



Alien Crosstalk Mitigation Technique

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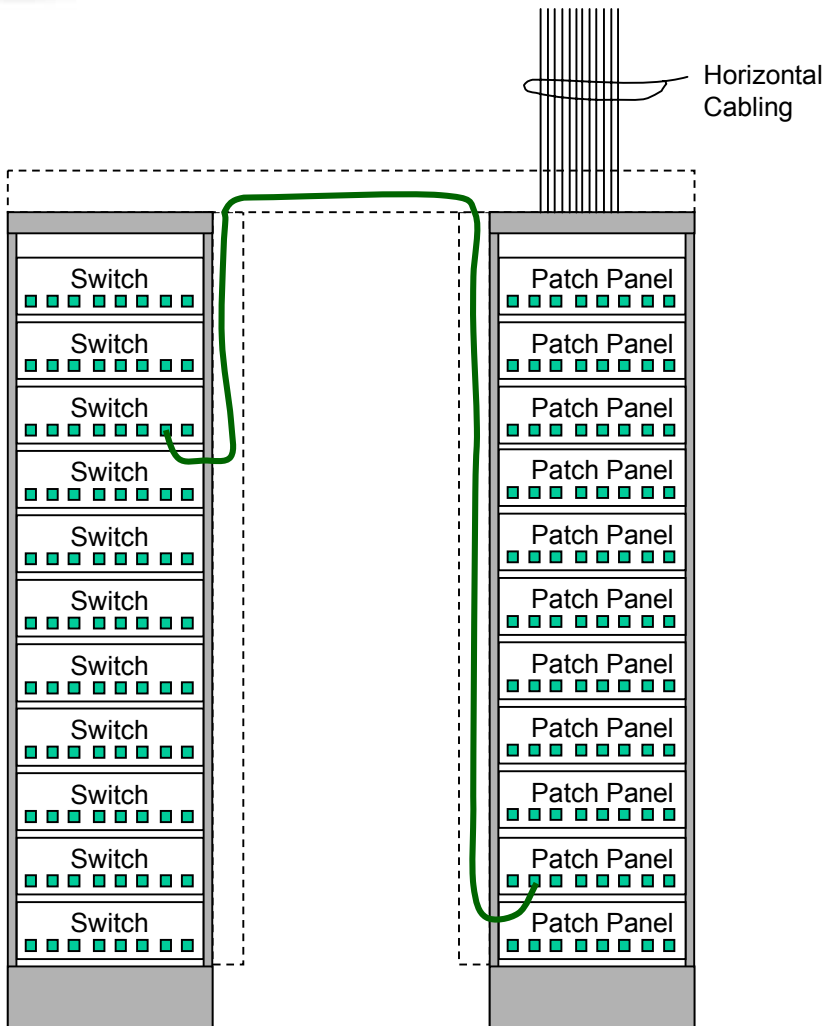
Objective:

Two Path Plan

- 1.) Support the existing installations
with Mitigation techniques
- 2.) New cable for new installations

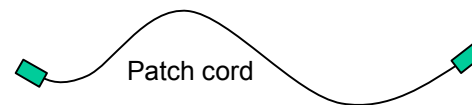


An Example of a Mitigation Technique “Enhanced Performance Patch Cords”



