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North American Broadcasters Association

FURTHER COMMENTS ON THE STUDIES OF PLT SYSTEMS

The North American Broadcasters Association (NABA, www.nabanet.com) is an association of broadcasters in Canada, Mexico, and the United States, and the NABA Technical Committee is its standing technical body. NABA is thus in a position to present the technical viewpoints of the most authoritative association of professional North American Broadcasters in television and sound programme production, post-production, and distribution for terrestrial, satellite, and cable broadcasting.

NABA is a Sector Member of ITU-R and a long-time participant in ITU-R Study Groups, Working Parties, Task Groups, Rapporteur groups, etc. NABA numbers among its members Chairmen, Vice-Chairmen and members of the above groups. NABA also participates widely in the ITU work on radio, television and multimedia services and has a strong interest in spectrum management studies including spectrum engineering techniques, spectrum management fundamentals, spectrum monitoring, and inter-service sharing, interference and compatibility.

We have noted that satisfactory progress has been already made with some ITU-R Recommendations on the subject of interference. We note, however, with concern that the same has not yet happened with some other equally important ITU-R Recommendations on the same subject.

Based on extensive studies performed by several of its members, the NABA wishes to confirm its support to the request to set an adequate criterion for protection of broadcasting services, from harmful interference caused by PLT technology. NABA notes that it has submitted a study on PLT emissions in Annex 19 of Document 1A/62. NABA fully supports the inclusion of these studies in its entirety into the “Working Document towards a preliminary draft new Report - Impact of power line telecommunications systems on radiocommunication systems operating in the LF, MF, HF and VHF bands below 80 MHz” (Annex 4 of Document 1A/62). Comments made during the June 2008 meeting of Working Party 1A indicated a desire for more technical information concerning the measurement procedures. The attached Annex provides those details and may be inserted prior to Section 2 – Measurement results.

Annex

1 bis Measurement procedures

The measurements were made at a two-story wooden house in an actual residential area of Suita City, Osaka, Japan. In order to accommodate a separation distance of ten (10) meters from the outer wall of the building, houses with sufficiently large gardens were selected. A pair of PLT devices was plugged into two outlets in the house. Each PLT device was connected to a personal computer. Large data files were transmitted from one computer to the other through the PLT devices using the FTP protocol. The radiated electric field strength was measured during the data transfer as well as with the PLT devices idle and unplugged. In most cases the data transfer occurred between an outlet on the first floor and another outlet on the second floor.

The radiated electric field strength was measured using a shielded small loop antenna (60 cm by 60 cm square). The antenna was located at a distance of 10 meters from the outer wall of the house and at a height of two (2) meters above ground level. The antenna was supported by a non-conducting pipe and its beam direction was fixed towards the centre of the house. The antenna factor of the loop is calibrated by the replacement method with the calibrated loop (Model 6512, ETS-Lindgren) and also the three antenna method including another square loop at a distance of 10m. Both results are consistent with the theoretically calculated antenna factor within 5dB in 5 to 30MHz range, therefore the latter was used for conversion. The nominal conversion to the equivalent electric field strength was done by multiplying the magnetic field strength by $120\pi[\Omega]$. The output from the antenna was measured using a spectrum analyzer (SpeCat2, NEC Engineering). The frequency span was from 2 MHz to 26 MHz. The resolution bandwidth was 8 kHz. Measurements were made using rms detection and the maxhold function on the spectrum analyzer.