

RELEASE TERMS

This RELEASE AGREEMENT ("**Release Agreement**") is entered into by and between Bell Northern Research, LLC a Delaware limited liability company with a principal place of business at 401 N. Michigan Ave, Suite 1630, Chicago, IL 6061 (including its Affiliates, as defined below) ("**Licensor**"), and OnePlus Technology (Shenzhen) Co., Ltd, a Chinese corporation with a principal place of business at 18F Tairan Building, Block C, Tairan 8th Road, Chegongmiao, Futian District, Shenzhen, Guangdong 518040 (including its Affiliates), ("**OnePlus**"), on the last date when this Release Agreement has been executed by both Licensor and OnePlus (the "**Effective Date**").

"**Affiliate(s)**" of an Entity shall mean any and all Entities, past, present, or future, that are or were Controlled, directly or indirectly, by the Entity, but only for so long as such Control existed or exists.

"**Claims**" shall mean any and all claims, counterclaims, third-party claims, contribution claims, indemnity claims, demands, actions, liabilities, damages, losses, causes of action, and all other claims of every kind and nature in law or equity, whether arising under state, federal, international or other law, which arise from or relate to in any way the Patents or which are (currently or in the future) or were asserted in, could have been asserted in, or which arise from the same transactions or occurrences as those claims that are (currently or in the future) or were asserted in the Licensor Litigation, whether such claims are absolute or contingent, in tort, contract or otherwise, direct or indirect, past, present or future, known or unknown, that exist or may have existed prior to the Effective Date.

"**Combined Licensed Product and Service**" shall mean any past, present or future combination or use, whether by OnePlus, OnePlus's Affiliate, or a third party, of a Licensed Product and Service with any other product, service, technology, or material, but only if such Licensed Product and Service provided by or on behalf of OnePlus or OnePlus Affiliate (i) only has a reasonable and intended use to practice any Patent, and (ii) embodies essential features of the patented invention in such Patent.

"**Control**" shall mean the legal, beneficial, and/or equitable ownership of more than fifty percent (50%) of (i) the voting power representing the right to vote for directors or other managing authority, (ii) equity ownership interest in an Entity, or (iii) other ownership interest in an Entity.

"**Effective Date**" shall have the meaning ascribed to it in the preamble.

"**Entity**" shall mean a corporation, association, partnership, business trust, joint venture, limited liability company, proprietorship, unincorporated association, individual or other entity that can exercise independent legal standing.

"**Licensed Product and Service**" shall mean any past, present or future product, software, technology, design, material or service (including any components, devices, data, media or any other portions thereof) at any time, made, have made, used, purchased, provided, hosted, sold,

leased, licensed, distributed, transmitted, exported, imported or offered for sale, lease, or import alone or in combination with other products, software, technology, materials and services, the manufacture, use, purchase, provision, hosting, sale, lease, license, distribution, export, import (or offer for sale, lease or import) of which would result in infringement (direct, indirect, or otherwise) of any Patents, irrespective of whether the product, service, software, technology, or material (including any components, devices, data, media, or any other portions thereof) were or had been made, used, purchased, provided, hosted, sold, leased, licensed, distributed, transmitted, exported, imported or offered for sale, lease, or import in the United States. Licensed Product and Service will include any Combined Licensed Product and Service.

“**Licensor**” shall have the meaning ascribed to it in the preamble.

“**Licensor Litigation**” shall mean Bell Northern Research, LLC v OnePlus USA Corp., Civil Action No. 3:21-cv-02293-X (N.D. Tex.); and Certain Electronic Devices Having Wireless Communication Capabilities and Components Thereof, Inv. No. 337-TA-1284 (U.S.I.T.C.).

“**Patents**” shall mean: (i) the patents and patent applications identified on Schedule 1, together with any and all patents and patent applications that are owned, controlled or licensable as of the Effective Date or later by Licensor and/or its Affiliates, and any and all foreign counterparts of any of the foregoing; (ii) any and all patents that have issued or may issue from any of the patents or patent applications described in (i) of this definition; (iii) any and all patents and patent applications that, in whole or in part, claim priority to (directly or indirectly), or the benefit of the filing date of, any of the patents or patent applications described in (i) or (ii) of this definition, including any and all child, continuation, continuation-in-part, continuing prosecution, divisional, provisional, non-provisional, reissue, reexamination, substitution, post-issuance trial certificate, extension and counterpart patents and patent applications of any of the patents or patents applications described in (i) or (ii) of this definition; (iv) any and all patents and patent applications from which any of the patents or patent applications described in (i) or (ii) of this definition, in whole or in part, claim the benefit of priority (directly or indirectly) or otherwise claim the benefit of the filing date, including any and all parent patents or patent applications of any of the patents or patent applications described in (i) or (ii) of this definition; and (v) any and all extensions or renewals of any of the patent or patent applications described in this definition. Any one of the foregoing is a “Patent”.

“**Release Agreement**” shall have the meaning ascribed to it in the preamble.

Mutual Release.

Except with respect to the obligations created by or arising out of this Release Agreement, Licensor does hereby for itself and its respective legal successors, Affiliates, heirs and assigns, irrevocably release and absolutely discharge OnePlus, each OnePlus Affiliate, and each of OnePlus’s and each OnePlus Affiliate’s respective direct and indirect customers, suppliers, have-made vendors, manufacturers, other contractors, licensees, developers, users (including end users), distributors, dealers, employees, representatives, agents, officers, directors, parents, subsidiaries, past and present (each, a “Covered Third Party”), of and from any and all Claims based in whole or in part on acts of OnePlus or any OnePlus Affiliate prior to the Effective Date of this Release Agreement. To the extent that, after the Effective Date, Licensor or its Affiliates owns any right, title or interest

in, or has exclusive license rights (or the right to grant rights) under, any patents or patent applications that are not expressly listed on Schedule 1, then (i) such patents and patent applications are intended to be, and shall be treated as if they are, included on Schedule 1; and (ii) the release granted in the foregoing sentence with respect to such patents and patent applications shall become effective immediately as of the first date that each such patent or patent application becomes owned, controlled, or licensable by Licensor or its Affiliates. The release granted in this paragraph further extends to Covered Third Parties, solely to the extent of their use, purchase, sale, importation, offer for sale or distribution of OnePlus's and/or its Affiliates' Licensed Products or Services.

