David Halberstadter (State Bar No. 107033)
david.halberstadter@kattenlaw.com
KATTEN MUCHIN ROSENMAN LLP
2029 Century Park East, Suite 2600
Los Angeles, California 90067
Telephone: (310) 788-4408
Fax: (310) 788-4471

Michael F. Sarney (Pro Hac Vice Application to be Filed)
Samson Helfgott (Pro Hac Vice Application to be Filed)
michael.sarney@kattenlaw.com
KATTEN MUCHIN ROSENMAN LLP
575 Madison Avenue
New York, New York 10022
Telephone: (212) 940-8698
Fax: (212) 940-8986

Attorneys for Plaintiff Axell Wireless, Ltd.

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

AXELL WIRELESS LTD., Plaintiff, vs. ADVANCED RF TECHNOLOGIES, INC. and ADRF KOREA CO., LTD., Defendants.	**Case No.** CV12-4938 MWF (MRWx) **COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff, by way of complaint against the defendants, alleges that:

1. This is an action for patent infringement arising under 35 U.S.C. §271 and this Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§1331 and 1338(a).

2. Plaintiff Axell Wireless Ltd. ("Axell") is a corporation organized and existing under the laws of the United Kingdom.

3. Upon information and belief, defendant Advanced RF Technologies, Inc. ("ADRF") is a corporation organized and existing under the laws of the State of California, having a principal place of business located at 3116 West Vanowen Street, Burbank, California 91505.

4. Upon information and belief, defendant ADRF Korea Co., Ltd. ("ADRF Korea") is a company formed under the laws of Korea, having a place of business located at 5-5 Mojeon-Ri, Backsa-Myun, Icheon City, Kyunggi-Do, Korea.

5. Upon information and belief, ADRF resides in this judicial district and is subject to the jurisdiction of this Court.

6. Upon information and belief, ADRF Korea has imported allegedly infringing products and/or systems into the United States, has sold allegedly infringing products and/or systems to ADRF in this judicial district, and is subject to the jurisdiction of this Court.

7. Venue is proper in this district under 28 U.S.C. §1391 and 28 U.S.C. §1400(b).

8. U.S. Patent No. 6,873,823 B2 ("the '823 patent"), a copy of which is attached hereto as Exhibit A, was duly and legally issued on March 29, 2005 and is entitled "Repeater With Digital Channelizer."

9. On September 22, 2009, Reexamination Certificate 6,873,823 C1 was issued for the '823 patent, a copy of which is attached hereto as Exhibit B.

10. Axell is the owner, by assignment, of all right, title and interest in and to the '823 patent.

11. Upon information and belief, ADRF has offered for sale, sold, installed and/or caused to be installed, bi-directional cellular communication products and systems in the United States.

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12. ADRF has infringed and/or has contributed to the infringement by others and/or has induced others to infringe and, unless enjoined, will continue to infringe and/or contribute to the infringement by others and/or induce others to infringe at least claims 1, 4, 13, 16 and 17 of the '823 patent by selling, offering to sell, importing, making, using, and/or installing, in the United States, bi-directional cellular communication products and systems covered by at least claims 1, 4, 13, 16 and 17 of the '823 patent, or equivalents thereof, including, but not necessarily limited to the PSR78 Public Safety Repeater, the Duo i625 NM digital repeater, the Duo i8030NM digital repeater, the Trilogue 3D digital repeater and the Trilogue 2NM digital repeater, and by instructing and teaching customers and/or end users how to use such products in bi-directional cellular communication systems covered by at least claims 1, 4, 13, 16 and 17 of the '823 patent, or equivalents thereof.

