# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4302612

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	GRANT OF FIRST PRIORITY AND JUNIOR PRIORITY SECURITY INTEREST IN PATENT RIGHTS

# **CONVEYING PARTY DATA**

Name	Execution Date	
CLEARWIRE IP HOLDINGS LLC	02/03/2017	

# **RECEIVING PARTY DATA**

Name:	DEUTSCHE BANK TRUST COMPANY AMERICAS
Street Address:	60 WALL STREET
Internal Address:	16TH FLOOR
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10005

# **PROPERTY NUMBERS Total: 198**

Property Type	Number
Patent Number:	6289037
Patent Number:	6333937
Patent Number:	6347236
Patent Number:	6389474
Patent Number:	6487235
Patent Number:	6501771
Patent Number:	6639935
Patent Number:	6643281
Patent Number:	6785300
Patent Number:	6968371
Patent Number:	7161922
Patent Number:	7177650
Patent Number:	7324495
Patent Number:	7526290
Patent Number:	7693530
Patent Number:	7720468
Patent Number:	7733814
Patent Number:	7769035
Patent Number:	7831213

<u>PATENT</u>

REEL: 041882 FRAME: 0875

504255932

Property Type	Number
Patent Number:	7843870
Patent Number:	7852787
Patent Number:	7920877
Patent Number:	7929497
Patent Number:	7929567
Patent Number:	7937063
Patent Number:	7948913
Patent Number:	7961610
Patent Number:	7970920
Patent Number:	7978724
Patent Number:	7983688
Patent Number:	8019385
Patent Number:	8023484
Patent Number:	8027646
Patent Number:	8031665
Patent Number:	8036136
Patent Number:	8036222
Patent Number:	8036225
Patent Number:	8045557
Patent Number:	8045561
Patent Number:	8050242
Patent Number:	8064410
Patent Number:	8068786
Patent Number:	8068838
Patent Number:	8068877
Patent Number:	8086249
Patent Number:	8107888
Patent Number:	8121090
Patent Number:	8125949
Patent Number:	8126428
Patent Number:	8130728
Patent Number:	8144639
Patent Number:	8155603
Patent Number:	8155658
Patent Number:	8170618
Patent Number:	8175032
Patent Number:	8175051
Patent Number:	8175596

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Patent Number:	8176198
Patent Number:	8185146
Patent Number:	8189525
Patent Number:	8200191
Patent Number:	8204448
Patent Number:	8213459
Patent Number:	8213949
Patent Number:	8219079
Patent Number:	8233434
Patent Number:	8233448
Patent Number:	8239900
Patent Number:	8239911
Patent Number:	8248983
Patent Number:	8250423
Patent Number:	8259600
Patent Number:	8279872
Patent Number:	8285291
Patent Number:	8285292
Patent Number:	8289852
Patent Number:	8295235
Patent Number:	8295774
Patent Number:	8305979
Patent Number:	8311573
Patent Number:	8311574
Patent Number:	8312337
Patent Number:	8326305
Patent Number:	8331302
Patent Number:	8331319
Patent Number:	8332711
Patent Number:	8339970
Patent Number:	8340610
Patent Number:	8355722
Patent Number:	8358624
Patent Number:	8359063
Patent Number:	8369268
Patent Number:	8370491
Patent Number:	8370872
Patent Number:	8396039

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Patent Number:	8406712
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Patent Number:	8423065
Patent Number:	8423068
Patent Number:	8423854
Patent Number:	8424085
Patent Number:	8446887
Patent Number:	8451814
Patent Number:	8453029
Patent Number:	8453234
Patent Number:	8458293
Patent Number:	8472941
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Patent Number:	8478331
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Patent Number:	8488548
Patent Number:	8489137
Patent Number:	8503368
Patent Number:	8503399
Patent Number:	8503945
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Patent Number:	8520646
Patent Number:	8521214
Patent Number:	8542653
Patent Number:	8553567
Patent Number:	8553596
Patent Number:	8554242
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Patent Number:	8576719
Patent Number:	8588855
Patent Number:	8605586
Patent Number:	8614990
Patent Number:	8620322

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Patent Number:	8621513
Patent Number:	8634423
Patent Number:	8644154
Patent Number:	8644301
Patent Number:	8649282
Patent Number:	8681638
Patent Number:	8681660
Patent Number:	8682392
Patent Number:	8699423
Patent Number:	8699445
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Patent Number:	8717981
Patent Number:	8731034
Patent Number:	8750878
Patent Number:	8756470
Patent Number:	8768358
Patent Number:	8781441
Patent Number:	8797945
Patent Number:	8804688
Patent Number:	8805379
Patent Number:	8811925
Patent Number:	8825865
Patent Number:	8830985
Patent Number:	8842525
Patent Number:	8873502
Patent Number:	8874782
Patent Number:	8879386
Patent Number:	8891442
Patent Number:	8904527
Patent Number:	8908571
Patent Number:	8908592
Patent Number:	8917713
Patent Number:	8954514
Patent Number:	8989804
Patent Number:	9001817
Patent Number:	9025505
Patent Number:	9036588
Patent Number:	9088909

Property Type	Number
Patent Number:	9137719
Patent Number:	9166762
Patent Number:	9198147
Patent Number:	9204346
Patent Number:	9204483
Patent Number:	9226307
Patent Number:	9232364
Patent Number:	9236895
Patent Number:	9247514
Patent Number:	9253705
Patent Number:	9258754
Patent Number:	9276723
Patent Number:	9277517
Patent Number:	9357436
Patent Number:	9461917
Patent Number:	9474054
Patent Number:	9497494
Patent Number:	9521187
Patent Number:	9014698
Application Number:	12819887
Application Number:	13959521
Application Number:	14179201
Application Number:	14317384
Application Number:	14531767
Application Number:	14532349
Application Number:	15001946
Application Number:	15204320

#### **CORRESPONDENCE DATA**

**Fax Number:** (212)455-2502

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.