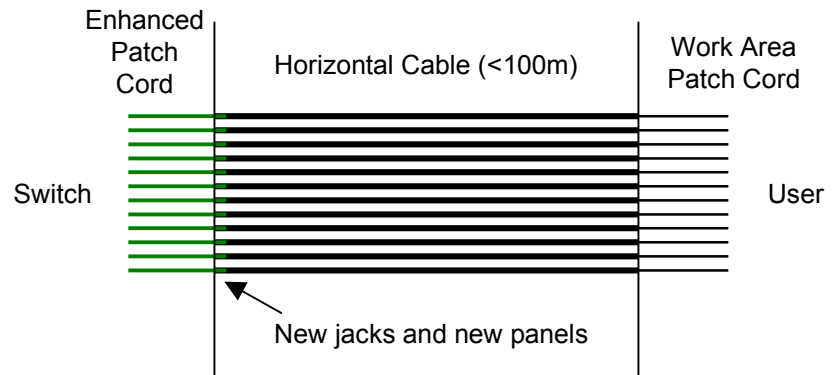
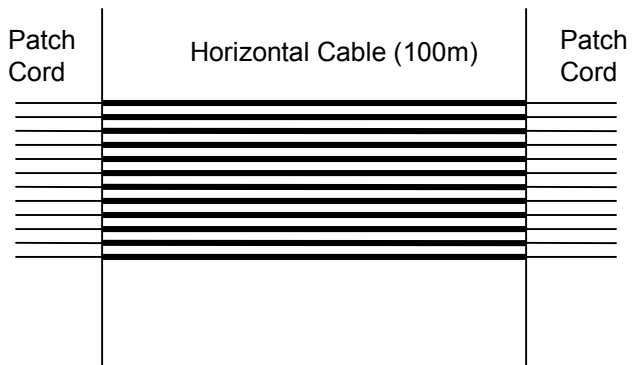
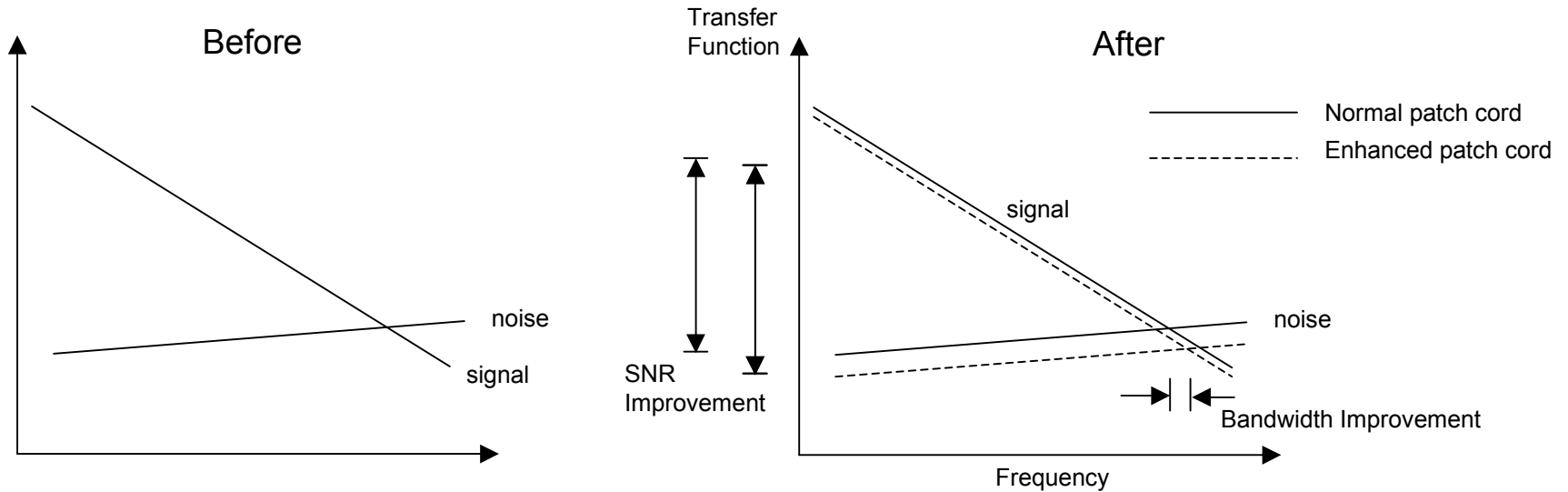
Concepts

- ANEXT Enhanced Performance Patch Cord
- Could be shielded or non-shielded
- Enhanced Performance arises from
 - Patch Cord Length
 - Patch Cord Separation
 - Patch Cord Loss