13. ADRF Korea has infringed and/or has contributed to the infringement by others and/or has induced others to infringe and, unless enjoined, will continue to infringe and/or contribute to the infringement by others and/or induce others to infringe at least claims 1, 4, 13, 16 and 17 of the '823 patent by selling, offering to sell, importing, making, using, and/or installing, in the United States, bi-directional cellular communication products and systems covered by at least claims 1, 4, 13, 16 and 17 of the '823 patent, or equivalents thereof, including, but not necessarily limited to the PSR78 Public Safety Repeater, the Duo i625 NM digital repeater, the Duo i8030NM digital repeater, the Trilogue 3D digital repeater and the Trilogue 2NM digital repeater, by instructing and teaching customers and/or end users how to use such products in bi-directional cellular communication systems covered by at least claims 1, 4, 13, 16 and 17 of the '823 patent, or equivalents thereof, and by selling bi-directional cellular communication products and systems covered by at least claims 1, 4, 13, 16 and 17 of the '823 patent, or equivalents thereof, including, but not necessarily limited to the PSR78 Public Safety Repeater, the

Duo i625 NM digital repeater, the Duo i8030NM digital repeater, the Trilogue 3D digital repeater and the Trilogue 2NM digital repeater, to ADRF, knowing that they will be sold and/or installed in the United States.

14. ADRF has had knowledge of the '823 patent since at least as early as December 14, 2011.

15. Upon information and belief, ADRF Korea has knowledge of the '823 patent.

16. ADRF has been on notice of its infringement of the '823 patent since December 14, 2011.

17. Upon information and belief, ADRF Korea is on notice of its infringement of the '823 patent.

18. ADRF's infringement of the '823 patent has been willful.

19. Axell has been damaged by ADRF's and ADRF Korea's infringement of the '823 patent, in an amount to be determined at trial. Axell's damages include lost profits and/or reasonable royalties adequate to compensate for the infringement by ADRF and ADRF Korea.

WHEREFORE, Axell respectfully prays for judgment against ADRF and ADRF Korea, as follows:

(a) that ADRF and ADRF Korea have infringed and/or contributed to the infringement of and/or induced infringement of the '823 patent;

(b) that an accounting be had, and judgment be rendered in Axell's favor, and against ADRF and ADRF Korea, for damages adequate to compensate for the infringement of the '823 patent, in an amount to be determined at trial, together with costs and interest;

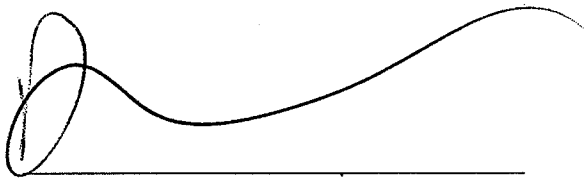
(c) that the infringement by ADRF be found to be willful and that Axell be awarded treble damages pursuant to 35 U.S. Code §284;

(d) that attorney's fees, costs and disbursements incurred in connection with the prosecution of this litigation be awarded to Axell; and

(e) for such other and further relief as the Court may deem just, proper and equitable under the circumstances.

Dated: June 5, 2012

KATTEN MUCHIN ROSENMAN LLP

By: 

David Halberstadter
Attorneys for Plaintiff
Axell Wireless Ltd.

EXHIBIT A

US006873823B2

(12) **United States Patent**
Hasarchi et al.

(10) **Patent No.: US 6,873,823 B2**
(45) **Date of Patent: Mar. 29, 2005**

(54) **REPEATER WITH DIGITAL CHANNELIZER**

(75) Inventors: **Abraham Hasarchi**, Yavne (IL); **Alex Baber**, Ramat Gan (IL)

(73) Assignee: **Dekolink Wireless Ltd.**, Petah Tikva (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 95 days.

(21) Appl. No.: **10/175,146**

(22) Filed: **Jun. 20, 2002**

(65) **Prior Publication Data**

US 2003/0236067 A1 Dec. 25, 2003

(51) **Int. Cl.**[7] **H04B 7/15**

(52) **U.S. Cl.** **455/11.1**; 455/17; 455/21; 455/67.13; 375/350

(58) **Field of Search** 455/11.1, 17–23, 455/119, 67.13, 67.11, 306, 307; 375/348–350

