



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

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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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Contents

Intellectual Property Rights	5
Foreword.....	5
Introduction	5
1 Scope	6
2 References	6
2.1 Normative references	6
2.2 Informative references	6
3 Symbols and abbreviations.....	7
3.1 Symbols.....	7
3.2 Abbreviations	7
3.2.1 Abbreviations used for feeding styles	8
4 Major Project Phases	8
5 Motivation	8
6 Measurement Description.....	9
6.1 Introduction	9
6.2 General Requirements for the Measurements.....	11
6.3 Radiation Measurements (k-factor).....	11
6.3.1 Set-Up	11
6.3.2 Calibration of NWA.....	14
6.3.3 Signal injection	15
6.3.4 Calculation of the final k-factor.....	18
6.4 Subjective Evaluation of the Interference to Radio Broadcast	19
6.4.1 General.....	19
6.4.2 Verification and Calibration	21
6.4.3 Measurement procedure.....	21
6.5 General Equipment List.....	22
6.5.1 Coaxial Cables.....	22
6.5.2 Network Analyzer.....	23
6.5.3 Probes to connect to the LVDS.....	23
6.5.4 Amplifier	23
6.5.5 Filter to Isolate Measurement Devices from Mains	24
7 Statistical Evaluation of Results.....	24
7.1 k-factor	24
7.2 Interference threshold to FM Radio Broadcast.....	31
Annex A: Alternative procedure for NWA calibration in case that the amplifier output power is too high for the NWA input	34
Annex B: Software for automatic file naming.....	35
B.1 General	35
B.2 Main Dialog.....	35
B.3 Antenna Location Description Dialog.....	36
B.4 Feed Point Description Dialog	37
B.5 Help for Injection Types.....	38
B.6 File Formats.....	38
B.7 Creation of the data for the FTP server	39

Annex C: Bibliography	40
History	41

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[ETSI TR 101 562-2 V1.1.1 \(2011-08\)](#)

<https://standards.iteh.ai/catalog/standards/etsi/e6df38b3-c266-42a0-a90a-4d79d9c0e56b/etsi-tr-101-562-2-v1-1-1-2011-08>

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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. Full details of the entire series can be found in part 1 [i.9].

Introduction

In order to study and compare MIMO (Multiple Input Multiple Output) characteristics of the LVDN network in different countries the STF 410 (Special Task Force) was set up. The present document is one of three TRs which present the result of the work of STF 410. The work items in ETSI TC PLT dealing with the results of STF 410 are TR 101 562-1 [i.9], the present document and TR 101 562-3 [i.5]. The PLT coupler used to feeding the signals into the LVDN is described in TR 101 562-1 [i.9].

The present document specified the measurement tools, set-up and procedure to record the interference potential of MIMO PLT transmissions.

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1 Scope

MIMO PLT EMI review and statistical analysis taking 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 101 562-3: "Powerline Telecommunications (PLT); MIMO PLT; Part 3: Measurement Methods and Statistical Results of MIMO PLT channels".
- [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".

NOTE: See <http://stason.org/TULARC/radio/shortwave/08-What-is-SINPO-SIO-Shortwave-radio.html>.