

Technological Advisory Council (TAC) Noise Floor Technical Inquiry

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### Noise Floor Technical Inquiry Comments

To: U.S. FCC Office of Engineering and Technology

Via: Electronic Submission via FCC E-filing

Submission: August 8, 2016

Regarding the following,

Title: Office of Engineering and Technology Announces Technological Advisory Council (TAC) Noise Floor Technical Inquiry

Short Title: TAC Noise Floor Technical Inquiry

Reason: The FCC's Technological Advisory Council (TAC), an advisory group to the FCC operating under the Federal Advisory Committee Act, is investigating changes and trends to the radio spectrum noise floor to determine if there is an increasing noise problem, and if so, the scope and quantitative evidence of such problem(s), and how a noise study should be performed.

OET Publication: ET Docket No 16-191

Keyword: Noise Floor

Questions: See below text

Posted: June 15, 2016

Due Date: August 11, 2016



### Submitted Comments

Philips Lighting appreciates the opportunity granted by the United States Federal Communications Commission (FCC) to comment on this Noise Floor Technical Inquiry (FCC, 2016). The FCC Office of Engineering and Technology (OET) shall be commended and recognized because of their efforts in addressing this important subject.

### Responses and Comments to the TAC Noise Floor Technical Inquiry

We support and agree with the comments submitted by the National Electrical Manufacturers Association (NEMA). A new noise floor study seems to be a critical requirement to establish future spectrum policy that enables the full potential of the Internet of Things (IoT) and Machine to Machine (M2M) communications (NIST, 2016).

New man-made noise issues need to be fully researched and understood; the National Research Council has issued a report expressing concerns with interference from new sources like the LTE wireless networks and automobile anti-collision radar with weather satellites and radio telescopes (Cohen et al., 2010).

Reports from the National Science and Technology Council address various aspects of the Presidential Networking and Information Technology Research program such as Cybersecurity (NCO\_NITRD, 2016) and Federal – Commercial spectrum sharing. These are important aspects for consideration regarding future spectrum use for IoT and M2M technologies.



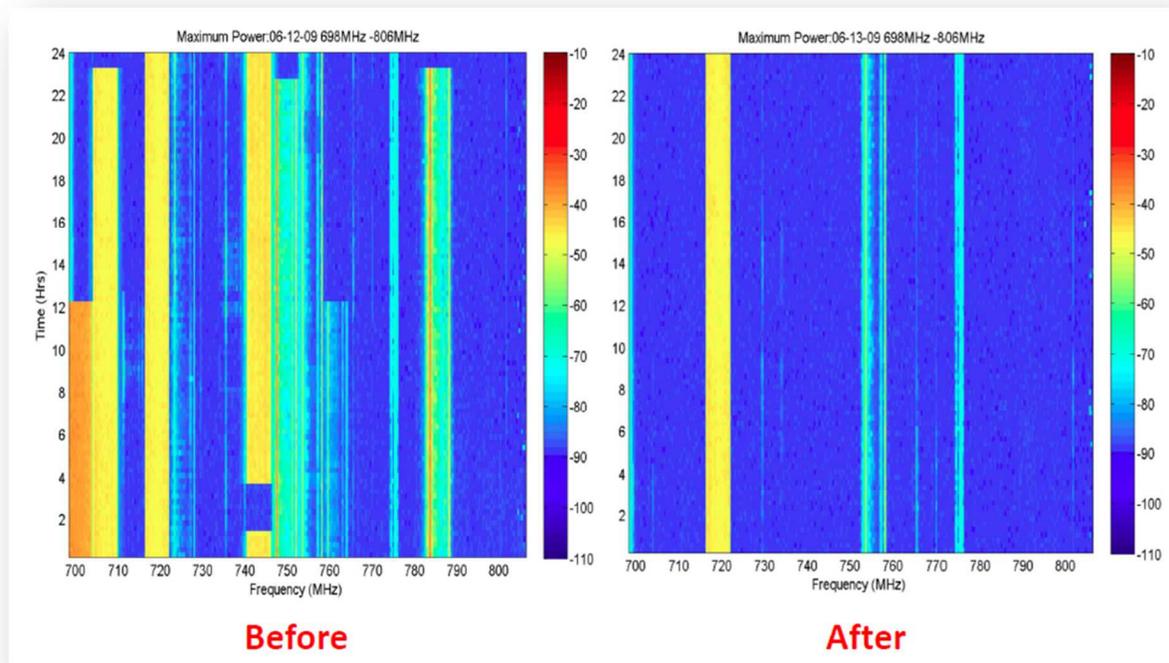
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Man-made noise and changes to the noise floor measurements may be adapted from the FCC radio interference forensic tools, the spectrum monitoring from government institutions (ITS, 2012), and academia (IIT, 2016).

The reported spectrum improvement after powering off analog TV (IIT, 2016) supports the need of a new noise floor study. See Figure 1. This study will enable the potential future allocation of any additional portions of the spectrum.

Figure 1, Digital Television Transition Spectrum Monitoring Report



Note adapted from: Roberson, D, (Illinois Institute of Technology) report to the International Symposium on Advanced Radio Technologies, Denver Co, 2016.



### References

Cohen, M., Gasiewski, A., Backer, D., Balstad, R., Ellingson, S., Emerson, D., Kolodzky, P. (2010). *Spectrum Management for Science in the 21st Century*. Washington, DC: The National Academies Press.

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IIT. (2016). Science Everywhere: Optimizing the RF Spectrum | IIT College of Science. Retrieved from <https://science.iit.edu/science-everywhere-optimizing-rf-spectrum>

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