



2015 Annual Report

Voluntary Agreement for
Ongoing Improvement to
the Energy Efficiency of
Small Network Equipment

Prepared on behalf of the
Steering Committee by:
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EXECUTIVE SUMMARY

In 2015, 17 residential broadband Internet service providers and manufacturers of small network equipment, such as modems and routers used by consumers to access such services, led by the National Cable & Telecommunications Association and the Consumer Technology Association, signed the [Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment](#). This agreement is modeled on the successful Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Set-Top Boxes. The primary objective of the agreement is to increase the energy efficiency of small network equipment while promoting rapid innovation and timely introduction of new features. The service provider signatories serve 78.5 million residential U.S. Internet subscribers, accounting for 87.4% of the market in 2015.

One of the requirements of the Voluntary Agreement is the publication of an annual report that summarizes developments for the previous calendar year. This first annual report has been prepared by the Independent Administrator and Auditor, D+R International, Ltd.

Under the Voluntary Agreement, at least 90% of all small network equipment purchased by service providers or sold by manufacturers at retail after December 31, 2015 must meet the energy efficiency standards established under the Voluntary Agreement. Early implementation has resulted in 89.6% of service providers' purchases and vendors' retail sales of small network equipment meeting these standards in 2015.

Consumer-Facing Energy Efficiency Information. Each service provider and retail vendor committed to providing reasonable access to energy efficiency information for small network equipment purchased after January 1, 2015. Links to this information are provided in [Appendix B](#) and at www.energy-efficiency.us.

Verification Testing. The Independent Administrator randomly selected one model from each commercial signatory's annual report for verification testing. Verification testing was conducted in third-party laboratories approved by the Steering Committee or under a supervised vendor or service provider testing program with an accredited independent observer approved by the Steering Committee. Independent lab verification test results for all of the models tested confirmed that idle mode energy usage was at or below the levels reported by the signatory.

Random Audit. The Independent Administrator is required to conduct a random audit of one commercial signatory's annual report data each year. D+R selected the signatory randomly and reviewed its raw reported data, invoice data, purchase order/sales data, product specification sheets, and screen shots from its systems for 2015. D+R determined that the data submitted by the signatory for the audit is consistent with the annual report data submitted by that party.

OVERVIEW OF THE VOLUNTARY AGREEMENT

Internet service providers offer services to approximately 89.9 million U.S. residential customers using small network equipment.¹ All kinds of small network equipment, which includes modems, routers, and other equipment, have one thing in common: they require power to operate. To further the national objective of energy efficiency, save their customers money, improve the reliability of their networks, and preserve flexibility conducive to rapid innovation and timely introduction of new features, the signatories crafted the [Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment](#) in 2015. This agreement is modeled on the successful [Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Set-Top Boxes](#), which was signed in 2012. The agreement sets rigorous requirements that will improve the efficiency of small network equipment by 10 to 20 percent compared to typical, previously deployed devices used by signatories that cover more than 85 percent of U.S. broadband households.² The Voluntary Agreement provides a framework for the broadband Internet industry to deliver market-based energy efficiency gains that keep pace with technological innovation.

The Voluntary Agreement classifies small network equipment into three categories:

- **Broadband Modems**
- **Integrated Access Devices (IAD):** Broadband network devices with a Wide Area Network interface to a service provider wired or optical network and one or more of the following functions on the Local Area Network interface: multiport routing, Wi-Fi wireless access point functionality, and/or Voice over Internet Protocol (VoIP).
- **Local Network Equipment (LNE):** Devices that do not have a direct interface to a service provider network. These are principally routers, but also wireless access points, switches, and network extenders that bridge or extend a local area network beyond its physical limitations.³

Voluntary Agreement Objectives

The objectives of the Voluntary Agreement are to continue improvements in the energy efficiency of small network equipment and to foster device and service functionality, while encouraging innovation and competition. By improving small network equipment energy efficiency, the Voluntary Agreement also aims to further reduce potential negative environmental impacts and increase benefits to consumers in a flexible manner that allows for high-quality services and takes advantage of rapidly changing technologies and new features.

1 - Based on data provided by the National Cable & Telecommunications Association and the Consumer Technology Association.

2 - National Cable and Telecommunications Association. "New Initiative Will Improve Energy Efficiency of Home Internet Equipment." NCTA (June 25, 2015), available at <https://www.ncta.com/news-and-events/media-room/content/new-initiative-will-improve-energy-efficiency-home-internet-equipment>.

3 - For the full definitions of these categories, see [Appendix A](#) of this report or [Annex 1](#) of the Voluntary Agreement.

Voluntary Agreement Signatories and Steering Committee

The signatories and participants in the Voluntary Agreement are listed below. Signatories that currently have a voting member serving on the Steering Committee are indicated with an asterisk; all signatories may participate in Steering Committee meetings.

Service Provider Signatories

- AT&T Services, Inc.*
- Bright House Networks, LLC*
- Cablevision Systems Corp.*
- CenturyTel Broadband Services, LLC d/b/a CenturyLink*
- Charter Communications, Inc.*
- Comcast Cable Communications, LLC*
- Cox Communications, Inc.*
- Time Warner Cable, Inc.*
- Verizon Communications, Inc.*

Vendor Signatories

- Actiontec Electronics, Inc.
- ARRIS Group, Inc.*
- D-Link Systems, Inc.
- EchoStar Technologies, LLC
- Netgear, Inc.*
- Pace Americas LLC
- Technicolor Connected Home USA LLC (signed in 2016)
- Ubee Interactive, Inc.

Other Organizations

- Consumer Technology Association (CTA)*
- National Cable & Telecommunications Association (NCTA)*
- Cable Television Laboratories (CableLabs)

The Voluntary Agreement obligates the Steering Committee to designate an Independent Administrator and publish an annual report. The Steering Committee designated D+R International, Ltd. as the Independent Administrator and Auditor in 2015. This report is the first annual report.

The Voluntary Agreement requires that the Steering Committee meet at least once each year. The Steering Committee met three times in 2015 (June 11, October 13, and December 8, 2015).

