

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5971995

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	RUCKUS WIRELESS, INC.	04/01/2018
RECEIVING PARTY DATA		
Name:	ARRIS ENTERPRISES, LLC	
Street Address:	3871 LAKEFIELD DR.	
City:	SUWANEE	
State/Country:	GEORGIA	
Postal Code:	30024	
PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	16535758
CORRESPONDENCE DATA		
Fax Number:		
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>		
Phone:	6507044434	
Email:	steve.stupp@gmail.com	
Correspondent Name:	STUPP ASSOCIATES, LLC	
Address Line 1:	200 STAYSAIL CT.	
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ATTORNEY DOCKET NUMBER:	RUC0066-CON1	
NAME OF SUBMITTER:	STEVEN STUPP	
SIGNATURE:	/Steven Stupp/	
DATE SIGNED:	02/20/2020	
Total Attachments: 18		
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ASSIGNMENT

WHEREAS RUCKUS Wireless, Inc., a Delaware corporation whose registered address is c/o CT Company, 1209 Orange Street, Wilmington, DE 19801, USA (hereinafter referred to as "ASSIGNOR"), owns all right, title, and interest in and to certain inventions disclosed in the patent applications and patents, including the Letters Patents worldwide but excluding the United States to be obtained therefore, identified on Exhibits A & B attached hereto (collectively, "the Patents") and incorporated herein by reference; and

WHEREAS, ARRIS Enterprises LLC, a limited liability company incorporated in the state of Delaware, having a principal place of business at 3871 Lakefield Drive, Suwanee, GA 30024, USA (hereinafter referred to as "ASSIGNEE"), is desirous of acquiring all right, title, and interest in, to the Patents:

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and for other good and valuable consideration, ASSIGNOR hereby irrevocably assigns and transfers to ASSIGNEE, as of the date set forth below, all right, title, and interest in (including the right to prosecute Assignee's name, all claims), to the Patents, including all rights of priority in inventions disclosed in the Patents, together with all issued patents, rights to inventions, pending patents, worldwide, including and all Letters Patent to be obtained therefore on said applications including any continuation, division, extension, renewal, substitute or reissue thereof for the full term or terms for which the same may be granted (collectively, the "Assigned Patents"), and all causes of action, rights, and acts of infringement arising under any such Assigned Patents prior to, on or after the assignment date hereof, with the right to bring suit and collect such damages and enforce such remedies.

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment and sale.

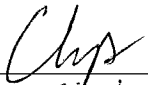
ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said applications, said inventions and said Letters Patent as may be known and accessible to ASSIGNOR and will testify as to the same in any interference or litigation related thereto and will promptly execute and deliver to ASSIGNEE or its legal representative any and all papers, instruments or affidavits required to

ASSIGNMENT

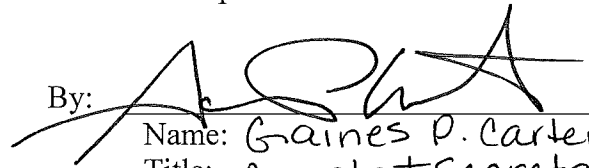
apply for, obtain, maintain and enforce said applications, said inventions and said Letters Patent which may be necessary or desirable to carry out the purposes hereof.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 1st day of April, 2018.

Ruckus Wireless, Inc.

By: 
Name: Clayton B Sharp
Title: Assistant Secretary

ARRIS Enterprises LLC

By: 
Name: Gaines P. Carter
Title: Assistant Secretary

ASSIGNMENT

**Exhibit A
US Patents**

Application Serial Number	AppTitle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
12/212,855	Vertical Multiple-Input Multiple-Output Wireless Antennas				Allowed	10/7/2016	US	Antenna Designs
13/396,482	Radio Frequency Emission Pattern Shaping				Allowed	12/16/2016	US	Antenna Designs
14/275,887	Adjustment of Radiation Patterns Utilizing a Position Sensor				Filed	2/11/2015	US	Antenna Designs
12/980,253	Antenna With Selectable Elements For Use In Wireless Communications				Filed	1/23/2015	US	Antenna Designs
14/792,052	Antennas With Polarization Diversity				Filed	10/29/2015	US	Antenna Designs
15/050,233	Pattern Shaping of RF Emission Patterns				Filed	2/22/2016	US	Antenna Designs
15/237,547	Mountable Antenna Elements For Dual Band Antenna				Filed	12/1/2016	US	Antenna Designs
13/396,484	Radio Frequency Antenna Array With Spacing Element				Filed	1/21/2015	US	Antenna Designs
14/217,392	Low Band Reflector For Dual Band Directional Antenna				Filed	4/29/2015	US	Antenna Designs
15/405,275	Antenna with Enhanced Azimuth Gain				Filed	1/12/2017	US	Antenna Designs
11/413,670	Pin Diode Network for Multiband RF Coupling	7,639,106	12/29/2009	7/10/2026	Granted	12/29/2009	US	Antenna Designs
12/404,127	Adjustment of Radiation Patterns Utilizing a Position Sensor	8,217,843	7/10/2012	11/16/2030	Granted	7/10/2012	US	Antenna Designs
13/485,012	Adjustment of Radiation Patterns Utilizing a Position Sensor	8,723,741	5/13/2014	3/13/2029	Granted	5/13/2014	US	Antenna Designs
11/010,076	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	7,292,198	11/6/2007	12/9/2024	Granted	11/6/2007	US	Antenna Designs
11/414,117	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	7,652,632	1/26/2010	3/1/2026	Granted	1/26/2010	US	Antenna Designs
11/799,458	Reducing Stray Capacitance In Antenna Element Switching	7,696,946	4/13/2010	3/7/2025	Granted	4/13/2010	US	Antenna Designs
11/877,465	Antenna With Selectable Elements For Use In Wireless Communications	9,019,165	4/28/2015	10/13/2026	Granted	4/28/2015	US	Antenna Designs
11/041,145	SYSTEM AND METHOD FOR A MINIMIZED ANTENNA APPARATUS WITH SELECTABLE ELEMENTS	7,362,280	4/22/2008	5/7/2025	Granted	4/22/2008	US	Antenna Designs
11/646,136	ANTENNAS WITH POLARIZATION DIVERSITY	7,498,996	3/3/2009	2/19/2025	Granted	3/3/2009	US	Antenna Designs
12/396,439	Antennas With Polarization Diversity	7,880,683	2/1/2011	7/10/2025	Granted	2/1/2011	US	Antenna Designs
12/604,832	Dual Polarization Antenna Array With Increased Wireless Coverage	7,965,252	6/21/2011	2/5/2025	Granted	6/21/2011	US	Antenna Designs
12/605,256	Dual Band Dual Polarization Antenna Array	8,031,129	10/4/2011	1/21/2025	Granted	10/4/2011	US	Antenna Designs