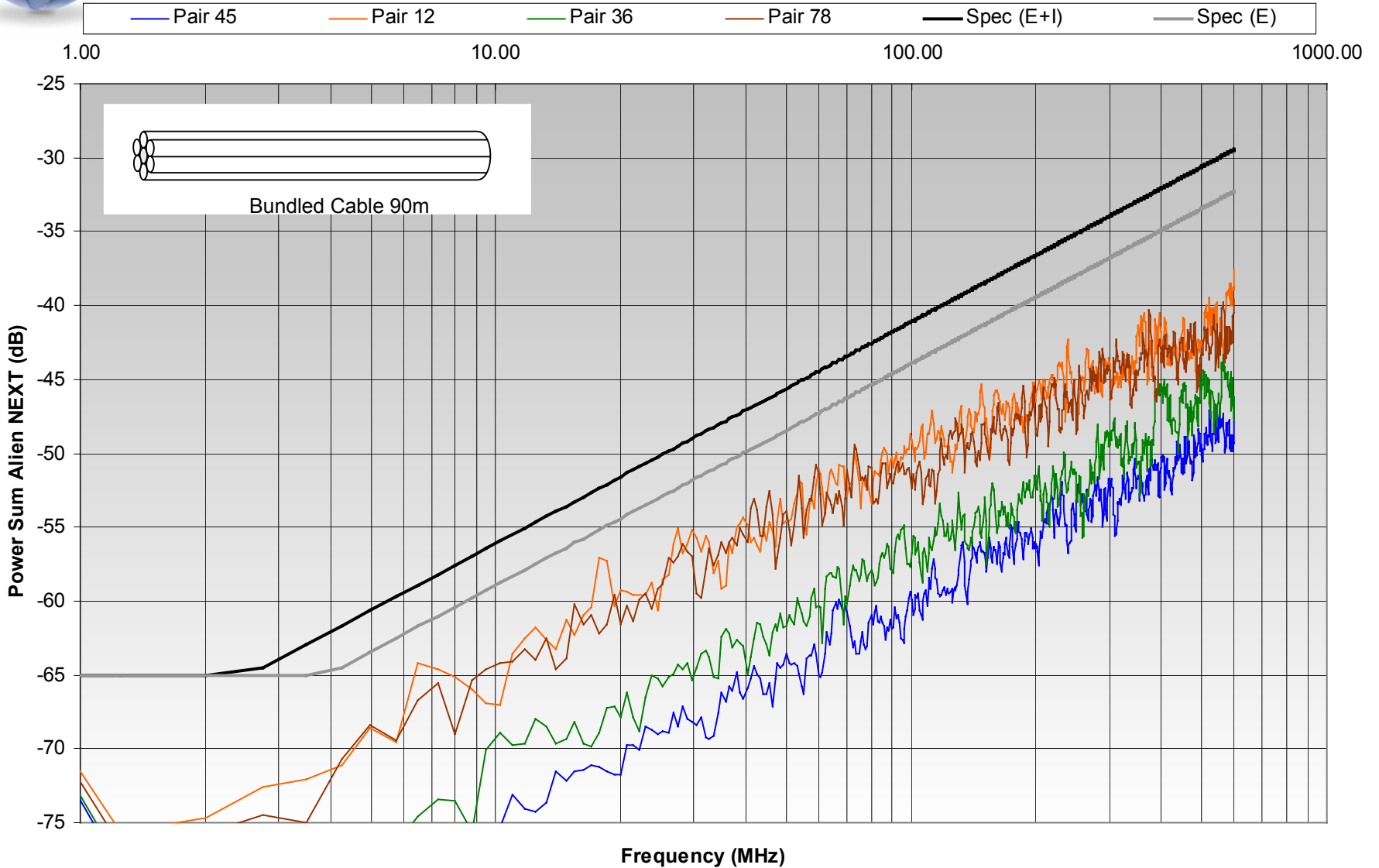
A Mitigation Strategy ("Enhanced Performance Patch Cords")