Additional responsibilities of the Steering Committee include the following:

- Managing the Voluntary Agreement
- Hiring the Independent Administrator
- Reviewing proposals for energy allowances based on new features, which the Steering Committee can approve, reject, or add to the Voluntary Agreement as appropriate
- Evaluating the effectiveness of the Voluntary Agreement in achieving its purposes
- Adopting new or revised efficiency measures, courses of action, and amendments to the Voluntary Agreement as technologies and services change

CTA and NCTA are required to provide the Independent Administrator with the estimated total number of U.S. residential broadband Internet access subscribers and the number served by service providers participating in the Voluntary Agreement during the reporting period. This information is due by April 1 of each year, beginning in 2016; CTA and NCTA provided the 2015 information on time in 2016.

Signatory Commitments

The primary commitment is to procure and sell energy-efficient small network equipment. Specifically, beginning January 1, 2016, 90% of new small network equipment purchased by service providers or sold at retail by vendors shall meet the energy efficiency standards established in the Voluntary Agreement.

Independent Administrator and Auditor Role

The Independent Administrator is a third party appointed by the Steering Committee. Under the Voluntary Agreement, the Independent Administrator must aggregate and compile confidential procurement or sales data submitted by the signatories. Once the Voluntary Agreement commitments become effective, the Independent Administrator will also assess the signatories' compliance with the commitments of the Voluntary Agreement. If these commitments are not met, the Independent Administrator has the authority to take appropriate action following the procedures set out in the Voluntary Agreement.

The Independent Administrator is charged with conducting a random audit of one service provider's procurement figures or one vendor's sales figures each year. The results of the 2015 audit are presented in [Appendix C](#). The Independent Administrator also randomly selects one model from each service provider and retail vendor that must be independently tested in an accredited third-party lab or supervised by an accredited independent observer to verify the reported idle power values.

New Feature Process for Small Network Equipment

The New Feature Process is intended to encourage innovation and competition by service provider and vendor signatories and to encourage energy efficiency by design. This process provides a path for signatories to innovate and add new features, including features with no assigned allowances and features in the early stages of design, without being treated as being in violation of Voluntary Agreement energy allowances or commitments. If a service provider signatory deploys or a vendor signatory sells small network equipment that includes a new feature with no allowance, and the presence of the feature causes the device to exceed the prescribed allowances, the signatory may set and report an appropriate initial allowance for the power consumption of that feature when it reports the device under the Voluntary Agreement. When such information is reported, the Steering Committee will propose appropriate allowances and effective dates. Any allowances established by the Steering Committee for new features will be publicly reported as are other such allowances under the Voluntary Agreement. In 2015, no signatories proposed new feature allowances.

Mitigation and Alternative Energy Efficiency Strategies

A signatory may request credits for alternative energy efficiency measures in connection with the submission of its annual report data. If a signatory wishes to rely on the alternative for determination of its substantial compliance, it must propose the alternative and submit its prior year annual report data by February 1 of the subsequent year. A signatory may request credits for alternative energy efficiency measures at other times to assist with energy planning. The signatories will establish a review panel to review the request for credit and the panel will jointly determine any credits for alternative energy efficiency measures with the requesting signatory. Because the procurement/sales commitments were not applicable in 2015, no requests for alternative energy efficiency credits were proposed to the Steering Committee.

PROGRESS TOWARD 2016 PROCUREMENT AND SALES COMMITMENTS

Under the Voluntary Agreement, 90% of small network equipment purchased or sold at retail by commercial signatories after December 31, 2015 must meet specified energy efficiency standards. Although these commitments⁴ are not applicable until 2016, 2015 data was collected from the service provider and retail vendor signatories to measure progress toward these commitments. Seven of the eleven reporting signatories met the 90% threshold and five of those did so for 100% of their new purchases/sales. Overall, 89.6% of reported units satisfied the energy efficiency standards of the Agreement.

Table 1: 2015 Small Network Equipment Purchases and Sales

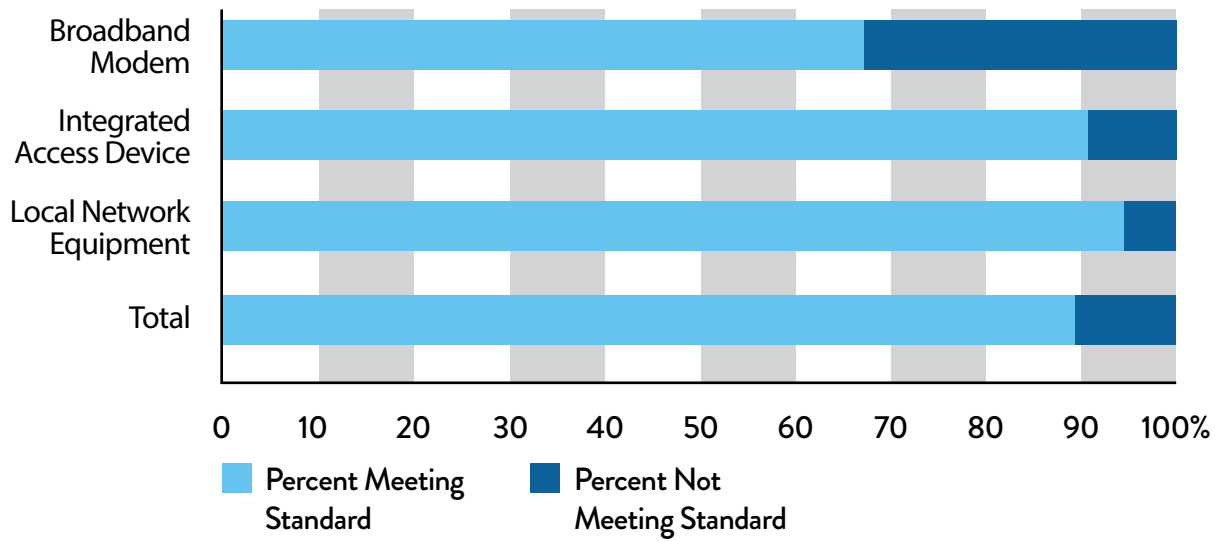
Category	Reported Units	Number Meeting Standards	Percent Meeting Standards
Broadband Modem	2,607,044	1,757,890	67%
Integrated Access Device	20,683,903	18,845,019	91%
Local Network Equipment	5,649,062	5,334,323	94%
Total	28,940,009	25,937,232	89.6%

Although the Voluntary Agreement was adopted in June 2015, nearly all of the signatories committed in principle to the Voluntary Agreement months earlier and began adjusting purchases and sales before the implementation of the agreement, which enabled early compliance.

