

RSGB RESPONSE TO OFCOM STATEMENT OF 27 APRIL 2011 ON PLT

The Society recently published a statement commenting on the release by Ofcom of a test report commissioned by them in 2008 on certain Power Line Adapters (PLAs). The report by ERA was initially withheld from release by Ofcom after a Freedom of Information Act request. However on appeal the Information Commissioner forced Ofcom to release it.

Ofcom has now made a further statement on this matter which is in full at <http://stakeholders.ofcom.org.uk/enforcement/spectrum-enforcement/plt/>.

The Society is once again so very concerned at the content of the Ofcom statement that we feel we must respond publicly to correct what we see as several misleading and inaccurate points. The relevant parts of Ofcom's statement are set out below followed by the Society's response.

Ofcom says:

“Harmonised Standards

There is no suitable standard which is directly applicable to PLT products. This is because it is a relatively new technology and has generated divergence of opinion. In 2001 the EU Commission issued a mandate for the production of a suitable PLT standard. This work is still in progress.”

RSGB response:

This is not correct. The EU Harmonised Standard EN55022 covers all IT products. A look at the definitions and scope of that standard show it clearly applicable to devices such as PLAs. To provide clarity and eliminate any misunderstandings the latest version of EN55022 fully defines the measurement method for telecommunications devices with a mains port. This would clearly be applicable to PLAs. Further, EU Commissioner Verheugen publicly confirmed this applicability in 2009. The fact is that certain PLAs, those produced by Comtrend and used in BT Vision systems included, are unable to meet it at HF apart for some specific notches provided for the amateur bands. Comtrend claims compliance to the Essential Requirements through EN55022 and where their PLAs cannot meet this (most of the HF spectrum) they call up a CISPR committee draft paper known as CISPR/1/cd89. However this was not accepted because it would permit emissions to a level that would not protect radio services. CISPR itself noted in 2007 that cd89 had no status beyond being a committee paper.

High rate PLT and the use of PLAs may be a relatively new technology but that is no excuse to suggest that existing standards are inadequate. EN55022 is derived from CISPR22. CISPR is the special committee of the International Electrotechnical Commission that is charged with producing World-wide standards for the protection of radio services from interference. CISPR standards are therefore levels to protect

the spectrum regardless of the emissions produced by different technologies; that is, the requirements for spectrum protection do not change. We emphasise “high rate” because low rate PLT that is fully in conformance with standards has been usefully deployed for years.

EU Commission Mandate 313 was issued in 2001, but this was for a standard to set limits for *network* emissions. It specifically excluded modems such as PLAs. It was not possible to reconcile the opposing views of radio and telecommunications interests to produce a standard and it has effectively been sidelined. In any case, some experts have cast doubts that such a standard could ever be made applicable to power lines that were never intended to be used as telecommunications networks. Following similar and predictable failure in CISPR to produce a modification to CISPR22 to cover PLAs (in the course of which cd89 was proposed and rejected), the EU Commission somehow used Mandate 313 to ask CENELEC to do similar work within the EU. The EU Commission felt that a specific product standard for PLAs would solve this issue. That work has only been going since 2010. So far the work has been very controversial since once again it envisages limits far above EN55022 and proposes methods to eliminate interference through the use of technology such as dynamic notching and power control. Neither of these processes has yet been incorporated into PLAs nor been proven to work in real network situations. The Society is closely involved with this development, as are the amateur Societies of several other EU countries along with professional radio users.

Ofcom says:

“Insufficient evidence

The [ERA] report concluded that the PLT equipment in question did not satisfy the essential requirements.

Notwithstanding this report, as explained in the September 2009 Statement, Ofcom found at the time of the investigation that there was not a breach of the EMC essential requirements. Ofcom's considerations in that regard were:

- *The EMC regulatory regime is founded in criminal law. For a prosecution to succeed Ofcom must prove beyond reasonable doubt that a manufacturer had placed a particular product on the market and that the product did not meet the essential requirements, because it produced excessive levels of "electromagnetic disturbance".*
- *Comtrend had obtained a Notified Body Opinion.*
- *Significantly, the conclusions of the disclosed report were based on an assessment against a harmonized standard for (EN55022) which is not specifically intended for PLT apparatus and contained a caveat that it does not consider the communications services that could be affected or the range at which the affect might occur.*
- *The testing and analysis is complex and highly technical. For that reason there is uncertainty as to when products fail to meet essential requirements.*

- *There is no suitable EU harmonized standard directly applicable to this type of apparatus. So testing and analysis took place against a backdrop of wider technical uncertainty than is normally the case when standards provide an appropriate benchmark. “*

RSGB response:

As we said in our previous statement, Ofcom are going against their own commissioned, expert advice.

