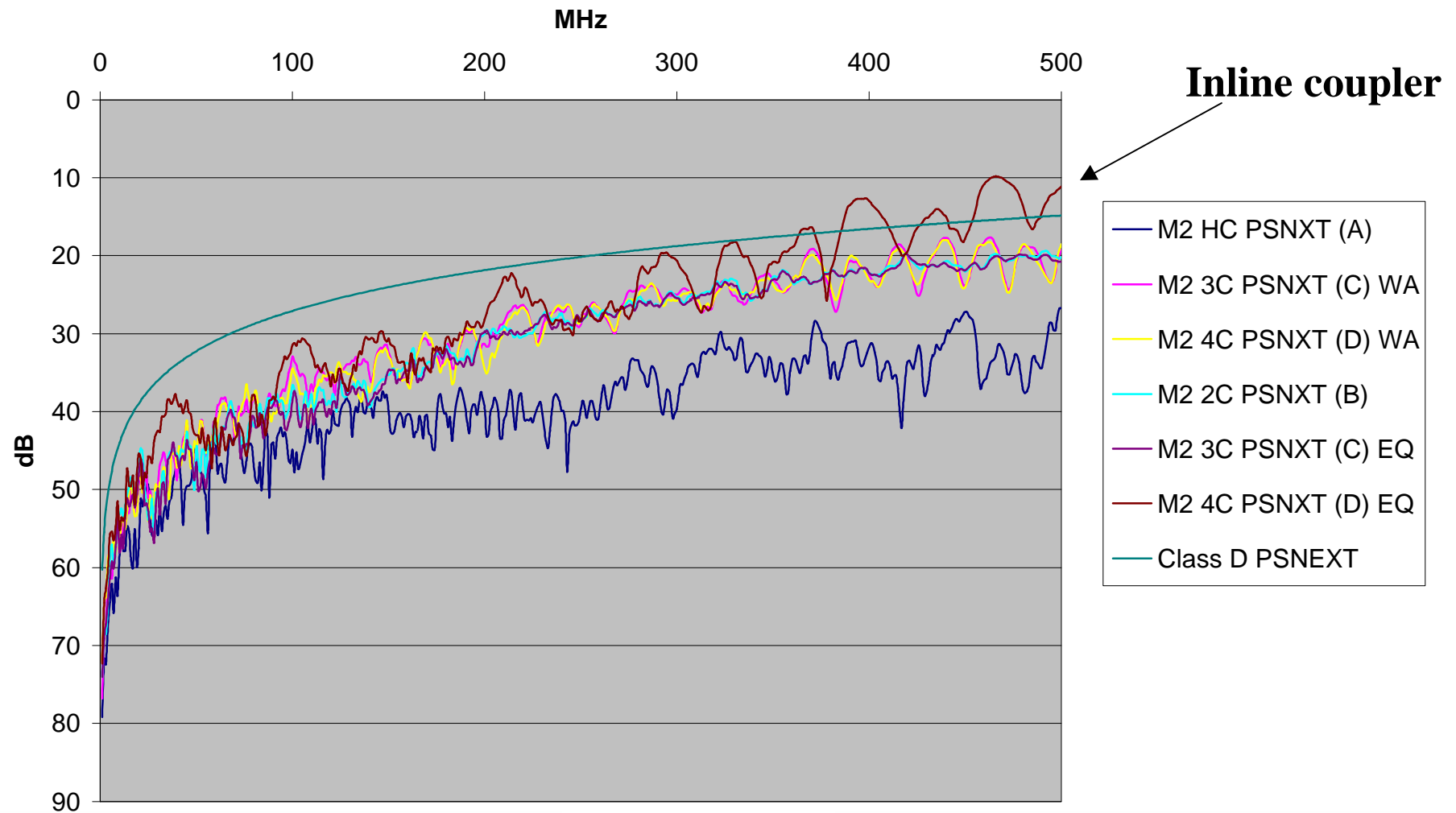
10GBASE-T

M2 Category 5e NEXT



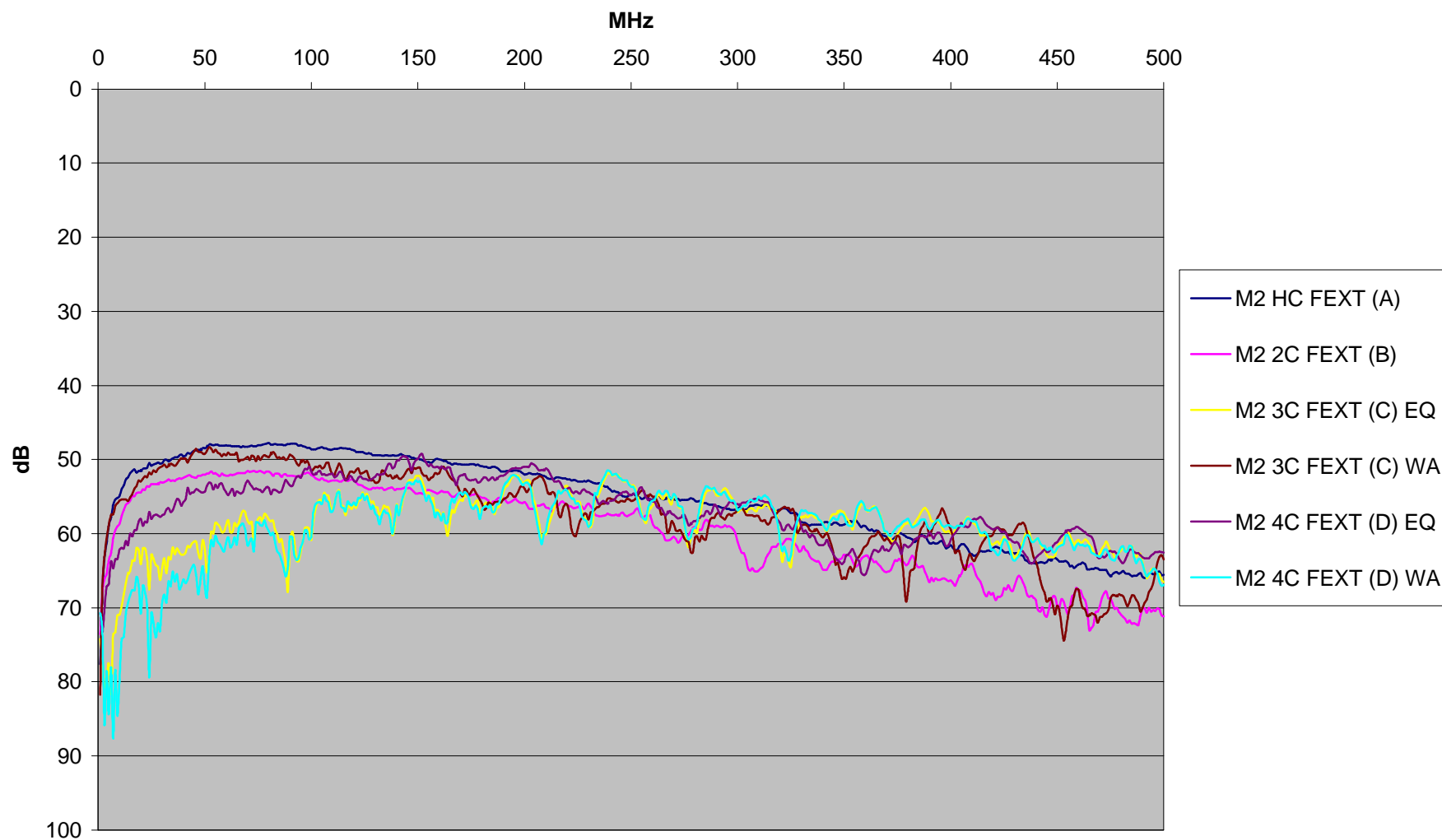
10GBASE-T