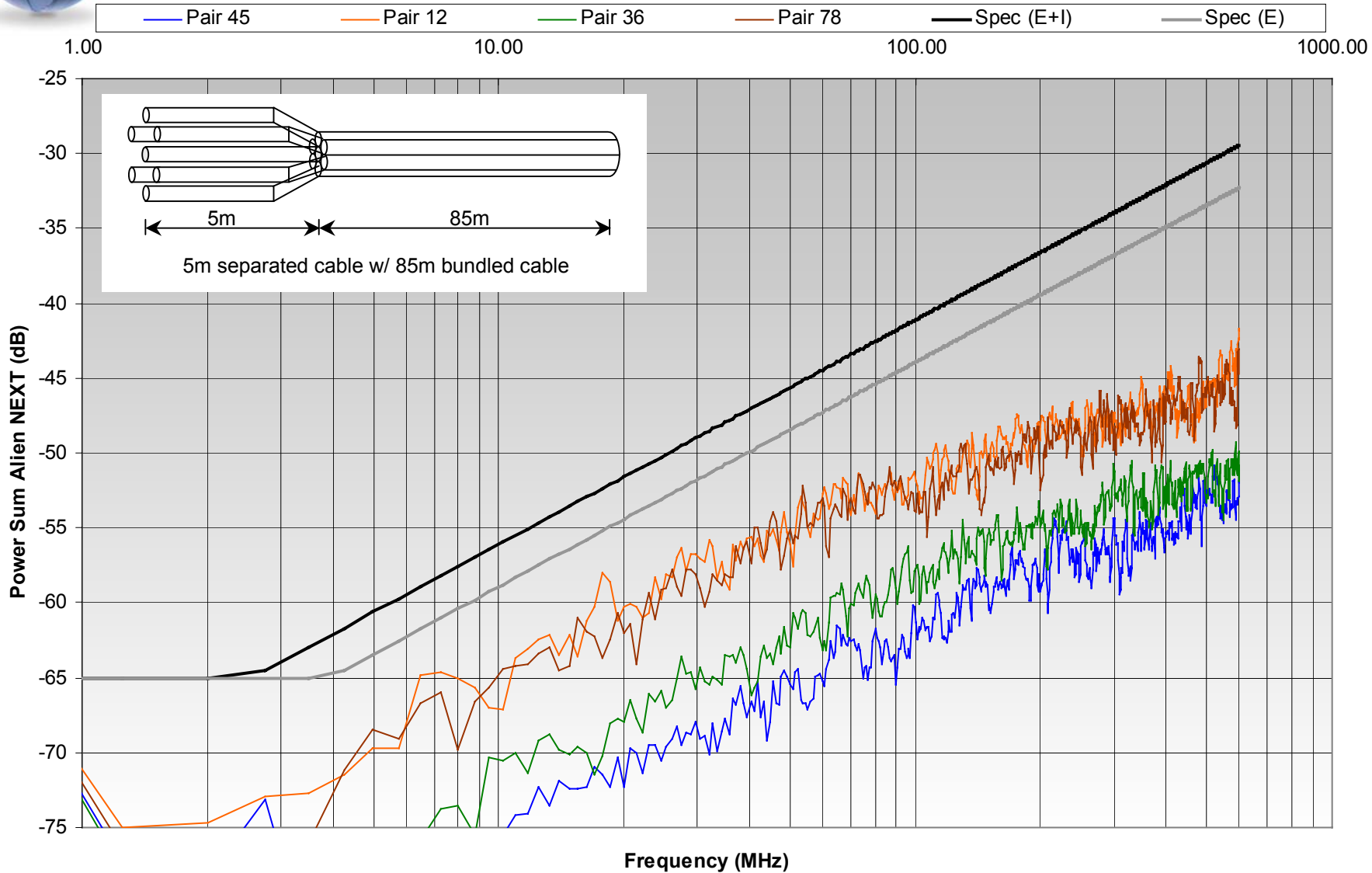


Cat 6 Cable Alien Crosstalk Performance (0 m separation)