**Phone:** (212) 455-3605

Email: ksolomon@stblaw.com

Correspondent Name: GENEVIEVE DORMENT, ESQ.

Address Line 1: SIMPSON THACHER & BARTLETT LLP

Address Line 2: 425 LEXINGTON AVENUE

Address Line 4: NEW YORK, NEW YORK 10017

ATTORNEY DOCKET NUMBER: 509265/1490

NAME OF SUBMITTER:	GENEVIEVE DORMENT	
SIGNATURE:	/gd/	
DATE SIGNED:	03/03/2017	

#### **Total Attachments: 15**

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# GRANT OF FIRST PRIORITY AND JUNIOR PRIORITY SECURITY INTEREST IN PATENT RIGHTS

This GRANT OF FIRST PRIORITY AND JUNIOR PRIORITY SECURITY INTEREST IN PATENT RIGHTS ("Agreement"), effective as of February 3, 2017 is made by CLEARWIRE IP HOLDINGS LLC, a New York limited liability company (the "Grantor"), located at 6200 Sprint Parkway, Overland Park, KS 66251, in favor of DEUTSCHE BANK TRUST COMPANY AMERICAS, as Collateral Trustee (in such capacity, the "Collateral Trustee") under the Collateral Trust Agreement, dated as of February 3, 2017 (the "Collateral Trust Agreement"), among, inter alia, Grantor, Sprint Communications, Inc., the Collateral Trustee and various Holder Representatives.

#### WITNESSETH:

WHEREAS, pursuant to various Secured Instruments certain Secured Parties have made extensions of credit and other accommodations to the Grantor upon the terms and subject to the conditions set forth therein;

WHEREAS, in connection with the Collateral Trust Agreement, the Grantor has executed and delivered a Security Agreement, dated as of February 3, 2017, in favor of the Collateral Trustee (together with all amendments and modifications, if any, from time to time thereafter made thereto, the "Security Agreement");

WHEREAS, pursuant to the Security Agreement, the Grantor has (x) pledged and granted to the Collateral Trustee, for the benefit of the First Priority Secured Parties, a continuing security interest in all Intellectual Property, including its Patents and (y) pledged and granted to the Collateral Trustee, for the benefit of the Junior Priority Secured Parties, a continuing security interest in all Intellectual Property, including its Patents; and

WHEREAS, the Grantor has duly authorized the execution, delivery and performance of this Agreement;

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and to induce the Secured Parties to enter into their respective Secured Instruments and to induce the Secured Parties to make their respective extensions of credit or other accommodations to the Grantor thereunder, the Grantor hereby agrees with the Collateral Trustee, for the applicable ratable benefit of the First Priority Secured Parties and Junior Priority Secured Parties, as follows:

**SECTION 1. Definitions**. Unless otherwise defined herein or the context otherwise requires, terms used in this Agreement, including its preamble and recitals, have the meanings provided or provided by reference in the Collateral Trust Agreement and the Security Agreement.

SECTION 2. Grant of Security Interest to First Priority Secured Parties. The Grantor hereby pledges and grants a continuing security interest in all of the Grantor's right, title and interest in, to and under the Patents, including the Patents listed on Schedule A hereto (the "Collateral"), to the Collateral Trustee for the benefit of the First Priority Secured Parties to secure payment, performance and observance of the First Priority Secured Obligations. Notwithstanding the foregoing, the Collateral does not and shall not include any Excluded Assets.

SECTION 3. Grant of Security Interest to Junior Priority Secured Parties. The Grantor hereby pledges and grants a continuing security interest in all of the Grantor's right, title and

interest in, to and under the Collateral to the Collateral Trustee for the benefit of the Junior Priority Secured Parties to secure payment, performance and observance of the Junior Priority Secured Obligations.

SECTION 4. Purpose. This Agreement has been executed and delivered by the Grantor for the purpose of recording the grant of security interest herein with the United States Patent and Trademark Office. The security interest granted hereby has been granted to the Collateral Trustee for the benefit of the First Priority Secured Parties and Junior Priority Secured Parties in connection with the Security Agreement and is expressly subject to the terms and conditions thereof. The Security Agreement (and all rights and remedies of the Collateral Trustee and the Secured Parties thereunder) shall remain in full force and effect in accordance with its terms.

SECTION 5. Acknowledgment. The Grantor does hereby further acknowledge and affirm that the rights and remedies of the Collateral Trustee and the Secured Parties with respect to the security interest in the Collateral granted hereby are more fully set forth in the Collateral Trust Agreement and the Security Agreement, the terms and provisions of which (including the remedies provided for therein) are incorporated by reference herein as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the terms of the Security Agreement, the terms of the Security Agreement shall govern.

**SECTION 6. Counterparts**. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together constitute one and the same original.

(Remainder of the page intentionally left blank)

509265-1490-15867-Active.21010040.1

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the day and year first above written.