M2 Category 5e PSNEXT



10GBASE-T

M2 Category 5e FEXT

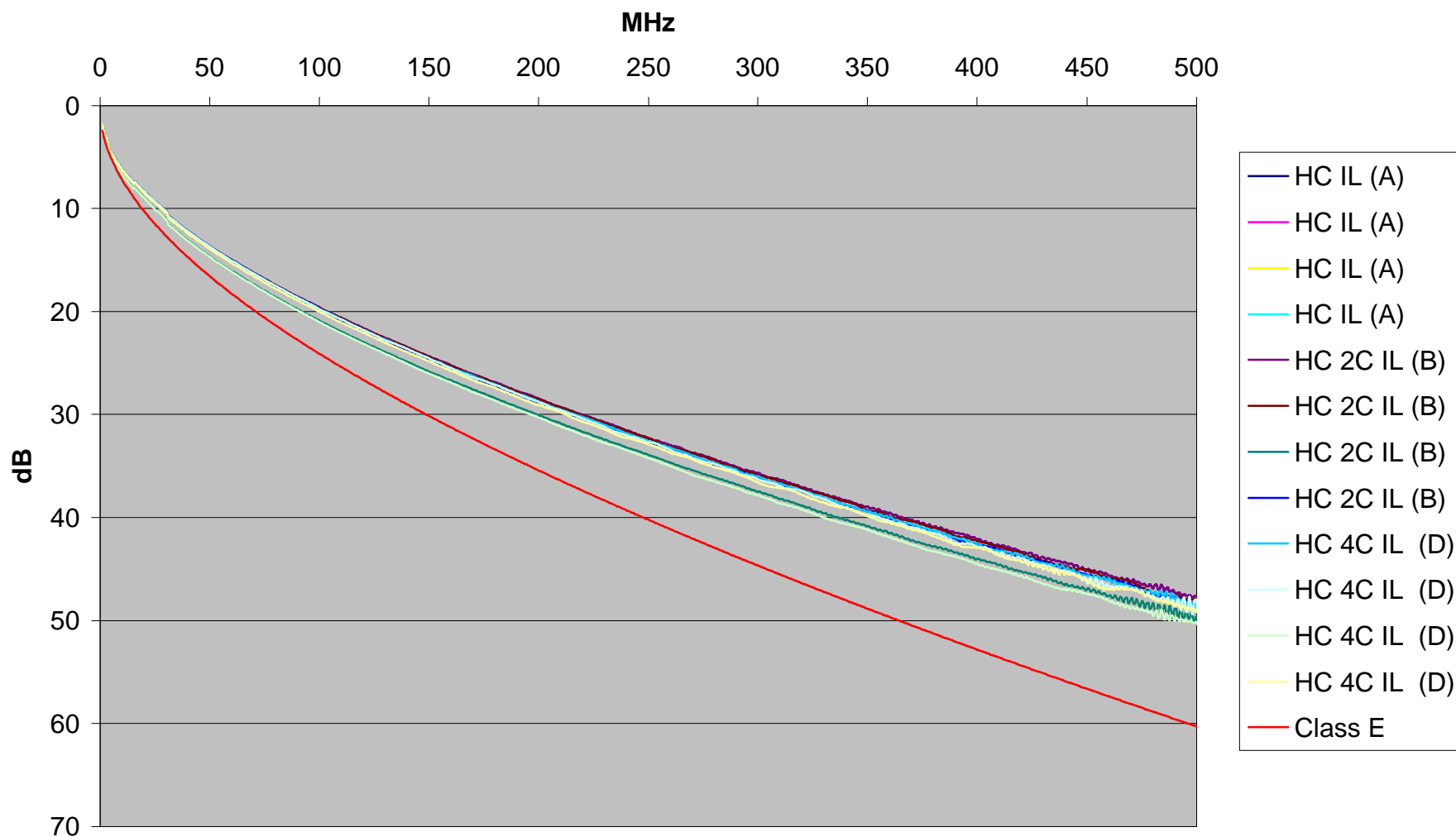


10GBASE-T

M3- Category 6 Measurement Data

