

Source: Austria

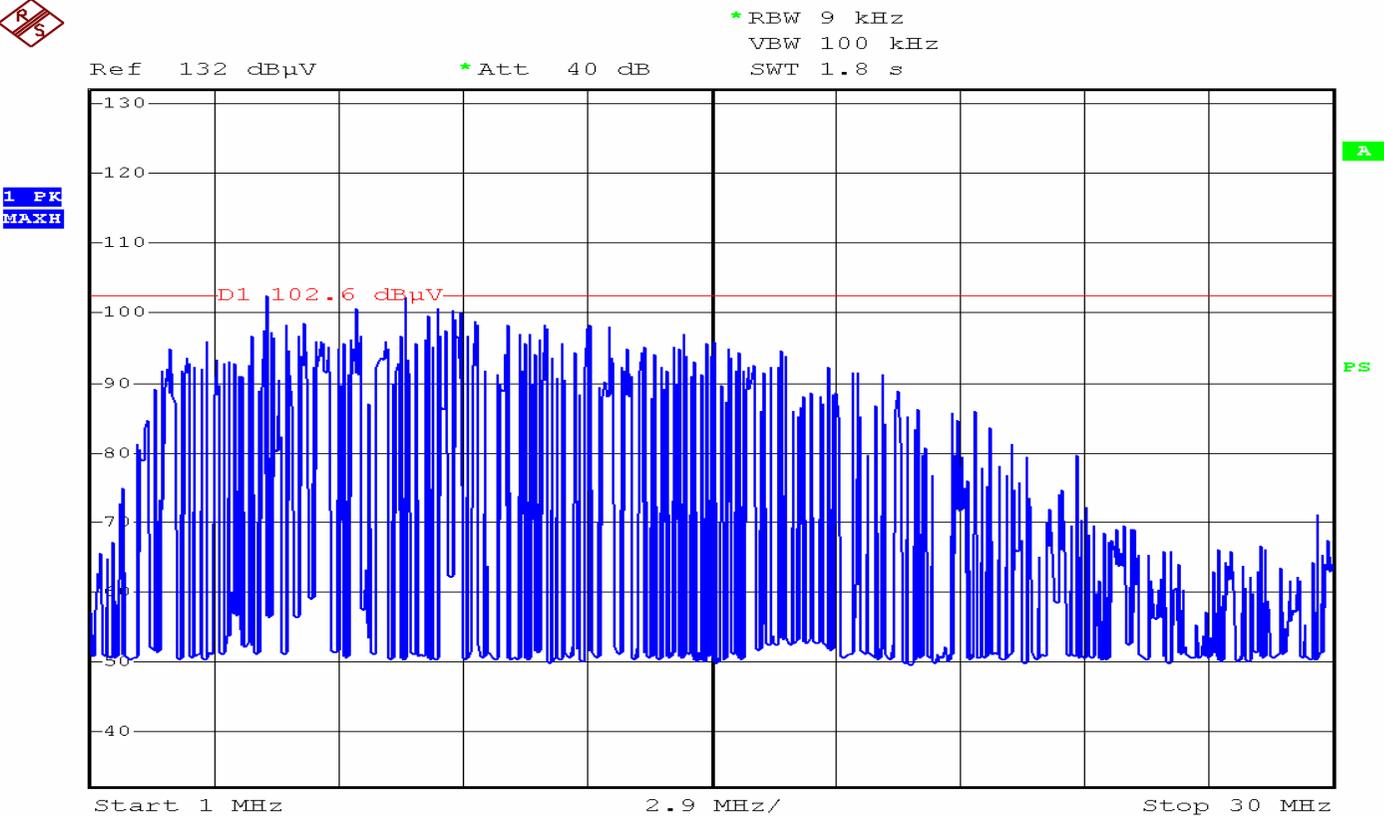
Subject: PLC disturbances

Relating to document COCOM-05-50, Austria is pleased to present the following report about disturbances caused by power line communications in the HF bands (2000 – 30000 kHz).

In Austria, broadband services via PLC are being provided in one region (approx. 250000 inhabitants). Since the first trials of this technology in this region, which commenced in 2001, the radio amateurs, and various public safety organizations using radio services in the HF band in this region, periodically reported disturbances in the frequency bands below 30 MHz, which were, according to the opinion of the spectrum users, caused by PLC operation in the concerned region.

In order to verify the complaints of the various spectrum users, the competent Austrian authority (i. e. the Federal Ministry for Transport, Innovation and Technology, Telecommunications Authority) investigated the reported disturbances. **The measurements carried out in May 2004, April 2005 and November 2005 clearly showed that the cause of the disturbance reported by users of the HF band in the concerned region is the operation of PLC.** In particular, the measurement proved that the emission of PLC installations is up to 16000 times (42 dB) higher than the relevant limit (according to CEPT ECC/REC/(05)04). Details of the measurement results are available in the annex to this document.