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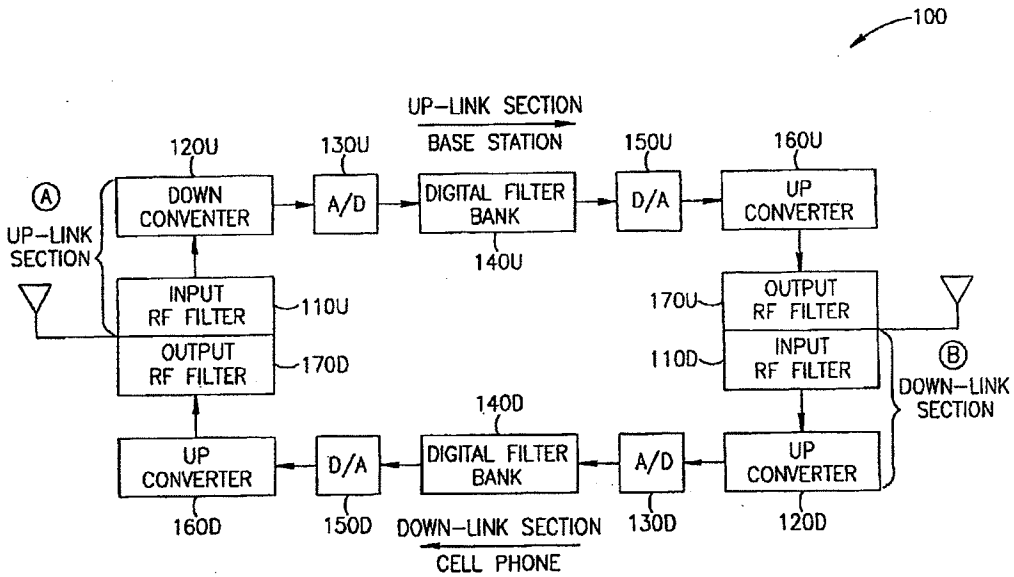
Primary Examiner—Nay Maung
Assistant Examiner—Edan Orgad
(74) *Attorney, Agent, or Firm*—Eitan Law Group

(57) **ABSTRACT**

In order to retransmit a communication channel at a specific frequency, a receiver may receive a signal including the communication channel's specific frequency. An analog to digital converter may generate a digital signal correlated to the received signal and the digital signal may be passed through a digital filter configured to filter the digital signal and pass frequency components at or around the frequency of the communication channel's specific frequency. A digital to analog converter may generate an analog signal correlated to the filtered digital signal and a transmitter may transmit the analog signal.

19 Claims, 5 Drawing Sheets



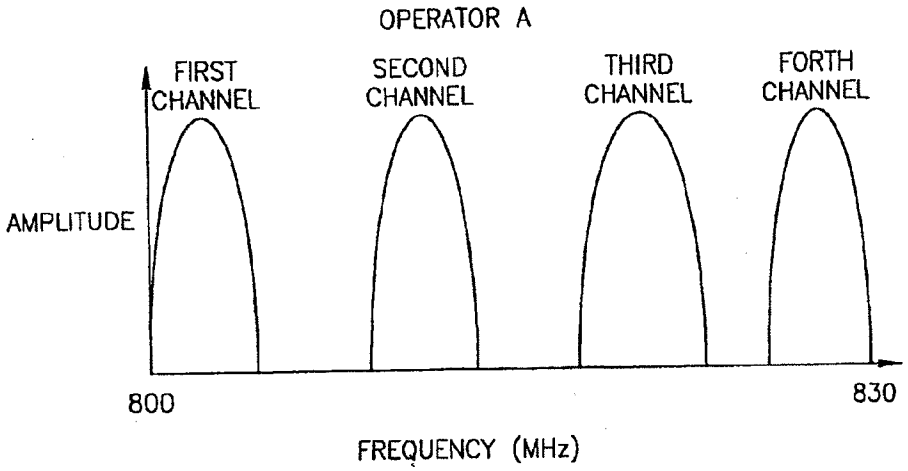

OPERATOR A
FIRST CHANNEL
SECOND CHANNEL
THIRD CHANNEL
FORTH CHANNEL
AMPLITUDE
800
830
FREQUENCY (MHz)