Application Serial Number	AppTitle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
11/924,082	Minimized Antenna Apparatus With Selectable Elements	7,511,680	3/31/2009	1/21/2025	Granted	3/31/2009	US	Antenna Designs
13/019,214	Antennas With Polarization Diversity	9,077,071	7/7/2015	5/26/2026	Granted	7/7/2015	US	Antenna Designs
13/240,687	Dual Band Dual Polarization Antenna Array	8,314,749	11/20/2012	1/21/2025	Granted	11/20/2012	US	Antenna Designs
13/681,421	Dual Band Dual Polarization Antenna Array	8,860,629	10/14/2014	1/21/2025	Granted	10/14/2014	US	Antenna Designs
11/265,751	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements	7,498,999	3/3/2009	2/15/2026	Granted	3/3/2009	US	Antenna Designs
12/851,472	Antenna Array	7,864,119	1/4/2011	12/23/2024	Granted	1/4/2011	US	Antenna Designs
13/862,834	Antenna Array	9,379,456	6/28/2016	2/3/2030	Granted	6/28/2016	US	Antenna Designs
11/938,240	Multiple-Input Multiple-Output Wireless Antennas	7,646,343	1/12/2010	10/7/2026	Granted	1/12/2010	US	Antenna Designs
12/018,894	Horizontal Multiple-Input Multiple-Output Wireless Antennas	7,675,474	3/9/2010	10/14/2026	Granted	3/9/2010	US	Antenna Designs
12/082,090	Coverage Antenna Apparatus With Selectable Horizontal And Vertical Polarization Elements	8,068,068	11/29/2011	2/7/2028	Granted	11/29/2011	US	Antenna Designs
13/280,278	Coverage Antenna Apparatus With Selectable Horizontal And Vertical Polarization Elements	8,704,720	4/22/2014	4/28/2026	Granted	4/22/2014	US	Antenna Designs
13/653,405	Coverage Antenna Apparatus With Selectable Horizontal And Vertical Polarization Elements	8,836,606	9/16/2014	6/1/2026	Granted	9/16/2014	US	Antenna Designs
14/487,593	Coverage Antenna Apparatus With Selectable Horizontal And Vertical Polarization Elements	9,093,758	7/28/2015	4/28/2026	Granted	7/28/2015	US	Antenna Designs
11/971,210	Pattern Shaping of RF Emission Patterns	7,893,882	2/22/2011	7/19/2029	Granted	2/22/2011	US	Antenna Designs
12/953,324	Pattern Shaping of RF Emission Patterns	8,085,206	12/27/2011	1/8/2028	Granted	12/27/2011	US	Antenna Designs
13/305,609	Pattern Shaping of RF Emission Patterns	8,358,248	1/22/2013	1/8/2028	Granted	1/22/2013	US	Antenna Designs
13/731,273	Pattern Shaping of RF Emission Patterns	8,686,905	4/1/2014	1/8/2028	Granted	4/1/2014	US	Antenna Designs
14/242,689	Pattern Shaping of RF Emission Patterns	9,270,029	2/23/2016	5/22/2028	Granted	2/23/2016	US	Antenna Designs
12/545,758	Mountable Antenna Elements For Dual Band Antenna	8,698,675	4/15/2014	4/2/2031	Granted	4/15/2014	US	Antenna Designs
14/252,857	Mountable Antenna Elements For Dual Band Antenna	9,419,344	8/16/2016	2/26/2030	Granted	8/16/2016	US	Antenna Designs
12/887,448	Antenna With Dual Polarization And Mountable Antenna Elements	9,407,012	8/2/2016	4/29/2031	Granted	8/2/2016	US	Antenna Designs

Application Serial Number	AppTitle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
13/607,612	Multiband Monopole Antenna Apparatus With Ground Plane Aperture	9,570,799	2/14/2017	7/3/2033	Granted	1/25/2017	US	Antenna Designs
12/545,796	Transmission And Reception Parameter Control	9,153,876	10/6/2015	8/9/2025	Granted	10/6/2015	US	Antenna Designs
14/637,381	System And Method For Providing A Certificate For Network Access				Filed	3/3/2015	US	Cloudpath
14/824,328	System And Method For Providing A certificate By Way Of A Browser Extension				Filed	8/12/2015	US	Cloudpath
14/882,323	System And Method For Managing Network Access With A Certificate Having Soft Expiration				Filed	10/13/2015	US	Cloudpath
14/882,372	System And Method For Managing Certificate Based Secure Network Access With A Certificate Having A Buffer Period Prior To Expiration				Filed	10/13/2015	US	Cloudpath
13/454,600	System And Method For Providing A Certificate To A User Request	9,032,499	5/12/2015		Granted	5/12/2015	US	Cloudpath
13/454,653	System And Method For Providing A Certificate To A Third Party Request	9,003,507	4/7/2015		Granted	4/7/2015	US	Cloudpath
13/454,691	System And Method For Providing A Certificate Based On Granted Permissions	9,137,234	9/15/2015		Granted	9/15/2015	US	Cloudpath
13/454,737	System And Method For Providing A Certificate Based On List Membership	9,137,235	9/15/2015		Granted	9/15/2015	US	Cloudpath
13/662,224	System And Method For Providing a Certificate For Network Access	8,843,741	9/23/2014		Granted	9/23/2014	US	Cloudpath
13/874,063	System And Method For Managing Network Access Based On A History Of A Certificate	9,037,849	5/19/2015		Granted	5/19/2015	US	Cloudpath
14/456,074	Wireless Services Gateway				Allowed	10/26/2016	US	Gateway & Mobile Core Integration
12/250,947	Femtocell Architecture In Support Of Voice And Data Communications	8,116,264	2/14/2012	7/24/2030	Granted	2/14/2012	US	Gateway & Mobile Core Integration
13/371,331	Femtocell Architecture In Support Of Voice And Data Communications	8,576,781	11/5/2013	10/14/2028	Granted	11/5/2013	US	Gateway & Mobile Core Integration
14/043,760	Wireless Architecture In Support Of Voice And Data Communications	8,855,058	10/7/2014	10/14/2028	Granted	10/7/2014	US	Gateway & Mobile Core Integration
11/234,072	Maintaining Consistent Network Connections While Moving Through Wireless Networks	8,238,326	8/7/2012	5/22/2030	Granted	8/7/2012	US	Gateway & Mobile Core Integration