CLEARWIRE IP HOLDINGS LLC, as Grantor

By:

Name: Janet M. Duncan

Title: Vice President and Treasurer

# DEUTSCHE BANK TRUST COMPANY AMERICAS, as Collateral Trustee

By:

Name: Randy Kahn Title: Vice President

By:

Name: Deirdre Lewis Title: Vice President

REEL: 041882 FRAME: 0885

Schedule A

U.S. Patent Registrations and Applications

Owner	Title	Application Number	Patent Number	Filed/Issued Date
Clearwire IP Holdings LLC	OUT OF CHANNEL CRC METHOD	08/803,831	6,289,037	09/11/01
Clearwire IP Holdings LLC	ACCESS RETRY METHOD FOR SHARED CHANNEL	09/035,287	6,333,937	12/25/01
Clearwire IP Holdings LLC	REMOTE WIRELESS UNIT HAVING REDUCED POWER	08/803,835	6,347,236	02/12/02
Clearwire IP Holdings LLC	ACCESSING A SHARED CHANNEL USING A TIME SLOT	09/148,317	6,389,474	05/14/02
Clearwire IP Holdings LLC	DELAY COMPENSATION	09/138,745	6,487,235	11/26/02
Clearwire IP Holdings LLC	DELAY COMPENSATION	09/270,987	6,501,771	12/31/02
Clearwire IP Holdings LLC	OUT OF CHANNEL CRC METHOD	09/902,730	6,639,935	10/28/03
Clearwire IP Holdings LLC	SYNCHRONIZATION PREAMBLE METHOD FOR OFDM WAVEFORMS IN A COMMUNICATIONS SYSTEM	09/035,210	6,643,281	11/04/03
Clearwire IP Holdings LLC	DELAY COMPENSATION	10/272,272	6,785,300	08/31/04
Clearwire IP Holdings LLC	DESIGN FOR SCALABLE NETWORK MANAGEMENT SYSTEMS	09/572,193	6,968,371	11/22/05
Clearwire IP Holdings LLC	DYNAMICALLY ASSIGNING TIME SLOTS	10/917,825	7,161,922	01/09/07
Clearwire IP Holdings LLC	METHOD AND APPARATUS FOR USE IN REDUCING OVERUTILIZATION OF RF COMMUNICATION SYSTEM RESOURCES	09/609,021	7,177,650	02/13/07
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR BROADCASTING TIMING INFORMATION TO REMOTE UNITS IN A WIRELESS MULTIPLE ACCESS NETWORK	09/592,820	7,324,495	01/29/08
Clearwire IP Holdings LLC	ESTABLISHING A COMMUNICATION CHANNEL IN A WIRELESS NETWORK	10/958,679	7,526,290	04/28/09
Clearwire IP Holdings LLC	RANGING RESOURCE ALLOCATION FOR WIRELESS DEVICES IN NETWORKS PROVING ACCESS BY WI-MAX AND LIKE PROTOCOLS	11/731,670	7,693,530	04/06/10
Clearwire IP Holdings LLC	POLLING METHODS FOR USE IN A WIRELESS COMMUNICATIONS SYSTEM	09/597,016	7,720,468	05/18/10
Clearwire IP Holdings LLC	SEPARATION AND COMBINATION OF MULTIPLE CHANNELS IN A BI-DIRECTIONAL TIME-DIVISION COMMUNICATION SYSTEM	12/122,899	7,733,814	06/08/10
Clearwire IP Holdings LLC	FACILITATING A CHANNEL CHANGE BETWEEN MULTIPLE MULTIMEDIA DATA STREAMS	11/777,741	7,769,035	08/03/10
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR CONFIGURING A TOWER TOP LOW NOISE AMPLIFIER	11/948,723	7,831,213	11/09/10

Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF SUPPORTING MULTIPLE WIRELESS COMMUNICATION TECHNOLOGIES	11/593,476	7,843,870	11/30/10
Clearwire IP Holdings LLC	EXTENSIBLE MICRO-MOBILITY WIRELESS NETWORK ARCHITECTURE	12/054,237	7,852,787	12/14/10
Clearwire IP Holdings LLC	USING BASE-STATION LOCATION TO ASSIST MOBILE- DEVICE SYSTEM ACQUISITION	12/147,901	7,920,877	04/05/11
Clearwire IP Holdings LLC	MOBILE STATION SERVICE SESSION HANDOFF	12/020,675	7,929,497	04/19/11
Clearwire IP Holdings LLC	DATA RATE MANAGEMENT	12/180,767	7,929,567	04/19/11
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR CONFIGURING A TOWER TOP LOW NOISE AMPLIFIER	11/847,023	7,937,063	05/03/11
Clearwire IP Holdings LLC	COMMUNICATIONS DATA IN VARIOUS MODES USING HEADER-COMPRESSION ALGORITHMS	12/261,794	7,948,913	05/24/11
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR OVERLOAD CONTROL	12/062,192	7,961,610	06/14/11
Clearwire IP Holdings LLC	DYNAMIC TWO-DIMENSIONAL CODING FOR APPLICATIONS	12/334,705	7,970,920	06/28/11
Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF ALLOCATING RADIO RESOURCES	12/021,665	7,978,724	07/12/11
Clearwire IP Holdings LLC	ESTABLISHING A COMMUNICATION CHANNEL IN A WIRELESS NETWORK	12/427,672	7,983,688	07/19/11
Clearwire IP Holdings LLC	LOAD SIMULATION FOR TESTING UPLINK OF WIRELESS NETWORKS	11/971,554	8,019,385	09/13/11
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR OBTAINING A MOBILE INTERNET PROTOCOL ADDRESS	12/264,955	8,023,484	09/20/11
Clearwire IP Holdings LLC	COMMUNICATION SYSTEM AND METHOD FOR FILTERING AND ATTENUATING A SIGNAL BETWEEN AN ANTENNA SYSTEM AND A BASE STATION	12/251,657	8,027,646	09/27/11
Clearwire IP Holdings LLC	CONNECTION IDENTIFIER RESERVATION IN A WIRELESS COMMUNICATION SYSTEM	12/211,272	8,031,665	10/04/11
Clearwire IP Holdings LLC	SYSTEM AND METHOD OF ALLOCATING SUB- CHANNELS	12/046,554	8,036,136	10/11/11
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR OBTAINING A MOBILE INTERNET PROTOCOL ADDRESS	12/264,968	8,036,222	10/11/11
Clearwire IP Holdings LLC	ENHANCED RANGING IN WIMAX	12/121,230	8,036,225	10/11/11
Clearwire IP Holdings LLC	GROUP COMMUNICATION THROUGH BROADCAST CHANNELS	12/040,454	8,045,557	10/25/11
Clearwire IP Holdings LLC	TWO STAGE TRAFFIC SCHEDULING	12/112,713	8,045,561	10/25/11
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR TAILORING WIMAX DEVICE PROVISIONING BASED ON DEVICE CAPABILITY INFORMATION COMMUNICATED TO NETWORK	11/680,714	8,050,242	11/01/11

