



Co-existence with PLT

- is it possible ?

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The Conflict



- ❖ **Protection of radio services**
- ❖ **Enable PLT.**

The Conundrum

- ❖ Existing mains limits protect radio
- ❖ Therefore PLT should use these limits
- ❖ Unless PLT has higher limits it cannot work!

Justifying higher limits

- ❖ **Telecom limits take advantage of balanced lines -**
- ❖ **How balanced is the mains network?**
- ❖ **CISPR/I /257/CD proposes 24dB.**

Measuring line balance

- ❖ **Using telecom techniques-
20 - 30 dB appears valid**
- ❖ **Using radiated field measurements-
6 dB appears valid**
- ❖ **Are ISN measurements valid for mains
networks ?**

What's in an ISN?

- ❖ **ISN is specified by performance**
- ❖ **Design is not specified**
- ❖ **Performance depends on design**
- ❖ **Not in the CD.**

Potential Dangers

- ❖ **Resolve ISN and mains balance**
- ❖ **Apply to all double insulated devices ?**
 - E.g. Energy efficient lighting
- ❖ **PLT loses its advantage!**

Avoiding Interference

- ❖ **Fixed Notching**
 - Amateur bands ?
- ❖ **Active notching**
 - Broadcast bands
- ❖ **Other services ?**

Does Notching Work ?

❖ Fixed Notching

- ✓ Used by Homeplug

❖ Active notching

- ✓ ETSI PlugTests successful
- ✓ ETSI TS 102 578 draft near completion.

Is notching the Answer?

- ❖ **Can all systems notch?**
 - Probably
- ❖ **Can all operate Active Notching ?**
 - Possibly
- ❖ **Is it acceptable ?**
 - Currently regarded as a mitigation technique.

Cost of Notching

- ❖ **In-Home PLT is seeking 200 Mbits**
 - Typically 20 kHz sampling, using 1024 QAM
- ❖ **Use - video and data distribution**
 - Typically needs 30 Mbits
- ❖ **Plenty to spare for notching ?**

Co-existence with what?

- ❖ **Protecting Radio - tip of iceberg?**
 - Other PLT systems
 - VDSL services
 - Home automation
- ❖ **Potential for data corruption**
 - High data rates needed.

Summary

- ❖ **Access PLT - side lined**
- ❖ **Problem areas - side lined**
- ❖ **What will happen to CISPR/I /257/CD ?**
- ❖ **Watch this space!**