Application Serial Number	AppTitle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
10/176,198	Method And System For Transparently And Security Interconnecting A WLAN Radio Access Network Into A GPRS/GSM Core Network	7,155,526	12/26/2006	6/16/2024	Granted	12/26/2006	US	Gateway & Mobile Core Integration
10/818,850	Mobile Cellular Network Selection From Wireless Lan	7,650,428	1/19/2010	9/26/2024	Granted	1/19/2010	US	Gateway & Mobile Core Integration
11/714,707	Increased Wireless Coverage Patterns	7,525,486	4/28/2009	12/23/2024	Granted	4/28/2009	US	Hardware Designs
95/001,078	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements	7,193,562	2/21/2012	12/23/2024	Granted	2/15/2012	US	Hardware Designs
15/403,117	Inhibiting Location Tracking Using Probe-Request Addresses				Filed	1/10/2017	US	Location Based Services
13/505,656	A Method And Apparatus For Determining Location Information Of A Position In A Multi-storey Building	8,385,943	2/6/2013		Granted	2/6/2013	US	Location Based Services
13/441,744	Computer Network Service Providing System Including Self Adjusting Volume Enforcement Functionality				Filed	4/1/2015	US	LTE/Cellular/ WiFi Integration
15/371,797	Cross Access Login Controller				Filed	12/8/2016	US	LTE/Cellular/ WiFi Integration
62/316,382	Reliable Communication in Shared-License Access Bands				Filed	3/31/2016	US	LTE/Cellular/ WiFi Integration
62/306,014	Concatenated Authentication and Authorization to Multiple Networks				Filed	3/9/2016	US	LTE/Cellular/ WiFi Integration
13/897,052	Cross Access Login Controller	9,055,073	6/9/2015	8/3/2033	Granted	6/9/2015	US	LTE/Cellular/ WiFi Integration
14/733,333	Cross Access Login Controller	9,548,983	1/17/2017		Granted	1/17/2016	US	LTE/Cellular/ WiFi Integration
14/503,133	Discovery of Cloud-Based Access-Point Controllers				Filed	9/30/2014	US	Management, Reporting, Analytics, Services Management
14/502,926	Avoiding Electronic Device Identification Errors				Filed	9/30/2014	US	Management, Reporting, Analytics, Services Management
14/986,508	Discovery and Security in LWA Communication				Filed	12/31/2015	US	Management, Reporting, Analytics, Services Management
15/532,847	Mac Based Mapping In IP Based Communications				Filed	2/14/2017	US	Management, Reporting, Analytics, Services Management
15/432,860	Modified Federation Architecture with Reduced Update Time				Filed	2/14/2017	US	Management, Reporting, Analytics, Services Management
62/436,997	Gathering Diagnostic Information for End-User Devices Having Network Connectivity Problems				Filed	12/20/2016	US	Management, Reporting, Analytics, Services Management
10201700756P	Anomaly Detection Based on Performance Indicators				Filed	1/31/2017	US	Management, Reporting, Analytics, Services Management
29/233,156	Wireless Local Area Network Device	D532,001	11/14/2006	11/14/2020	Granted	11/14/2006	US	Mechanical Design
29/292,091	Wireless Access Point	D596,628	7/21/2009	7/21/2023	Granted	7/21/2009	US	Mechanical Design
29/292,117	Wireless Access Point Cover	D595,705	7/7/2009	7/7/2023	Granted	7/7/2009	US	Mechanical Design

Application Serial Number	AppTitle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
29/292,464	Wireless Access Point Cover Base	D596,168	7/14/2009	7/14/2023	Granted	7/14/2009	US	Mechanical Design
29/307,082	Wireless Access Point	D596,635	7/21/2009	7/21/2023	Granted	7/21/2009	US	Mechanical Design
29/555,313	Wireless-Communication Dongle				Filed	2/19/2016	US	Mechanical design (form factor, attachments, etc)
29/533,643	Access Point Design				Allowed	12/13/2015	US	Mechanical Designs
13/461,679	Remote Cable Access Point Reset				Filed	2/4/2015	US	Other
14/814,681	Modeling Radio Frequency Coverage				Filed	7/31/2015	US	Other
15/153,522	Automated Access Point Provisioning				Filed	5/12/2016	US	Other
15/388,290	Provisioning Radios Associated With Access Points For Testing A Wireless Network				Filed	12/22/2016	US	Other
14/975,180	Multimedia Service Mirroring			12/18/2035	Filed	12/18/2015	US	Other
11/607,619	On-Demand Services By Wireless Base Station Virtualization	8,009,644	8/30/2011	9/17/2028	Granted	8/30/2011	US	Other
13/191,383	On-Demand Services By Wireless Base Station Virtualization	8,605,697	12/10/2013	9/7/2027	Granted	12/10/2013	US	Other
14/078,877	On-Demand Services By Wireless Base Station Virtualization	8,923,265	12/30/2014	12/11/2026	Granted	12/30/2014	US	Other
14/586,396	On-Demand Services By Wireless Base Station Virtualization	9,313,798	4/12/2016	11/13/2033	Granted	5/15/2015	US	Other
14/286,854	Out-of-Band Acknowledgment of Wireless Communication	9,497,717	11/12/2016		Granted	11/15/2016	US	Other
14/748,141	Distributed Access Point for IP Based Communications				Allowed	1/20/2017	US	RF Adaptive Algorithms
15/050,317	Wireless Network Throughput Enhancement Through Channel Aware Scheduling				Allowed	8/25/2016	US	RF Adaptive Algorithms
14/588,006	Mesh Network with Personal Pre-Shared Keys				Allowed	1/25/2017	US	RF Adaptive Algorithms
14/979,018	Increasing Reliable Data Throughput in a Wireless Network				Filed	12/22/2015	US	RF Adaptive Algorithms
14/177,634	Closed-Loop Automatic Channel Selection				Filed	4/17/2015	US	RF Adaptive Algorithms
12/947,800	Establishing A Mesh Network With Wired And Wireless Links				Filed	3/19/2015	US	RF Adaptive Algorithms
12/947,803	Determining Role Assignment In A Hybrid Mesh Network				Filed	3/12/2015	US	RF Adaptive Algorithms
14/855,079	Improving Distribution Of Clients Across A Network				Filed	9/15/2015	US	RF Adaptive Algorithms
14/855,107	Localizing A Multicast Service				Filed	9/15/2015	US	RF Adaptive Algorithms
15/338,246	Transmission And Reception Parameter Control				Filed	10/28/2016	US	RF Adaptive Algorithms
14/748,153	Performance Mapping			6/23/2035	Filed	6/23/2015	US	RF Adaptive Algorithms
15/403,087	Remedial Action Based on Monitored Wireless Throughput				Filed	1/10/2017	US	RF Adaptive Algorithms