Clearwire IP Holdings LLC	METHODS AND DEVICES FOR SCHEDULING TRANSMISSIONS IN A WIRELESS NETWORK BASED ON TRAFFIC PRIORITY AND CHANNEL CONDITIONS	12/548,921	8,064,410	11/22/11
Clearwire IP Holdings LLC	METHOD FOR REDUCING TIME OF FLIGHT INTERFERENCE IN WIRELESS COMMUNICATION NETWORK	12/388,391	8,068,786	11/19/11
Clearwire IP Holdings LLC	MOBILE COMMUNICATIONS DEVICE INITIATED HAND-OFF BASED ON AIR INTERFACE METRICS	12/193,926	8,068,838	11/29/11
Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF ANTENNA SELECTION	11/780,783	8,068,877	11/29/11
Clearwire IP Holdings LLC	RANGING OF WIRELESS COMMUNICATION NETWORKS WITH DISTANT WIRELESS LINKS	12/197,597	8,086,249	12/27/11
Clearwire IP Holdings LLC	COMMUNICATION OPERATING MODE SELECTION BASED ON MULTI-PATH SIGNAL POWER MEASUREMENT	12/397,702	8,107,888	01/31/12
Clearwire IP Holdings LLC	MOBILE COMMUNICATION DEVICE INITIATED HAND- OFF BASED ON WIRELESS BASE STATION PRIORITY	12/181,924	8,121,090	02/21/12
Clearwire IP Holdings LLC	DYNAMIC ALLOCATION OF WIMAX RANGING CODES	12/124,307	8,125,949	02/28/12
Clearwire IP Holdings LLC	SUBSCRIBER MANAGEMENT SYSTEM FOR A COMMUNICATION NETWORK	12/186,451	8,126,428	02/28/12
Clearwire IP Holdings LLC	DYNAMIC TRANSMISSION OF DCD AND UCD MESSAGES IN A WIMAX NETWORK	12/235,948	8,130,728	03/06/12
Clearwire IP Holdings LLC	DYNAMIC MODE TRANSITION BASED ON RESOURCE UTILIZATION AND USER APPLICATION	12/271,084	8,144,639	03/27/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD TO UTILIZE WHITE SPACE OR THE VACANT TV AIRWAVES IN 4G NETWORKS	12/416,983	8,155,603	04/10/12
Clearwire IP Holdings LLC	METHODS AND SYSTEMS FOR PROVIDING DYNAMIC BANDWIDTH ADAPTATION IN WIRELESS SYSTEMS	12/254,899	8,155,658	04/10/12
Clearwire IP Holdings LLC	MEASURING SIGNAL STRENGTH IN A MULTIPLE- INPUT OUTPUT ANTENNA ENVIRONMENT	12/197,745	8,170,618	05/01/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR RADIO FREQUENCY RESOURCE ALLOCATION	11/517,365	8,175,032	05/08/12
Clearwire IP Holdings LLC	HYBRID SCHEME FOR DL LINK ADAPTATION	12/474,872	8,175,051	05/08/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD OF EXTENDING BASE STATION COVERAGE	12/170,481	8,175,596	05/08/12
Clearwire IP Holdings LLC	CONFIGURABLE DOWNLOAD TIMING AND REWARD SYSTEM IN A DATA NETWORK	12/549,024	8,176,198	05/08/12

Clearwire IP Holdings LLC	QUALITY OF SERVICE BASED DOWNLINK POWER ALLOCATION	12/509,130	8,185,146	05/22/12
Clearwire IP Holdings LLC	SOLUTION FOR INE/HO LB BOTTLE NECK	12/488,271	8,189,525	05/29/12
Clearwire IP Holdings LLC	TREATMENT OF DEVICES THAT FAIL AUTHENTICATION	11/672,833	8,200,191	06/12/12
Clearwire IP Holdings LLC	ADAPTIVE CONTROL OF CQI REPORT PERIOD USING CHANNEL CONDITION	12/537,973	8,204,448	06/19/12
Clearwire IP Holdings LLC	SYSTEMS AND METHODS FOR ESTABLISHING A DATA PATH BETWEEN A MOBILE STATION AND A HOME ACCESS SERVICE NETWORK GATEWAY	12/508,715	8,213,459	07/03/12
Clearwire IP Holdings LLC	ADJUSTABLE MODULATION FOR OVERHEAD INFORMATION IN WIRELESS COMMUNICATION NETWORKS	12/324,228	8,213,949	07/03/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR MICROWAVE TRAFFIC ROUTING	12/510,896	8,219,079	07/10/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR ADAPTIVE CONTROL OF AN AVERAGING PARAMETER FOR PCINR AND RSSI	12/434,047	8,233,434	07/31/12
Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR SCHEDULER IMPLEMENT FOR BEST EFFORT PRIORITZATION AND ANTI-STARVATION	12/545,959	8,233,448	07/31/12
Clearwire IP Holdings LLC	VIDEO BURSTING BASED ON WIRELESS DEVICE LOCATION	12/199,468	8,239,900	08/07/12
Clearwire IP Holdings LLC	VIDEO BURSTING BASED UPON MOBILE DEVICE PATH	12/255,930	8,239,911	08/07/12
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR CONTROLLING THE PROVISION OF MEDIA CONTENT TO MOBILE STATIONS	12/109,502	8,248,983	08/21/12
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR IMPROVING PERFORMANCE OF BROADCAST/MULTICAST TRANSMISSIONS	12/410,008	8,250,423	08/21/12
Clearwire IP Holdings LLC	AIR INTERFACE QUALITY	12/139,232	8,259,600	09/04/12
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR OBTAINING A MOBILE INTERNET PROTOCOL ADDRESS	12/265,000	8,279,872	10/02/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR MULTIMODE DEVICE HANDOVER	12/698,384	8,285,291	10/09/12
Clearwire IP Holdings LLC	DETECTION OF CROSS-CONNECTION BETWEEN A WIRELESS LOOP NETWORK AND ANOTHER LOOP NEWORK AT A SUBSCRIBER'S PREMISES	09/502,655	8,285,292	10/09/12
Clearwire IP Holdings LLC	SETTING TOKEN BUCKET PARAMETERS FOR SCHEDULING OF AIR-INTERFACE RESOURCES	12/388,038	8,289,852	10/16/12

