



**PowerLine Telecommunications (PLT);
MIMO PLT;
Part 2: Setup and Statistical Results of
MIMO PLT EMI Measurements**

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Powerline Telecommunications (PLT).

The present document is part 2 of a multi-part deliverable covering the MIMO PLT as identified below:

Part 1: "Measurement Methods of MIMO PLT";

Part 2: "Setup and Statistical Results of MIMO PLT EMI Measurements";

Part 3: "Setup and Statistical Results of MIMO PLT Channel and Noise Measurements".

Introduction

The STF 410 (Special Task Force) was set up in order to study and compare MIMO (Multiple Input Multiple Output) characteristics of the LVDN network in different countries. The present document is one of three parts of TR 101 562 which contain the findings of the STF 410 research.

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1 Scope

MIMO PLT EMI is a review and statistical analysis which takes into account such matters as earthing variation, country variation, operator differences, phasing and distribution topologies, domestic, industrial and housing types along with local network loading.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

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2.1 Normative references

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] Sartenaer, T. & Delogne, P., "Powerline Cables Modelling for Broadband Communications", ISPLC 2001, pp. 331-337.
- [i.2] R. Hashmat, P. Pagani, A. Zeddami, T. Chonavel, "MIMO Communications for Inhome PLC Networks: Measurements and Results up to 100 MHz", IEEE International Symposium on Power Line Communications and its Applications (ISPLC), Rio, Brasil, March 2010.
- [i.3] A. Schwager, "Powerline Communications: Significant Technologies to become Ready for Integration" Doctoral Thesis at University of Duisburg-Essen, May 2010.
- [i.4] ETSI TR 102 175 (V1.1.1): "PowerLine Telecommunications (PLT); Channel characterization and measurement methods".
- [i.5] ETSI TR 101 562-1 (V1.3.1): "Powerline Telecommunications (PLT); MIMO PLT; Part 1: Measurement Methods of MIMO PLT".
- [i.6] ETSI TR 102 616 (V1.1.1): "PowerLine Telecommunications (PLT); Report from PlugtestsTM 2007 on coexistence between PLT and short wave radio broadcast; Test cases and results".
- [i.7] ITU-R Recommendation BS.1284: "General methods for the subjective assessment of sound quality".
- [i.8] SCHWARZBECK MESS - ELEKTRONIK; EFS 9218: "Active Electric Field Probe with Biconical Elements and built-in Amplifier 9 kHz ... 300 MHz".

NOTE: See <http://www.schwarzbeck.de/Datenblatt/m9218.pdf>.

- [i.9] ETSI TR 101 562-3 (V1.1.1): "PowerLine Telecommunications (PLT); MIMO PLT; Part 3: Setup and Statistical Results of MIMO PLT Channel and Noise Measurements".