Except with respect to the obligations created by or arising out of this Release Agreement, OnePlus, each OnePlus Affiliate³, and each of their respective legal successors, heirs and assigns, release and absolutely discharge Licensor, and each of Licensor's employees, representatives, agents, officers, directors, parents, subsidiaries, past and present, solely of and from any and all Claims, demands, damages, debts, liabilities, accounts, reckonings, obligations, costs, expenses, liens, attorneys' fees, actions and causes of action of every kind and nature whatever, arising out of the institution, filing, prosecution and resolution of the Licensor Litigation. Nothing in this Release Agreement, however, shall extinguish, impair or otherwise affect any defense, Claim, or position of OnePlus that the Patents are not infringed, invalid and/or not enforceable. Accordingly, with respect to any defenses, Claims, and/or challenges relating to the Patents, OnePlus shall be in the same position as though the Licensor Litigation had never been brought.

The parties acknowledge and agree that this Release Agreement fully and finally releases and forever resolves the Licensor Litigation, including those Claims identified above involving the Patents and the Licensed Products and Services that are unknown, unanticipated or unsuspected or that may hereafter arise as a result of the discovery of new and/or additional facts. The parties acknowledge and understand the significance and potential consequence of the release of unknown claims. The parties intend that the claims released under this Release Agreement be construed as broadly as possible and agree to waive and relinquish all rights and benefits each may have under Section 1542 of the Civil Code of the State of California, or any similar statute or law of any other jurisdiction. Section 1542 reads as follows: "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY."

IPRs. OnePlus (or its Affiliate, as applicable) and Licensor will mutually cooperate to request termination of proceedings related to any *inter partes reviews* (or other invalidity or nullity proceedings before the PTO or any other US or foreign court or administrative body) of any Patent ("IPR"), but only to the extent that Licensor and OnePlus (or its Affiliates, as applicable) possess the power to terminate such proceedings. Such request for the termination of proceedings related to any such IPR will be made immediately (and in any event, within five (5) days of the appropriate tribunal granting the dismissal) after a fully-executed dismissal with prejudice with respect to any Licensor Litigation pending against OnePlus and/or its Affiliates is filed with the applicable court. In the event an invalidity or nullity proceeding is not terminated, OnePlus and its Affiliates will withdraw from such proceedings. All fees and costs will be borne by the party that incurred them,

both for Licensor Litigations and IPRs.

No Admission of Liability. The Parties agree that the settlement of the Licensor Litigation is intended solely as a compromise of the disputed claims, and without any acknowledgment of liability, fault, damages, or any other merits of the Licensor Litigation.

Notice. Any notice or communication required or permitted to be given by either Party hereunder shall be in written form and shall be considered to be sufficiently given if mailed by registered or certified mail or transmitted by overnight courier, addressed to the Parties hereto as follows:

To Licensor:

Bell Northern Research, LLC
401 N. Michigan Ave., Suite 1630
Chicago, IL 60611
ATTN: Lynn Wilson
Email: lwilson@hilcoglobal.com

To OnePlus:

OnePlus Technology (Shenzhen) Co., Ltd
18F Tairan Building, Block C, Tairan 8th Road, Chegongmiao
Futian District, Shenzhen, Guangdong 518040
ATTN: Legal Department
Email: ip@oneplus.com

Or to such changed address as the addressee shall have specified by written notice in accordance with this provision.

Governing Law. The Parties hereto agree that this Release Agreement shall be considered to have been made in, and construed and interpreted in accordance with the substantive laws of the State of California of the United States of America.

Disputes. The Parties hereto shall use their best efforts to resolve by mutual agreement any disputes, controversies or differences that may arise from, under, out of or in connection with the Release Agreement. If any such disputes, controversies or differences cannot be settled between the Parties hereto within thirty (30) days, they shall be finally brought in federal district court in OnePlus's choice of venue, and the Parties hereby submit to the jurisdiction of, and waive any venue objections against such venue. Should such venue lack jurisdiction, the Parties hereby submit to the exclusive jurisdiction of the state courts of the State chosen by OnePlus.

Representations and Warranties. Licensor represents and warrants that it is a limited liability company in good standing under the laws of the state of D; that it has the authority to enter into this Agreement; and that this Agreement is valid, binding and enforceable in accordance with its terms. Licensor further represents and warrants that it has sufficient right, title, and interest to grant the release conveyed in this Release Agreement. OnePlus represents and warrants that it is a

corporation in good standing under the laws of the People's Republic of China. OnePlus further represents and warrants that it has the authority to enter into this Release Agreement; and that this Release Agreement is valid, binding and enforceable in accordance with its terms.

Confidentiality. Neither Party will disclose the terms or existence of this Agreement, except:

1. As required by any law, rule, regulation, order, discovery request, subpoena or other governmental requirement (including public reporting requirements); provided that such disclosure is made pursuant to a protective order or agreement providing confidentiality protections at least as stringent as those provided in this paragraph, to the extent possible;
2. To such Party's accountants, attorneys, financial advisors and other professionals engaged by such Party, as reasonably required for their performance of services for such Party; provided that such disclosure will be governed by the confidentiality provisions set forth herein;
3. As reasonably required for due diligence in connection with any proposed assignment of this Agreement or any transaction involving OnePlus or a OnePlus Affiliate; provided that such disclosure will be governed by the confidentiality provisions set forth herein;
4. A Party may disclose any information that becomes part of the public domain without a breach of this Section by the disclosing Party;
5. With the prior written consent of the other Party;
6. Both Parties may disclose that "the dispute between the parties has been resolved;"
7. OnePlus may disclose in the course of any legal proceeding to support any claim or defense; provided that such disclosure is made pursuant to a protective order or agreement providing confidentiality protections at least as stringent as those provided in this paragraph, to the extent possible;
8. OnePlus may disclose to any OnePlus Affiliate or Covered Third Party only the fact that Licensor has licensed the Patents and granted a release to OnePlus, the OnePlus Affiliates, and the Covered Third Parties in connection with any activity related to Licensed Products and Services, and has covenanted not to sue with respect to the Patents; provided that such disclosure will be governed by the confidentiality provisions set forth herein. The OnePlus Affiliate(s) shall have the same confidentiality obligations as the Parties herein and specifically set forth in this section.

No Right to Terminate. Neither Party may terminate this Release Agreement without the express, written consent of the other Party.

No Domestic Industry. Licensor agrees on behalf of itself, its Affiliates, and their successors and assigns not to claim that the rights conveyed to OnePlus in this Release Agreement or OnePlus's alleged practice of any Patents are evidence of a domestic industry pursuant to Section 337(a) of the Tariff Act of 1930 or any similar foreign or domestic statute, and hereby irrevocably waives any such argument.

Entire Agreement. This Release Agreement constitutes the entire agreement between the Parties concerning the subject matter hereof and supersedes all written and oral prior agreements and understandings with respect thereto. No variation or modification of the terms of this Release Agreement, nor any waiver of any of the terms or provisions hereof, shall be valid unless in writing and signed by an authorized representative of each Party.

