

December 10, 2012

The Honorable Greg Walden
Chairman
Subcommittee on Communications and Technology
Committee on Energy and Commerce
2182 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Anna Eshoo
Ranking Member
Subcommittee on Communications and Technology
Committee on Energy and Commerce
241 Cannon House Office Building
Washington, D.C. 20515

Chairman Walden and Ranking Member Eshoo:

The undersigned companies and organizations commend Congress and the FCC for working to unleash additional spectrum in the current broadcast bands. We are committed to working with all stakeholders on auction rules and a band plan that supports diverse, efficient, and innovative broadband services while protecting broadcast licensees. To accomplish this goal, it is critical that the FCC pursue policies that strike a productive balance between the need for more spectrum that accommodates both exclusive-use licensed *and* non-exclusive unlicensed technologies.

The nation's unlicensed bands are critical to innovation and have generated hundreds of billions of dollars in economic growth. Indeed, a recent study by economist Richard Thanki found that the economic value generated even by a subgroup of unlicensed broadband applications is between \$16-\$37 billion per year. Throughout 2012, we have seen further evidence of the importance of unlicensed technologies to innovation, job creation, and, most recently, public safety. For example, during the devastating Hurricane Sandy and its aftermath, when many wireless phone networks were overloaded, flooded, or completely offline, Wi-Fi provided access to the Internet for critical news and information (and continues to do so in some areas still recovering).

Demand for unlicensed services is growing at a higher rate than either wired or licensed wireless services. Cisco projects that by 2015, IP traffic originated over Wi-Fi networks will surpass traffic originated over wired networks. The number of intelligent connected devices is growing so quickly that it is likely to exceed 100 billion by 2020, potentially generating an economic contribution of \$1.4 trillion—five times greater than the Internet today. Technologies using unlicensed spectrum are set to provide *over 95%* of those machine-to-machine connections. This skyrocketing demand for unlicensed technologies is outstripping the supply of unlicensed spectrum and threatens to soon saturate the core 2.4 GHz band, leaving innovators and consumers with only the high-frequency 5 GHz band. While the 5 GHz band is extremely important, it is not a substitute for lower-frequency spectrum given its limited range due to higher attenuation and, over much of its range, lower power limits and more restrictive technical rules.

With additional unlicensed spectrum allocations, the FCC can enable innovators to create tremendous economic value for the country. But if the Commission does not designate more unlicensed spectrum, the fuel for this growth engine will be lost and consumers will face degraded service and slowed innovation. Fortunately, the current television broadcast spectrum presents the FCC with a once-in-a-generation opportunity to begin to address the unlicensed spectrum crunch by making powerful sub-1-GHz unlicensed spectrum available for innovative approaches to broadband access and machine-to-machine

services. A well-designed auction will allow the Commission to both free up new licensed spectrum and expand unlicensed spectrum resources. The undersigned companies and organizations therefore urge the FCC to designate an ample amount of spectrum for non-exclusive unlicensed technologies, and urge Congress to allow the FCC to accomplish this task unimpeded.

Sincerely,

Broadcom
CompTIA
Consumer Federation of America
Consumers Union
CSR Technology, Inc.
Electronic Frontier Foundation
Free Press
Google
Marvell
MediaTek
Microsoft
National Hispanic Media Coalition
Native Public Media
Open Technology Institute, New America Foundation
Public Knowledge
XG Technology Inc.

101Netlink
1635652 Ontario Limited o/a WaveDirect
Telecommunications
360 Communications, LLC
ACCS, Inc.
ADT Systems, Inc. / Rural Texas Broadband
Adtech
Advanced Automation
Advanced Broadband LLC
AeroVive LLC.
Air Advantage, LLC
Air Link Rural Broadband LLC
Air Networks
AIRbaud
AirLink Internet Services
AirLogic Internet Services
Alamo Broadband Inc.
AlasConnect
AL-GA WIRELESS BROADBAND LLC
Alluretech
Aloha Broadband
Altazip Inc.
Altius Broadband
Alyrica Networks, Inc.
Amplex
Antelecom, Inc.
Aroostook Technologies Inc.