Figure 1: PLC signal injected from PLC modem into power supply line:



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Figure 1

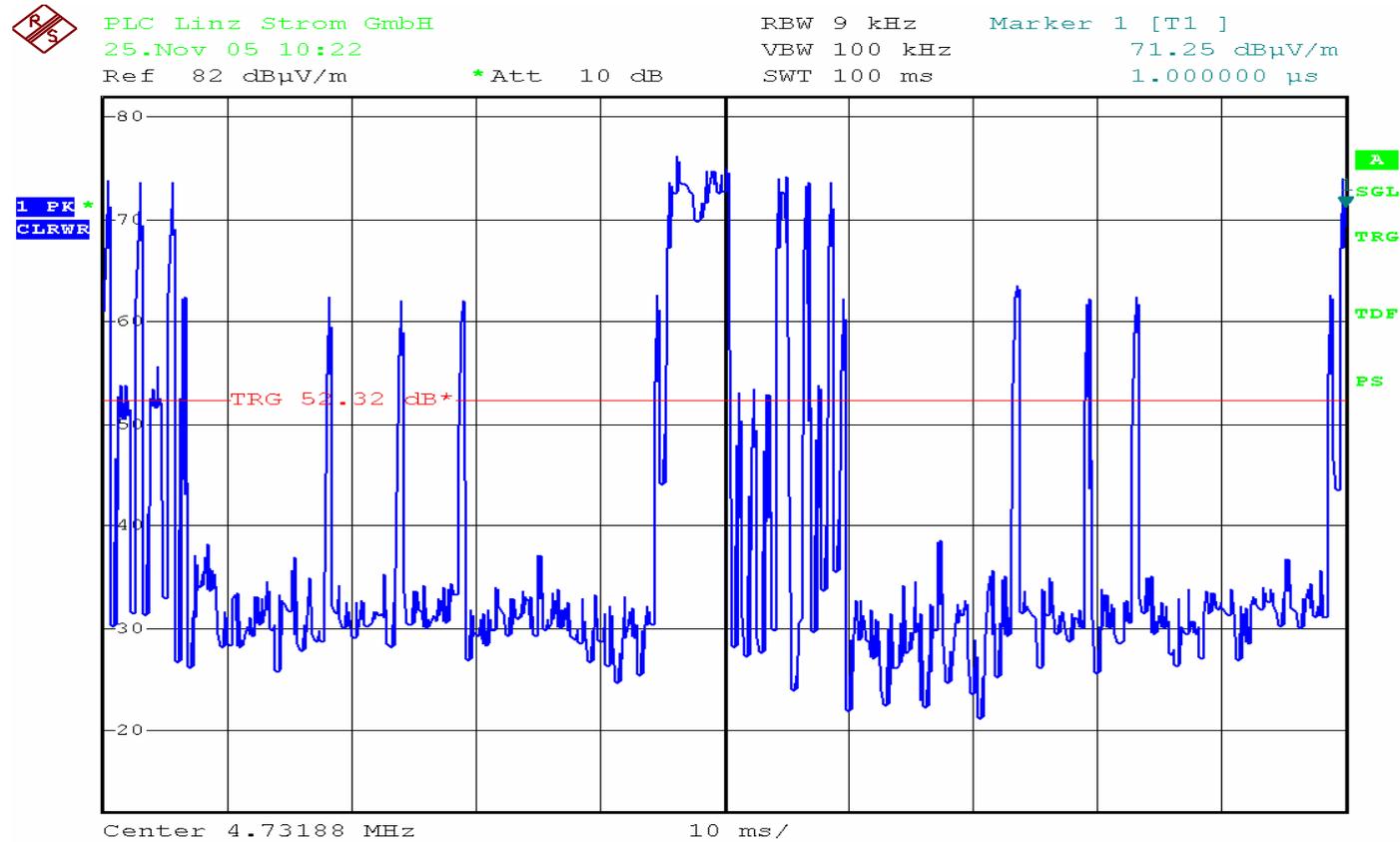
Figure 2: Radio spectrum emitted by PLC installation (measured in open area in a distance of 3 m from power supply line carrying PLC signals). Spikes are intended radio signals emitted by licensed radio transmitters. The line on the bottom presents the limits according to CEPT ECC/REC/(05)04).



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Figure 2

Figure 3: PLC emission on frequency 4731.88 kHz in the time domain (sweep time 100 milliseconds). In particular, this figure shows, as an example, the disturbance caused by PLC emissions to a radio receiver operated on the a.m. frequency.



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Figure 3