FIG.1A

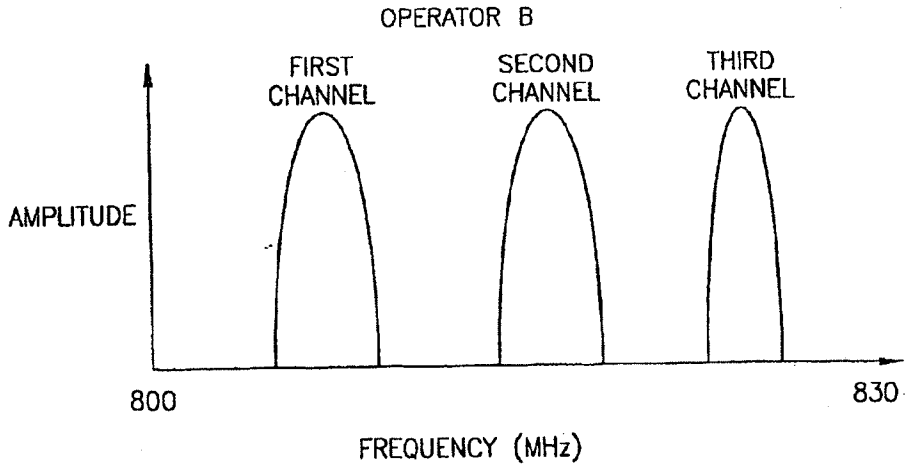

OPERATOR B
FIRST CHANNEL
SECOND CHANNEL
THIRD CHANNEL
AMPLITUDE
800
830
FREQUENCY (MHz)