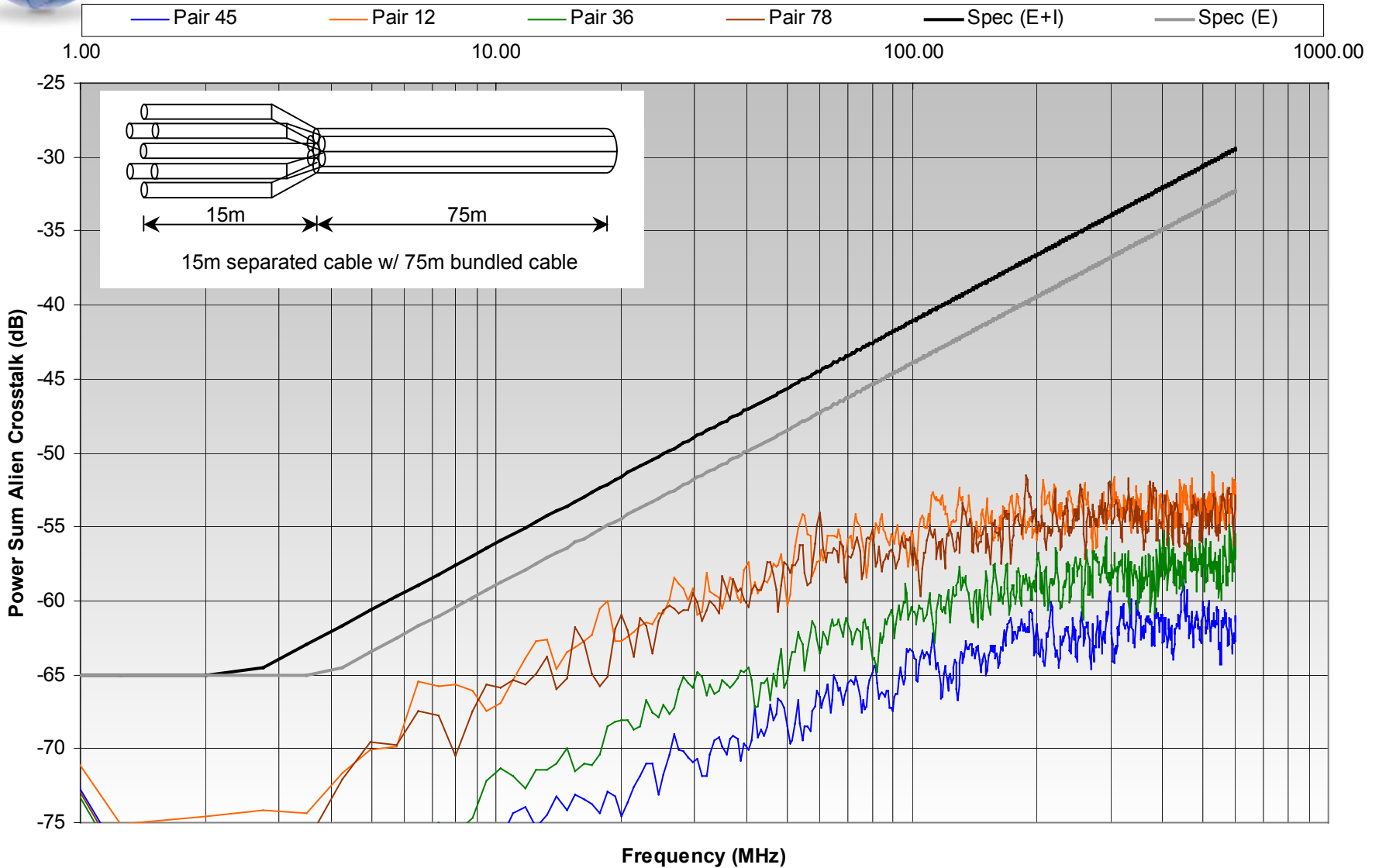


Cat 6 Cable Alien Crosstalk (0-5 m unbundled)





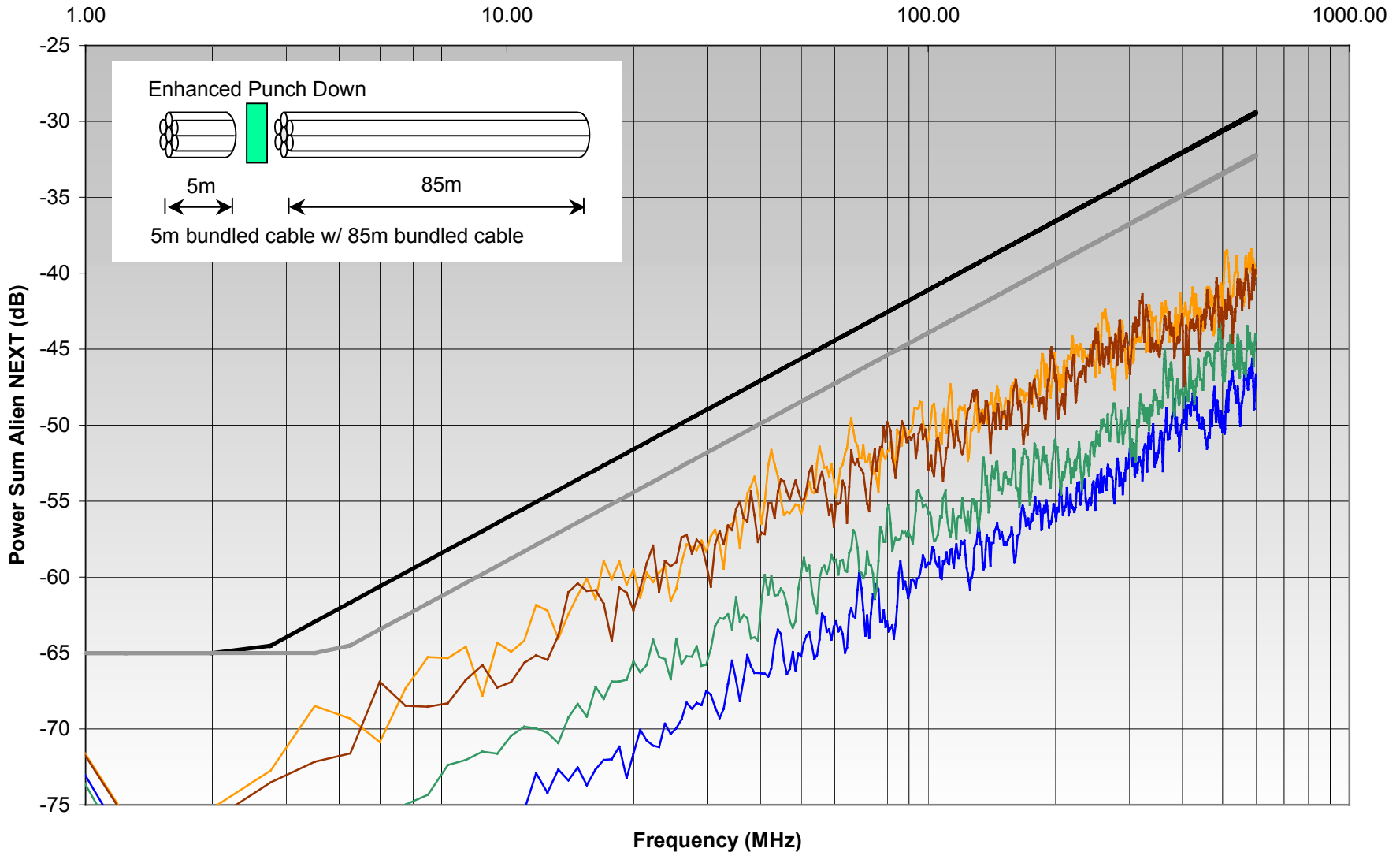
Cat 6 Cable Alien Crosstalk (0-15 m unbundled)