Ofcom keep telling us that the EMC Regulations are founded in criminal law. It appears that they are frightened to act, yet they have a very good record of successful prosecutions. However, we feel that prosecution action would not be necessary in this case, for reasons set out lower down.

Comtrend had obtained the opinion of a Notified Body in Spain. These are only opinions and are challengeable. We wonder if they were fully aware that cd89 was not a valid document for compliance purposes. The ERA conclusions were based on EN5022 because it is an appropriate standard directly applicable to PLA products. Moreover it was the Standard used by the Notified Body advising Comtrend. The test methods are clearly set out in Harmonised Standards and are well known to accredited test laboratories. While some margin of test uncertainty is always acknowledged, measurements in excess of 30dB (i.e. 1000 times) above the Standard's limits are well beyond that uncertainty level and give a clear non-compliance.

Ofcom says:

“Ofcom Prosecutions

In considering prosecutions, Ofcom applies the Crown Prosecution Service Code. The two key tests are:

- 1. is there on the evidence a realistic prospect of conviction?; and if so*
- 2. is prosecution in the public interest?*

Given that the evidence case for non compliance was not clear (and was complex) Ofcom did not consider that there was a realistic prospect of conviction. Included within that assessment is the fact that given the EMC uncertainty over the benchmark for this apparatus, the prosecutor would essentially be asking the court to determine what the acceptable level of disturbance is. A court would have test results one way and the other, and no extraneous point of reference to measure them by.

Given that the first test on the evidence was not met, there was no need to turn to the second test which relates to public interest. But, Ofcom considered that if that test were to be applied, prosecution would probably not be in the public interest for the following reasons:

- *the companies involved were doing what they could to comply with the EMC technical requirements for this apparatus;*
- *There wasn't evidence of serious public harm from the use of the apparatus. There were a relatively low number of complaints (all from amateur radio users) when compared to the number of devices being used. This is not a case, for example, involving harmful interference to aircraft navigation where there would be a potentially significant public safety issue or harm;*
- *BT was using other means to solve the problem. BT were sending out their engineers (for free) to fix problems as they arise. It would not seem to be in the public interest to prosecute in relation to an individual case where there is no actual public harm because the problem has been fixed.*
- *BT and Comtrend were cooperating with Ofcom's investigations and appeared willing to do what they could to resolve any problems.*
- *Rather than focus on companies' individual products it would make sense to address the lack of harmonised standard as a priority. Ofcom could work with the Government to push for an EU resolution.*
- *The most appropriate means to resolve any wider problem is the development by the EU of an EMC "harmonised standard" for these products. That will give manufacturers a much clearer benchmark of what is acceptable in relation to these products. Meeting a standard only gives a presumption of compliance in any individual case, but it nevertheless does give a benchmark for measuring performance.*

Ofcom also considered (as an aside) the existence of the Commission Recommendation of 6 April 2005 (2205/292/EC) which deals with this technology, although not for the purposes of the above assessment. It does recommend "proportionate" enforcement measures in relation to EMC enforcement for this apparatus. The availability of alternative ways of resolving immediate problems arising from particular cases by BT and the possibility of future EU harmonisation of standards indicate that prosecution in this context might well be disproportionate. "

RSGB response:

In our view Ofcom were in possession of sufficient evidence to take enforcement action:

- A report from a UK accredited test house that showed emissions far in excess of the limits in the Harmonised Standard used by Comtrend's Notified Body;
- That the draft cd89 used by the Notified Body to claim derogation from EN55022 had been formally disregarded and was thus not a "relevant document" on which to rely;
- Evidence of actual interference complaints when the devices were put into service showing that they were not compliant with the Essential Requirements when first placed on the market.