Counterparts. This Release Agreement may be executed in two counterparts in the English language and each such counterpart shall be deemed an original thereof. Facsimile signatures or signatures delivered by e-mail in .pdf or similar format will be deemed original signatures for purposes of this Release Agreement.

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IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed as of the Effective Date. Each individual signing below represents and warrants that he or she has authority to sign for and enter into this Agreement on behalf of his or her respective Party.

Agreed to:

Bell Northern

By: _____  _____

Name: Afzal Dean

Title: President

Date: Jan 18, 2022

Agreed to:

OnePlus Technology (Shenzhen) Co., Ltd

By: _____  _____

Name: Yori Xiao

Title: IP Counsel

Date: Jan 18, 2022

SCHEDULE 1PATENTS**EXHIBIT B**PATENTS

| Fam | Patent No. | Publication No. | Application Number | Country | Status | Title | File Date | Pub. Date |
|------------|-------------------|------------------------|---------------------------|----------------|---------------|--|------------------|------------------|
| 1 | | | US60/350660 | US | Expired | Wireless LAN chipset having baseband processor and direct conversion radio | 1/22/2002 | |
| 1 | US6980774 | | US10/103365 | US | Expired | Radio frequency integrated circuit | 3/21/2002 | 12/27/2005 |
| 1 | US7421250 | | US11/223170 | US | Expired | Radio frequency integrated circuit | 9/9/2005 | 9/2/2008 |
| 1 | | EP1331742 | EP03001462A | EP | Expired | Radio frequency integrated circuit | 1/22/2003 | 7/30/2003 |
| 2 | | | US60/636255 | US | Expired | Method and system for frame formats for MIMO channel measurement exchange | 12/14/2004 | |
| 2 | US7564914 | | US11/052353 | US | Active | Method and system for frame formats for mimo channel measurement exchange | 2/7/2005 | 7/21/2009 |
| 2 | US7957450 | | US12/506053 | US | Active | Method and system for frame formats for mimo channel measurement exchange | 7/20/2009 | 6/7/2011 |
| 2 | US8437419 | | US13/100014 | US | Active | Method and system for frame formats for mimo channel measurement exchange | 5/3/2011 | 5/7/2013 |
| 2 | US8588283 | | US13/856708 | US | Active | Method and system for frame formats for mimo channel measurement exchange | 4/4/2013 | 11/19/2013 |
| 2 | | CN1790943 | CN200510131783A | CN | Active | Method and system for transmitting information in communication system | 12/13/2005 | 1/11/2012 |
| 2 | | DE202005022049 | DE202005022049U | DE | Expired | Frame format system and apparatus for exchanging mimo channel measurements | 9/15/2005 | 9/17/2012 |
| 2 | | DE202005022074 | DE202005022074U | DE | Expired | Frame format system and apparatus for exchanging mimo channel measurements | 9/15/2005 | 2/20/2013 |

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| 2 | | DE6020050 47993 | DE60200504 7993T | DE | Active | Method and system for mimo channel measurement exchange | 9/15/2 005 | 6/21/2 006 |
| 2 | | EP1672824 | EP05020119 A | EP | Active | Method and system for mimo channel measurement exchange | 9/15/2 005 | 12/2/2 015 |
| 2 | | EP1672824 | EP05020119 A | FR | Active | Method and system for mimo channel measurement | 9/15/2 005 | 12/2/2 015 |

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| | | | | | | exchange | | |
| 2 | | EP1672824 | EP05020119 A | GB | Active | Method and system for mimo channel measurement exchange | 9/15/2005 | 12/2/2015 |
| 2 | | EP2523380 | EP12005338 A | EP | Active | Method and system for frame formats for mimo channel measurement exchange | 9/15/2005 | 6/20/2018 |
| 2 | | EP2523380 | EP12005338 A | FR | Active | Method and system for frame formats for mimo channel measurement exchange | 9/15/2005 | 6/20/2018 |
| 2 | | EP2523380 | EP12005338 A | GB | Active | Method and system for frame formats for mimo channel measurement exchange | 9/15/2005 | 6/20/2018 |
| 2 | | EP2523381 | EP12005339 A | EP | Active | Method and system for frame formats for mimo channel measurement exchange | 9/15/2005 | 12/25/2019 |
| 2 | | EP2523381 | EP12005339 A | FR | Active | Method and system for frame formats for mimo channel measurement exchange | 9/15/2005 | 12/25/2019 |
| 2 | | EP2523381 | EP12005339 A | GB | Active | Method and system for frame formats for mimo channel measurement exchange | 9/15/2005 | 12/25/2019 |
| 2 | | TW1324452 | TW9414430 7A | TW | Active | Method and system for frame formats for mimo channel measurement exchange | 12/14/2005 | 5/1/2010 |
| 3 | | | US61/32140 2 | US | Expired | Method and system for automatically rescaling an accumulation buffer in synchronization systems | 4/6/2010 | |
| 3 | US891 7704 | | US12/76841 5 | US | Active | Method and system for automatically rescaling an accumulation buffer in synchronization systems | 4/27/2010 | 12/23/2014 |
| 4 | US911 8442 | | US12/57708 0 | US | Active | Method and system for continuous packet connectivity | 10/9/2009 | 8/25/2015 |
| 4 | US828 4819 | | US12/58277 1 | US | Active | Method and system for interference suppression in wcdma systems | 10/21/2009 | 10/9/2012 |
| 4 | US850 3506 | | US13/58829 7 | US | Active | Method and system for interference suppression in wcdma systems | 8/17/2012 | 8/6/2013 |
| 5 | US694 1156 | | US09/88849 3 | US | Active | Automatic handoff for wireless piconet multimode cell phone | 6/26/2001 | 9/6/2005 |

