

Case study #	1.7
Title	Infrared movement-sensing lights
Type of trouble	Degradation, abnormal operation, loss function.
Source of trouble	Outdoors PIR lighting was creating noise on a number of telephone lines, sufficient to cause DSL circuits to fail.
System affected	Customer's equipment/Access network.
Location	Customer premises.
Keywords	Emission, other (solved at source).
Version date	2004-01-01

System configuration

A normal PSTN line, enabled for ADSL, suddenly started to suffer from large numbers of transmission errors, particularly in the early evening, when it got dark, and last thing at night. A number of customers appeared to suffer from the problem.

Measurement/Searching techniques/Experiment

A RF detector indicated that there was harmonic power noise present, but no industry likely to cause the problem. Using the RF detector to search the lead-in cables to each of the premises found one to be particularly high in the harmonic noise levels. Further investigation revealed that the owner of the premises had used a 'spare pair' in his telecoms cable as a power feed for his PIR (passive infra red) outside lamp. The problem was compounded in that the lamp controller also performed a dimming action. Once the lamp was correctly wired, away from the telecoms cable, the problem was solved. A similar lamp was procured for EMC testing, as it was thought to possibly be too high on emissions.

Mitigation method/Results/Conclusion

Solved at source, rewired the lamp correctly.

References

Rec. ITU-T K.37; Annexes A and B.