Aston Technology
Atlas Broadband
ATM-INTERNET LLC
AVISP
B2X Online, Inc.
BackWoods Wireless
Baltic Networks
Battles Xtreme Networks, LLC
Believe Wireless, LLC
Bitlomat
BitWind Communications
BizVox Communications
Blast Communications, Inc.
Blaze Broadband
Bloosurf LLC
Blue Zoom Inc.
BluegrassNet
Boardman River Communications, LLC
Bolt Internet
BPS Networks
Bright.net North Inc.
Broadband Corp
Broadband VI
Bspeedy Wireless Inc.
Business Only Broadband
Business Systems Connection, Inc.
Butch Evans Consulting

Cal.net, Inc.
California Broadband Services,
Carlson Wireless Technologies
CBTR Services, LLC
CCAonline, Inc., BroadTech, Inc.
CellTex Networks, LLC
Center for Innovative Technology
Central Coast Internet
Central States Security, LLC
Central Valley Broadband
Cherry Capital Connection, LLC
Circle Computer Resources, Inc.
City of Coffeyville
City of Greenfield
CKS Wireless, Inc.
ClearTalk
Cloud Alliance LLC
CLOUDWYZE, INC.
CMS Internet LLC
CNSP, Internet
Cnywireless
Coast Networks, LLC.
Coastal Sierra, Inc. - dba Skyline Broadband
Service
Coeur d'Alene Tribe
Columbia Energy
Columbia Wireless Inc.
ColusaNET Inc.
CommFunction, LLC
Community Broadband
Computer Dynamics of NW IL LLC
Computer Sales and Services, Inc.
Computers & Tele-Comm Inc.
Comspeco.net
Confederated Tribes of the Umatilla Indian
Reservation (CTUIR)
Contractdata
Country Connections LLC
CoxWireless
Craig Williams Consulting
CRESCOMM WIFI, L.L.C.
CresComm WiFi, LLC
Crestone Telecom
Crossfire Media
Crossroads WiFi
CSInet Internet Access Corp.
CTI Networks / PA.net
Cue Band, LLC
CV-Access, Inc.
CVALINK Broadband
Cyber Broadband Inc.
Cyber Broadcasting, LLC
Cybernet1, Inc.
Cyberpine Cooperative, Inc.
db Wireless, Inc.
Desert Wireless, LLC
Digital Wind, LLC
DiMan Systems
DMCI Broadband, LLC
DSLbyAir, LLC
East Allen High Speed Internet, LLC
Eastern Indiana WIFI, Inc.
Eastern Oregon Net, Inc.
Eastern Shore Communications
eCom Direct, Inc.
ECSIS.NET, LLC
Egan Technology Services
Elevated Access LLC
Elite Broadband LLC
Elk Country Wireless
Energy Innovation Foundation
Estes Valley Networks, Inc.
Exceed Technologies, Inc.
Excel.Net, Inc.
Exwire
Farm to Market Broadband
Fast-Air Internet, Inc.
Fastnet Wireless LLC
Fire2Wire
Firenet1.com
FireServe Broadband Internet
First Step Internet, LLC
Fluidmesh Networks
Fourway Computer Products, Inc.
Freeway Networks
Freewire Broadband LLC
Fullair Wireless
Fullnet, Inc.
Future Link of ILL.
Future Wireless Technologies of Nebraska
G Link Systems
GBIS Holdings Inc, dba Great Basin Internet
Services, Inc.
Getwireless.net, Inc.
Global Net, Inc.
GlobalNet Internet Services
Gonthier, Inc., dba Radio Communications
Service
Gozoe Wireless LLC
Grand Avenue Broadband
Grand County Internet Services Inc.
Great American Broadband, Inc.

Guacamole Press, LLC (dba Solano Wireless & Yolo Wireless Internet)
GVEC.net
Haug Communications Inc.
Helix Technologies, Inc.
Highspeedlink.net
Hstar, Inc.
ICON Technologies Inc.
Imagine Networks
Indian Creek Internet services, Inc.
Indigo Wireless
Info Link Wireless, Inc.
InfoWest, Inc.
Intelligent Computing Solutions
Intellilink Communications, LLC
International Communication, R&C
Internet Free Planet, Inc.
Invictus Networks, LLC dBa Invictus Wireless
InvisiMax Inc.
Iron Goat Networks, LLC
IT GROUP, INC (DBA HOOSIER INTERNET)
IteLite Antennas, Inc.
iWiSP LLC
JAB Wireless, Inc.
Jade Communications
JKM Consulting, Inc. dba M2 Connections
Jo-Carroll Energy, Inc. (NFP)
Joink, LLC
KC NAP, LLC
Keenwire
Ken-Tenn Wireless
Kinex Telecom, Inc.
Kiss My Tek
Kitepilot Solutions LLC
Knetworx LLC
Kremmling Technology Services LLC
KyWiFi
LakeNet LLC
Lease Corporation of America
Lexsar Solutions, Inc.
Lighthouse.Net
Lobo Internet Services Ltd
LocalLoop, Inc.
Los Guys Wireless Internet
M2 Connections
Magnolia Wireless, LLC
Magnum Wireless, LLC
Mchenrycom Company / dba-mc.net
MCM Systems
McMinnville Access Company
Megagate Broadband