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| 6 | | | US60/306271 | US | Expired | Adaptive differential microphone array | 7/18/2001 | |
| 6 | US6584203 | | US09/999298 | US | Expired | Second-order adaptive differential microphone array | 10/30/2001 | 6/24/2003 |
| 6 | US7123727 | | US09/999380 | US | Active | Adaptive close-talking differential microphone array | 10/30/2001 | 10/17/2006 |
| 6 | | DE60234487 | DE60234487T | DE | Expired | Adaptive differential microphone arrangement of second order | 7/12/2002 | 1/7/2010 |
| 6 | | EP1278395 | EP02254939A | FR | Expired | Second-order adaptive differential microphone array | 7/12/2002 | 11/25/2009 |
| 6 | | EP1278395 | EP02254939A | GB | Expired | Second-order adaptive differential microphone array | 7/12/2002 | 11/25/2009 |
| 7 | US6696941 | | US09/944367 | US | Expired | Theft alarm in mobile device | 9/4/2001 | 2/24/2004 |
| 8 | US7039435 | | US09/967140 | US | Active | Proximity regulation system for use with a portable cell phone and a method of operation thereof | 9/28/2001 | 5/2/2006 |
| 8 | US7499722 | | US11/369363 | US | Active | Proximity regulation system for use with a portable cell phone and a method of operation thereof | 3/7/2006 | 3/3/2009 |
| 8 | US8140128 | | US12/367078 | US | Active | Portable cell phone and a proximity regulation system for use with a portable cell phone | 2/6/2009 | 3/20/2012 |
| 8 | US8532594 | | US13/398656 | US | Expired | Portable cell phone and a proximity regulation system for use with a portable cell phone | 2/16/2012 | 9/10/2013 |
| 8 | | GB2380359 | GB0206845A | GB | Expired | A proximity regulation system for use with a portable cell phone and a method of operation thereof | 3/22/2002 | 12/7/2005 |
| 8 | | JP4057383 | JP2002280418A | JP | Active | Proximity adjusting device for mobile phone and operation method thereof | 9/26/2002 | 3/5/2008 |
| 9 | US6894239 | | US10/370137 | US | Active | Flip-cover sensor for keypad | 2/19/2003 | 5/17/2005 |
| 9 | | DE60208151 | DE60208151T | DE | Active | Folding cover sensor for keyboard | 3/13/2002 | 8/31/2006 |
| 9 | | EP1345390 | EP02251790A | FR | Active | Flip-cover sensor for keypad | 3/13/2002 | 12/21/2005 |
| 9 | | EP1345390 | EP02251790A | GB | Active | Flip-cover sensor for keypad | 3/13/2002 | 12/21/2005 |
| 9 | | JP2009141968 | JP2009000149A | JP | Expired | Flip cover sensor for keypad | 1/5/2009 | 6/25/2009 |

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| 9 | | JP4285031 | JP20030652 59A | JP | Active | Flip cover sensor for keypad | 3/11/2 003 | 6/24/2 009 |
| 10 | US668 0532 | | US10/26575 1 | US | Expired | Multi chip module | 10/7/2 002 | 1/20/2 004 |
| 10 | US685 8930 | | US10/63877 2 | US | Active | Multi chip module | 8/11/2 003 | 2/22/2 005 |
| 11 | | | US60/46637 7 | US | Expired | Low power protocol for multiple wireless terminals | 4/29/2 003 | |
| 11 | US727 7417 | | US10/77153 2 | US | Active | Low power protocol for wireless terminal peer-to- peer communications | 2/4/20 04 | 10/2/2 007 |
| 11 | US824 3701 | | US11/86571 3 | US | Expired | Low power protocol for wireless terminal peer-to- peer communications | 10/1/2 007 | 8/14/2 012 |
| 11 | US855 3666 | | US13/53453 8 | US | Active | Low power protocol for wireless terminal peer-to- peer communications | 6/27/2 012 | 10/8/2 013 |
| 11 | US902 5582 | | US13/93113 6 | US | Active | Low power protocol for wireless terminal peer-to- peer communications | 6/28/2 013 | 5/5/20 15 |
| 12 | US711 3811 | | US10/46363 0 | US | Active | System and method for conserving battery power in a mobile station | 6/17/2 003 | 9/26/2 006 |
| 12 | US731 9889 | | US11/51631 6 | US | Active | System and method for conserving battery power in a mobile station | 9/6/20 06 | 1/15/2 008 |
| 12 | US820 4554 | | US11/94550 5 | US | Active | System and method for conserving battery power in a mobile station | 11/27/ 2007 | 6/19/2 012 |
| 12 | US848 3780 | | US13/47294 0 | US | Active | System and method for conserving battery power in a mobile station | 5/16/2 012 | 7/9/20 13 |
| 12 | | DE1020040 28259 | DE10200402 8259A | DE | Expired | System and method for saving battery power in a mobile station | 6/11/2 004 | 2/13/2 014 |
| 12 | | JP20050128 05 | JP20041790 16A | JP | Expired | System and method for saving, and using battery power in mobile station | 6/17/2 004 | 1/13/2 005 |
| 13 | US794 5284 | | US09/44728 4 | US | Expired | Cordless telephone with mp3 player capability | 11/23/ 1999 | 5/17/2 011 |
| 13 | US770 2363 | | US10/95918 6 | US | Expired | Cordless telephone with mp3 player capability | 10/7/2 004 | 4/20/2 010 |
| 13 | US794 5285 | | US12/70604 7 | US | Expired | Integrating a digital encoded-audio bit stream player in a radio-frequency telephone handset | 2/16/2 010 | 5/17/2 011 |
| 13 | US820 0280 | | US13/09642 0 | US | Expired | Cordless telephone with digital audio player capability | 4/28/2 011 | 6/12/2 012 |
| 13 | | US2012022 5689 | US13/47278 0 | US | Abandoned | Cordless telephone with digital audio player capability | 5/16/2 012 | 9/6/20 12 |

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| 13 | | CA2325244 | CA2325244 A | CA | Expired | Cordless telephone with mp3 player capability | 11/8/2000 | 10/13/2009 |
| 13 | | EP1104150 | EP00310081 A | EP | Expired | Cordless telephone with mp3 player capability | 11/13/2000 | 10/5/2011 |
| 13 | | EP1104150 | EP00310081 A | DE | Expired | Cordless telephone with mp3 player capability | 11/13/2000 | 10/5/2011 |
| 13 | | EP1104150 | EP00310081 A | FR | Expired | Cordless telephone with mp3 player capability | 11/13/2000 | 10/5/2011 |
| 13 | | EP1104150 | EP00310081 A | GB | Expired | Cordless telephone with mp3 player capability | 11/13/2000 | 10/5/2011 |
| 13 | | JP20011971 73 | JP20003552 36A | JP | Expired | Cordless telephone set and method for integrating digital bit stream music player into the same | 11/22/2000 | 7/19/2001 |
| 14 | US716 2212 | | US10/66762 4 | US | Expired | System and method for obscuring unwanted ambient noise and handset and central office equipment incorporating the same | 9/22/2003 | 1/9/2007 |
| 14 | | US2007012 3283 | US11/56708 6 | US | Abandoned | System and method for obscuring unwanted ambient noise and a mobile communications device and central office equipment incorporating the same | 12/5/2006 | 5/31/2007 |
| 14 | | GB2406251 | GB0406131 A | GB | Expired | System and method for obscuring unwanted ambient noise and handset and central office equipment incorporating the same | 3/18/2004 | 12/7/2005 |
| 14 | | JP20051022 19 | JP20042742 82A | JP | Expired | System and method for obscuring unwanted ambient noise and handset and central office equipment incorporating the same | 9/22/2004 | 4/14/2005 |
| 15 | | | US60/52523 1 | US | Expired | Software-directed power management for Ethernet network device | 11/25/2003 | |
| 15 | US761 0495 | | US10/87483 4 | US | Active | Method and apparatus for power management using transmission mode with reduced power | 6/23/2004 | 10/27/2009 |
| 15 | | EP1536569 | EP04257130 A | EP | Active | Power management in a transmitter | 11/17/2004 | 3/25/2015 |
| 15 | | DE6020040 468584 | EP04257130 A | DE | Active | Power management in a transmitter | 11/17/2004 | 3/25/2015 |
| 15 | | EP1536569 | EP04257130 A | FR | Active | Power management in a transmitter | 11/17/2004 | 3/25/2015 |
| 15 | | EP1536569 | EP04257130 A | GB | Active | Power management in a transmitter | 11/17/2004 | 3/25/2015 |
| 15 | | JP4594046 | JP20043382 45A | JP | Active | Power management method and apparatus using transmission mode for | 11/24/2004 | 12/8/2010 |