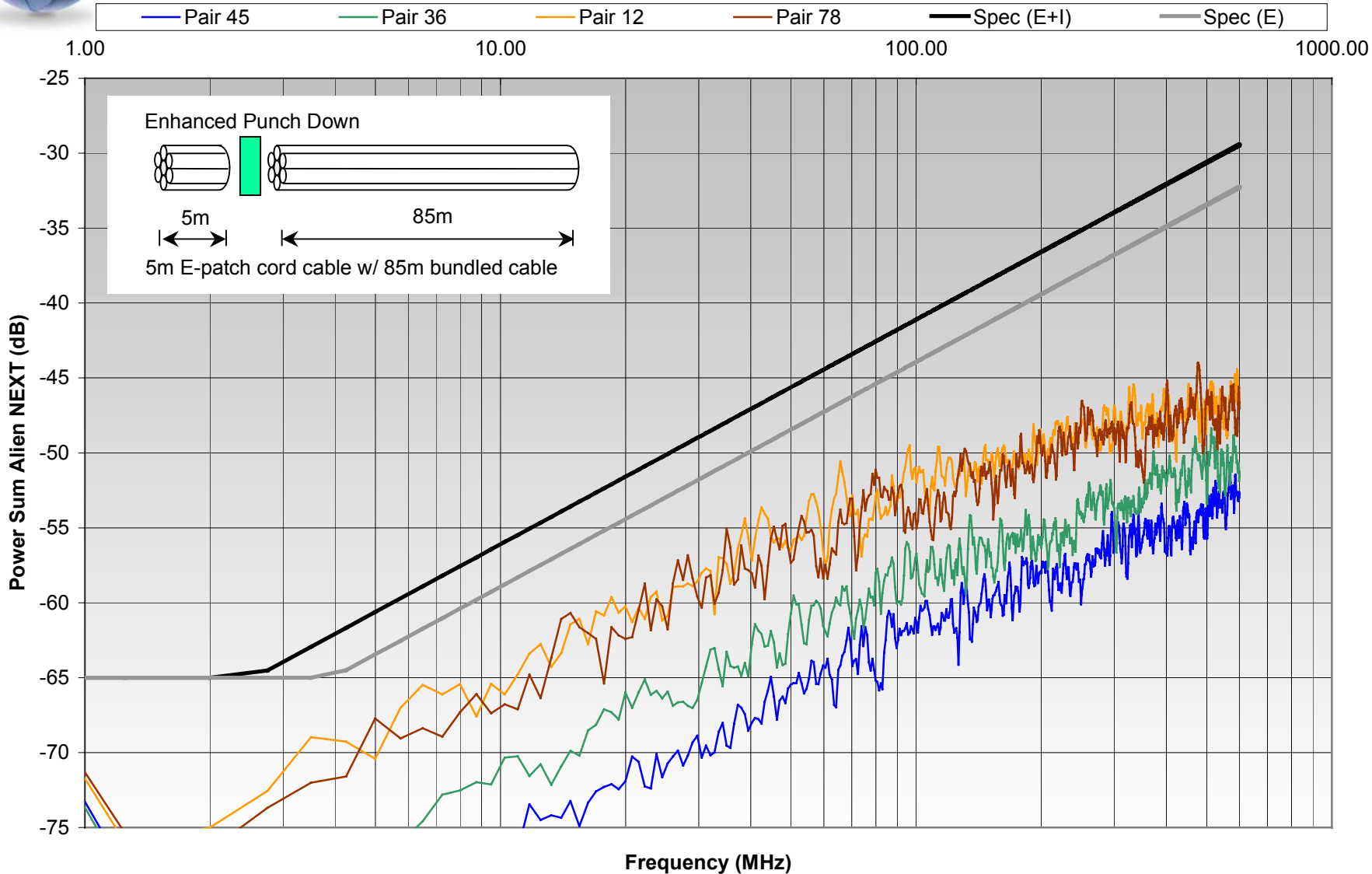
Cat 6 Cable Alien Crosstalk (85m UTP-B - 110 punch down - 5m UTP-B)

— Pair 45 — Pair 36 — Pair 12 — Pair 78 — Spec (E+I) — Spec (E)