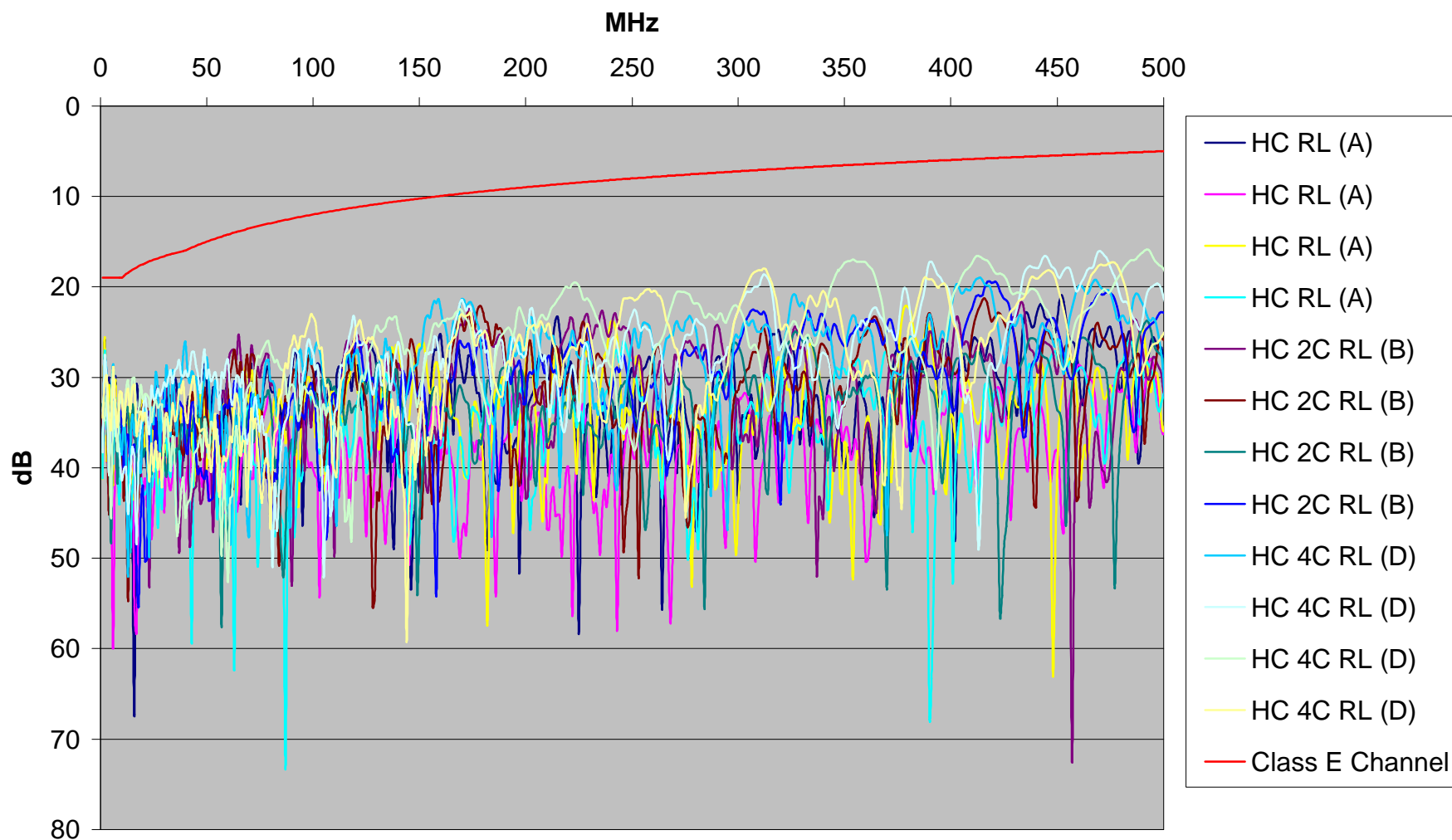
10GBASE-T

M3-Category 6 Insertion Loss



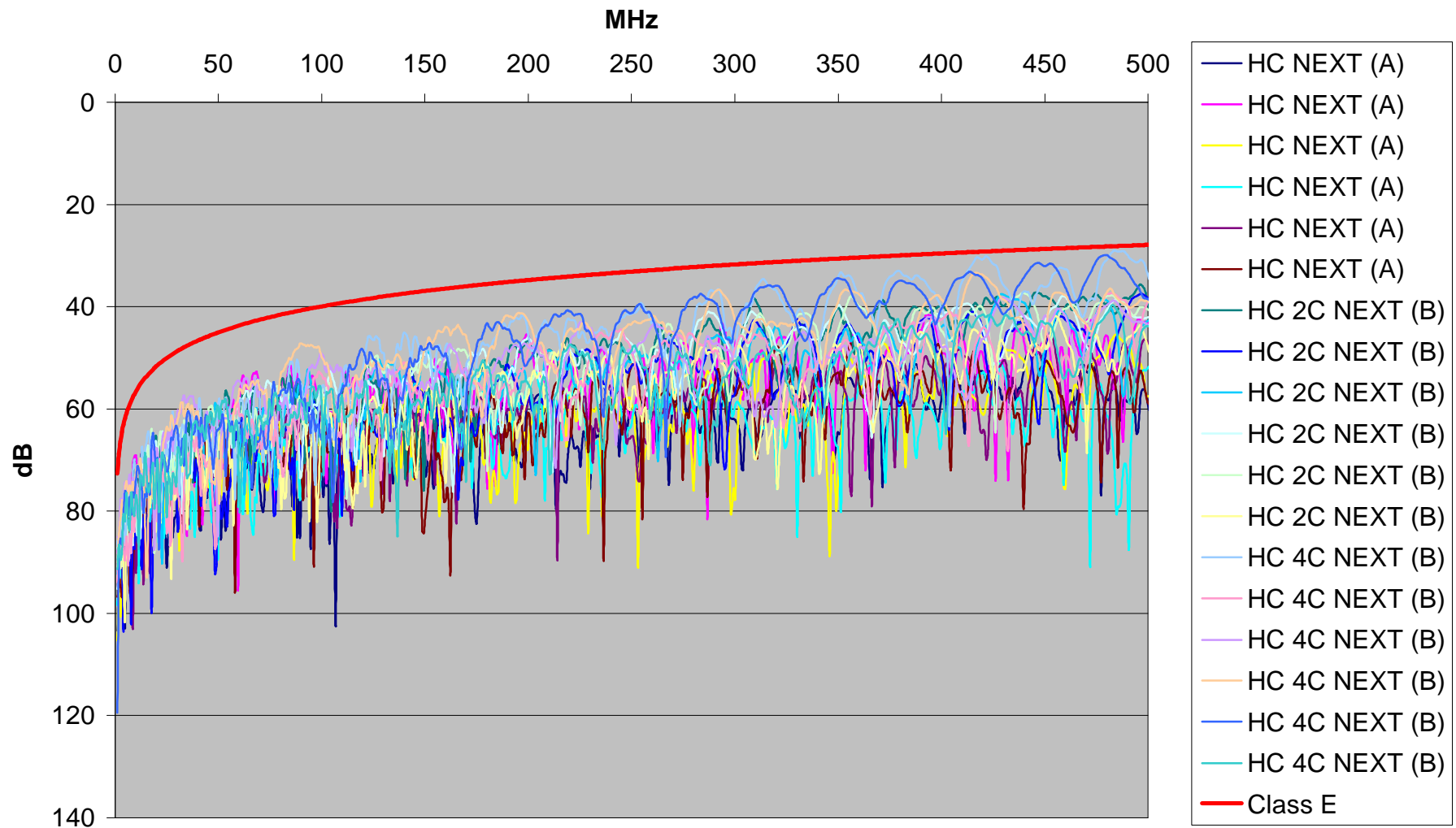
10GBASE-T