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| | | | | | | reducing power | | |
| 16 | | | US60/561738 | US | Expired | Method and system for a new packet preamble for wideband wireless LAN systems | 4/13/2004 | |
| 16 | US7515581 | | US11/050505 | US | Active | Method and system for a new packet preamble for wideband wireless local area network (lan) systems | 2/3/2005 | 4/7/2009 |
| 17 | US7404146 | | US10/855458 | US | Active | Input device for portable handset | 5/27/2004 | 7/22/2008 |
| 18 | US6118881 | | US08/853736 | US | Expired | Reduction of flow-induced microphone noise | 5/13/1997 | 9/12/2000 |
| 19 | US6208846 | | US08/782355 | US | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units by selectable switching of power amplifier | 1/13/1997 | 3/27/2001 |
| 19 | | EP0853391 | EP98300050A | EP | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units | 1/6/1998 | 7/15/1998 |
| 19 | | EP0853391 | EP98300050A | DE | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units | 1/6/1998 | 7/15/1998 |
| 19 | | EP0853391 | EP98300050A | FR | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units | 1/6/1998 | 7/15/1998 |
| 19 | | EP0853391 | EP98300050A | GB | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units | 1/6/1998 | 7/15/1998 |
| 19 | | JPH10242781 | JP444998A | JP | Expired | Power control circuit | 1/13/1998 | 9/11/1998 |
| 19 | | KR100353313 | KR19980000489A | KR | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units | 1/10/1998 | 11/18/2002 |
| 19 | | TW361013 | TW86117869A | TW | Expired | Method and apparatus for enhancing transmitter circuit efficiency of mobile radio units | 11/27/1997 | 6/11/1999 |
| 20 | US6363257 | | US09/245078 | US | Expired | Method, apparatus, and communication protocol for transmitting control data with an improved error correction capability in a digital cordless telephone system | 2/5/1999 | 3/26/2002 |
| 20 | | EP1026850 | EP00300562A | EP | Expired | Error control method and system for digital cordless | 1/26/2000 | 8/9/2000 |

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| | | | | | | telephone | | |
| 21 | US654 9792 | | US09/33989 3 | US | Expire d | Accelerometer influenced communication device | 6/25/1 999 | 4/15/2 003 |
| 21 | | CA2311113 | CA2311113 A | CA | Expire d | Accelerometer influenced communication device | 6/8/20 00 | 4/6/20 04 |
| 21 | | CN1147187 | CN00118750 A | CN | Expire d | Communication apparatus influenced by accelerometer | 6/23/2 000 | 4/21/2 004 |
| 21 | | DE6002294 6 | DE60022946 T | DE | Expire d | Communication device under the influence of an acceleration sensor | 6/13/2 000 | 7/20/2 006 |
| 21 | | EP1063837 | EP00304982 A | EP | Expire d | Accelerometer influenced communication device. | 6/13/2 000 | 10/5/2 005 |
| 21 | | EP1063837 | EP00304982 A | FR | Expire d | Accelerometer influenced communication device. | 6/13/2 000 | 10/5/2 005 |
| 21 | | EP1063837 | EP00304982 A | GB | Expire d | Accelerometer influenced communication device. | 6/13/2 000 | 10/5/2 005 |
| 21 | | JP20010366 28 | JP20001890 24A | JP | Expire d | Communication device receiving effect of accelerometer | 6/23/2 000 | 2/9/20 01 |
| 21 | | JP20080793 43 | JP20073069 91A | JP | Expire d | Accelerometer influenced communication device | 11/28/ 2007 | 4/3/20 08 |
| 21 | | JP4938100 | JP20101006 21A | JP | Expire d | Communication device affected by accelerometer | 4/26/2 010 | 5/23/2 012 |
| 22 | US692 5489 | | US09/44481 8 | US | Expire d | Methods and apparatus for identification and purchase of broadcast digital music and other types of information | 11/22/ 1999 | 8/2/20 05 |
| 22 | | EP1113605 | EP00310070 A | EP | Expire d | Methods and apparatus for identification and purchase of broadcast digital music and other types of information | 11/13/ 2000 | 7/4/20 01 |
| 22 | | JP20012164 34 | JP20003551 10A | JP | Expire d | Method and device for identifying and purchasing broadcasting digital music and other type information | 11/22/ 2000 | 8/10/2 001 |
| 22 | | JP20122563 35 | JP20121669 85A | JP | Expire d | Method and apparatus for identification and purchase of broadcast digital music and other types of information | 7/27/2 012 | 12/27/ 2012 |
| 23 | US696 3129 | | US10/46417 8 | US | Active | Multi-chip package having a contiguous heat spreader assembly | 6/18/2 003 | 11/8/2 005 |
| 24 | US741 2263 | | US10/93190 2 | US | Active | Advisory alert of low signal strength for cell phone user | 9/1/20 04 | 8/12/2 008 |
| 24 | US799 6047 | | US12/16981 4 | US | Active | Advisory alert of low signal strength for cell phone user | 7/9/20 08 | 8/9/20 11 |
| 25 | | | US60/59109 7 | US | Expire d | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/27/2 004 | |