Clearwire IP Holdings LLC	LOAD BALANCING MULTIPLE AMONG MULTIPLE CARRIERS IN A SECTOR	12/403,542	8,295,235	10/23/12
Clearwire IP Holdings LLC	METHODS AND APPARATUSES FOR PROVIDING A STABLE WIDEBAND NOISE SIGNAL	11/960,511	8,295,774	10/23/12
Clearwire IP Holdings LLC	MANAGING MULTIPLE APPLICATION FLOWS OVER AN ACCESS BEARER IN A QUALITY OF SERVICE POLICY ENVIRONMENT	12/554,503	8,305,979	11/06/12
Clearwire IP Holdings LLC	QUALITY OF SERVICE BASED DOWNLINK POWER ALLOCATION	13/454,261	8,311,573	11/13/12
Clearwire IP Holdings LLC	QUALITY OF SERVICE BASED DOWNLINK POWER ALLOCATION	13/454,538	8,311,574	11/13/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR DYNAMIC HYBRID AUTOMATIC REPEAT REQUEST (HARQ) ENABLE/DISABLE	12/434,063	8,312,337	11/13/12
Clearwire IP Holdings LLC	SYSTEMS AND METHODS FOR SELECTIVELY PRE- REGISTERING DATA PATHS FOR MOBILE STATIONS	12/508,694	8,326,305	12/04/12
Clearwire IP Holdings LLC	APPARATUS AND METHOD OF DYNAMIC DOWNLINK PERMUTATION ASSIGNMENT FOR USE IN A WIRELESS COMMUNICATION SYSTEM	12/821,813	8,331,302	12/11/12
Clearwire IP Holdings LLC	PRIORITY USERS SECTOR SWITCHING BASED ON BACKHAUL TRAFFIC OPTIMZATION AND MOBILITY FACTOR IN WIMAX NETWORK	12/487,905	8,331,319	12/11/12
Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF INFORMATION TRANSMISSION	12/479,913	8,332,711	12/11/12
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR NETWORK OPTIMIZATION	12/753,663	8,339,970	12/25/12
Clearwire IP Holdings LLC	MULTI-CARRIER SELECTION	12/372,949	8,340,610	12/25/12
Clearwire IP Holdings LLC	SERVICE INITIATION BASED ON ALTERNATIVE RESOURCES AND QOS	12/188,248	8,355,722	01/15/13
Clearwire IP Holdings LLC	BIDIRECTIONAL UPLINK/DOWNLINK HANDOFF	12/270,204	8,358,624	01/22/13
Clearwire IP Holdings LLC	MULTI-ANTENNA MODE BASED CALL ADMISSION CONTROL	12/257,545	8,359,063	01/22/13
Clearwire IP Holdings LLC	MULTIPLE DEVICE TO ONE-ANTENNA COMBINING CIRCUIT AND METHODS OF USING SAME	12/614,010	8,369,268	02/05/13
Clearwire IP Holdings LLC	OPEN MOBILE ALLIANCE PROVISIONING VIA A GLOBAL WIMAX DEVICE REGISTRY	11/765,779	8,370,491	02/05/13
Clearwire IP Holdings LLC	BROADCAST CHANNELS OF STREAMING MEDIA CONTENT IN A WIRELESS TELELCOMMUNICATIONS NETWORK	12/235,229	8,370,872	02/05/13

Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR MULTIMODE DEVICE HANDOVER	12/760,987	8,396,039	03/12/13
Clearwire IP Holdings LLC	EXTENDED RANGE VOICE OVER IP WIMAX DEVICE	12/432,643	8,406,712	03/26/13
Clearwire IP Holdings LLC	DYNAMIC UPLINK/DOWNLINK CAPACITY ALLOCATION IN A COMMUNICATION NETWORK	12/169,704	8,423,035	04/16/13
Clearwire IP Holdings LLC	METHOD COMPUTER-READABLE MEDIUM FOR DYNAMIC RATE CAPPING	12/487,743	8,423,065	04/16/13
Clearwire IP Holdings LLC	QUALITY OF SERVICE BASED MULTI-ANTENNA MODE SWITCHING	12/369,880	8,423,068	04/16/13
Clearwire IP Holdings LLC	COMMUNICATION RETRANSMISSION BASED ON TRANSMISSION PERFORMANCE RELATIVE TO EXPECTED QUALITY OF SERVICE	12/396,166	8,423,854	04/16/13
Clearwire IP Holdings LLC	DETECTING A DENIAL OF SERVICE ATTACK	12/500,656	8,424,085	04/16/13
Clearwire IP Holdings LLC	METHODS AND DEVICES FOR SCHEDULING TRANSMISSIONS IN A WIRELESS NETWORK BASED ON TRAFFIC PRIORITY AND CHANNEL CONDITIONS	13/276,010	8,446,887	05/21/13
Clearwire IP Holdings LLC	CARRIER SIGNALS FOR SYNCHRONIZATION	12/814,206	8,451,814	05/28/13
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR IMPROVING PERFORMANCE OF BROADCAST/MULTICAST TRANSMISSIONS	13/544,528	8,453,029	05/28/13
Clearwire IP Holdings LLC	CENTRALIZED SECURITY MANAGEMENT SYSTEM	11/533,586	8,453,234	05/28/13
Clearwire IP Holdings LLC	NETWORK ACCESS FOR NON-NETWORK ENABLED DEVICES	12/016,006	8,458,293	06/04/13
Clearwire IP Holdings LLC	POLLING METHODS FOR USE IN A WIRELESS COMMUNICATIONS SYSTEM	12/697,089	8,472,941	06/25/13
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR DETERMINING WIRELESS CHIPSET PERFORMANCE	12/099,866	8,478,263	07/02/13
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR TRANSMITTING STREAMING MEDIA CONTENT TO WIRELESS SUBSCRIBER STATIONS	11/876,949	8,478,331	07/02/13
Clearwire IP Holdings LLC	APPARATUS AND METHOD OF DYNAMIC DOWNLINK PERMUTATION ASSIGNMENT FOR USE IN A WIRELESS COMMUNICATION SYSTEM	13/553,633	8,483,167	07/09/13
Clearwire IP Holdings LLC	HYBRID SCHEME FOR DL LINK ADAPTATION	13/444,274	8,488,548	07/16/13
Clearwire IP Holdings LLC	INTERFERENCE MITIGATION	12/185,966	8,489,137	07/16/13
Clearwire IP Holdings LLC	MACRO-NETWORK LOCATION DETERMINATION, LOCAL-OSCILLATOR STABILIZATION, AND FRAME- START SYNCHRONIZATION BASED ON NEARBY FM RADIO SIGNALS	13/023,269	8,503,368	08/06/13
Clearwire IP Holdings LLC	MANAGEMENT OF WIMAX TONES TO AVOID INTER- MODULATION INTERFERENCE	13/607,228	8,503,399	08/06/13

Clearwire IP Holdings LLC	MEASURING SIGNAL STRENGTH IN A MULTIPLE- INPUT OUTPUT ANTENNA ENVIRONMENT	13/435,041	8,503,945	08/06/13
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR ADAPTIVE CONTROL OF AN AVERAGING PARAMETER FOR PCINR AND RSSI	13/546,590	8,509,156	08/13/13
Clearwire IP Holdings LLC	ALLOCATION OF SIGNAL QUALITY FEEDBACK BANDWIDTH	12/175,696	8,515,444	08/20/13
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR MANAGING TRAFFIC IN A WIRELESS COMMUNICATION SYSTEM	12/712,651	8,520,538	08/27/13
Clearwire IP Holdings LLC	EFFICIENT IN-BAND BACKHAUL	12/248,707	8,520,590	08/27/13
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR CONTROLLING THE PROVISION OF MEDIA CONTENT TO MOBILE STATIONS	13/549,616	8,520,604	08/27/13
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR SYNCHRONIZING WIRELESS DEVICES WITH A COMMUNICATION NETWORK	12/842,066	8,520,633	08/27/13
Clearwire IP Holdings LLC	RANGING OF WIRELESS COMMUNICATION NETWORKS WITH DISTANT LINKS	12/180,036	8,520,646	08/27/13
Clearwire IP Holdings LLC	ADAPTIVE CONTROL OF CQI REPORT PERIOD USING CHANNEL CONDITION	13/475,192	8,521,214	08/27/13
Clearwire IP Holdings LLC	MOBILE COMMUNICATION DEVICE INITIATED HAND- OFF BASED ON WIRELESS BASE STATION PRIORITY	13/350,242	8,542,653	09/24/13
Clearwire IP Holdings LLC	PACKET DROPPING BASED ON RF CONDITIONS	12/139,346	8,553,567	10/08/13
Clearwire IP Holdings LLC	SELECTION OF PEER TO PEER PROVIDERS IN A WIRELESS NETWORK	12/248,735	8,553,596	10/08/13
Clearwire IP Holdings LLC	METHODS AND SYSTEMS FOR PROVIDING DYNAMIC BANDWIDTH ADAPTATION IN WIRELESS SYSTEMS	13/411,853	8,554,242	10/08/13
Clearwire IP Holdings LLC	MOBILE COMMUNICATIONS DEVICE INITIATED HAND-OFF BASED ON AIR INTERFACE METRICS	13/281,427	8,571,558	10/29/13
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR DYNAMICALLY BALANCING A MAXIMUM NUMBER OF ACTIVE REMOTE DEVICE USERS BETWEEN BASE STATIONS	12/985,933	8,576,719	11/05/13
Clearwire IP Holdings LLC	MEASURING SIGNAL STRENGTH IN A MULTIPLE- INPUT OUTPUT ANTENNA ENVIRONMENT	13/435,031	8,588,855	11/19/13
Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR LOAD BALANCING	13/046,832	8,605,586	12/10/13
Clearwire IP Holdings LLC	WIRELESS DEVICE HANDOFF BASED UPON DYNAMIC FACTORS	12/324,179	8,614,990	12/24/13
Clearwire IP Holdings LLC	METHOD AND SYSTEM OF HANDOVER BASED ON CHANNEL QUALITY AND LOADING	12/760,546	8,620,322	12/31/13