As for the "public interest" test

- The companies involved were evidently not doing what they could to comply with the EMC technical requirements, since they had freely chosen a technical specification that had traded off conformance to the emission Standard in favour of enhanced performance claims.
- There is no requirement in the EMC Regulations to show “serious public harm” nor is the number of complaints a factor (cases have been brought under the EMC Regs. where there were no complaints) and while many of the complaints may have been from licensed radio amateurs they were complaints of interference to short wave broadcast reception. Ofcom’s interpretation of the complaint data has been heavily criticised in the press for failing to take account of either the strong criteria set out in Harmonised Standards or the victim’s lack of understanding of interference issues. Very few members of the public apart from radio amateurs are familiar with the analysis of radio interference. Also, the “caveat” in the ERA report mentioned by Ofcom, that the report does not consider the communications services that could be affected or the range at which the affect might occur, is because these are not factors mentioned in the Directive or the UK Regulations and did not need to be considered.
- It is irrelevant that the manufacturer and BT should have solved cases after they occurred. The fact is that the EMC Regulations are concerned with placing apparatus on the market and taking into service for the first time. Properly compliant apparatus should not cause interference. There should be no onus on a user to obtain a satisfactory product.
- The “problem” has not been fixed; the same products continued to be placed on the market and taken into service.
- The focus on one manufacturer is because of the token passing protocol used in its products. This means that they are emitting fully all the time they are plugged in regardless of whether or not they are passing data. Thus even one such PLA can cause interference. It is possible to manufacture PLAs that do comply and which do not generally cause interference and which meet EN55022. Non-compliance is thus not generic to PLAs. However, the RSGB still considers PLT is fundamentally a bad use of technology.
- The only product specific Harmonised Standard that would suit these products is one which would inherently permit emissions well above current CISPR22/EN55022 levels and which relies on untested technology to avoid interference in use. Ofcom’s point about the presumption of conformity provided by a Harmonised Standard is misleading: Harmonised Standards have to meet the Essential Requirements in full. The presumption of conformity provided by them is thus the surest way for a manufacturer to demonstrate conformity.
- Finally – and perhaps most telling – the Information Commissioner ordered Ofcom to release the ERA report precisely because its contents were in the public interest. There clearly is much public interest in protecting the radio spectrum.

Ofcom notes the EU Commission's exhortation to take proportionate action. The Guide for Crown Prosecutors also suggests ways of avoiding prosecution by "out of court disposal". All regulators wish to avoid prosecution and use it as a last resort. That is understandable. However, "proportionate" action does not mean no action and Ofcom, armed with a substantial body of evidence could have issued a Suspension Notice under the EMC Regulations, rather than prosecuted, which would have stopped the supply of the apparatus.

Ofcom says:

"No right to "clean" spectrum

.....While the need to avoid harmful interference underpins the [licensing] regime, individual wireless telegraphy licence holders are not offered a legal or practical guarantee that interference will not arise. Interference can arise from a number of sources outside the control of the licensing authority. For example, atmospheric conditions, pirate radio use and foreign overseas use all have the potential to cause interference. For this reason no guarantees of "reception" of radio signals have been given. The licensing regime instead sets reasonable parameters on the transmission of radio signals.

Licensees do not therefore have a formal legal right to "clean spectrum". Radio frequencies are commonly occupied by a "background noise" and this noise is created from a multitude of sources. Transmission on a radio frequency several bands away could cause a detectable background noise.

Ofcom does understand that amateur radio users are concerned about the potential increase in the background noise floor attributed by PLT equipment, particularly since they may be particularly inclined to use sensitive equipment to listen to weak signals. However, legally amateur radio licence holders are on the same footing as others and Ofcom's ability to deliver "clean" spectrum is limited for the same practical reasons. "

RSGB response:

The RSGB and all other radio users fully understand that absolutely clean spectrum is an unreal expectation. However, atmospheric noise, illegal operators and interference from overseas are not the same as deliberately generated non-radio electromagnetic noise from which all authorised spectrum users are entitled to be protected. That is the purpose of the EMC Directive and nationally transposed Regulations.