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| 25 | | | US60/624197 | US | Expired | Method and apparatus for wide bandwidth mixed-mode wireless communications | 11/3/2004 | |
| 25 | US7586887 | | US11/188767 | US | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/26/2005 | 9/8/2009 |
| 25 | US7912024 | | US12/553281 | US | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 9/3/2009 | 3/22/2011 |
| 25 | US8599755 | | US13/069108 | US | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 3/22/2011 | 12/3/2013 |
| 25 | US9264275 | | US14/094107 | US | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 12/2/2013 | 2/16/2016 |
| 25 | | CN100446459 | CN200510085677A | CN | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/26/2005 | 12/24/2008 |
| 25 | | DE60200505115 | DE602005005115T | DE | Active | Method and arrangement for combined wireless broadband communications | 7/22/2005 | 3/12/2009 |
| 25 | | EP1622290 | EP05016005A | EP | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/22/2005 | 3/5/2008 |
| 25 | | EP1622290 | EP05016005A | FR | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/22/2005 | 3/5/2008 |
| 25 | | EP1622290 | EP05016005A | GB | Active | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/22/2005 | 3/5/2008 |
| 25 | | TWI284463 | TW94125416A | TW | Expired | Method and apparatus for wide bandwidth mixed-mode wireless communications | 7/27/2005 | 7/21/2007 |
| 26 | | | US60/591104 | US | Expired | Backward-compatible long training sequences for wireless communication networks | 12/8/2004 | |
| 26 | | | US60/634102 | US | Expired | Backward-compatible long training sequences for wireless communication networks | 7/27/2004 | |
| 26 | US7646703 | | US11/188771 | US | Active | Backward-compatible long training sequences for wireless communication networks | 7/26/2005 | 1/12/2010 |
| 26 | US7990842 | | US12/684650 | US | Active | Backward-compatible long training sequences for wireless communication networks | 1/8/2010 | 8/2/2011 |
| 26 | US8477594 | | US13/196082 | US | Active | Backward-compatible long training sequences for wireless communication networks | 8/2/2011 | 7/2/2013 |

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| 26 | USRE4 8629 | | US16/68646 8 | US | Active | Backward-compatible long training sequences for wireless communication networks | 11/18/ 2019 | 7/6/20 21 |
| 26 | | | US17/36815 6 | US | Pending | Backward-Compatible Long Training Sequences for Wireless Communication Networks | 7/6/20 21 | |
| 27 | US728 0816 | | US11/02215 9 | US | Active | Techniques for monitoring mobile telecommunications for shared accounts | 12/23/ 2004 | 10/9/2 007 |
| 27 | | DE1020050 61225 | DE10200506 1225A | DE | Expired | A method of monitoring mobile communications for shared accounts | 12/20/ 2005 | 7/13/2 006 |
| 27 | | JP20061805 14 | JP20053689 28A | JP | Expired | Technique for monitoring telecommunication for shared account | 12/22/ 2005 | 7/6/20 06 |
| 28 | US775 1541 | | US11/08434 4 | US | Active | Communication setup methods for gsm, umts and isdn protocols to enable personalized telephony and communication device incorporating the same | 3/18/2 005 | 7/6/20 10 |
| 29 | US781 7434 | | US11/40349 2 | US | Active | Method and apparatus for improving thermal energy dissipation in a direct-chip-attach coupling configuration of an integrated circuit and a circuit board | 4/13/2 006 | 10/19/ 2010 |
| 30 | | | US60/67345 1 | US | Expired | Reduced feedback for beamforming in a wireless communication | 4/21/2 005 | |
| 30 | | | US60/67482 2 | US | Expired | Beamforming in a wireless communication | 4/26/2 005 | |
| 30 | | | US60/69868 6 | US | Expired | Efficient feedback for channel information in closed loop beamforming in a wireless communication | 7/13/2 005 | |
| 30 | | | US60/73071 8 | US | Expired | Feedback of channel information in a closed loop beamforming wireless communication system | 10/27/ 2005 | |
| 30 | | | US60/74296 3 | US | Expired | Feedback of channel information in a closed loop beamforming wireless communication system | 12/7/2 005 | |
| 30 | US750 2408 | | US11/16859 0 | US | Active | Rf transceiver having adaptive modulation | 6/28/2 005 | 3/10/2 009 |
| 30 | US773 8583 | | US11/16879 3 | US | Active | Reduced feedback for beamforming in a wireless communication | 6/28/2 005 | 6/15/2 010 |
| 30 | US773 | | US11/16883 | US | Active | Beamforming in a wireless | 6/28/2 | 6/15/2 |

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| | 8584 | | 8 | | | communication with a partial estimation to reduce overhead | 005 | 010 |
| 30 | US8416862 | | US11/237341 | US | Active | Efficient feedback of channel information in a closed loop beamforming wireless communication system | 9/28/2005 | 4/9/2013 |
| 30 | US8085871 | | US11/244518 | US | Active | Adaptive modulation in a multiple input multiple output wireless communication system with optional beamforming | 10/6/2005 | 12/27/2011 |
| 30 | US8345732 | | US11/412388 | US | Active | Feedback of channel information in a closed loop beamforming wireless communication system | 4/27/2006 | 1/1/2013 |
| 30 | US8184679 | | US12/360850 | US | Active | Rf transceiver having adaptive modulation | 1/27/2009 | 5/22/2012 |
| 30 | US8743994 | | US13/729881 | US | Active | Feedback of channel information in a closed loop beamforming wireless communication system | 12/28/2012 | 6/3/2014 |
| 30 | | CN1855798 | CN200610074842A | CN | Active | Rf transceiver having adaptive modulation | 4/19/2006 | 9/28/2011 |
| 30 | | EP1715643 | EP06001248A | EP | Active | Rf transceiver having adaptive modulation | 1/20/2006 | 10/23/2013 |
| 30 | | DE602006038913.2 | EP06001248A | DE | Active | Rf transceiver having adaptive modulation | 1/20/2006 | 10/23/2013 |
| 30 | | EP1715643 | EP06001248A | FR | Active | Rf transceiver having adaptive modulation | 1/20/2006 | 10/23/2013 |
| 30 | | EP1715643 | EP06001248A | GB | Active | Rf transceiver having adaptive modulation | 1/20/2006 | 10/23/2013 |
| 30 | | TW1353740 | TW95113933A | TW | Active | Rf transceiver having adaptive modulation | 4/19/2006 | 12/1/2011 |
| 31 | US7782375 | | US11/575856 | US | Active | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 8/24/2010 |
| 31 | | EP1800475 | EP04784876A | EP | Expired | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 6/27/2007 |
| 31 | | EP1800475 | EP04784876A | DE | Expired | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 6/27/2007 |
| 31 | | EP1800475 | EP04784876A | FR | Expired | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 6/27/2007 |
| 31 | | EP1800475 | EP04784876A | GB | Expired | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 6/27/2007 |
| 31 | | JP4618651 | JP2007533441A | JP | Active | Mobile communication device having panoramic image creation function | 9/23/2004 | 1/26/2011 |