Figure 1 shows the percentage of units (purchased or sold) meeting the energy efficiency standards. For example, 91.4% of reported integrated access devices met the energy efficiency standards.

⁴ - Five vendors had no retail sales of small network equipment in 2015 and therefore did not need to submit sales data; one vendor signatory was unable to provide a complete report for 2015, but has committed to submitting a complete annual report for 2016.

Figure 1: Percentage of Units Meeting Energy Efficiency Standards, by Equipment Type



IADs represented nearly three-quarters of reported products, followed by local network equipment (principally routers) (20%), and broadband modems (9%).

Figure 2: Small Network Equipment, by Equipment Type

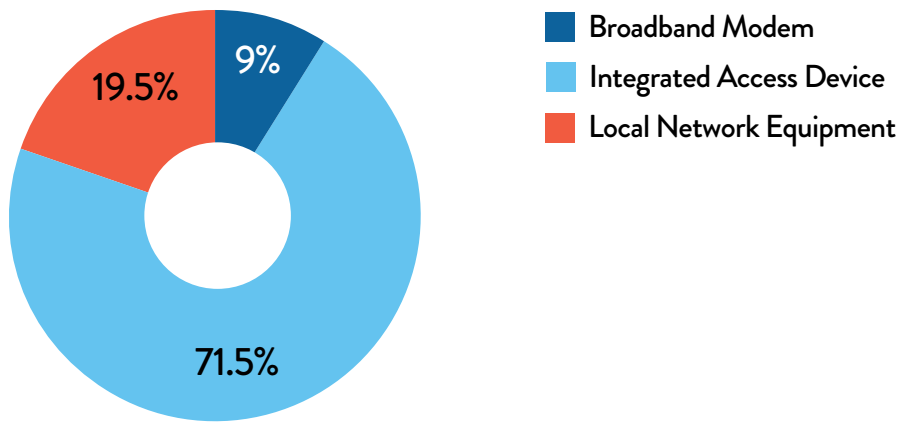
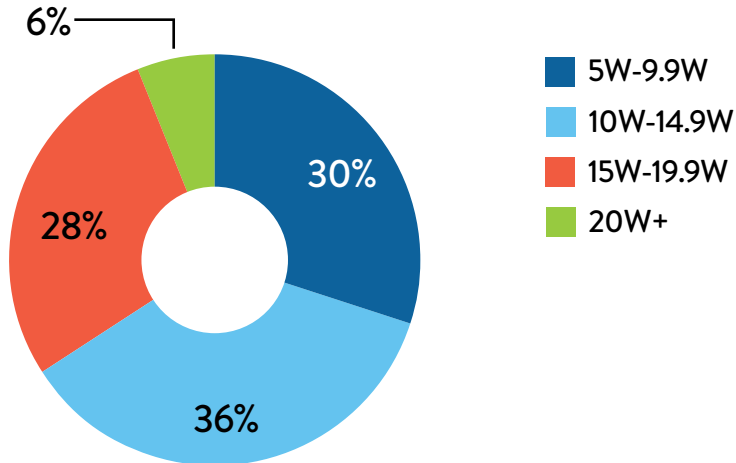


Figure 3 shows that the idle power of the integrated access device models reported by signatories is relatively equally distributed among categories of 5-9.9 watts, 10-14.9 watts, and 15-19.9 watts, reflective of the wide variation in capability of these products.

Figure 3: Distribution of Reported Idle Power of Integrated Access Device Models



ENERGY EFFICIENCY OF SMALL NETWORK EQUIPMENT

The average weighted typical idle mode power consumption for small network equipment purchased or sold by the signatories in 2015 is presented in Table 2, by category, with consumption values ranging from 1.56 watts to 13.2 watts. Many devices, such as IADs on the higher end of the range, perform multiple functions that in the past may have been performed by two or more devices that in the aggregate used more energy. There has been a rapid expansion in the functionality sought by consumers of small network equipment that places greater energy demands on manufacturers. Details about the small network equipment purchased or sold by the signatories are provided in [Appendix A: Small Network Equipment Purchased or Sold by Voluntary Agreement Signatories in 2015](#).

Table 2: Average Weighted Typical Idle Mode Power Consumption for Small Network Equipment Categories⁵

SNE Category:	Average Weighted Power 2015 (in watts)
Broadband Modem	6.67
Integrated Access Device	13.30
Local Network Equipment	6.44

⁵ - Average weighted power was calculated by multiplying the weighted power of each unit type (by signatory) by the total number of units. These totals were all added and then divided by the total number of units in each category.

At the time the Voluntary Agreement was announced to the public, it was estimated that its commitments would improve the energy efficiency of small network equipment by 10 to 20 percent compared to typical legacy devices developed prior to the Agreement. An examination of the reported legacy models purchased and sold in 2015 that did not meet the Agreement's new energy efficiency standards supports this estimate. These models use an average of 9.38 watts in idle mode, which is 18.4% more than the average of the maximum power consumption (7.92 watts) that would be permitted under the Voluntary Agreement's allowances for their respective models. The Voluntary Agreement is expected to continue to drive purchase and retail decisions, increasing the efficiency of equipment on the market and in consumers' homes.

LAB VERIFICATION TESTING

The Independent Administrator randomly selected one product from each annual report to be submitted for independent lab testing to verify the reported idle power. Verification testing was conducted in third-party laboratories approved by the Steering Committee or under a supervised vendor or service provider testing program with an accredited independent observer approved by the Steering Committee. Independent lab verification testing confirmed that all of the products tested had idle mode energy usage at or below the levels reported by the signatories. Test results revealed that, in aggregate, the average actual usage is 0.56 watts less than the values reported by the signatories in their 2015 annual reports.

CONSUMER-FACING ENERGY EFFICIENCY INFORMATION

All signatories committed to provide subscribers and prospective customers with reasonable access to energy efficiency information for small network equipment purchased or sold at retail since January 1, 2015. This information makes it easier for consumers to learn about energy-efficient small network equipment and typical energy consumption. Links to the information are shown in [Appendix B](#) and posted at www.energy-efficiency.us.