Application Serial Number	Appritle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
14/278,419	Collision Protection Based on Packet Error Rate				Filed	5/14/2014	US	RF Adaptive Algorithms
15/403,100	Beamforming for a Multi-User MIMO Group				Filed	1/10/2017	US	RF Adaptive Algorithms
14/870,496	Remedial Action Based on Inter-Packet Receive Power				Filed	3/31/2016	US	RF Adaptive Algorithms
62/316,444	Rapidly Disseminated Operational Information for WLAN Management				Filed	3/31/2016	US	RF adaptive algorithms
15/432,868	Dynamic Selection of a Receive Antenna Pattern				Filed	2/14/2017	US	RF Adaptive Algorithms
12/008,715	Determining Associations in a Mesh Network	8,355,343	1/15/2013	12/19/2028	Granted	1/15/2013	US	RF Adaptive Algorithms
13/736,017	Determining Associations in a Mesh Network	8,780,760	7/15/2014	1/11/2028	Granted	7/15/2014	US	RF Adaptive Algorithms
12/719,006	Distributed Access Point for IP Based Communications	8,089,949	1/3/2012	1/21/2026	Granted	1/3/2012	US	RF Adaptive Algorithms
13/298,927	Distributed Access Point for IP Based Communications	8,634,402	1/21/2014	5/17/2026	Granted	1/21/2014	US	RF Adaptive Algorithms
14/160,402	Distributed Access Point for IP Based Communications	9,066,152	6/23/2015	9/20/2025	Granted	6/23/2015	US	RF Adaptive Algorithms
11/180,329	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	7,899,497	3/1/2011	12/2/2028	Granted	3/1/2011	US	RF Adaptive Algorithms
12/283,223	Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	7,877,113	1/25/2011	7/12/2025	Granted	1/25/2011	US	RF Adaptive Algorithms
13/037,250	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	8,150,470	4/3/2012	7/12/2025	Granted	4/3/2012	US	RF Adaptive Algorithms
11/232,196	Systems And Methods For Improved Data Throughput In Communications Networks	7,505,447	3/17/2009	11/28/2025	Granted	3/17/2009	US	RF Adaptive Algorithms
12/718,987	Mac Based Mapping In IP Based Communications	8,638,708	1/28/2014	5/4/2027	Granted	1/28/2014	US	RF Adaptive Algorithms
14/080,488	Mac Based Mapping In IP Based Communications	9,071,942	6/30/2015	9/20/2025	Granted	6/30/2015	US	RF Adaptive Algorithms
11/985,865	Communications Throughput with Unicast Packet Transmission Alternative	8,125,975	2/28/2012	2/5/2028	Granted	2/28/2012	US	RF Adaptive Algorithms
11/985,866	Communications Throughput with Multiple Physical Data Rate Transmission Determinations	7,787,436	8/31/2010	12/28/2025	Granted	8/31/2010	US	RF Adaptive Algorithms

Application Serial Number	AppTitle	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
11/267,477	Throughput Enhancement By Acknowledgment Suppression	9,240,868	1/19/2016	3/24/2028	Granted	1/19/2016	US	RF Adaptive Algorithms
13/548,798	Throughput Enhancement By Acknowledgment Suppression	8,824,357	9/2/2014	6/14/2026	Granted	9/2/2014	US	RF Adaptive Algorithms
11/413,293	Coverage Enhancement Using Dynamic Antennas	8,792,414	7/29/2014	5/30/2033	Granted	7/29/2014	US	RF Adaptive Algorithms
12/562,061	Coverage Enhancement Using Dynamic Antennas And Virtual Access Points	9,344,161	5/17/2016	4/28/2026	Granted	5/17/2016	US	RF Adaptive Algorithms
11/841,619	Closed-Loop Automatic Channel Selection	8,670,725	3/11/2014	9/14/2030	Granted	3/11/2014	US	RF Adaptive Algorithms
12/181,274	Wireless Network Throughput Enhancement Through Channel Aware Scheduling	8,547,899	10/1/2013	7/31/2031	Granted	10/1/2013	US	RF Adaptive Algorithms
14/028,323	Wireless Network Throughput Enhancement Through Channel Aware Scheduling	9,271,327	2/23/2016	7/28/2028	Granted	2/23/2016	US	RF Adaptive Algorithms
12/938,316	Unicast To Multicast Conversion	8,619,662	12/31/2013	4/28/2026	Granted	12/31/2013	US	RF Adaptive Algorithms
14/106,514	Unicast To Multicast Conversion	9,019,886	4/28/2015	9/20/2025	Granted	4/28/2015	US	RF Adaptive Algorithms
11/474,057	Transmission And Reception Parameter Control	7,933,628	4/26/2011	11/18/2028	Granted	4/26/2011	US	RF Adaptive Algorithms
12/575,422	Transmission And Reception Parameter Control	8,594,734	11/26/2013	8/23/2026	Granted	11/26/2013	US	RF Adaptive Algorithms
13/282,157	Transmission And Reception Parameter Control	8,583,183	11/12/2013	9/19/2025	Granted	11/12/2013	US	RF Adaptive Algorithms
13/340,425	Transmission And Reception Parameter Control	9,484,638	11/1/2016	7/12/2025	Granted	10/12/2016	US	RF Adaptive Algorithms
14/981,579	Dynamic Psk For Hotspots				Allowed	12/27/2016	US	Security and Authentication
14/751,833	Sharing Security Keys with Headless Devices				Filed	6/25/2015	US	Security and Authentication
14/692,485	Key Assignment For A Brand				Filed	3/23/2015	US	Security and Authentication
15/089,247	Secure Network Access Using Credentials				Filed	4/1/2016	US	Security and Authentication
14/747,930	Group Isolation in Wireless Networks			6/23/2035	Filed	6/23/2015	US	Security and Authentication
62/316,475	Key Management for Fast Transitions				Filed	3/31/2016	US	Security and Authentication
62/438,413	Cloud Authentication of Layer 2-Connected Member Deives via an IP-Connected Active Device				Filed	12/22/2016	US	Security and Authentication
11/788,371	Dynamic Authentication In Secured Wireless Networks	7,788,703	8/31/2010	9/12/2028	Granted	8/31/2010	US	Security and Authentication
11/789,446	Provisioned Configuration For Automatic Wireless Connection	9,071,583	6/30/2015	5/16/2028	Granted	6/30/2015	US	Security and Authentication
12/339,688	Dynamic Authentication In Secured Wireless Networks	7,669,232	2/23/2010	4/18/2027	Granted	2/23/2010	US	Security and Authentication