M3 Category 6 RL



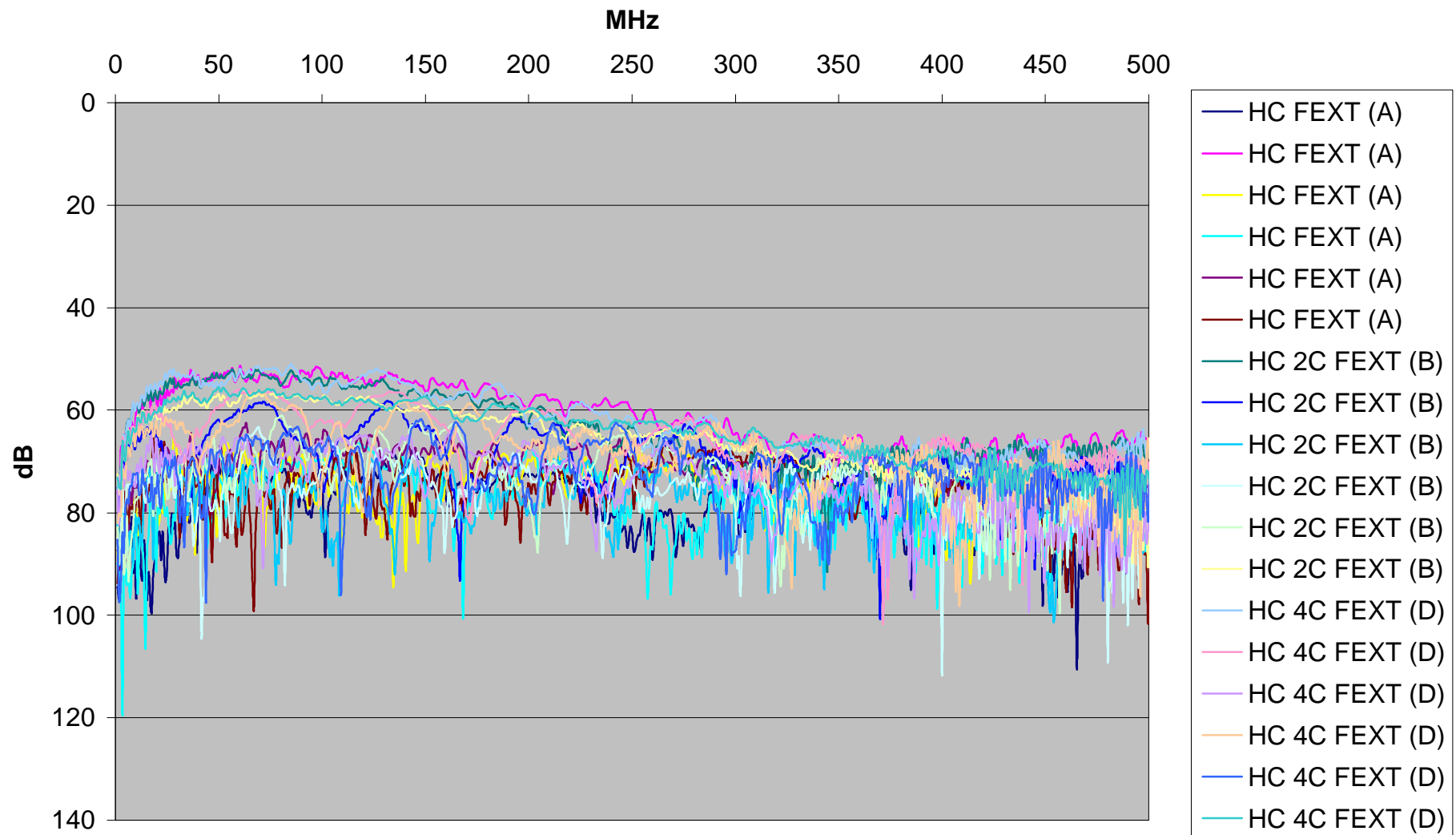
10GBASE-T

M3 Category 6 NEXT



10GBASE-T

M3 Category 6 FEXT