CONCLUSION

Though the signatories were not obligated in 2015 to meet the 90% procurement/sales commitment, which came into effect January 1, 2016, seven of the eleven reporting signatories met the 90% threshold and five of those met the Agreement's standards for 100% of their new sales/purchases. Overall, 89.6% of reported units satisfied the energy efficiency standards of the Agreement, and 100% of the devices subjected to independent lab audits were confirmed to have idle power draws at or below the levels reported by the signatories. The Voluntary Agreement is off to a promising start in improving the energy efficiency of small network equipment used by American consumers with broadband Internet access service.

APPENDIX A: SMALL NETWORK EQUIPMENT PURCHASED OR SOLD BY VOLUNTARY AGREEMENT SIGNATORIES IN 2015

Appendix A lists the small network equipment reported by the signatories as purchased or sold in 2015. Please note that the same model could have variances in reported power for several reasons, including differences in reported versus measured power, enabling of different product features, and/or different software deployed on the device by different signatories. Modal power figures in this Appendix are rounded up to the next one-hundredth digit (e.g., 5.121 watts would be rounded up to 5.13 watts).

Vendor reports include only the models that were sold via retail channels. Models sold to Service Providers are reported by the Service Providers.

The Voluntary Agreement as amended July 27, 2016 establishes the following categories of small network equipment subject to the Agreement:

- **"Broadband Modem."** A simple network device that enables high speed data service with a WAN (Wide Area Network) interface to a service provider wired or optical network, and typically a single LAN (Local Area Network) interface for the customer premise network. The Broadband Modem category does not include devices with integrated router, or IEEE 802.11 (Wi-Fi) wireless access point functionality.
- **"Integrated Access Device" ("IAD").** A network device that enables high speed data service with a WAN interface to a service provider wired or optical network and one or more of the following functions on the LAN interface: multiport routing, IEEE 802.11 (Wi-Fi) wireless access point functionality, and/or VoIP.
- **"Local Network Equipment" ("LNE").** The following local network devices that do not have a direct interface to a Service Provider wired or optical network:
 - **Wireless Access Point:** A device that typically includes one or more Ethernet interfaces, and that provides IEEE 802.11 (Wi-Fi) wireless network connectivity to multiple clients as its primary function.
 - **Router:** A network device that forwards packets from one network interface to another based on network layer information (typically IP destination address). Devices fitting this definition may provide both wired and wireless network connectivity.
 - **Switch:** A network device that filters and forwards frames based on the Ethernet destination MAC address of each frame as its primary function.
 - **Network Extender:** A device that bridges or extends a local area network beyond its physical limitations using one or more transmission media such as twisted pair, coax, Wi-Fi, or powerline.