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12/845,089	Dynamic Authentication In Secured Wireless Networks	8,272,036	9/18/2012	4/18/2027	Granted	9/18/2012	US	Security and Authentication
13/590,997	Dynamic Authentication In Secured Wireless Networks	8,607,315	12/10/2013	4/18/2027	Granted	12/10/2013	US	Security and Authentication
14/078,947	Dynamic Authentication In Secured Wireless Networks	9,131,378	9/8/2015	4/18/2027	Granted	9/8/2015	US	Security and Authentication
13/370,201	Dynamic Psk For Hotspots	8,756,668	6/17/2014	2/9/2032	Granted	6/17/2014	US	Security and Authentication
14/294,012	Dynamic Psk For Hotspots	9,226,146	12/29/2015	2/9/2032	Granted	12/29/2015	US	Security and Authentication
13/439,844	Key Assignment For A Brand	9,092,610	7/28/2015	4/4/2032	Granted	7/28/2015	US	Security and Authentication
12/679,613	Authentication, Authorization And Accounting Services Solution	8,528,052	9/3/2013	6/6/2031	Granted	9/3/2013	US	Security and Authentication

ASSIGNMENT

Exhibit B

Non-US Patents

Application Serial Number	App Title	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	AT	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	BE	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	CH	Antenna Designs
201510921058.4	Adjustment Of Radiation Patterns Utilizing A Position Sensor				Filed	7/6/2016	CN	Antenna Designs
201310130004.7	System And Method For A Minimized Antenna Apparatus With Selectable Elements				Filed	4/3/2015	CN	Antenna Designs
201480015806.6	Low Band Reflector For Dual Band Directional Antenna				Filed	3/17/2014	CN	Antenna Designs
200780023325.X	Pin Diode Network For Multiband RF Coupling	ZL 200780023325.X	2/12/2014	4/12/2027	Granted	2/12/2014	CN	Antenna Designs
200780020943.9	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	ZL 200780020943.9	11/20/2013	4/12/2027	Granted	11/20/2013	CN	Antenna Designs
201210330398.6	Multiband Omnidirectional Planar Antenna Apparatus With Selectable Elements	ZL201210330398.6	7/13/2016	4/12/2027	Granted	7/13/2016	CN	Antenna Designs
200680048001.7	Antennas With Polarization Diversity	ZL200680048001.7	5/22/2013	12/26/2026	Granted	5/22/2013	CN	Antenna Designs
201180050872.3	Antenna With Dual Polarization And Mountable Antenna Elements	ZL201180050872.3	4/20/2016	9/21/2031	Granted	4/20/2016	CN	Antenna Designs
09014389.9	ADJUSTMENT OF RADIATION PATTERNS UTILIZING A POSITION SENSOR	602009037900.3	4/20/2016	12/3/2029	Granted	4/20/2016	DE	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	DE	Antenna Designs
602006044519.9	Antennas With Polarization Diversity	1964209	2/18/2015	12/26/2026	Granted	2/18/2015	DE	Antenna Designs
11827493.5	Antenna With Dual Polarization And Mountable Antenna Elements				Filed	5/11/2015	EP	Antenna Designs
13834691.1	Multiband Monopole Antenna Apparatus With Ground Plane Aperture				Filed	4/28/2015	EP	Antenna Designs
14754406.6	Low Band Reflector For Dual Band Directional Antenna				Filed	4/8/2016	EP	Antenna Designs
9014989.9	Adjustment of Radiation Patterns Utilizing a Position Sensor	2228868	4/20/2016	12/3/2029	Granted	10/21/2015	EP	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	7/14/2014	EP	Antenna Designs
6849122.5	Antennas With Polarization Diversity	1964209	2/18/2015		Granted	2/18/2015	EP	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	FI	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	FR	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	GB	Antenna Designs
13108046.2	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements				Filed	11/17/2013	HK	Antenna Designs
16107900.6	Low Band Reflector For Dual Band Directional Antenna				Filed	7/6/2016	HK	Antenna Designs
1323/MUMNP/2008	Antennas With Polarization Diversity	266895	6/13/2015	12/26/2026	Granted	6/13/2015	IN	Antenna Designs
5776913.5	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1782499	9/4/2013	7/29/2025	Granted	9/4/2013	IT	Antenna Designs
10-2015-7008927	Multiband Monopole Antenna Apparatus With Ground Plane Aperture				Filed	4/23/2015	KR	Antenna Designs
PCT/US07/09278	Pin Diode Network for Multiband RF Coupling				Nationalized	4/12/2007	PCT	Antenna Designs
PCT/US05/27023	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements				Nationalized	14-Jul-14	PCT	Antenna Designs
PCT/US07/09276	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements				Nationalized	12/23/2014	PCT	Antenna Designs
PCT/US2006/049211	System And Method For A Minimized Antenna Apparatus With Selectable Elements				Nationalized	9/19/2008	PCT	Antenna Designs