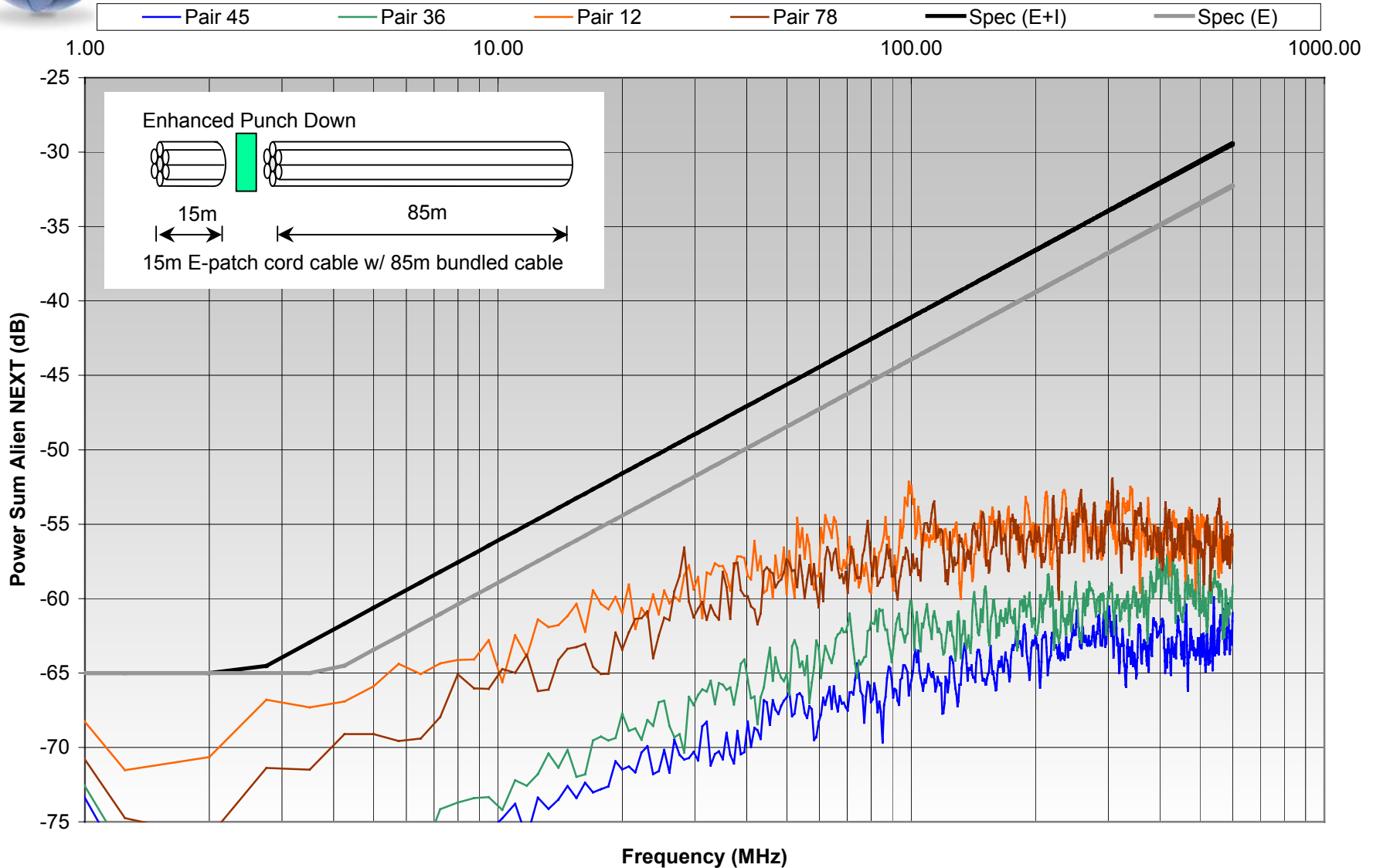


Cat 6 Cable Alien Crosstalk (85m UTP-B - 110 Punch Down - 5m STP-B)





