

RSGB EMCC REPORT TO SPECTRUM FORUM - NOVEMBER 2015

1. Minimising the impact of interference especially from new technologies

WINDFARMS.

We have taken measurements of emissions causing interference at several windfarms in Yorkshire and elsewhere to assess levels and determine what part of the installation the emissions are from. We published these to the member who first reported the problem to use as evidence. He has raised his case with Ofcom (twice) his MP and MEP and taken his case to the ombudsman.

Ofcom claim not enough people are effected so we need to get more amateurs to report the issue to persuade Ofcom to take action. A paper summarising the results of these measurements was discussed at a recent CISPR/H meeting, but support from others is limited. Significant interference has only been found when the Farms are located on wet Fenland (peat) near sea level.

VDSL.

We continue to liaise with BT to investigate emissions from VDSL systems. Leakage is continuous and sounds like white noise so it difficult to identify except at the edges of the VDSL bands. We published widely details of how to find it. We now have over 50 cases confirmed and the rate of reporting has risen sharply in the last quarter. We have a team of four volunteers investigating the cause and trying to find ways of reducing the levels. We already know that in many cases either high resistance joints in the cable or badly installed extensions in the houses cause imbalance which leads to radiation. However, there is no universal solution. The aim is to reduce the level to minimise the interference so there is no total cure, just a reduction to a level that is tolerable.

Currently we are testing common mode filter designs that either fit inline or are coupled by clipping them over the dropwires.

We do not expect quick solutions as the situation is complex both technically and administratively. There are well over 100 service providers supplying the 4 million properties currently supplied with fibre services principally VDSL. We have heard of problems from ten different SP's - each have a different approach to solving the problem and many do not understand the issue.

Our transmitters also interrupt the VDSL causing the system to test the line for problem frequencies. This shows up as a series of spikes 4kHz apart near the transmitted frequencies. To the user this looks like a reduction in the broadband speed.

We are also monitoring initial trial installations of G.fast or Ultrafast broadband. These use frequencies between 23 and 106MHz.

IN HOUSE PLT

The CENELEC standard, EN50561-1 (HF) has been published and becomes the applicable standard on 9 October 2016. Part 3 (VHF) has received a positive vote in CENELEC, even though there was some opposition with some countries voting

against. Part 2 of the standard concerns Access PLT, as opposed to in-house, and is still at committee draft stage, but the signs are that it too will get a positive vote in due course. We have made our own representations to the Commission about the validity of the mandate for this family of standards which so far have been met with an obtuse response. Of even more concern is MIMO (Multiple In – Multiple Out) implementation, when three pairs of PLT are used L-N, N-E, L-E, as the pairs including earth will be very badly balanced and thus more likely to interfere.

The European Commission will have to submit EN50561-1 to CISPR for consideration as a global standard. If CISPR were to reject it the EU will need to withdraw EN50561-1. Parts 2 and 3 will be subject to the same procedure.

It is worth noting that while the notches in the in-house PLT spectrum provided by EN50561-1 and 3 effectively protect the amateur bands, PLT noise outside the bands can be significant. In some locations the ambient noise floor can only be observed inside the amateur bands. In the longer term there is still concern that intermods may gradually fill the notches.

SOLAR PVs

Our discussions with BIS on our view that solar PVs are Fixed Installations under the EMC Directive and should be treated according to the appropriate compliance regime reached an impasse. BIS said that they would continue to treat them as individual items of CE marked apparatus, despite our evidence to the contrary, and that Ofcom had sufficient powers to deal with non-compliant installations. We took this up with the EU Commission via a letter from the President in August, that included the Commission's own confirmation that solar PVs are Fixed Installations. A reply received this month (October) is non-committal and simply says that the Commission and Members States' EMC Working Group will review this in the context of the revised EMC Directive currently being processed (see below).

Meanwhile Ofcom has closed several cases of interference from installed solar PV apparatus, saying they have no power to act. We are considering how to take this forward.

We continue to have an EMCC member participating in a CISPR/H review of the DC port limits for domestic PV installations, which will feed into a future edition of CISPR 11.

2 Other Issues

WIRELESS POWER TRANSFER. The charging of electrical devices, especially vehicles, is a potential concern. We have a member with experience of the power industry on the relevant CISPR (international interference standards committee) group and continue to watch progress.

MAINS-BORNE EMISSION BASICS. Attempts are being made by others to introduce new measurement methods (into CISPR 16 and CISPR32) that specifically ignore differential-mode interference on mains cables. Such disregard of the fact that

mode conversion can lead to radiation of such emission would undermine our work on several of the above technologies. The UK National EMC committee has established an informal group to progress this issue, with RSGB member G3SBA doing most of the work so far. A substantial technical paper covering theory, extensive laboratory demonstrations, and outline changes desired of several CISPR Standards is part-written. It will be ready to embed additional mathematical material from NPL and test results from Samsung before the year end. The target is to gain broad UK support, and then circulate this in good time for the CISPR meetings scheduled for April 2016.

REVISED EMC DIRECTIVE

A revised Directive 2014/30 has been produced by the EU to take account of the New Legislative Framework which has to be implemented in April 2016. This mainly concerns changes to market surveillance for non-compliant products. We have only just become aware of draft UK implementing Regulations which were put out for consultation by BIS in August along with those relating to eight other revised Directives. We were not consulted. Nevertheless the essential parts of the existing Directive remain, including that Ofcom continues as an enforcement authority. There are new conditions imposed on distributors and importers of apparatus as well as manufacturers.

3 Technical Advisors and Forum

Take up of the EMC on-line forum continues to be slow. However it is constantly monitored to ensure prompt answers to questions. Ken Underwood G3SDW is doing a sterling job and has negotiated with two manufacturers to replace noisy plasmas with LED TV's; seven of which including one in Sweden have been replaced this quarter.

All cases are now listed and annotated as to action taken.

4. On-going work

Ofcom finally published draft interference Regulations under WTA along with a consultation document in January. Their aim was to introduce final Regulations in May. We sought comments from members with a commentary document where we gave a general welcome to this progress but pointed out several flaws and made suggestions for improvement. Ofcom has made no further formal comment on progress.

In general we are very concerned at the lack of Ofcom assistance on interference issues. When questioned in the liaison meeting in June about progress on the Regulations, they revealed nothing. In the meantime, as mentioned above, they have refused to help in amateur interference cases from a range of identifiable sources, some of which clearly fall under the EMC regime. Cases are sometimes closed with no more than a perfunctory reference to natural noise and propagation conditions. One recent case noted a change of policy and the awaiting of a new "Act of Parliament" (we believe in fact this was an erroneous reference to the WTA

interference Regulations). We are presently assembling details on such cases as background to a high level approach to Ofcom about their policy towards amateur interference cases.

Our lobbying of BIS and the EU Commission is reported above.

The IARU Region 1 committee C7 on EMC, formerly an informal working group, will meet for the first time at Vienna in April 2016. We are collecting material to put forward for the agenda.

We are now well placed to contribute to CISPR and to CENELEC via our BSI standards committee membership with new members, recognising however the sometimes strong industry opposition to our spectrum protection position.

We still have in mind a database of problem equipment together with fixes, where these are known. The noise floor measurement project, to which we could lend expert help, has been delayed.

The Radcom EMC column continues to be an important window on our subject. It is well appreciated by members.

The specialist groupings within EMCC – broadly lobbying, standards, investigations/cases and publicity have to continued to work and report in to the whole committee, mostly by e-mail reflector and skype conferencing, but with occasional face to face committee meetings. We have recruited several new members including a secretary, Rupert Thorogood, G3KKT.

EMCC
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