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PCT/US11/52661	Antenna With Dual Polarization And Mountable Antenna Elements				Nationalized	4/2/2013	PCT	Antenna Designs
PCT/US13/58713	Multiband Monopole Antenna Apparatus With Ground Plane Aperture				Nationalized	9/9/2013	PCT	Antenna Designs
PCT/US14/30911	Low Band Reflector For Dual Band Directional Antenna				Nationalized	9/18/2014	PCT	Antenna Designs
96114271.0	Pin Diode Network For Multiband RF Coupling	145162	9/1/2014	4/23/2027	Granted	9/1/2014	TW	Antenna Designs
94127953.0	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1384686	2/1/2013	8/16/2025	Granted	2/1/2013	TW	Antenna Designs
96114265.0	System And Method For An Omnidirectional Planar Antenna Apparatus With Selectable Elements	1372487	9/11/2012	4/22/2027	Granted	9/11/2012	TW	Antenna Designs
94141018.0	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements	1426653	2/11/2014	11/22/2025	Granted	2/11/2014	TW	Antenna Designs
PCT/US15/67542	Virtual-Machine Dataplane Having Fixed Interpacket Time				Filed	12/22/2015	PCT	Controller Functionality
PCT/US16/49520	Virtual-Machine Dataplane with DHCP-Server Functionality				Filed	8/30/2016	PCT	Gateway & Mobile Core Integration
US13/27701	Wireless Services Gateway				Nationalized	2/25/2013	PCT	Gateway & Mobile Core Integration
200580001608.0	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements	ZL200580001608.5	7/18/2012	7/29/2025	Granted	7/18/2012	CN	Hardware Designs
5776697.4	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements				Filed	7/23/2014	EP	Hardware Designs
7104718.6	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements	1097354	4/26/2013	7/29/2025	Granted	4/26/2013	HK	Hardware Designs
PCT/US05/27169	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements				Nationalized	2008	PCT	Hardware Designs
94127962.0	Circuit Board Having A Peripheral Antenna Apparatus With Selectable Antenna Elements	1360919	3/21/2012	8/15/2025	Granted	3/21/2012	TW	Hardware Designs
201180076211.8	A Method And Apparatus For Determining Location Information Of A Position In A Multi-storey Building				Filed		CN	Location Based Services
11 875 431.6	A Method And Apparatus For Determining Location Information Of A Position In A Multi-storey Building				Filed		EP	Location Based Services
PCT/US14/47317	Inhibiting Location Tracking Using Probe-Request Addresses				Filed	7/18/2014	PCT	Location Based Services
PCT/SG13/00206	Title: A Method And Apparatus For Recording Information From A Plurality Of Mobile Devices In An Area				Filed		PCT	Location Based Services
PCT/US14/70015	Calibration-Free Location Determination Using Wireless Communication				Filed	12/12/2014	PCT	Location Based Services
PCT/SG2011/000397	A Method And Apparatus For Determining Location Information Of A Position In A Multi-storey Building				Nationalized		PCT	Location Based Services
204202386-7	A Method And Apparatus For Determining Location Information Of A Position In A Multi-storey Building	189818	6/28/2013		Granted		SG	Location Based Services
103117600	Title: A Method And Apparatus For Recording Information From A Plurality Of Mobile Devices In An Area				Filed		TW	Location Based Services
201180064820.1	Cross Access Login Controller				Filed	6/2/2015	CN	LTE/Cellular/ WiFi Integration
201080055564.5	Computer Network Service Providing System Including Self Adjusting Volume Enforcement Functionality	ZL 201080055564.5	8/24/2016		Granted	8/24/2016	CN	LTE/Cellular/ WiFi Integration
10821674.8	Computer Network Service Providing System Including Self Adjusting Volume Enforcement Functionality				Filed	4/27/2012	EP	LTE/Cellular/ WiFi Integration
11842127.0	Cross Access Login Controller				Filed	5/23/2013	EP	LTE/Cellular/ WiFi Integration
15822331.5	Small-Cell Coverage Shaping				Filed	1/30/2017	EP	LTE/Cellular/ WiFi Integration
15822771.0	Small-Cell Coverage Shaping				Filed	1/30/2017	EP	LTE/Cellular/ WiFi Integration
13101948.6	Computer Network Service Providing System Including Self Adjusting Volume Enforcement Functionality				Filed	2/15/2013	HK	LTE/Cellular/ WiFi Integration
2012-532716	Computer Network Service Providing System Including Self Adjusting Volume Enforcement Functionality	5734299	4/24/2015	10/7/2030	Granted	4/24/2015	JP	LTE/Cellular/ WiFi Integration
2013-539400	Cross Access Login Controller	5982389	8/5/2016		Granted	8/5/2016	JP	LTE/Cellular/ WiFi Integration

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PCT/US15/40646	Small-Cell Coverage Shaping				Filed	7/15/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/68181	Neutral-Host-Network Venue-Specific Application Provisioning				Filed	12/30/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/40648	Schedule Aggregation and Antenna-Radiation-Pattern Optimization				Filed	7/15/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/68268	Operator Formed Network Consortiums				Filed	12/31/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/68184	Determining a Sounding Interval Based on Throughput				Filed	12/30/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/60937	Establishing LWA-WLAN Communication				Filed	11/16/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/68186	Synchronizing Indoor Radio Nodes				Filed	12/30/2015	PCT	LTE/Cellular/ WiFi Integration
PCT/US16/49276	Network Support for Locally Offloaded Traffic				Filed	8/29/2016	PCT	LTE/Cellular/ WiFi Integration
PCT/IL10/000815	Computer Network Service Providing System Including Self Adjusting Volume Enforcement Functionality				Nationalized	10/7/2010	PCT	LTE/Cellular/ WiFi Integration
IL11/050019	Cross Access Login Controller				Nationalized	11/17/2011	PCT	LTE/Cellular/ WiFi Integration
PCT/US15/052404	Discovery of Cloud-Based Access-Point Controllers				Filed	9/25/2015	PCT	Management, Reporting, Analytics, Services Management
200830210510.7	Wireless Access Point	ZL200830210510.7	2/10/2010	9/27/2018	Granted	2/10/2010	CN	Mechanical Design
000882725-0001	Wireless Access Point	882725	2/20/2008	2/20/2033	Granted	2/20/2008	European Community	Mechanical Design
000882725-0002	Wireless Access Point	882725	2/20/2008	2/20/2033	Granted	2/20/2008	European Community	Mechanical Design
001009500-0001	Wireless Access Point	1009500	10/5/2008	9/26/2033	Granted	10/6/2008	European Community	Mechanical Design
001009500-0002	Wireless Access Point	1009500	10/6/2008	9/26/2033	Granted	10/6/2008	European Community	Mechanical Design
94304938.0	Wireless Local Area Network Device	D113194	10/1/2006	8/15/2017	Granted	10/1/2006	TW	Mechanical Design
97305653.0	Wireless Access Point	D136568	8/21/2010	7/21/2023	Granted	8/21/2010	TW	Mechanical Design
98305230.0	Wireless Access Point	D138206	12/11/2010	7/21/2023	Granted	12/11/2010	TW	Mechanical Design
PCT/US14/69722	Low-Profile Clip for Reduced Electrical Noise				Filed	12/11/2014	PCT	Mechanical Designs
201280021332.7	Remote Cable Access Point Reset				Filed	12/15/2014	CN	Other
Not yet available	Automated Access Point Provisioning				Filed	7/8/2016	CN	Other
6838713.3	On-Demand Services By Wireless Base Station Virtualization	1958369	4/8/2015	12/1/2026	Granted	4/8/2015	DE	Other
12779857.7	Remote Cable Access Point Reset				Granted	7/6/2016	DE	Other
14163071.5	On-Demand Services By Wireless Base Station Virtualization	602012020244.0	7/5/2016	5/1/2032	Filed	1/26/2015	EP	Other
14861732.7	Automated Access Point Provisioning				Filed	6/8/2016	EP	Other
6838713.3	On-Demand Services By Wireless Base Station Virtualization	1958369	4/8/2015		Granted	4/8/2015	EP	Other
12779857.7	Remote Cable Access Point Reset				Granted	12/8/2015	EP	Other
12779857.7	Remote Cable Access Point Reset	12705429	7/6/2016	5/1/2032	Granted	7/6/2016	GB	Other
2014-509367	Remote Cable Access Point Reset	1606997	1/6/2017	5/1/2032	Granted	1/24/2017	JP	Other
PI 2013003985	Remote Cable Access Point Reset				Filed	5/8/2015	MY	Other
PCT/US14/65188	Automated Access Point Provisioning				Filed	11/12/2014	PCT	Other
PCT/US15/30573	Out-of-Band Acknowledgment of Wireless Communication				Filed	5/13/2015	PCT	Other
PCT/US14/72974	WLAN Testing Using an RF Abstraction Layer				Filed	12/31/2014	PCT	Other
PCT/US15/68347	Selective WLAN Processing Based on Preamble Information				Filed	12/31/2015	PCT	Other
PCT/US2006/045893	On-Demand Services By Wireless Base Station Virtualization				Nationalized	12/1/2006	PCT	Other
PCT/US12/36028	Remote Cable Access Point Reset				Nationalized	5/1/2012	PCT	Other
US14/24289	Modeling Radio Frequency Coverage				Nationalized	1/31/2014	PCT	Other
PCT/US14/72363	Provisioning Radios Associated With Access Points For Testing A Wireless Network			12/25/2016	Nationalized	12/22/2016	PCT	Other
103103766	Tool For Planning And Visualizing RF Coverage				Filed	2/5/2014	TW	Other
103139244	Automated Access Point Provisioning				Filed	11/12/2014	TW	Other