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
ARRIS	ARRIS	SB6121	Basic D3	GigE LAN	6.64	No
ARRIS	ARRIS	SB6141	Basic D3	D3 above 4X4, GigE LAN	5.45	Yes
ARRIS	ARRIS	SB6183	Basic D3	D3 above 4X4 (3), GigE LAN	8.45	Yes
ARRIS	ARRIS	SB6190	Basic D3	D3 above 4X4 (7), GigE LAN	8.60	Yes
ARRIS	ARRIS	SBG6400	IAD D3	D3 above 4X4, GigE LAN (2), Wi-Fi (n) LP, USB 2	8.00	Yes
ARRIS	ARRIS	SBG6580	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP	11.44	No
ARRIS	ARRIS	SBG6700-AC	IAD D3	D3 above 4X4, GigE LAN (2), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP	10.00	Yes
ARRIS	ARRIS	SBG6782-AC	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP, MoCA	13.20	Yes
ARRIS	ARRIS	SBG6900-AC	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP, MoCA	14.10	Yes
ARRIS	ARRIS	SBR-AC1750	IAD GigE	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), USB 2	5.10	Yes
ARRIS	ARRIS	TG862G	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, FXS (2), USB 2	8.00	Yes
ARRIS	ARRIS	WR2100/RT	Basic LNE	Fast Eth LAN, Wi-Fi (n) LP	2.80	Yes
AT&T	ARRIS	NVG510	IAD ADSL2+	Fast Eth LAN (4), Wi-Fi (n) LP, FXS (2)	5.90	Yes
AT&T	ARRIS	NVG599	IAD VDSL2	GigE WAN, VDSL 2 (30a), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP, HPNA, FXS (2), USB 2, PCIe	18.11	Yes
AT&T	Pace	5031NV	IAD VDSL2	GigE WAN, Fast Eth LAN (4), Wi-Fi (n) HP, FXS (2), USB 2	7.90	Yes
AT&T	Pace	5268	IAD VDSL2	GigE WAN, VDSL2, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), HPNA, FXS (2), USB 2, Battery	16.00	Yes
BHN	ARRIS	DG1670A	IAD D3	D3 above 4X4 (3), GigE LAN(4), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, Wi-Fi (n) HP, Wi-Fi above 2X2 HP, MoCA, USB 2	14.00	Yes
BHN	ARRIS	TG1672G	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, Wi-Fi (n) HP, Wi-Fi above 2X2 HP, MoCA, FXS (2), USB 2	15.50	Yes
BHN	ARRIS	TG1682G	IAD D3	D3 above 4X4 (5), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, FXS (2), USB 2 (2)	20.00	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
BHN	Technicolor	TC8715D	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, USB 2	16.50	Yes
BHN	Actiontec	WCB3000N	IAD GigE	GigE LAN, Wi-Fi (n) LP (2), MoCA	8.00	Yes
BHN	Actiontec	WCB6200q	IAD GigE	GigE LAN, Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA	10.00	Yes
Cablevision	D-LINK	DIR868	IAD GigE	GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), USB 3, PCIe (2)	9.10	Yes
Cablevision	Sagemcom	F@st 5260	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), USB 2, PCIe (2)	6.50	Yes
Cablevision	ARRIS	TM822G	IAD D3	D3 above 4X4, GigE LAN, FXS (2)	6.00	Yes
Cablevision	ARRIS	TM804G	IAD D3	D3 above 4X4, GigE LAN, FXS (2)	6.30	Yes
Cablevision	ARRIS	TM1602A	IAD D3	D3 above 4X4 (5), GigE LAN, FXS (2)	9.30	Yes
Cablevision	Cisco	DPQ3925	IAD D3	D3 above 4X4, GigE LAN (4), FXS (2), USB 2	11.20	No
CenturyLink	Actiontec	C1000A	IAD VDSL2	GigE LAN (4), Wi-Fi (n) LP, USB 2	9.43	No
CenturyLink	Actiontec	C1900A	IAD VDSL2	GigE WAN, VDSL2, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (n) HP, USB 2	11.30	Yes
CenturyLink	Actiontec	PK5001A	IAD ADSL2+	GigE LAN (4), Wi-Fi (n) LP	5.64	Yes
CenturyLink	Technicolor	C2000T	IAD VDSL2	GigE WAN, VDSL2, GigE LAN (4), Wi-Fi (n) HP, HPNA, FXS (2), USB 2	13.10	No
CenturyLink	Technicolor	C2100T	IAD VDSL2	GigE WAN, VDSL2, GigE LAN (2), Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), Wi-Fi (n) HP, HPNA, FXS (2), USB 2	15.80	Yes
CenturyLink	Zyxel	C1000Z	IAD VDSL2	GigE LAN (4), Wi-Fi (n) LP, USB 2	7.77	No
CenturyLink	Zyxel	C1100Z	IAD VDSL2	GigE WAN, GigE LAN (4), Wi-Fi (n) HP, USB 2	7.25	Yes
CenturyLink	Zyxel	FR1000Z	IAD GigE	GigE LAN (4), Wi-Fi (n) LP, USB 2	7.75	No
CenturyLink	Zyxel	PK5001Z	IAD ADSL2+	Fast Eth LAN (4), Wi-Fi (n) LP	3.88	Yes
Charter	Netgear	R6300v2	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), 802.11n 256 QAM, USB 2, USB 3, PCIe (2)	10.50	Yes
Charter	Sagemcom	F@st 5260	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 (2), USB 2, PCIe (2)	6.50	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
Charter	ARRIS	TM822G	IAD D3	D3 above 4X4, GigE LAN, FXS (2)	6.00	Yes
Charter	ARRIS	TM804G	IAD D3	D3 above 4X4, GigE LAN, FXS (2)	6.00	Yes
Charter	ARRIS	TM1602	IAD D3	D3 above 4X4 (3), GigE LAN, FXS (2)	8.00	Yes
Charter	Cisco	DPC3216	IAD D3	D3 above 4X4 (3), GigE LAN, FXS (2)	8.50	Yes
Comcast	Cisco	DPC3939	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) LP (2), Wi-Fi above 2X2 LP (2), MoCA, FXS (2), USB 2 (2), PCIe (2)	18.00	Yes
Comcast	Cisco	DPC3941T	IAD D3	D3 above 4X4 (5), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), MoCA, FXS (2), USB 2 (2), PCIe (2)	20.50	Yes
Comcast	ARRIS	TG862	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, FXS (2), USB 2	9.00	Yes
Comcast	ARRIS	TG1682G	IAD D3	D3 above 4X4 (5), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, FXS (2), USB 2 (2)	20.00	Yes
Comcast	Technicolor	TC8305C	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) HP, Wi-Fi above 2X2 HP, FXS (2), USB 2	10.00	Yes
Comcast	Technicolor	TC8717CV1	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, FXS (2), USB 2 (2)	17.00	Yes
Comcast	Netgear	R6300v2	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe (2)	10.50	Yes
Comcast	Netgear	WN3000RP	Basic LNE	Fast Eth LAN, Wi-Fi (n) LP	2.00	Yes
Comcast	Cisco	DPC3941Tv2	IAD D3	D3 above 4X4 (5), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), MoCA, FXS (2), USB 2 (2), PCIe (2)	18.00	Yes
Cox	ARRIS	SB6182	Basic D3	D3 above 4X4, GigE LAN, USB 2	6.50	Yes
Cox	Cisco	DPQ3212	IAD D3	D3 above 4X4, GigE LAN, FXS (2), USB 2	9.10	No
Cox	Cisco	DPC3010	Basic D3	D3 above 4X4, GigE LAN, USB 2	8.40	No
Cox	Netgear	CG3000Dv2	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, USB 2 (2), PCIe	9.20	Yes
Cox	Netgear	CG4500BD	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) HP (2), Wi-Fi above 2X2 (2), USB 2, PCIe (2)	11.50	Yes
Cox	Netgear	C6300BD	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), 802.11n 256 QAM, USB 2, PCIe (2)	13.50	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
Cox	Netgear	R6300v2	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe (2)	10.60	Yes
Cox	Ubee	DVW326	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, FXS (2), USB 2, PCIe	9.30	Yes
Cox	Ubee	DDW365	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi above 2X2, USB 2, PCIe	9.60	Yes
Cox	Ubee	DDW366	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP (2), Wi-Fi above 2X2 LP (2), USB 2, PCIe (2)	11.00	Yes
Cox	ARRIS	SB6183	Basic D3	D3 above 4X4 (3), GigE LAN	8.30	Yes
Cox	ARRIS	TG2472	IAD D3	D3 above 4X4 (5), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 (2), FXS (2), USB 2	16.40	Yes
D-Link	D-Link	DIR-842	IAD GigE	GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP	5.09	Yes
D-Link	D-Link	DIR-859	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP, PCIe (2)	3.74	Yes
D-Link	D-Link	DIR-879	IAD GigE	GigE LAN (4), Wi-Fi (n) HP (2), Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), PCIe (2), AP>5K DMIPS	9.03	Yes
D-Link	D-Link	DIR-895L/R	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP (2), USB 2, USB 3, PCIe (2), AP>5K DMIPS	13.60	Yes
D-Link	D-Link	DAP-1330	IAD GigE	Fast Eth LAN, Wi-Fi (n) LP, Wi-Fi above 2X2 LP, AP>5K DMIPS	1.58	Yes
D-Link	D-Link	DAP-1620	IAD GigE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP	3.12	Yes
D-Link	D-Link	DAP-1120	IAD GigE	Wi-Fi (n) LP	0.96	Yes
D-Link	D-Link	DIR-813	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP, PCIe (2)	4.25	Yes
D-Link	D-Link	DIR-885L/R	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP, USB 3, AP>5K DMIPS	9.98	Yes
D-Link	D-Link	GO-RT-N300	IAD GigE	Fast Eth LAN (4)	2.60	Yes
D-Link	D-Link	DIR-890L/R	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP (2), USB 2, USB 3, PCIe (3), AP>5K DMIPS	11.72	Yes
D-Link	D-Link	DIR-830L	IAD GigE	GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP	4.05	Yes
Netgear	Netgear	C3000-100NAS	IAD D3	D3 above 4X4, GigE LAN (2), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, USB 2	9.25	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
Netgear	Netgear	C3700-100NAS	IAD D3	D3 above 4X4, GigE LAN (2), Wi-Fi (n) LP (2), Wi-Fi above 2X2 LP (2), USB 2	10.45	Yes
Netgear	Netgear	C6250-100NAS	IAD D3	D3 above 4X4 (3), GigE LAN (2), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 (2), USB 2	14.22	Yes
Netgear	Netgear	C6300-100NAS	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, Wi-Fi above 2X2 (2), QAM, USB 3	13.36	Yes
Netgear	Netgear	C7000-100NAS	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2	16.49	Yes
Netgear	Netgear	CM400-100NAS	Basic D3	D3 above 4X4, GigE LAN	5.31	Yes
Netgear	Netgear	CM500-100NAS	Basic D3	D3 above 4X4 (3), GigE LAN	8.32	Yes
Netgear	Netgear	CM600-100NAS	Basic D3	D3 above 4X4 (5), GigE LAN	10.35	Yes
Netgear	Netgear	D6200-100NAS	IAD ADSL2+	GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, USB 2	9.02	No
Netgear	Netgear	D7000-100NAS	IAD VDSL2	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP, QAM, USB 3 (2)	8.89	Yes
Netgear	Netgear	D7800-100NAS	IAD VDSL2 (30a)	GigE LAN (4), Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), Wi-Fi (n) HP, Wi-Fi above 2X2 HP (2), QAM, USB 3 (2), SATA, PCIe (2)	11.54	Yes
Netgear	Netgear	DM111PSP-100NAS	Basic ADSL2+	Fast Eth LAN	4.28	No
Netgear	Netgear	DST6501-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP, QAM	6.84	No
Netgear	Netgear	EX3700-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, PCIe (2)	2.89	Yes
Netgear	Netgear	EX3800-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP, QAM, PCIe (2)	2.79	Yes
Netgear	Netgear	EX3920-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP, PCIe (2)	2.89	Yes
Netgear	Netgear	EX6100-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) HP, PCIe	3.77	Yes
Netgear	Netgear	EX6120-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP, PCIe (2)	2.89	Yes
Netgear	Netgear	EX6150-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP, PCIe (2)	5.06	Yes
Netgear	Netgear	EX6200-100NAS	Basic LNE	GigE LAN (5), Wi-Fi (n) HP (2), Wi-Fi (ac) HP (2), USB 3, PCIe (2)	8.60	Yes
Netgear	Netgear	EX7000-100NAS	Basic LNE	GigE LAN (5), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 3, PCIe (2)	9.47	No