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| | | | | | | activation of a mobile communication device | | |
| 36 | | EP1966980 | EP06846420 A | GB | Active | Apparatus and method for preventing an unintentional activation of a mobile communication device | 11/30/ 2006 | 6/17/2 015 |
| 36 | | KR1013041 83 | KR20087016 068A | KR | Expired | Apparatus and method for preventing an unintentional activation of a mobile communication device | 11/30/ 2006 | 9/6/20 13 |
| 36 | | WO200706 5130 | US20060614 06W | WO | Expired | Apparatus and method for preventing an unintentional activation of a mobile communication device | 11/30/ 2006 | 6/7/20 07 |
| 37 | | | US60/77232 0 | US | Expired | Channel estimation for a high-speed data packet access rake receiver | 2/10/2 006 | |
| 37 | US775 1466 | | US11/65495 7 | US | Active | Channel estimation for a high-speed data packet access rake receiver | 1/18/2 007 | 7/6/20 10 |
| 38 | US821 8517 | | US11/36475 1 | US | Active | Method and apparatus for dual frequency timing acquisition for compressed wcdma communication networks | 2/28/2 006 | 7/10/2 012 |
| 38 | US876 7700 | | US13/48916 9 | US | Active | Method and apparatus for dual frequency timing acquisition for compressed wcdma communication networks | 6/5/20 12 | 7/1/20 14 |
| 39 | | | US60/77652 3 | US | Expired | Geometric mean decomposition minimizing effects of transmitter impairments in MIMO beamforming | 2/24/2 006 | |
| 39 | US766 4200 | | US11/44941 3 | US | Active | Method and system for minimizing effects of transmitter impairments in multiple input multiple output (mimo) beamforming communication systems | 6/8/20 06 | 2/16/2 010 |
| 39 | | US2010015 0260 | US12/70604 2 | US | Abandoned | Method and system for minimizing effects of transmitter impairments in multiple input multiple output (mimo) beamforming communication systems | 2/16/2 010 | 6/17/2 010 |
| 40 | US770 2050 | | US11/35668 5 | US | Active | Method and system for an adaptive vblast receiver for wireless multiple input multiple output (mimo) detection | 2/17/2 006 | 4/20/2 010 |
| 40 | US830 | | US12/76367 | US | Active | Method and system for an | 4/20/2 | 10/30/ |

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| 31 | | KR101074284 | KR20077006995A | KR | Active | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 10/17/2011 |
| 31 | | WO2006041443 | US2004031193W | WO | Expired | Mobile communication device having panoramic imagemaking capability | 9/23/2004 | 4/20/2006 |
| 32 | | | US60/695155 | US | Expired | Multiple protocol wireless communication baseband transceiver | 6/29/2005 | |
| 32 | US7813374 | | US11/433997 | US | Expired | Multiple protocol wireless communication baseband transceiver | 5/15/2006 | 10/12/2010 |
| 32 | | CN101001230 | CN200610099751A | CN | Expired | Multiple protocol wireless communication baseband transceiver | 6/26/2006 | 4/14/2010 |
| 32 | | EP1739871 | EP06011013A | EP | Expired | Multiple protocol wireless communication transceiver | 5/29/2006 | 1/3/2007 |
| 32 | | TW1351857 | TW95123363A | TW | Expired | Multiple protocol wireless communication baseband | 6/28/2006 | 11/1/2011 |
| 33 | | | US60/698691 | US | Expired | Channel reciprocity matrix determination in a wireless MIMO communication system | 7/13/2005 | |
| 33 | US7242961 | | US11/209003 | US | Expired | Channel reciprocity matrix determination in a wireless mimo communication system | 8/22/2005 | 7/10/2007 |
| 33 | US7894852 | | US11/770975 | US | Active | Channel reciprocity matrix determination in a wireless mimo communication system | 6/29/2007 | 2/22/2011 |
| 34 | | | US60/701478 | US | Expired | Method and apparatus for interleaving in a wireless communication system | 7/22/2005 | |
| 34 | US7693234 | | US11/359460 | US | Active | Method and apparatus for interleaving in a wireless communication system | 2/23/2006 | 4/6/2010 |
| 34 | | US20100246717 | US12/748722 | US | Abandoned | Interleaving in a wireless communication system | 3/29/2010 | 9/30/2010 |
| 35 | US7684522 | | US11/374705 | US | Expired | Method and system for determining a log-likelihood ratio (llr) corresponding to each bit of a symbol | 3/14/2006 | 3/23/2010 |
| 36 | US7570978 | | US11/291937 | US | Active | Apparatus and method for preventing an unintentional activation of a mobile communication device | 12/1/2005 | 8/4/2009 |
| 36 | | EP1966980A | EP06846420A | EP | Active | Apparatus and method for preventing an unintentional activation of a mobile communication device | 11/30/2006 | 6/17/2015 |
| 36 | | DE6020060457456 | EP06846420A | DE | Active | Apparatus and method for preventing an unintentional | 11/30/2006 | 6/17/2015 |

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| | 0747 | | 0 | | | adaptive vblast receiver for wireless multiple input multiple output (mimo) detection | 010 | 2012 |
| 41 | | | US60/392573 | US | Expired | Scrambler initialization in a wireless local area network | 6/27/2002 | |
| 41 | US7317735 | | US10/447626 | US | Expired | Scrambler initialization in a wireless local area network | 5/29/2003 | 1/8/2008 |
| 42 | US7680205 | | US11/494962 | US | Active | Method and system for transmitter beamforming for reduced complexity multiple input multiple output (mimo) transceivers | 7/28/2006 | 3/16/2010 |
| 42 | US8306142 | | US12/724134 | US | Active | Method and system for transmitter beamforming for reduced complexity multiple input multiple output (mimo) transceivers | 3/15/2010 | 11/6/2012 |
| 42 | | CN101114863 | CN200710138464A | CN | Active | Method and system for processing signal of communication system | 7/26/2007 | 3/23/2011 |
| 42 | | EP1883168 | EP07005500A | EP | Expired | Method and system for transmitter beamforming for reduced complexity multiple input multiple output (mimo) transceivers | 3/16/2007 | 1/30/2008 |
| 42 | | HK1116943 | HK08107556A | HK | Expired | Method and system for transmitter beamforming for reduced complexity multiple input multiple output (mimo) transceivers | 7/9/2008 | 1/2/2009 |
| 42 | | KR100931901 | KR20070075975A | KR | Expired | Beamforming method and system of transmitter for reduced complexity multiple input multiple output transceiver | 7/27/2007 | 12/15/2009 |
| 42 | | TWI373222 | TW96127628A | TW | Expired | Method and system for transmitter beamforming for reduced complexity multiple input multiple output (mimo) transceivers | 7/27/2007 | 9/21/2012 |
| 43 | | | US60/927685 | US | Expired | Channel estimation for uplink CSM PUSC in the presence of timing and frequency offset | 5/4/2007 | |
| 43 | US7680027 | | US11/823763 | US | Expired | Methods and systems for channel estimation in a collaborative multi input multiple output (mimo) communication system | 6/28/2007 | 3/16/2010 |
| 44 | | | US60/963010 | US | Expired | Synchronization channel noise power estimation | 8/1/2007 | |
| 44 | US805 | | US11/96388 | US | Active | Synchronization channel | 12/24/ | 11/1/2 |