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103146285	Provisioning Radios Associated With Access Points For Testing A Wireless Network	1759543	2/11/2009	11/4/2025	Filed	12/24/2014	TW	Other
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	BE	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	CH	RF Adaptive Algorithms
201480028582.2	Improving Distribution of Clients Across a Network			3/14/2034	Filed	11/16/2015	CN	RF Adaptive Algorithms
201480028042.4	Localizing a Multicast Service			11/18/2028	Filed	11/13/2015	CN	RF Adaptive Algorithms
200580001531.1	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	ZL 200580001531.1	9/5/2012	7/29/2025	Granted	9/5/2012	CN	RF Adaptive Algorithms
200580001629.7	Systems and Methods for Improved Data Throughput in Communications Networks	ZL 200580001629.7	6/24/2015	11/4/2025	Granted	6/24/2015	CN	RF Adaptive Algorithms
201080002467.X	Establishing A Mesh Network With Wired And Wireless Links	ZL 201080002467.X	9/23/2015	11/16/2030	Granted	9/23/2015	CN	RF Adaptive Algorithms
5776630.5	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	1782639	5/8/2015	7/29/2025	Granted	4/7/2015	DE	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	DE	RF Adaptive Algorithms
8021224.4	Improved Communications Throughput With Multiple Physical Data Rate Transmission Determinations	2106178	8/24/2011	11/4/2025	Granted	2/27/2014	DE	RF Adaptive Algorithms
10011798.5	Mac Based Mapping In IP Based Communications	2278832	3/28/2012	11/4/2025	Granted	3/28/2012	DE	RF Adaptive Algorithms
10813061.8	Establishing A Mesh Network With Wired And Wireless Links	2350863	8/26/2015	11/16/2030	Granted	8/26/2015	DE	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	DK	RF Adaptive Algorithms
14762690.7	Improving Distribution of Clients Across a Network			3/14/2034	Filed	10/8/2015	EP	RF Adaptive Algorithms
14763341.6	Localizing a Multicast Service				Filed	10/8/2015	EP	RF Adaptive Algorithms
14897968.5	Beamforming for a Multi-User MIMO Group				Filed	2/13/2017	EP	RF Adaptive Algorithms
5776630.5	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	1782639	6/3/2015	7/29/2025	Granted	6/3/2015	EP	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	11-Feb-09	EP	RF Adaptive Algorithms
8021224.4	Improved Communications Throughput With Multiple Physical Data Rate Transmission Determinations	2106178	8/24/2011	11/4/2025	Granted	8/24/2011	EP	RF Adaptive Algorithms
10011798.5	Mac Based Mapping In IP Based Communications	2278832	3/28/2012	11/4/2025	Granted	2/27/2014	EP	RF Adaptive Algorithms
10813061.8	Establishing A Mesh Network With Wired And Wireless Links	2350863	8/26/2015	11/16/2030	Granted	8/26/2015	EP	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	FI	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	FR	RF Adaptive Algorithms
8021224.4	Improved Communications Throughput With Multiple Physical Data Rate Transmission Determinations	2106178	8/24/2011	11/4/2025	Granted	2/27/2014	FR	RF Adaptive Algorithms
10011798.5	Mac Based Mapping In IP Based Communications	2278832	3/28/2012	11/4/2025	Granted	3/28/2012	FR	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	GB	RF Adaptive Algorithms
8021224.4	Improved Communications Throughput With Multiple Physical Data Rate Transmission Determinations	2106178	8/24/2011	11/4/2025	Granted	2/27/2014	GB	RF Adaptive Algorithms
10011798.5	Mac Based Mapping In IP Based Communications	2278832	3/28/2012	11/4/2025	Granted	3/28/2012	GB	RF Adaptive Algorithms
10813061.8	Establishing A Mesh Network With Wired And Wireless Links	2350863	8/26/2015	11/16/2030	Granted	8/26/2015	GB	RF Adaptive Algorithms
7104495.5	Device And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	HK1097156	5/24/2013	7/29/2025	Granted	5/24/2013	HK	RF Adaptive Algorithms
7104205.6	Systems and Methods for Improved Data Throughput in Communications Networks	1096814	10/23/2009	11/4/2025	Granted	10/23/2009	HK	RF Adaptive Algorithms
11106373.5	Mac Based Mapping In IP Based Communications	1153077	9/7/2012	11/4/2025	Granted	9/7/2012	HK	RF Adaptive Algorithms