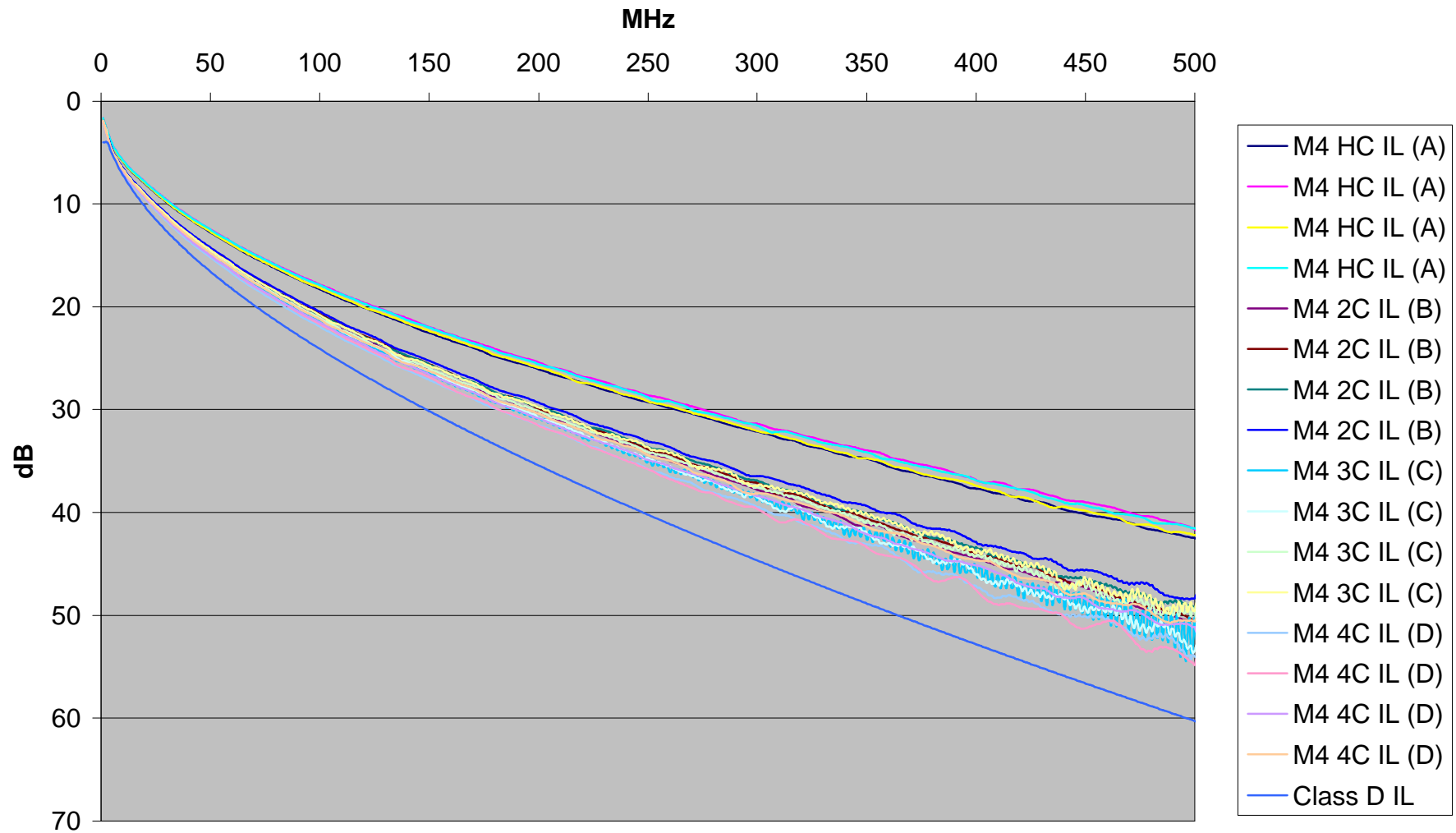


10GBASE-T

M4- Category 5e Measurement Data

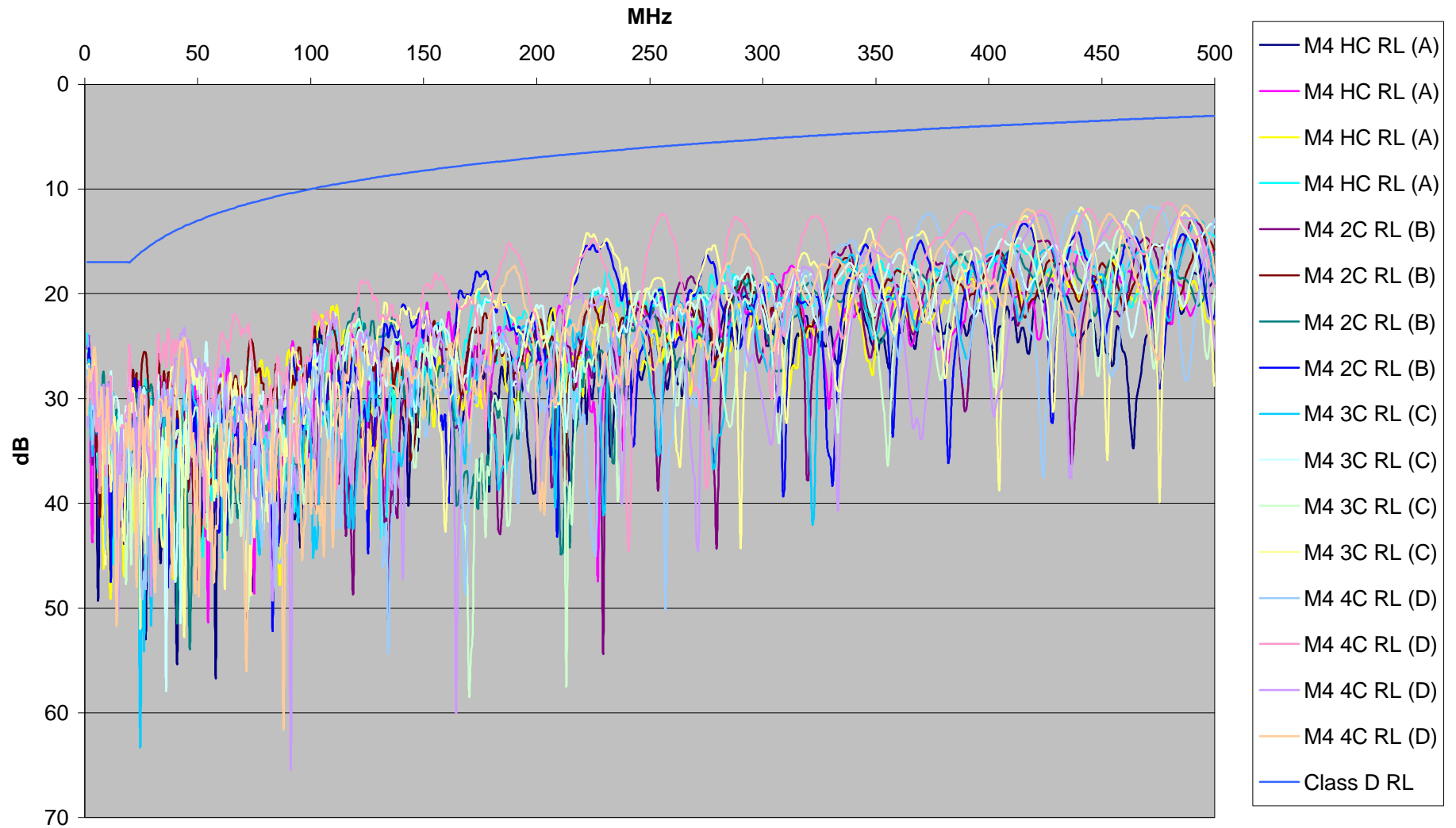
10GBASE-T