Clearwire IP Holdings LLC	BROADCAST CHANNELS OF STREAMING MEDIA CONTENT IN A WIRELESS TELELCOMMUNICATIONS NETWORK	13/757,447	8,621,513	12/31/13
Clearwire IP Holdings LLC	DETERMINING A QUALITY-OF-SERVICE PRIOR TO REGISTERING A WIRELESS	11/735,033	8,634,423	01/21/14
Clearwire IP Holdings LLC	PREDICTIVE THROUGHPUT MANAGEMENT	12/389,475	8,644,154	02/04/14
Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF SUPPORTING EMERGENCY COMMUNICATIONS	12/955,466	8,644,301	02/04/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR COMBINED MAC LEVEL MESSAGE WITH CQI CHANNEL CONTROL MESSAGE FOR CHANNEL FEEDBACK REPORT	12/762,701	8,649,282	02/11/14
Clearwire IP Holdings LLC	WIRELESS COMMUNICATION SYSTEM	12/533,846	8,681,638	03/25/14
Clearwire IP Holdings LLC	ENABLING COEXISTENCE BETWEEN FDD AND TDD WIRELESS NETWORKS	12/896,494	8,681,660	03/25/14
Clearwire IP Holdings LLC	MULTIMODE BASE STATION AND METHOD OF OPERATION	13/338,096	8,682,392	03/25/14
Clearwire IP Holdings LLC	WIRELESS SLOT ALLOCATION	12/139,308	8,699,423	04/15/14
Clearwire IP Holdings LLC	WIRELESS COMMUNICATION SYSTEM	12/533,889	8,699,445	04/15/14
Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR DETERMINING NUMBER OF RETRANSMISSION IN A WIRELESS SYSTEM	13/049,310	8,700,965	04/15/14
Clearwire IP Holdings LLC	PRIORITY ALLOCATION OF CONTENTION RESOURCES	12/113,615	8,717,981	05/06/14
Clearwire IP Holdings LLC	METHOD AND SYSTEM OF PAYLOAD ENCODING AND MODULATION FOR CHANNEL QUALITY FEEDBACK	13/053,405	8,731,034	05/20/14
Clearwire IP Holdings LLC	METHOD AND SYSTEM OF DETERMINING WHETHER A MOBILE STATION IS LOCATED INSIDE A COVERAGE AREA OF A NARROW BAND REPEATER AND USING THE DETERMINATION IN A HANDOVER PROCEDURE	12/759,195	8,750,878	06/10/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR DYNAMIC HYBRID AUTOMATIC REPEAT REQUEST (HARQ) ENABLE/DISABLE	13/674,580	8,756,470	06/17/14
Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF BANDWIDTH ALLOCATION DURING HANDOFF	12/503,949	8,768,358	07/01/14
Clearwire IP Holdings LLC	DECISION ENVIRONMENT FOR DEVICES THAT FAIL AUTHENTICATION	11/672,823	8,781,441	07/15/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR HYRBID SCHEMES FOR MIMO MODE DECISION	12/434,029	8,797,945	08/05/14
Clearwire IP Holdings LLC	DYNAMIC PERMUTATION CONFIGURATION TO ALTER PILOT CLUSTERING	12/539,268	8,804,688	08/12/14

Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR MULTIMODE DEVICE HANDOVER	13/647,079	8,805,379	08/12/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR PROVIDING EXTERNAL RECEIVER GAIN COMPENSATION WHEN USING AN ANTENNA WITH A PRE-AMPLIFIER	12/481,697	8,811,925	08/19/14
Clearwire IP Holdings LLC	TRAFFIC PLANNING IN A NETWORK USING A VARIABLE OVERSUBSCRIPTION FACTOR	13/439,938	8,825,865	09/02/14
Clearwire IP Holdings LLC	ENABLING COEXISTENCE BETWEEN FDD AND TDD WIRELESS NETWORKS	13/660,545	8,830,985	09/09/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR EXTENDING A WIRELESS COMMUNICATION COVERAGE AREA OF A CELLULAR BASE TRANSCEIVER STATION (BTS)	12/575,691	8,842,525	09/23/14
Clearwire IP Holdings LLC	CARRIER SELECTION	12/372,814	8,873,502	10/28/14
Clearwire IP Holdings LLC	CONFIGURABLE DOWNLOAD TIMING AND REWARD SYSTEM IN A DATA NETWORK	13/444,291	8,874,782	10/28/14
Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR SCHEDULER IMPLEMENT FOR BEST EFFORT PRIORITZATION AND ANTI-STARVATION	13/409,768	8,879,386	11/04/14
Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR DUAL-MODE WIMAX/CDMA OPERATION	12/495,154	8,891,442	11/18/14
Clearwire IP Holdings LLC	CENTRALIZED SECURITY MANAGEMENT SYSTEM	13/903,231	8,904,527	12/02/14
Clearwire IP Holdings LLC	ENABLING COEXISTENCE BETWEEN WIRELESS NETWORKS	13/160,273	8,908,571	12/09/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR UPLINK POWER CONTROL	13/016,633	8,908,592	12/09/14
Clearwire IP Holdings LLC	METHOD FOR THE BS TO ACQUIRE RANGING RESULTS AND RELEASE MS CONTEXT FOR WIMAX OFDMA SYSTEMS	12/835,256	8,917,713	12/23/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR DISPLAYING TIME- SENSITIVE ALERTS IN A MOBILE DEVICE	12/644,792	8,954,514	02/10/15
Clearwire IP Holdings LLC	PROXIMITY BASED RADIO MANAGEMENT	12/610,794	8,989,804	03/24/15
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR MAINTAINING WIRELESS LINKS IN A COMMUNICATION NETWORK	12/835,284	9,001,817	04/07/15
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR PROVIDING QUALITY OF SERVICE TO VOICE-OVER-IP TRAFFIC ON A WIRELESS RADIO ACCESS NETWORK	12/723,235	9,025,505	05/05/15
Clearwire IP Holdings LLC	HYBRID SCHEME FOR DL LINK ADAPTATION	13/921,919	9,036,588	05/19/15

