IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comments on FCC NPRM 12-118 | | | | |
| Date: 2013-01-17 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Ron Porat | Broadcom | 16340 West Bernardo Dr., San Diego, CA 92127 | 858-521-5409 | [rporat@broadcom.com](mailto:rporat@broadcom.com) |
| Vinko Erceg | Broadcom |  |  |  |

With Comments by Bruce Kraemer, Marvell

#### Before the

**FEDERAL COMMUNICATIONS COMMISSION**

**Washington, D.C. 20554**

|  |  |  |
| --- | --- | --- |
| In the Matter of  Expanding the Economic and Innovation  Opportunities of Spectrum Through Incentive  Auctions |  | Docket No. 12-268 |

**COMMENTS OF 802.11**

**INTRODUCTION**

802.11 focus its comments in this document to unlicensed white space channels. We support the Commission’s goals for unlicensed use of the unused TV White Spaces spectrum. , We firmly believe that the additional bandwidth and propagation characteristics of TV band White Spaces spectrum will significantly augment WLAN user experience by reducing outage, improving coverage and providing opportunities for new applications that are not well served using the 5GHz spectrum or the congested 2.4 GHz spectrum.

**802.11 RECOMMENDS THE COMMISSION ALLOCATE A MINIMUM OF THREE 6MHz CHANNELS ON A NATIONAL BASIS WITH POWER LIMITS ON-PAR WITH CURRENT FCC TVWS REGULATIONS**

20 years of engineering analysis and deployment experience with 802.11 in the 2.4 GHz band confirms that a minimum of three channelsis required for successful WLAN deployments.

802.11 is in the process of creating 802.11af specification, a new WLAN standard designed to operate in TVWS 6MHz channels according to current FCC rules. However, in order to guarantee success in the market we believe that a minimum amount of spectrum should be available in the largest metropolitan areas.

We applaud the commission opening new spectrum opportunities for unlicensed devices in a highly desired sub 1GHz frequency band. At the same time novel approaches such as database usage for spectrum access will be tested in the TVWS band and may be used in other bands after proven to be viable.

**802.11 RECOMMENDS THE COMMISSION SERIOUSLY CONSIDER THEFOLLOWING CHANNEL ALLOCATION PARAMETRS**

We note that several approaches for unlicensed operation are described by the FCC in which 802.11 devices may be able to operate in the guard bands, Duplex Gap, channel 37 and channels reserved for wireless microphones. We strongly support usage of the Duplex Gap, guard bands, channel 37 and the two channels currently reserved for wireless microphones but would like to emphasize the following:

1. To the extent that all approaches are equally feasible (figures 10, 12 and 15) and to the extent that all approaches yield similar amount of unlicensed channels, it is important to also minimize the number of filters that will be required to reduce interference of unlicensed devices to licensed devices such as TV receivers, channel 37 devices and cellular receivers.
2. Clearing channel 37 and the wireless microphone channels would be of enormous value to unlicensed operation. Having a fixed known channel location for unlicensed devices can considerably reduce initial scanning time and power consumption.
3. Operation of unlicensed devices in guard bands, especially near cellular uplink and the Duplex Gap, may experience high interference from cellular devices. We would like to encourage the FCC to subject these new licensed devices to the same tight transmit filtering currently required by unlicensed devices.
4. Currently the FCC limits operation in adjacent channels for white space devices. This has partially to do with incumbent receivers’ performance. Ensuring better adjacent channel rejection of cellular devices operating in this new band will allow for reliable operation of unlicensed devices in the guard bands (downlink and uplink) and Duplex Gap with similar transmit power as in current FCC TVWS rules.

CONCLUSION

We would like to thank the FCC for promoting usage of new frequencies under 1GHz for unlicensed usage. We are very excited by this opportunity and hope that when the uncertainty of spectrum availability on a nationwide basis is removed products will be widely deployed.

We can’t stress enough the importance of having at least three quality channels, without excessive interference present, available on a nationwide basis for the success of unlicensed TVWS deployments. Ensuring a minimum number of channels on a nationwide area is much more important than having many channels in some areas and no channels in some other urban areas.

Respectfully submitted,