M4 Category 5e IL



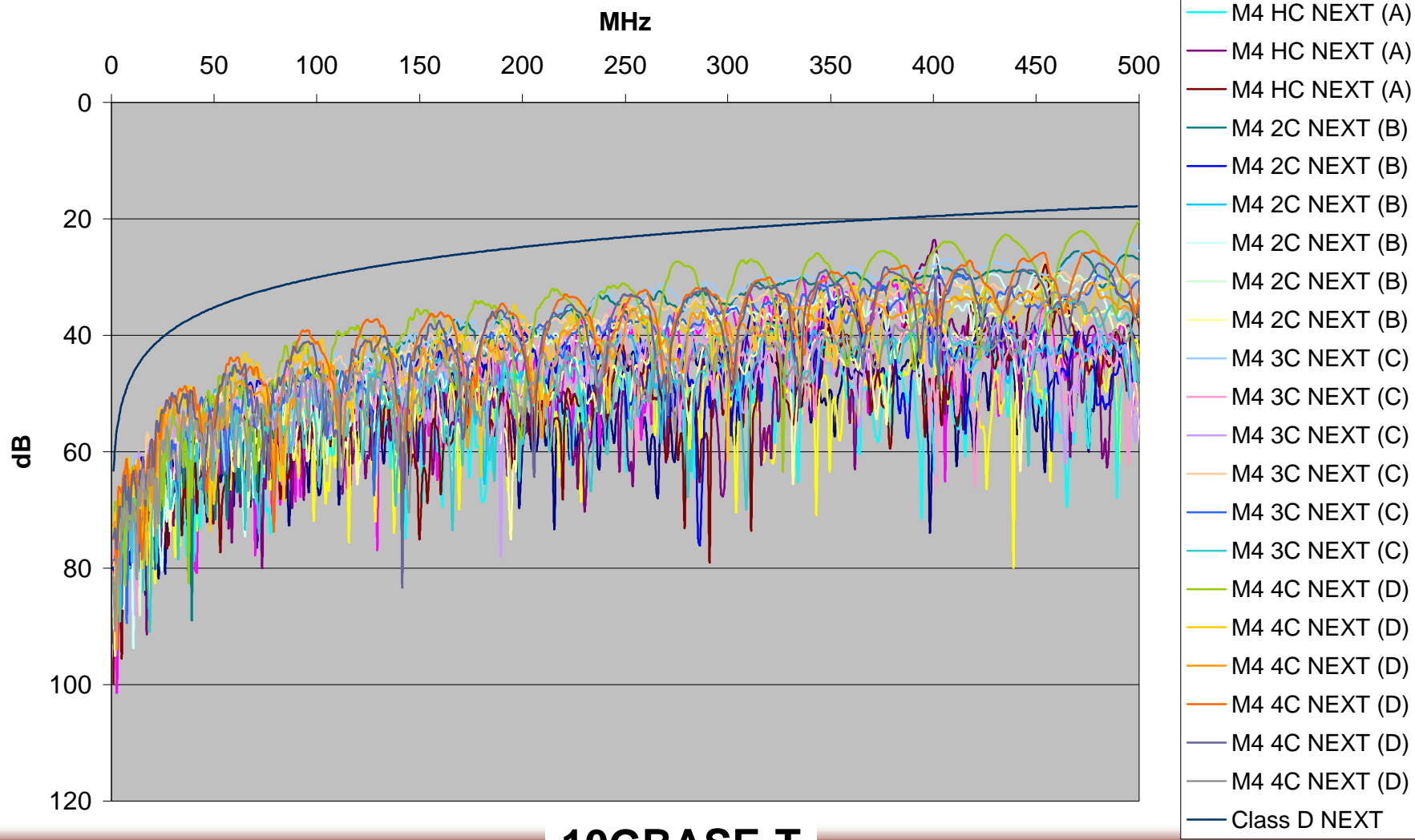
10GBASE-T

M4 Category 5e RL



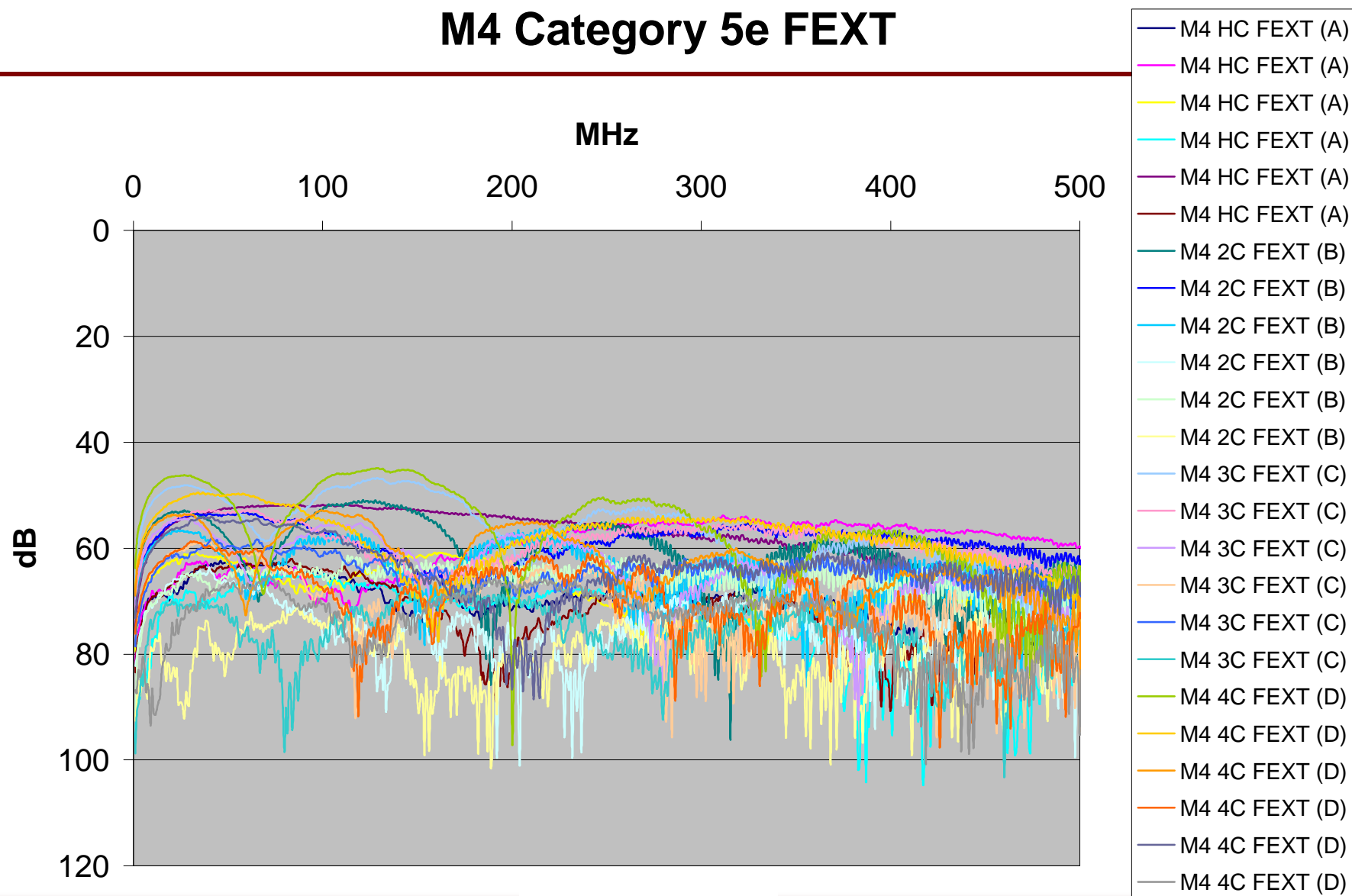