FIG.1B

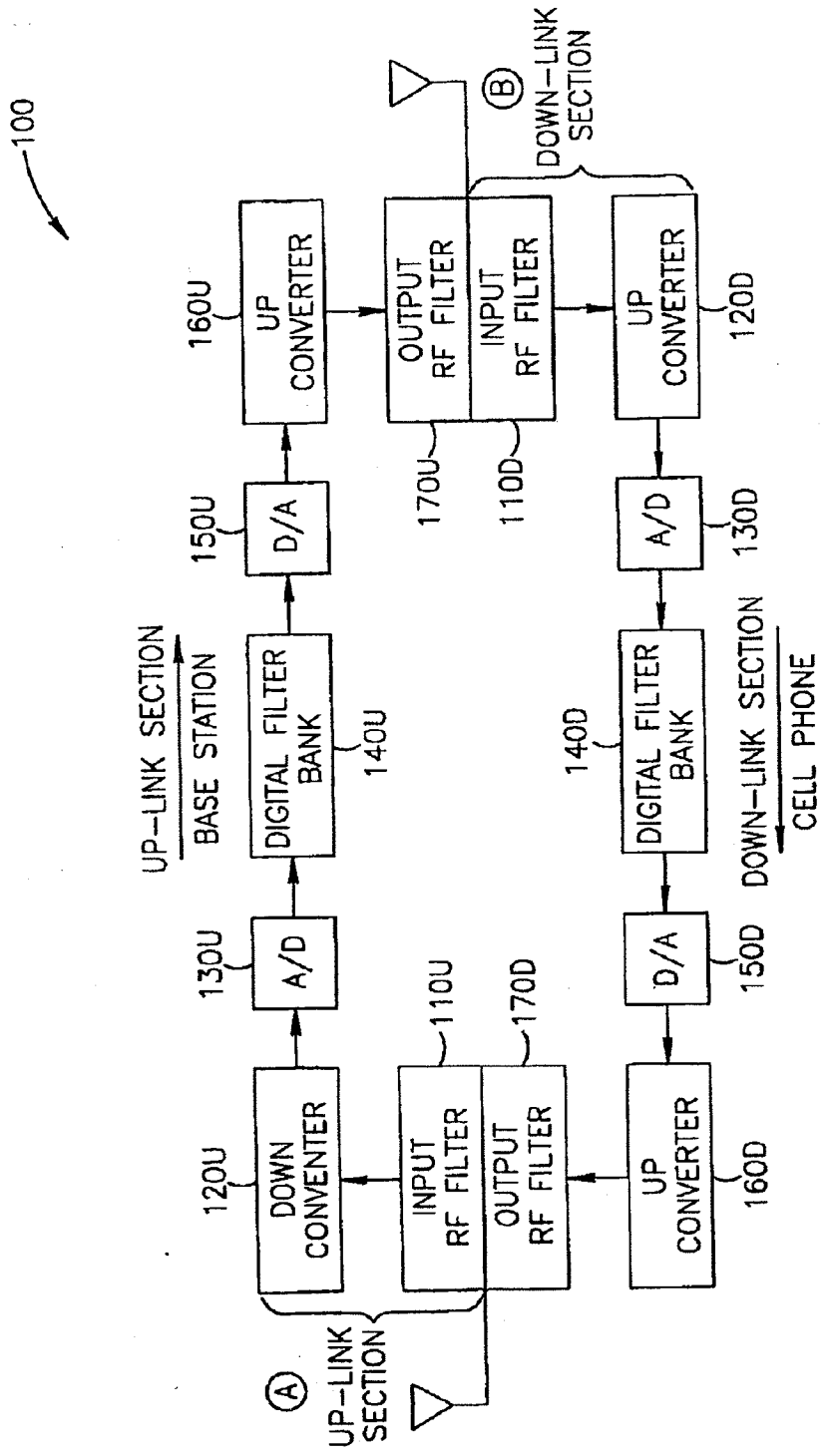

100
UP-LINK SECTION
BASE STATION
DOWN-LINK SECTION
CELL PHONE
(A)
UP-LINK SECTION
(B)
DOWN-LINK SECTION
DOWN CONVENTER
120U
A/D
130U
DIGITAL FILTER BANK
140U
D/A
150U
UP CONVERTER
160U
INPUT RF FILTER
110U
OUTPUT RF FILTER
170U
INPUT RF FILTER
110D
OUTPUT RF FILTER
170D
UP CONVERTER
120D
A/D
130D
DIGITAL FILTER BANK
140D
D/A
150D
UP CONVERTER
160D