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Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR TRANSMITTING STREAMING MEDIA CONTENT TO WIRELESS SUBSCRIBER STATIONS	13/919,526	9,088,909	07/21/15
Clearwire IP Holdings LLC	MULTI-FREQUENCY REAL-TIME DATA STREAM HANDOFF	12/606,319	9,137,719	09/15/15
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR COMBINED MAC LEVEL MESSAGE WITH CQI CHANNEL CONTROL MESSAGE FOR CHANNEL FEEDBACK REPORT	14/050,013	9,166,762	10/20/15
Clearwire IP Holdings LLC	CARRIER SIGNALS FOR SYNCHRONIZATION	13/872,010	9,198,147	11/24/15
Clearwire IP Holdings LLC	DYNAMIC CONFIGURATION OF BASE STATION SETTINGS FOR CONTROLLING HANDOVER TO PREFERRED COVERAGE FREQUENCY	14/246,769	9,204,346	12/01/15
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR OBTAINING A MOBILE INTERNET PROTOCOL ADDRESS	13/605,798	9,204,483	12/01/15
Clearwire IP Holdings LLC	METHODS AND DEVICES FOR SCHEDULING TRANSMISSIONS IN A WIRELESS NETWORK BASED ON TRAFFIC PRIORITY AND CHANNEL CONDITIONS	13/862,070	9,226,307	12/29/15
Clearwire IP Holdings LLC	METHOD, APPARATUS AND COMPUTER-READABLE MEDIUM FOR IMPROVING PUSH-TO-TALK CALL SETUP SPEED	12/467,393	9,232,364	01/05/16
Clearwire IP Holdings LLC	PHASE FILTER FOR RADIO FREQUENCY (RF) SIGNALS	14/274,039	9,236,895	01/12/16
Clearwire IP Holdings LLC	MACRO-NETWORK LOCATION DETERMINATION, LOCAL-OSCILLATOR STABILIZATION, AND FRAME- START SYNCHRONIZATION BASED ON NEARBY FM RADIO SIGNALS	13/935,225	9,247,514	01/26/16
Clearwire IP Holdings LLC	RESOLVING HANDOVER IN PRESENCE OF COVERAGE AREA IDENTIFIER CONFLICT	14/175,027	9,253,705	02/02/16
Clearwire IP Holdings LLC	APPARATUS AND METHOD FOR MULTIMODE DEVICE HANDOVER	13/793,122	9,258,754	02/09/16
Clearwire IP Holdings LLC	SYSTEMS AND METHODS OF TRANSMISSION OF USER DATA PACKETS	12/118,917	9,276,723	03/01/16
Clearwire IP Holdings LLC	MACRO-NETWORK LOCATION DETERMINATION, LOCAL-OSCILLATOR STABILIZATION, AND FRAME- START SYNCHRONIZATION BASED ON NEARBY FM RADIO SIGNALS	13/935,220	9,277,517	03/01/16
Clearwire IP Holdings LLC	METHOD AND SYSTEM FOR TRANSMITTING STREAMING MEDIA CONTENT TO WIRELESS SUBSCRIBER STATIONS	13/919,453	9,357,436	05/31/16
Clearwire IP Holdings LLC	CONTROLLING BASE STATION POWER STATUS BASED ON QUALITY OF SERVICE LOAD	14/242,645	9,461,917	10/04/16

Clearwire IP Holdings LLC	MANAGEMENT OF RESOURCE ALLOCATION IN A WIRELESS COMMUNICATION SYSTEM	14/171,258	9,474,054	10/18/16
Clearwire IP Holdings LLC	BROADCAST SERVICE CHANNEL OPTIMIZATION FOR TV SERVICES	12/040,532	9,497,494	11/15/16
Clearwire IP Holdings LLC	MANAGED FILE TRANSFER SYSTEM, METHOD AND APPARATUS	13/941,281	9,521,187	12/13/16
Clearwire IP Holdings LLC	HANDOVER CANCELLATION IN 16M	13/047,464	9.014,698	04/21/15
Clearwire IP Holdings LLC	PAGING CYCLE MANAGEMENT IN WIMAX NETWORK	12/819,887		06/21/10
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR ADAPTIVE CONTROL OF AN AVERAGING PARAMETER FOR PCINR AND RSSI	13/959,521		08/05/13
Clearwire IP Holdings LLC	PROACTIVE NEIGHBOR LIST OPTIMIZATION FOR AUTOMATIC NEIGHBOR RELATION IN A CELLULAR WIRELESS NETWORK	14/179,201		02/12/14
Clearwire IP Holdings LLC	SYSTEM AND METHOD FOR MULTIMODE DEVICE HANDOVER	14/317,384		06/27/14
Clearwire IP Holdings LLC	CARRIER SIGNALS FOR SYNCHRONIZATION	14/531,767		11/03/14
Clearwire IP Holdings LLC	CARRIER SIGNALS FOR SYNCHRONIZATION	14/532,349		11/04/14
Clearwire IP Holdings LLC	MACRO-NETWORK LOCATION DETERMINATION, LOCAL-OSCILLATOR STABILIZATION, AND FRAME- START SYNCHRONIZATION BASED ON NEARBY FM RADIO SIGNALS	15/001,946		01/20/16
Clearwire IP Holdings LLC	CONTROLLING BASE STATION POWER STATUS BASED ON QUALITY OF SERVICE LOAD	15/204,320		07/07/16

**RECORDED: 03/03/2017**