Ofcom mentions that foreign overseas use of the spectrum can cause interference, but does not recognise that foreign overseas use of PLT can also cause interference in the UK. The cumulative interference problem results from the interference generated by millions of PLT devices and will force power increases upon radio transmitters that will undermine commitments to energy efficiency in the UK and

World wide. Ofcom's commissioned research from PA Consultants accepted that PLT design has to be improved to minimise this problem.

Ofcom says:

“Can Ofcom take action in specific cases of interference?”

The Wireless Telegraphy Act 2006 provides a mechanism for taking enforcement action to stop interference from specific classes of apparatus, for example a boiler thermostat, domestic appliance or a discharge light. This does not include PLT or similar classes of apparatus.

We are currently considering our ability to make a statutory instrument under section 54 of the Wireless Telegraphy Act 2006 which might give us scope to demand cessation where there were threats to public health, safety or other similar problems arising from harmful interference.

However it remains the case that the use of such powers, should they be provided, would not be "automatic". It would be necessary to show that such action was evidence based, considered proportionate and reasonable. In many of the types of interference cases reported to Ofcom by radio amateurs and short-wave listeners it is not clear that these tests would be met.”

RSGB response:

The short answer is that Ofcom cannot presently take any formal action. The RSGB has been urging Ofcom for several years to put Regulations in place under s54 to cope with PLT interference from PLT and similar networks. Much of the groundwork for this was done in the late 1990s/early 2000s in response to the then perceived threat from ADSL and lower frequency access PLT. Why this work has been delayed we do not know, since Ofcom currently has absolutely no power to force a user of an interfering PLA to stop using it – even if it were a safety of life case. Section 54 Regulations protect all radio users, with enhanced provisions for safety of life service interference, but they have inbuilt proportionality tests which have been well tested over the years in cases where there are existing Regulations of this type.

The Ofcom statement also reports on the number of cases of interference from PLAs. We have asked Ofcom to show us where in the EMC Regulations it says that interference is a prime factor in determining non-compliance. They cannot. This is because the EMC Regulations are concerned with the state of goods when first placed on the market/taken into service. They are not concerned with interference from apparatus when in use. BIS has confirmed that publicly.

The Society has felt it necessary to go into considerable detail on this matter because otherwise amateurs and other radio users could be left with the impression that the ERA report is of little consequence and that all is in fact under control so far as PLT is concerned. That would be misleading. Indeed, Ofcom has itself circulated a

document to a CEPT committee that suggests that it is only radio amateurs who are concerned about PLT and that organisations such as RSGB have been responsible for misinformation. In fact other major spectrum users and representative organisations continue to be concerned. The redacted minutes of the February Spectrum Strategy Group meeting show reservations from CAA, BBC and FCO. The RSGB has also seen a draft document from GCHQ, widely available on some internet forums, which expresses great concern about the effect of PLT systems.

Even more recently Ofcom has itself placed documents on its website comprised of a report by a reputable test house, Blackwood, and a commentary by BT which concludes that overall the DoC and documentation for Comtrend 902 PLAs were based on valid measurements and compliance procedures. Once again, these conclusions could mislead. The Blackwood tests were only done on the telecomms (ethernet) port and the radiated emissions at the mains port above 30MHz. The test house makes it clear that no measurements were taken on conducted emissions at HF, which is where the major concern lies. BT's commentary contains the comment that the *"question of compliance for (mains port emissions) is one of whether the arguments given in Comtrend's documentation for the mains port emissions is valid"*. In other words they do not want to get into the question of the validity of cd89. In the RSGB's view this does not detract from the ERA report. BT goes on to note the "small" number of complaints. The RSGB would simply reiterate that there were hundreds of complaints and would be interested to know if any other product has generated complaints that run into three figures.

The RSGB will continue to work with others in the UK and abroad to try to ensure that the spectrum remains as free from controllable interference as possible and that regulators do not shirk their statutory duty. We also trust that the national regulator will refrain from placing disingenuous interpretations on published information and data and retracts from its stance that it is only radio amateurs who are concerned about PLT technology.

Some specific actions that we propose are:

- Ofcom to convene a group of interested stakeholders to help urgently to put in place WTA s54 Regulations on PLT. The RSGB is in a good position to assist.
- Ofcom should commission research into how PLAs can be produced that work and which comply with EN55022 and into how their design can help energy efficiency. Again RSGB has expertise that can help.