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
Netgear	Netgear	N450-100NAS	IAD D3	D3 above 4X4, GigE LAN (4), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, USB 2, PCIe (2)	7.62	Yes
Netgear	Netgear	PL1200-100PAS	Basic LNE	GigE LAN	2.78	No
Netgear	Netgear	PLP1200-100PAS	Basic LNE	GigE LAN	2.95	No
Netgear	Netgear	PLW1000-100NAS	Basic LNE	GigE LAN, Wi-Fi (n) LP, Wi-Fi (ac) LP, QAM	6.84	No
Netgear	Netgear	PR2000-100NAS	IAD GigE	Fast Eth LAN, Wi-Fi (n) HP, USB 2	1.71	Yes
Netgear	Netgear	R6050-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP (2), Wi-Fi (ac) HP, USB 2	3.67	Yes
Netgear	Netgear	R6100-100NAS	IAD GigE	Fast Eth LAN (3), Wi-Fi (n) LP, Wi-Fi (ac) LP, USB 2, PCIe	3.70	Yes
Netgear	Netgear	R6100-100PAS	IAD GigE	Fast Eth LAN (3), Wi-Fi (n) LP, Wi-Fi (ac) LP, USB 2, PCIe	3.70	Yes
Netgear	Netgear	R6220-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, USB 2	5.17	Yes
Netgear	Netgear	R6220-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (ac) LP, USB 3	5.17	Yes
Netgear	Netgear	R6250-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP, USB 2, PCIe (2)	9.40	Yes
Netgear	Netgear	R6250-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP, USB 2, PCIe (2)	9.40	Yes
Netgear	Netgear	R6300-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe (2)	9.81	Yes
Netgear	Netgear	R6300-2CP-NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe (2)	9.81	Yes
Netgear	Netgear	R6300-2SW-NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe (2)	9.81	Yes
Netgear	Netgear	R6400-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), USB 2, PCIe (2)	9.59	Yes
Netgear	Netgear	R6900-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), USB 2, USB 3, PCIe (2)	9.98	Yes
Netgear	Netgear	R7000-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe (2)	10.09	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
Netgear	Netgear	R7300DST-100NAS	IAD GigE	GigE LAN (5), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe	13.89	No
Netgear	Netgear	R7300DST-100PAS	IAD GigE	GigE LAN (5), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), QAM, USB 2, USB 3, PCIe	13.89	No
Netgear	Netgear	R7500-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP (2), Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP, QAM, USB 3 (2), SATA, PCIe (2)	9.02	Yes
Netgear	Netgear	R7500-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP (2), Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP, QAM, USB 3 (2), SATA, PCIe (2)	9.02	Yes
Netgear	Netgear	R7500-200NAS	IAD GigE	GigE LAN (4), Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (2), Wi-Fi (n) HP, Wi-Fi above 2X2 HP, QAM, USB 3 (2), SATA, PCIe (2)	7.19	Yes
Netgear	Netgear	R7800-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (3), Wi-Fi (n) HP, Wi-Fi above 2X2 HP, QAM, USB 3 (2), SATA, PCIe (2)	9.26	Yes
Netgear	Netgear	R7800-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (ac) LP, Wi-Fi above 2X2 LP (3), Wi-Fi (n) HP, Wi-Fi above 2X2 HP, QAM, USB 3 (2), SATA, PCIe (2)	9.26	Yes
Netgear	Netgear	R7900-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP (3), QAM, USB 3, PCIe (3)	12.76	Yes
Netgear	Netgear	R8000-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP (3), QAM, USB 2, USB 3, PCIe (3)	12.66	Yes
Netgear	Netgear	R8500-100NAS	IAD GigE	GigE LAN (6), Wi-Fi (n) HP, Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP (6), QAM, USB 2, USB 3, PCIe (3)	18.47	No
Netgear	Netgear	R8500-100PAS	IAD GigE	GigE LAN (6), Wi-Fi (n) HP, Wi-Fi (ac) HP (2), Wi-Fi above 2X2 HP (6), QAM, USB 2, USB 3, PCIe (3)	18.47	No
Netgear	Netgear	WN2000RPT-200NAS	Basic LNE	Fast Eth LAN (4), Wi-Fi (n) LP	1.72	Yes
Netgear	Netgear	WN2500RP-100NAS	Basic LNE	Fast Eth LAN (4), Wi-Fi (n) LP, PCIe (2)	5.12	Yes
Netgear	Netgear	WN3000RP-100NAS	Basic LNE	Fast Eth LAN, Wi-Fi (n) LP	1.69	Yes
Netgear	Netgear	WNCE3001-100NAS	Basic LNE	Fast Eth LAN, Wi-Fi (n) LP	1.91	Yes
Netgear	Netgear	WNDR3400-100NAS	IAD GigE	Fast Eth LAN (4), Wi-Fi (n) LP (2), USB 2, PCIe (2)	5.30	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
Netgear	Netgear	WNDR4300-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP (2), USB 2, PCIe	3.72	Yes
Netgear	Netgear	WNDR4300-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP (2), USB 2, PCIe	3.72	Yes
Netgear	Netgear	WNDR4300-1SWNAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP (2), USB 2, PCIe	3.72	Yes
Netgear	Netgear	WNDR4500-100NAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP (2), USB 2 (2), PCIe	4.05	Yes
Netgear	Netgear	WNDR4500-100PAS	IAD GigE	GigE LAN (4), Wi-Fi (n) LP (2), USB 2 (2), PCIe	4.05	Yes
Netgear	Netgear	WNR1000-100NAS	IAD GigE	Fast Eth LAN (4), Wi-Fi (n) LP	1.57	Yes
Netgear	Netgear	WNR2000-100NAS	IAD GigE	Fast Eth LAN (4), Wi-Fi (n) LP	2.21	Yes
Netgear	Netgear	WNR2020-200PAS	IAD GigE	Fast Eth LAN (4), Wi-Fi (n) LP (2)	1.57	Yes
Netgear	Netgear	XAVB5201-111NAS	Basic LNE	Fast Eth LAN	1.95	Yes
Netgear	Netgear	XAVB5201-1BNPAS	Basic LNE	Fast Eth LAN	1.70	Yes
Netgear	Netgear	XAVB5221-100PAS	Basic LNE	Fast Eth LAN (2)	2.08	Yes
Netgear	Netgear	XAVB5421-100PAS	Basic LNE	Fast Eth LAN (2)	2.08	Yes
Netgear	Netgear	XWNB5201-100PAS	Basic LNE	Fast Eth LAN	1.70	Yes
Netgear	Netgear	XWNB5221-100PAS	Basic LNE	Fast Eth LAN, Wi-Fi (n) HP	3.26	Yes
TWC	ARRIS	SB6183	Basic D3	D3 above 4X4 (3), GigE LAN	8.10	Yes
TWC	Ubee	DDM354	Basic D3	D3 above 4X4 (3), GigE LAN	8.00	Yes
TWC	Technicolor	TC4310	Basic D3	D3 above 4X4 (3), GigE LAN	8.00	Yes
TWC	ARRIS	DG1670A	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi above 2X2 LP, Wi-Fi (n) HP, Wi-Fi above 2x2 HP, MoCA, USB 2	14.00	Yes
TWC	Ubee	DDW36C1	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, USB 2	14.50	Yes