10GBASE-T

M4 Category 5e NEXT



10GBASE-T

M4 Category 5e FEXT

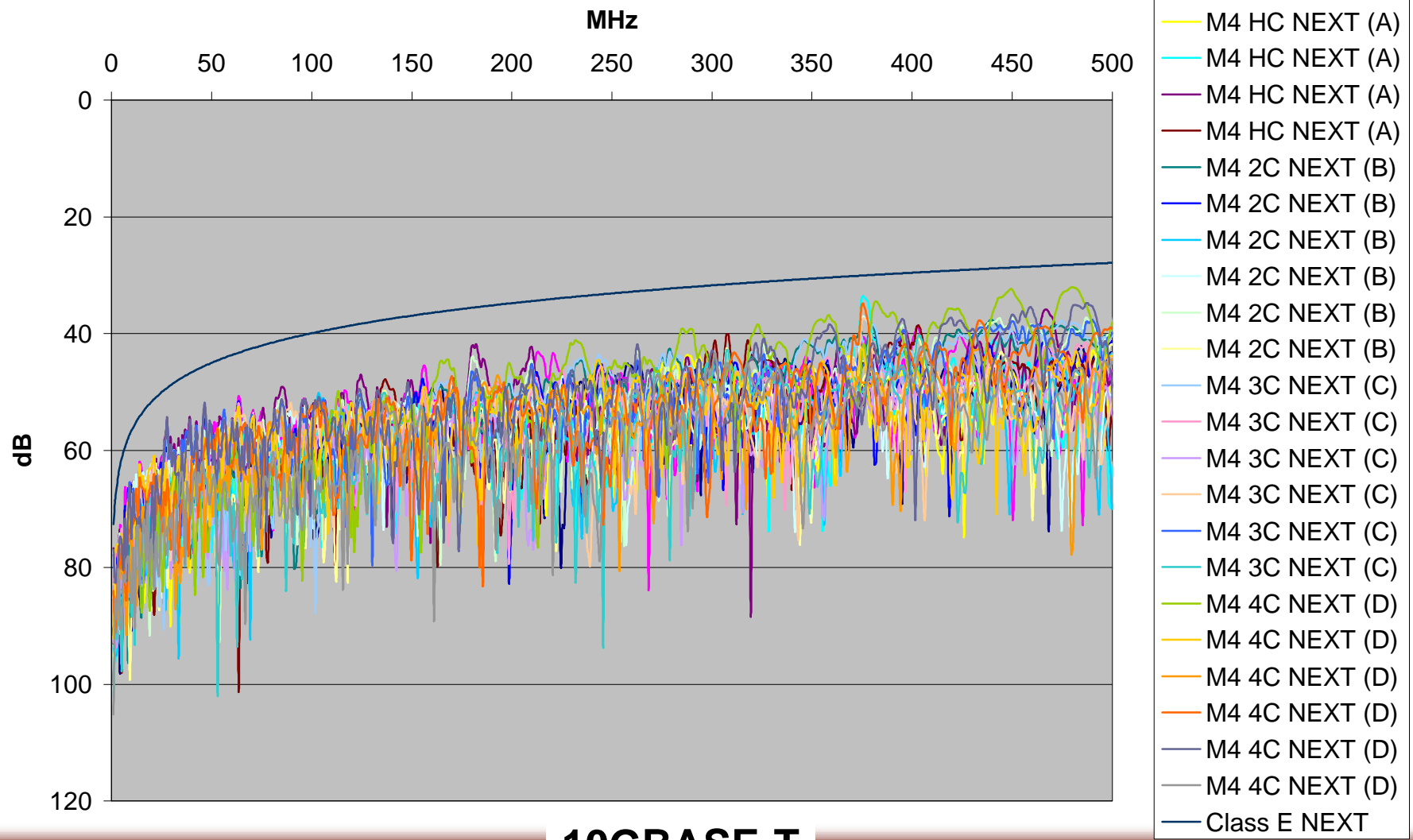


10GBASE-T

