M Octavian Popescu
European Commission - DG Enterprise & Industry
Unit G4 - Mechanical, Electrical and Telecom Equipment
BREY 07/318, B-1040 Brussels
6th January 2011

Dear Mr Popescu,

PLA Device Policy

I would like to thank you and your colleagues for your time on the 16th and providing me with the opportunity to put the case to protect the radio spectrum from widespread pollution.

I would like to confirm the key points that we discussed and add some additional information that time did not permit during our meeting.

Prior to our meeting I sent you the following documents;

- A test report confirming that PLT devices recently put on the UK market fail to meet EN55022 (which the RSGB contends is the only relevant standard at present) by some 30-40 dB, or 1,000-10,000 times in terms of power.
- A video showing the effect of high levels of PLT emissions on local radio communication reception.
- A copy of the Ofcom/PA Consulting report on the likelihood of interference from PLT devices

Subsequently, I have sent you the EMCIA (EMC Industry Association) report entitled "Greedy PLT"

The RSGB is deeply concerned that great swathes of the HF radio spectrum would by rendered unusable for radio communication by widespread deployment of PLA devices. This is beyond doubt and has been confirm by the Ofcom/PA Consulting report along with numerous other studies including one by NATO.
Currently proposed and unproven mitigation measures will become less effective as the density of deployment of PLA devices rises. This is a permanent and irreversible destruction of an irreplaceable natural resource. Neither the EC nor CENELEC has undertaken adequate independent tests to confirm or otherwise the damage that will be done, and this we regard as negligent. Too often the assurances of device manufacturers appear to have been taken at face value, rather than rigorously scrutinised.

Furthermore, in addition to the high levels of interference generated locally, the HF radio spectrum is used globally and cumulative “Sky Wave” propagation could likely mean that Europe’s “waste noise” will render the HF radio spectrum less usable in many locations worldwide. No assessment has been made of the financial impact, particularly in the third world, and the costs of alternative communications systems.

The RSGB’s position is that the HF radio spectrum is too valuable an asset to be consigned to history. Mr Bogers confirmed that the Commission knew that PLA devices polluted and that widespread deployment of PLA devices would render the HF spectrum all but useless in the urban environment. Acquiescing to this is surely not the action of a responsible European body?

The RSGB is campaigning for common sense here, and I seek your assurance that you will take all measures at your disposal to ensure that the HF spectrum is fully protected. As we discussed, the “win-win” solution could be to move PLT to a spectrum which does not possess the unique long-range “Sky Wave” communication characteristics of the HF spectrum – I suggested that much of the 30-50 MHz range might be suitable. Here PLT can exist without the extreme damage to well-used spectrum that use of HF will entail. I would like to draw your attention to the latest HomePlug PLT chipset from Atheros that uses the radio spectrum up to 68MHz. Protecting the spectrum below 30MHz would still leave 38MHz for PLT and provide data rates well in excess of any foreseeable requirement.

You also helpfully confirmed that, even when a standard is agreed, the EC will not prevent national administrations from implementing appropriate measures to protect against harmful interference to authorised radio services from PLA devices. We will be exploring this with Ofcom in the New Year.

We discussed the data which you had received from Ofcom, suggesting 1.8M pairs of devices are deployed in the UK. I find this puzzling, as the latest BT annual report (2010) identifies some 467,000 instances of “BT Vision” (the main user of these devices) and Comtrend (the BT Vision supplier of PLAs) reports that 90% of its sales are to BT. It seems that the very significant “churn” in BT Vision customers accounts for some of the difference in figures, with their PLAs most likely being discarded once the BTV contract is ended. Whilst it is true that other PLAs are available OTC in the UK, it is difficult to imagine that sales have exceeded the volume of the BT Vision base. My own estimate is that there are probably some 800,000 pairs in use in the UK .

You placed some store in the relatively small number of interference complaints reported by Ofcom. First of all, of course, I should point out that nowhere in the EMC Directive, does the number of complaints feature as a factor in judging whether or not the Essential Requirements have been met. If I am wrong here, please let me know and point me to the relevant section of the Directive.

Furthermore, looking at the BT Vision installed base, which has given rise to nearly all the complaints logged with Ofcom so far, I attach as you requested, the simple statistical modelling that RSGB has done to show the comparison between interference cases, and that installed base. Within the limits of statistical accuracy, this shows a very high probability of interference if someone using the short wave HF spectrum is located near a BT Vision PLA installation. Ofcom has also confirmed that it does not know of any PLT installations that do not generate interference.