Mercury Network Corporation
Mercury Wireless
Mesh.Net Internet
MetaLINK Technologies, Inc.
Methownet.com
Mille Lacs Energy Cooperative
Mobile Communications LLC
MohaveBroadBand
Mojavewifi.com LLC
Monon Telephone Company, Inc.
Mosier WiNet LLC
Mountain Radio Systems, Inc.
Mt. Vernon. Net, Inc.
Muckleshoot Indian Tribe
Myakka Technologies, Inc.
NAP2 Networks
Nature Coast Networks, LLC.
Navigue.Com
NCI Datacom, Inc.
NetBee Wireless
netBlazr Inc.
Net-Change.Com
NetsurfUSA, Inc.
Network Business Systems, Inc.
Network Tool and Die Company, Inc.
NetX Internet, LLC.
New Wave Net Corp.
NEWBREAK COMMUNICATIONS
NewWays Networking, LLC
NexGenAccess Inc.
Nextera Wireless
North Branch Networks, LLC
North Nova Cable Ltd.
Northeast Oklahoma Wireless
Northern Neck Wireless Internet Services, LLC
Novarum
NOW Wireless. LLC
NTInet Inc.
OACYS Technology
OceanWiFi
OINC Wireless
On Ramp Indiana
Orbit Broadband LLC
Orchard Wireless
OregonFAST.net
Parallax Systems, Division of Richmond Power & Light
PB Consulting
PCS-WIN
PEAK Internet, LLC
Phoenix Internet

Port Networks
Portative Technologies, LLC
Precision Data Solutions, LLC
Precision Wireless Internet
Premier Systems Unlimited Inc.
Premium Choice Broadband
Quinault Indian Nation
Q-Wireless, LLC
Ranch Wireless, Inc
Rapid Systems Corporation
Rapidwave, LLC
Razzo Link, Inc.
Red Shift Internet Services
Relay Networks, Inc.
RelayServices
Resonance Broadband
Rio Verde Wireless, LLC.
River Delta Wireless, LLC.
Roadstar Internet Inc.
Rowe Wireless Networks LLC
Royell Communications, Inc.
Rural iNet, LLC
Rural Technology Group
RuralConnection.ca
Sandhills Wireless
SCS, Ltd.
Shelby Broadband
Sierra Economic Development Corporation
(SEDCorp)
Skycom1
SKYFREQUENCY, INC.
Skywave Wireless, Inc.
Slopeside Internet LLC
SmarterBroadband, Inc.
Snappy Internet & Telecom
Sonic Spectrum, Inc.
SonicNet Inc.
Sooner Wireless LLC
Sound Internet Services Inc.
Southwestern Wireless, Inc.
SpeedyQuick Networks
SPITwSPOTS, Inc.
St. Louis Broadband, LLC
Star Telephone Membership Corporation
STARTOUCH INC
Stewart Computer Services
Streakwave Wireless, Inc.
Succeed.Net
Summit Digital, Inc.
SuperWiFi Conference
SystemsOne, LLC
TecInfo
Telebeep Wireless
TeleSystem Services
Teletec Communications
Telpage, Inc.
TerraNovaNet, Inc.
Texas Cellnet, Inc.
Texas Communications
TG Ferguson Company, Inc.
The Seimitsu Corporation / eSavannah LLC
theWISP.net, CORP
Thunderbird Broadband, Inc.
Tincans Wireless Internet
Tnet Broadband Internet, LLC
Town of Warwick MA
TransWorld Network, Corp.
Triad Wireless
Tucker Communications, Inc.
Txox Communications LLC
U.P. Logon
Ultimate Internet Access, Inc.
United, Inc.
Universal Connectivity
US Broadband
Valnet
Vector Data Systems, LLC
Velocity Online
Vergennes Broadband LLC
Virginia Computer Guys
Vistabeam
Vistanet Telecommunications, Inc.
Vue Inc.
WasabiNet, LLC
WaveDirect Telecommunications LLC
Webformix Company
Webhiway Communications LLC
Wercs Communications Inc. DBA Mountain
West Telephone
West Michigan Wireless ISP
Wheatland Electric Cooperative DBA
Wheatland Broadband
WhiteSpace Alliance
Wildfire Broadband
Williams Tel Data
Wilson Creek Communications, LLC
Winters Broadband LLC
Wired or Wireless, Inc. dba AIR-PIPE
Wired Waters, Inc.
Wireless Beehive
Wireless Data Net, LLC
Wireless Etc.

Wireless Hometown LLC
WISPA
WISPA Emergency Communications Action
Team (WECAT)
Wisper ISP
Wisper, LLC
WISP-Router, Inc.
Worldwide Technologies, Inc. / TurboNet
WVVA.net Inc.
X1 Communications
Xpressweb Internet Services, Inc.
Yakama Nation Networks
YubaGold
ZigWireless LLC
ZIRKEL Wireless, LLC