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| | 0237 | | 1 | | | noise power estimation | 2007 | 011 |
| 45 | | | US60/953317 | US | Expired | High-speed uplink packet access (hsupa) cipher multiplexing engine | 8/1/2007 | |
| 45 | US7949012 | | US11/861700 | US | Active | High-speed uplink packet access (hsupa) cipher multiplexing engine | 9/26/2007 | 5/24/2011 |
| 46 | US8151158 | | US11/893288 | US | Active | Method and system for decoding a data burst in a communication system | 8/15/2007 | 4/3/2012 |
| 47 | | | US61/023732 | US | Expired | Method and system for subspace beamforming for near capacity multiple input multiple output (mimo) performance | 1/25/2008 | |
| 47 | | | US61/096405 | US | Expired | Method and System for Subspace Beamforming for Near Capacity Multiple Input Multiple Output (MIMO) Performance | 9/12/2008 | |
| 47 | US8233557 | | US12/246206 | US | Active | Method and system for subspace beamforming for near capacity multiple input multiple output (mimo) performance | 10/6/2008 | 7/31/2012 |
| 48 | US8078197 | | US12/034385 | US | Active | Location-based search-result ranking for blog documents and the like | 2/20/2008 | 12/13/2011 |
| 48 | | US20120052882 | US13/292170 | US | Abandoned | Location-based search-result ranking for blog documents and the like | 11/9/2011 | 3/1/2012 |
| 49 | | | US61/155482 | US | Expired | Idle mode power consumption reduction in wireless communications | 2/25/2009 | |
| 49 | US8493900 | | US12/430025 | US | Expired | Idle mode power consumption reduction in wireless communications | 4/24/2009 | 7/23/2013 |
| 49 | US9277499 | | US13/947182 | US | Active | Idle mode power consumption reduction in wireless communications | 7/22/2013 | 3/1/2016 |
| 50 | US8396072 | | US13/031355 | US | Active | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 2/21/2011 | 3/12/2013 |
| 50 | | US20140198639 | US13/781869 | US | Abandoned | Channel traffic congestion avoidance in a mobile communication system | 3/1/2013 | 7/17/2014 |
| 50 | | US20130100802 | US13/418967 | US | Abandoned | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 3/13/2012 | 4/25/2013 |
| 50 | | CN103477681 | CN201280017149A | CN | Active | Method and apparatus for channel traffic congestion | 2/21/2012 | 12/25/2013 |

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| | | | | | | avoidance in a mobile communication system | | |
| 50 | | EP2679049 | EP12706937 A | EP | Active | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 2/21/2012 | 12/25/2019 |
| 50 | | GB2484827 | GB20111818 4A | GB | Expired | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 10/21/2011 | 11/28/2012 |
| 50 | | | IN1585MUN MP2013 | IN | Abandoned | Congestion Avoidance for Control Channels Prior Connection Establishment | 2/21/2012 | |
| 50 | | JP20145104 60 | JP20135540 51A | JP | Active | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 2/21/2012 | 4/24/2014 |
| 50 | | KR2014002 4857 | KR20137024 406A | KR | Expired | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 2/21/2012 | 3/3/2014 |
| 50 | | WO201211 4265 | IB20120507 77W | WO | Expired | Method and apparatus for channel traffic congestion avoidance in a mobile communication system | 2/21/2012 | 8/30/2012 |
| 51 | US879 2432 | | US13/02651 2 | US | Active | Prioritizing rach message contents | 2/14/2011 | 7/29/2014 |
| 51 | | CN1033709 61 | CN20128000 8740A | CN | Active | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 10/23/2013 |
| 51 | | EP2676474 | EP12714367 A | EP | Expired | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 1/7/2015 |
| 51 | | DE6020120 04823 | EP12714367 A | DE | Expired | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 1/7/2015 |
| 51 | | EP2676474 | EP12714367 A | FR | Expired | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 1/7/2015 |
| 51 | | EP2676474 | EP12714367 A | GB | Expired | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 1/7/2015 |
| 51 | | | IN1492MU MNP2013 | IN | Abandoned | Method of prioritising RACH message content | 8/2/2012 | |
| 51 | | JP20145054 46 | JP20135530 65A | JP | Active | Method, apparatus and computer program for prioritizing information in uplink messages | 2/14/2012 | 2/27/2014 |

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| 51 | | KR2014001 2092 | KR20137024 102A | KR | Expired | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 1/29/2014 |
| 51 | | WO201211 0950 | IB20120506 66W | WO | Expired | Method, apparatus and computer program for prioritizing information in uplink message | 2/14/2012 | 8/23/2012 |
| 52 | | | US61/49484 8 | US | Expired | Method and System for Pre-Emphasis for an Envelope Tracking Generator | 6/8/2011 | |
| 52 | | | US61/61171 8 | US | Expired | Methods and Systems for Pre-Emphasis of an Envelope Tracking Power Amplifier Supply Voltage | 3/16/2012 | |
| 52 | US919 7175 | | US13/49227 9 | US | Active | Methods and systems for pre-emphasis of an envelope tracking power amplifier supply voltage | 6/8/2012 | 11/24/2015 |
| 53 | US902 0020 | | US13/68045 5 | US | Active | System and method for a krylov method symbol equalizer | 11/19/2012 | 4/28/2015 |
| 54 | US937 4769 | | US13/70600 9 | US | Active | Enhanced higher priority public land mobile network (hpplmn) search | 12/5/2012 | 6/21/2016 |
| 55 | US914 3364 | | US14/05092 2 | US | Active | Iq imbalance estimation using broadcast signals | 10/10/2013 | 9/22/2015 |
| 56 | US923 6901 | | US14/06255 4 | US | Active | Adaptive infinite impulse response (iir)-based code detection for symbol-level equalizer | 10/24/2013 | 1/12/2016 |
| 57 | | | US60/69920 4 | US | Expired | Uniform precoding of mimo channels | 7/14/2005 | |
| 57 | US769 3551 | | US11/43332 9 | US | Active | Derivation of beamforming coefficients and applications thereof | 5/12/2006 | 4/6/2010 |
| 58 | US869 3559 | | US11/82988 8 | US | Active | Method and system for communication | 7/28/2007 | 4/8/2014 |
| 59 | US868 1730 | | US12/50056 4 | US | Active | Method and system for using sign based synchronization sequences in a correlation process to reduce correlation complexity in an ofdm system | 7/9/2009 | 3/25/2014 |