You also asserted that use of short waves was limited to those with expensive and complex equipment. As I explained, this is not the case, and by way of example I draw your attention to a typical broadcast band short wave receiver currently available in the UK for around £ 30.00: the Sony ICF SW11.

You and your colleagues also asserted that PLA technology was transitory and would soon be overtaken by more benign technologies. Our contention is that this is not the right way to look at it. Once the principal of allowing broadband emissions at 1,000 – 10,000 times the level of EN55022 has been accepted, any new technology will claim the current draft as precedent.

To summarise, I ended our meeting by suggesting that there were three actions that the EC should be considering:

a) Provide European companies with a technology development opportunity, through "raising the bar" and requiring PLAs to improve their performance (along the lines of Schwager's thesis) to operate at a much lower launch power. A comment was made that there were patent issues in doing this. The only patent that I am aware of is the Sony dynamic notching patent which has no relevance to launch power reduction. By reducing launch power research into advanced signal processing will be stimulated.

b) Permanently notching ALL the broadcast frequencies. You responded by saying that this would throttle PLA throughput. I asked whether that was reason enough not to do what was right.

c) To focus PLAs on 30-50 MHz, allowing the unique properties of the HF spectrum to be preserved with low noise. You commented that this would be the next phase of the work, and I countered with the observation that based on past behaviour, PLA device manufacturers would take all addition spectrum available in the unending quest for throughput. Our concern is that, simply because EN55022 makes a differentiation between emissions standards below and above 30 MHz, this is not sufficient reason to limit current standards discussions to the spectrum below 30MHz. By doing that, there is a very real risk of the wrong standard emerging. What is needed is a holistic review.

Finally, the current discussion in CENELEC will most likely lead to a bad standard, one where mitigation technologies can be demonstrated in laboratory conditions, but which are unlikely to be effective in many real-life deployments. This is a bad move for the standards industry, and should be resisted. The current regulatory vacuum is being interpreted by manufacturers as a signal that spectrum pollution is acceptable.

Thank you again for your time on 16th December. I do hope that the Commission will think very carefully before sanctioning the passage of any standard into the OJ which does not properly satisfy the requirements of the EMC Directive to protect authorised radio services in the HF spectrum between 3 and 30 MHz.

Yours sincerely

Donald F Beattie
Technical Director

c.c. Mark Bogers
Pablo Neira

Appendix 1

Overview modelling of the likelihood of complaints of interference from PLA devices

In preparing this data, the total number of P{LAs has been based on the number of devices notified by BT as being installed with the BT Vision product and the number of complaints is based on those generally attributable to BT Vision.

It is acknowledged that other devices are in the market but the shipped volume of devices in use seems likely to be low, and the assessment below is only intended to be an "order of magnitude" indicator based on the BT Vision base.

Description	**Statistic**	
Assumption: Of the total amateurs in the UK, number regularly using the HF spectrum	20,000	Source: RSGB survey
Assumption: UK population	61838000	Source: World bank 2009
Assumption: installed BTV PLA pairs	467000	Market data
20% of HF amateurs live in rural areas	4000	RSGB Survey
Conclusion: Number of urban amateurs active on HF in urban/semi-urban areas	16,000	
Assumption: Each urban/semi-urban amateur has 2 close neighbours	32,000	
Assumption: Average household size (number of people)	2.32	Source: ONS 2008 data
Conclusion: Number of households (note - coincides closely with ONS projections for 2011 of 26.2M)	26654310	Population / average household size
Calculation: Penetration of PLAs as % of UK households	1.75%	
Possibility (%) of ONE BTV PLA pair next door to an urban amateur	3.50%	2 x penetration
Likely impacted amateurs	561	3.75% or total
Likelihood of complaint (%) *	56	From UK QRM survey
Likely complaints	**314**	
Actual complaints (cumulative) attributable to PLAs	**265**	Ofcom data

** There is clear evidence from the market survey that a significant number of victims decide not to complain to Ofcom because of a wish not to offend their neighbours*

From this it will be seen that there is a close correlation between a PLA device being installed and interference being generated to nearby radio reception.