Application Serial Number	App Title	Patent Number	Issue Date	Expiration Date	Status	Status Date	Country	Technology Category
103102094.9	Improved Communications Throughput With Multiple Physical Data Rate Transmission Determinations	1136140	5/18/2012	11/4/2025	Granted	5/18/2012	HK	RF Adaptive Algorithms
13105010.0	Establishing A Mesh Network With Wired And Wireless Links	HK1178342	9/30/2016	11/16/2030	Granted	12/19/2016	HK	RF Adaptive Algorithms
W-00 2011 00594	Establishing A Mesh Network With Wired And Wireless Links				Filed	11/18/2013	ID	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	IE	RF Adaptive Algorithms
793/CHENP/2011	Establishing A Mesh Network With Wired And Wireless Links				Filed	10/31/2013	IN	RF Adaptive Algorithms
10-2015-7029123	Improving Distribution of Clients Across A Network			3/14/2034	Filed	10/13/2015	KR	RF Adaptive Algorithms
P1201000668	Establishing A Mesh Network With Wired And Wireless Links				Filed	11/19/2014	MY	RF Adaptive Algorithms
PCT/US14/29730	Improving Distribution Of Clients Across A Network				Filed	3/14/2014	PCT	RF Adaptive Algorithms
PCT/US14/29793	Localizing A Multicast Service				Filed	3/14/2014	PCT	RF Adaptive Algorithms
PCT/US14/47316	Remedial Action Based on Monitored Wireless Throughput				Filed	7/18/2014	PCT	RF Adaptive Algorithms
PCT/US15/52701	Remedial Action Based on Inter-Packet Received Power				Filed	9/28/2015	PCT	RF Adaptive Algorithms
PCT/US14/58272	Heuristic Method of Forming a WiFi Mesh Network				Filed	9/30/2014	PCT	RF Adaptive Algorithms
PCT/US16/23528	Rapidly Disseminated Operational Information for WLAN Management				Filed	4/1/2016	PCT	RF adaptive algorithms
PCT/US16/46279	Efficient Search Through an Antenna-Pattern Group				Filed	8/29/2016	PCT	RF adaptive algorithms
PCT/US08/14148	Determining Associations in a Mesh Network				Nationalized	11/5/2014	PCT	RF Adaptive Algorithms
PCT/US11/59019	Unitcast to Multicast Conversion				Nationalized	5/2/2013	PCT	RF Adaptive Algorithms
PCT/US05/26933	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements				Nationalized	7/27/2011	PCT	RF Adaptive Algorithms
PCT/US05/59760	Systems and Methods for Improved Data Throughput in Communications Networks				Nationalized	11/6/2007	PCT	RF Adaptive Algorithms
PCT/US06/26418	Coverage Enhancement Using Dynamic Antennas				Nationalized	11/5/2014	PCT	RF Adaptive Algorithms
PCT/US10/56308	Establishing A Mesh Network With Wired And Wireless Links				Nationalized	4/19/2012	PCT	RF Adaptive Algorithms
PCT/US14/47392	Beamforming for a Multi-User MIMO Group				Nationalized	7/31/2014	PCT	RF Adaptive Algorithms
1-2011-500365	Establishing A Mesh Network With Wired And Wireless Links				Filed	5/12/2015	PH	RF Adaptive Algorithms
05816101.4-2412	Systems and Methods for Improved Data Throughput in Communications Networks	1759543	2/11/2009	11/4/2025	Granted	2/11/2009	SE	RF Adaptive Algorithms
103109936	Improving Distribution Of Clients Across A Network				Filed	3/17/2014	TW	RF Adaptive Algorithms
103109932	Localizing A Multicast Service				Filed	3/17/2014	TW	RF Adaptive Algorithms
9417959.0	System And Method For Transmission Parameter Control For An Antenna Apparatus With Selectable Elements	1951790	11/1/2011	8/15/2025	Granted	11/4/2011	TW	RF Adaptive Algorithms
94138857.0	Systems and Methods for Improved Data Throughput in Communications Networks	1440370	6/1/2014	11/4/2025	Granted	6/1/2014	TW	RF Adaptive Algorithms
103106913.0	Improving Throughput in a Communications Network	1542228	7/11/2016	11/4/2025	Granted	7/11/2016	TW	RF Adaptive Algorithms
94138836.0	Throughput Enhancement By Acknowledgment Suppression	1991018	3/21/2013	11/4/2025	Granted	3/21/2013	TW	RF Adaptive Algorithms
95125286.0	Coverage Enhancement Using Dynamic Antennas	1442790	6/21/2014	7/11/2026	Granted	6/21/2014	TW	RF Adaptive Algorithms
201310291285.4	Dynamic Authentication In Secured Wireless Networks				Filed	5/21/2014	CN	Security and Authentication
201480064804.6	Secure Network Access Using Credentials				Filed	5/26/2016	CN	Security and Authentication
200780019074.8	Provisioned Configuration For Automatic Wireless Connection	ZL 200780019074.8	7/25/2012	4/23/2027	Granted	7/25/2012	CN	Security and Authentication
200780019385.2	Dynamic Authentication In Secured Wireless Networks	ZL 200780019385.2	8/14/2013	4/18/2027	Granted	8/14/2013	CN	Security and Authentication
7755678.5	Dynamic Authentication In Secured Wireless Networks	60 2007 047 273.3	8/3/2016	4/18/2027	Granted	8/3/2016	DE	Security and Authentication
7755678.5	Dynamic Authentication In Secured Wireless Networks	602007047273.3	8/3/2016	4/18/2027	Granted	11/9/2015	DE	Security and Authentication
7755913.6	Provisioned Configuration For Automatic Wireless Connection				Filed	4/13/2015	EP	Security and Authentication
14650219.8	Secure Network Access Using Credentials				Filed	4/28/2016	EP	Security and Authentication
7755678.5	Dynamic Authentication In Secured Wireless Networks	2013758	8/3/2016	4/18/2027	Granted	11/9/2016	EP	Security and Authentication

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7755678.5	Dynamic Authentication In Secured Wireless Networks	EP 2013758 B1	9/3/2016	4/18/2027	Granted	8/3/2016	GB	Security and Authentication
7755678.5	Dynamic Authentication In Secured Wireless Networks	2013758	8/3/2016	4/18/2027	Granted	11/9/2016	GB	Security and Authentication
PCT/US14/58409	Securing Network Access Using Credentials				Filed	9/30/2014	PCT	Security and Authentication
PCT/US16/25064	Virtual Device with Internet Protocol Security Tunnel				Filed	3/30/2016	PCT	Security and Authentication
PCT/US15/23340	Zero-Touch Onboarding in a Mesh Network				Filed	3/30/2015	PCT	Security and Authentication
PCT/US15/25541	Key Management For Fast Transitions				Filed	4/1/2016	PCT	Security and Authentication
PCT/US07/03836	Dynamic Authentication In Secured Wireless Networks				Nationalized	4/24/2008	PCT	Security and Authentication
PCT/US07/09503	Dynamic Authentication In Secured Wireless Networks				Nationalized	4/24/2008	PCT	Security and Authentication
PCT/US2013/025051	Dynamic Psk For Hotspots				Nationalized		PCT	Security and Authentication
PCT/US13/34997	Key Assignment For A Brand				Nationalized	8/28/2014	PCT	Security and Authentication
1108/001279	Authentication, Authorization And Accounting Services Solution				Nationalized	9/24/2008	PCT	Security and Authentication
102112203.D	Key Assignment For A Brand				Allowed	1/3/2017	TW	Security and Authentication
102105472.D	Dynamic Psk For Hotspots				Filed	11/14/2013	TW	Security and Authentication
103133967	Securing Network Access Using Credentials				Filed	9/30/2014	TW	Security and Authentication