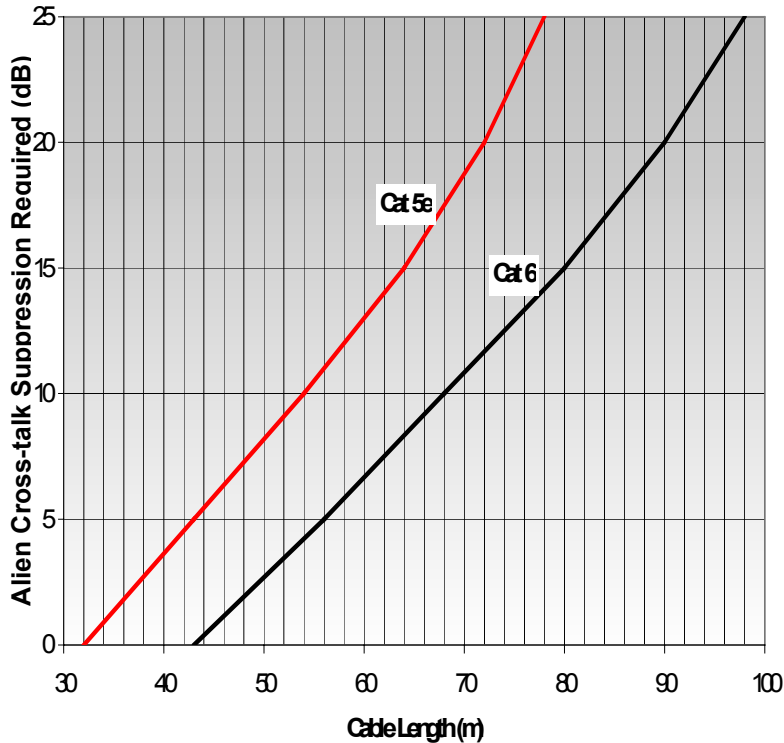
Cat 6 Cable Alien Crosstalk (85m UTP-B - 110 Punch down - 15m STP-B)





W/O Enhanced Patch Cord

10GbE Performance of Cat 6 and Cat 5e



Assumptions:

- 1.) Capacity > 16 Gbps to support 10 GbE
- 2.) re-shaped ANEXT to simulate Enhanced Patch Cord
- 3.) increased attenuation in model to represent Patch Cord extra loss (did not decrease the ANEXT when Enhanced Patch Cord used)
- 4.) Cable specifications used

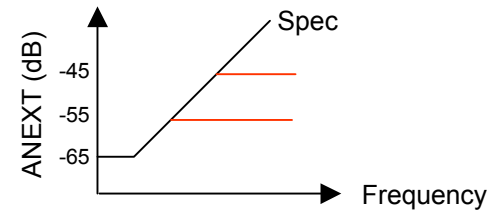
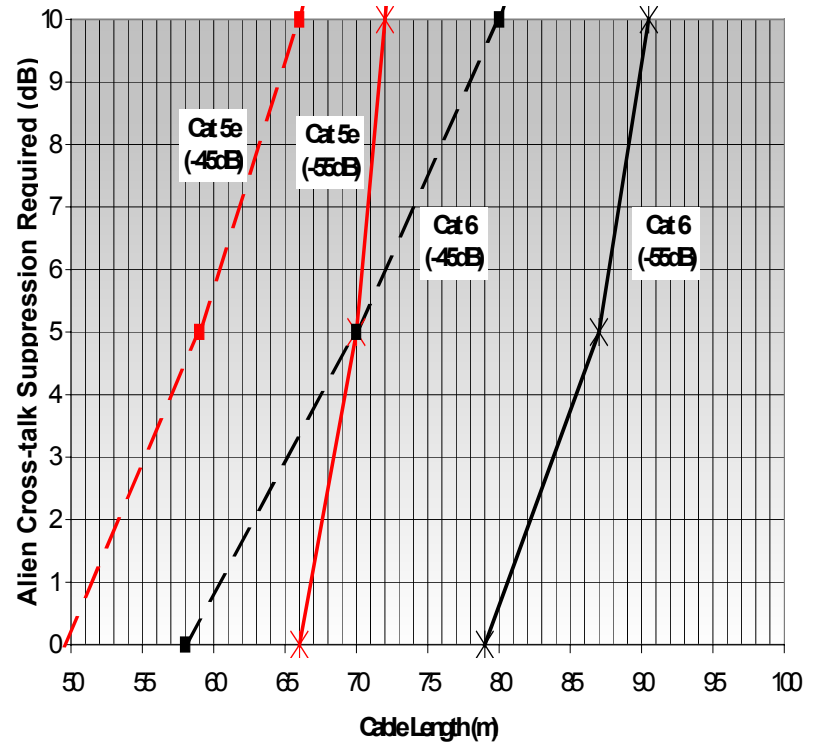
Note:

MatLab simulation tools need to be improved to accurately determine capacity



W/ Enhanced Patch Cord

10GbE Performance of Cat 6 and Cat 5e w/ Enhanced Patch Cord





Summary

Two Path Plan

- 1.) Support the existing installations at the 10 Gbps data rate with Mitigation techniques
 - a.) test methodology (determine if mitigation is required and certification)
 - b.) mitigation specification (e.g., patch cord)
 - c.) more measurements required
 - d.) better models for length dependence of all cable parameters

- 2.) New cable for new installations