M4- Category 6 Measurement Data

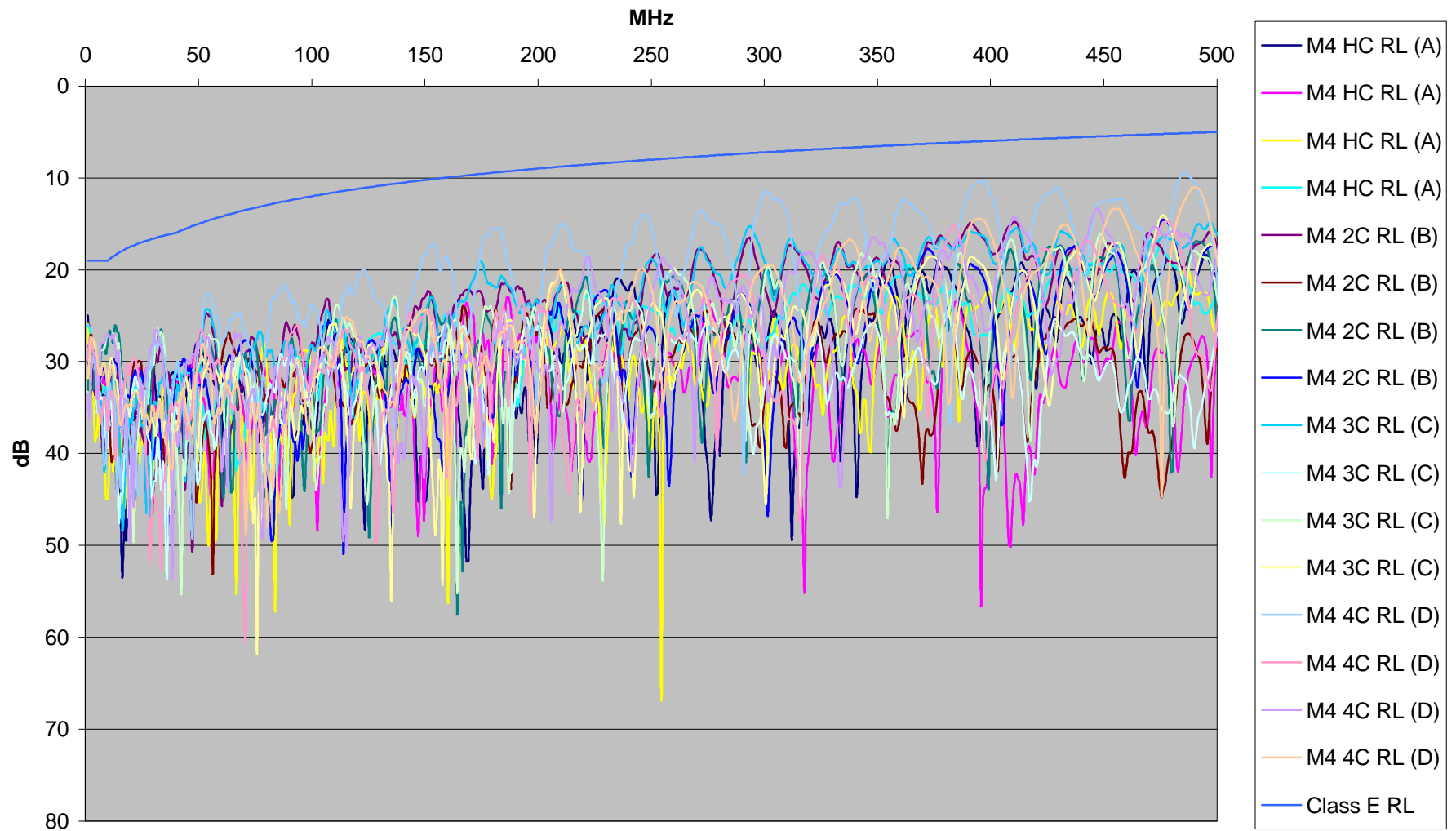
10GBASE-T

M4 Category 6 NEXT



10GBASE-T

M4 Category 6 RL



10GBASE-T