FIG.2

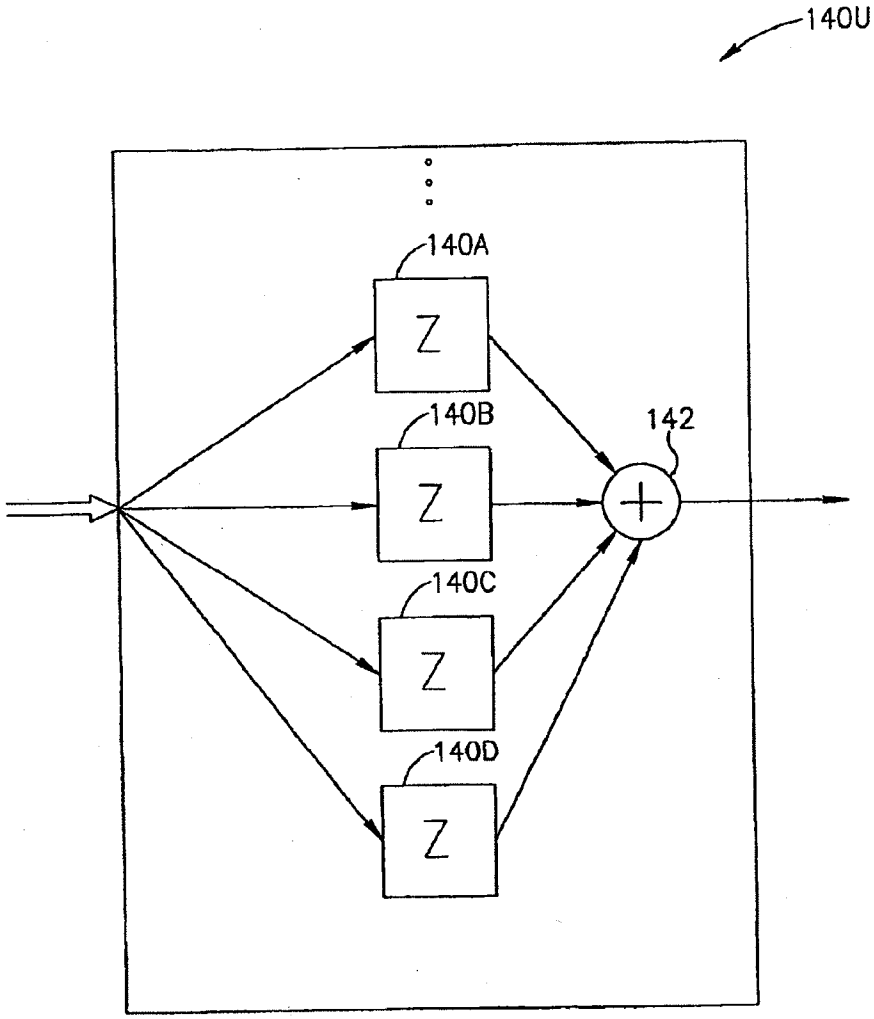


FIG.3

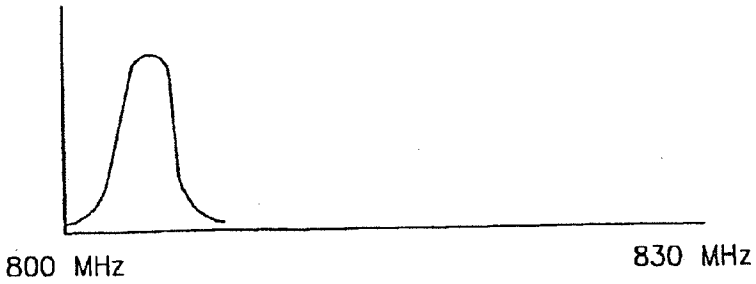


FIG.4A

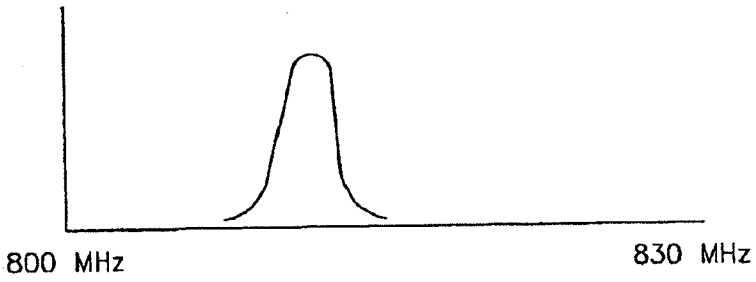


FIG.4B

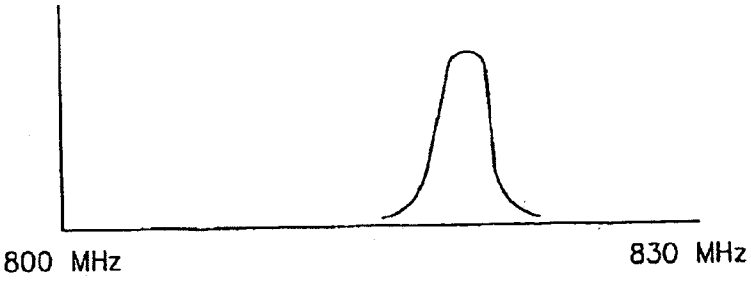


FIG.4C

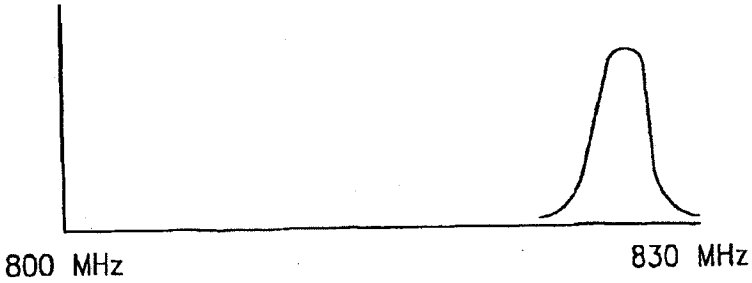


FIG.4D

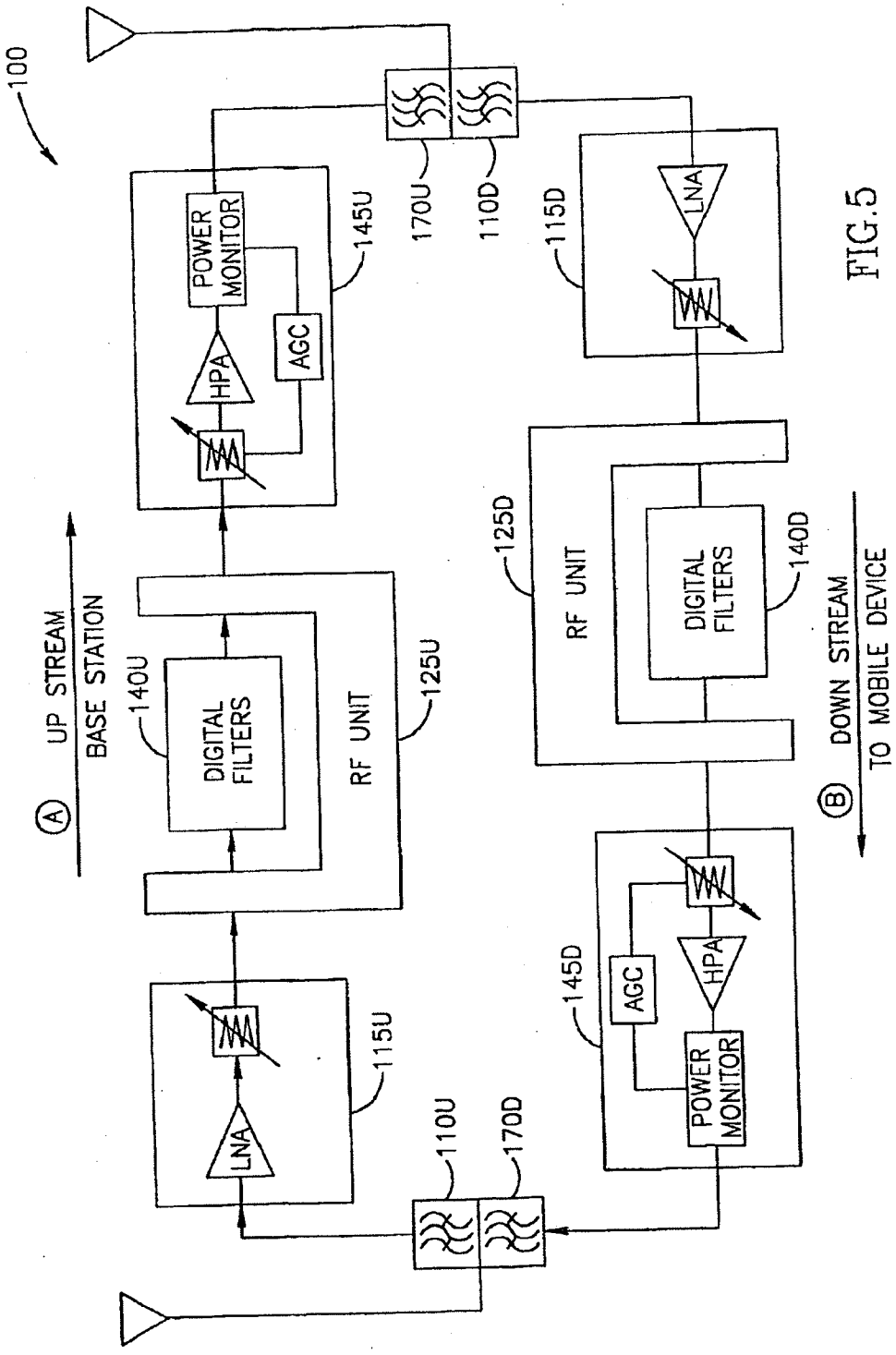

100
170U
110D
115D
LNA
145U
POWER MONITOR
AGC
HPA
125D
RF UNIT
DIGITAL FILTERS
140D
UP STREAM
BASE STATION
A
140U
DIGITAL FILTERS
RF UNIT
125U
B
DOWN STREAM
TO MOBILE DEVICE
145D
AGC
HPA
POWER MONITOR
115U
LNA
110U
170D

FIG.5

REPEATER WITH DIGITAL CHANNELIZER

FIELD OF THE INVENTION

The present invention relates generally to the field of communications. More specifically, the present invention relates to a repeater for a communication or transmission system (e.g. bi-directional cellular communication systems).