Table 3: Small Network Equipment Procured by Voluntary Agreement Signatories in 2015 (cont.)

Signatory	Brand	Model Number	Base Type	Claimed Allowances	Reported Idle Power (W)	Meets VA Levels
TWC	Tech-nicolor	TC8715D	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, USB 2	16.50	Yes
TWC	ARRIS	TG1672G	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) LP, Wi-Fi (n) HP, Wi-Fi above 2X2 HP, MoCA, FXS (2), USB 2	15.50	Yes
TWC	Ubee	DVW32CB	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, FXS (2), USB 2	14.50	Yes
TWC	Tech-nicolor	TC8717T	IAD D3	D3 above 4X4 (3), GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, FXS (2), USB 2 (2)	15.50	Yes
TWC	Actiontec	WCB3000N	IAD GigE	GigE LAN, Wi-Fi (n) LP (2), MoCA	8.50	Yes
Verizon	Actiontec	GT784WNV	IAD ADSL2+	Fast Eth LAN (4), Wi-Fi (n) LP, USB 2	6.09	No
Verizon	D-Link	DSL-2750B	IAD ADSL2+	Fast Eth LAN (4), Wi-Fi (n) LP, USB 2	5.05	Yes
Verizon	D-Link	DSL-6300V	Basic VDSL2 (30a)	Fast Eth LAN	6.46	No
Verizon	D-Link	DGS-1005G	Basic LNE	GigE LAN (5)	1.56	Yes
Verizon	Actiontec	WCB3000N	Basic LNE	GigE LAN (2), Wi-Fi (n) HP (2), MoCA	7.34	Yes
Verizon	Actiontec	MI424WR	IAD MoCA	GigE Backup WAN, GigE LAN (4), Wi-Fi (n) HP, MoCA, USB 2 (2)	11.55	No
Verizon	Verizon	FiOS-G1100	IAD MoCA	GigE Backup WAN, GigE LAN (4), Wi-Fi (n) HP, Wi-Fi (ac) HP, Wi-Fi above 2X2 HP (2), MoCA, USB 2 (2), Z-wave	10.43	Yes

Table 4 describes feature allowances outlined in the Voluntary Agreement.

Table 4: Voluntary Agreement Allowance Descriptions

Descriptor	Description	Allowance
GigE Backup WAN	Gigabit Ethernet WAN	0.7
SFP Backup WAN	A small form-factor pluggable (SFP): a compact, hot-pluggable transceiver used to interface a device to a fiber optic or copper networking cable	2
VDSL2 Simul WAN	An International Telecommunications Union standard for very high speed digital subscriber line (VDSL) broadband Internet access as defined by ITU G.993.2.	3.2
VDSL2 (30a) Simul WAN	An International Telecommunications Union standard for very high speed digital subscriber line (VDSL) broadband Internet access as defined by ITU G.993.2.	4.7
D3 above 4x4	DOCSIS 3.0 additional power allowance for each additional 4 downstream channels	1.5
Fast Eth LAN	1 Fast Ethernet port	0.2
GigE LAN	1 Gigabit Ethernet port	0.25
Wi-Fi (n) LP	Wi-Fi IEEE 802.11n radio at 2.4 GHz or at 5.0 GHz with a conducted output power less than 200 mW per chain (up to 2x2, i.e. 400 mW)	1
Wi-Fi (ac) LP	Wi-Fi, IEEE 802.11ac radio at 5 GHz with a conducted output power less than 200 mW per chain (up to 2x2, i.e. 400 mW)	2.1
Wi-Fi above 2x2 LP	Additional allowance per RF chain above a 2x2 MIMO configuration (e.g., for 3x3 and 4x4) with a conducted output power less than 200 mW per chain	0.3
Wi-Fi (n) HP	Wi-Fi IEEE 802.11n radio at 2.4 GHz or at 5.0 GHz with a conducted output power greater than or equal to 200 mW per chain (up to 2x2, i.e. 400 mW)	1.2
Wi-Fi (ac) HP	Wi-Fi, IEEE 802.11ac radio at 5 GHz with a conducted output power greater than or equal to 200 mW per chain (up to 2x2, i.e. 400 mW)	2.5
Wi-Fi above 2x2 HP	Additional allowance per RF chain above a 2x2 MIMO configuration (e.g., for 3x3 and 4x4) with a conducted output power greater than 200 mW per chain	0.4
802.11n 256 QAM	Wi-Fi IEEE 802.11n at 2.4GHz supporting 256-QAM	0.5
HPNA	Home PNA Alliance, formerly the Home Phoneline Networking Alliance	1.5
MoCA	MoCA 1.1 and 2.0: home networking specification as defined by the multimedia Over Coax Alliance	2.5
FXS	Foreign Exchange Station: device interface, such as RJ-11, to connect directly to a standard telephone, fax machine, or similar device and supply ring, voltage, and digital tone	0.3
DECT	Digital Enhanced Cordless Telecommunications is the ETSI standard for short-range cordless communications over unlicensed frequency used for voice, data, and networking applications with a range up to 500 meters	0.5

Table 4: Voluntary Agreement Allowance Descriptions (cont.)

Descriptor	Description	Allowance
USB 2	Universal Serial Bus	0.1
USB 3	Universal Serial Bus	0.2
SATA	Serial ATA: interface for connecting devices to external storage devices, such as a hard disk drive (HDD)	0.3
BATTERY	Built-in back-up battery	0.4
Blue-tooth	A wireless technology standard for exchanging data over short distances	0.1
ZigBee	A specification for the suite of high level communication protocols used to create personal area networks built from small, low-power digital radios	0.1
Z-wave	A wireless communications protocol designed for home automation	0.1
PCIe	Peripheral Component Interconnect Express: a high speed serial computer expansion bus standard	0.2
AP>5K DMIPS	Application Processor > 5K DMIPS allowance provides for more powerful processors in devices to accommodate advanced functionality	1

APPENDIX B: CONSUMER SMALL NETWORK EQUIPMENT ENERGY EFFICIENCY INFORMATION

Small network equipment energy information for consumers is available at www.energy-efficiency.us, and for each service provider and retail vendor at the links below

Signatory	Consumer Information Location	Additional Information
Service Providers		
AT&T	https://www.directv.com/cms3/about/sustainability/PDF/att_small_network_equipment.pdf	
Bright House Networks	http://energy.cablelabs.com/bright-house-networks-sne/	
Cablevision	http://energy.cablelabs.com/cablevision-sne/	
CenturyLink	http://internethelp.centurylink.com/internethelp/modem-energy-efficiency.html	
Charter	http://energy.cablelabs.com/charter-sne/	
Comcast	http://energy.cablelabs.com/comcast-sne/	
Cox Communications	http://energy.cablelabs.com/cox-sne/	
Time Warner Cable	http://energy.cablelabs.com/time-warner-cable-sne/	
Verizon	https://www.verizon.com/Support/Residential/Tv/FiosTv/Receivers/User+Guides/User+Guides.htm#sne	
Vendors		
Actiontec Electronics	http://support.actiontec.com/doc_files/actiontec_broadband_equipment_energy_information_sne_v1.pdf	
ARRIS Group, Inc.	http://ir.arris.com/phoenix.zhtml?c=87823&p=irol-govresponsibility	Scroll down to: ARRIS Small Network Equipment (SNE) Energy Efficiency
D-Link Systems	support.dlink.com	Scroll to the bottom and click on "2015 SNE- VA Report"
EchoStar Technologies	No Retail Products	
Netgear	http://www.netgear.com/about/environment/standards-compliance/ http://www.netgear.com/images/pdf/about/NETGEAR%20SNE%20Energy%20Information%202015.pdf	The first link is the policy page and the second link is the specific SNE information
Pace Americas	No Retail Products	
Technicolor	No Retail Products	
Ubee Interactive	No Retail Products	



2015 Annual Report Audit Results

In 2015, 17 residential broadband Internet service providers and manufacturers of small network equipment, such as modems and routers used by consumers to access such services, signed the *Voluntary Agreement for Ongoing Improvement to the Energy Efficiency of Small Network Equipment*.

The Voluntary Agreement requires the service provider and retail vendor signatories to submit annual procurement and sales data to an independent administrator, who collects and analyzes the data, then publishes the findings in an Annual Report. Data from the individual signatories is aggregated for publication in the Annual Report to protect this highly confidential information. To verify the accuracy of the reported data, the Voluntary Agreement requires a random audit of one commercial signatory each year. In accordance with the confidentiality requirements of the Voluntary Agreement, the name of the audited party is not published.

D+R International conducted an audit of the 2015 report data provided in 2016, which was used to develop the findings published in the 2015 Annual Report (released July 31, 2016). D+R randomly selected the party by creating an Excel spreadsheet and using the “random” function.

D+R requested raw data from the selected party to verify the data submitted. D+R reviewed the submitted data, which included invoice data and specification sheets.

D+R, as the Independent Administrator, has determined that the data submitted by the signatory for the audit is consistent with the annual report data submitted by that party.