BACKGROUND

Degradation of signal-to-noise ratio ("SNR") occurs to a signal carried along a transmission medium (e.g. coax, unshielded conductor, wave guide, open air or even optical fiber). SNR degradation is one factor which may limit bandwidth over a transmission medium. In order to improve the SNR of signals being transmitted over long distances, and accordingly to augment the transmission distance and/or data rate, signal repeaters may be placed at intervals along the transmitting path. Repeaters are well known and may be used for optical, microwave and radio frequency (RF) communication systems. Repeaters have been used as part of cellular transmission systems to extend the range of coverage between a cellular base station and a cellular handset.

However, the use of a repeater for one or more channels at one or more frequencies within a shared frequency range of the spectrum (e.g. 800 MHz to 830 Mhz) may produce interference. Turning now to FIG. 1A, there is shown a spectral diagram exemplifying the channel frequencies a first cellular operator may be using within the frequency range of 800 to 830 MHz. Turning now to FIG. 1B, there is shown a spectral diagram exemplifying the channel frequencies a second cellular operator in the same geographic location as the first may be using within the same frequency range, 800 to 830 MHz. As can be seen from the FIGS. 1A and 1B, each operator's channel frequencies may be distinct from the other. However, two or more channel frequencies of one operator may either be between two or more channel frequencies of the other operator or may be on either side one or more of the other operator's channel frequencies.

In order for an operator to use a repeater in the situation described above and exemplified in FIGS. 1A and 1B, the operator would either need a separate response for each channel, or the operator may use a broader band repeater to cover a frequency range within which several of the operator's channels reside. However, if a broader band repeater is used, the repeater may inadvertently retransmit one or more channels belonging to both operators. The retransmission of another operator's communication channel(s) has both legal and business implications which a cellular operator may prefer to avoid.

Analog channelized repeaters exist in the prior art. Channelized repeaters of the prior art use analog filters to exclude or filter out all signals or communication channels not belonging to the operator whose channels are to be repeated. For example, if the repeater's band of operation is 800 to 830 MHz, and the operator using the repeater has communication channels at 805 MHz, 807 MHz, and 809 MHz, the repeater may be equipped with analog filters which only allow or pass signals at the frequencies of the operator's channels. The analog channelized repeater thus retransmits only signals at the frequencies of the operator's communication channels.

Analog channelized repeaters of the prior art have numerous drawbacks which the present invention aims to address.

SUMMARY OF THE INVENTION

As part of the present invention, a receiver may receive a signal associated with a certain communication channel at a specific frequency. An analog to digital converter may generate a digital signal correlated to the received signal and the digital signal may be passed through a digital filter configured to filter the digital signal and pass frequency components at or around the frequency of the communication channel's specific frequency. A digital to analog converter may generate an analog signal correlated to the filtered digital signal and a transmitter may transmit the analog signal.

According to some embodiments of the present invention, there may be included a second digital filter configured to pass frequency components at or around a second frequency associated with a second communication channel.

According to some embodiments of the present invention, there may be included a down-converter to down-convert a received signal to an intermediate signal. An up-converter may also be included to up-convert to a transmission frequency an analog signal correlated to the filtered digital signal.

BRIEF DESCRIPTION OF THE DRAWINGS

The subject matter regarded as the invention is particularly pointed out and distinctly claimed in the concluding portion of the specification. The invention, however, both as to organization and method of operation, together with objects, features, and advantages thereof, may best be understood by reference to the following detailed description when read with the accompanying drawings in which:

FIG. 1A is a spectral diagram exemplifying four frequencies which may be used by a first cellular operator for four communication channels in a specific geographic region;

FIG. 1B is a spectral diagram exemplifying three frequencies which may be used by a second cellular operator for three communication channels in a specific geographic region;

FIG. 2 is a block diagram showing an example of a bi-directional repeater with a digital channelizer according to some embodiment of the present invention;

FIG. 3 is a block diagram showing a more detailed view of the filter bank in FIG. 3;

FIGS. 4A to 4D spectral diagrams showing examples of frequency responses of the digital filters 140A through 140D in FIG. 3; and

FIG. 5 is a block diagram showing another example of a bi-directional repeater with a digital channelizer according to some embodiment of the present invention.

It will be appreciated that for simplicity and clarity of illustration, elements shown in the figures have not necessarily been drawn to scale. For example, the dimensions of some of the elements may be exaggerated relative to other elements for clarity. Further, where considered appropriate, reference numerals may be repeated among the figures to indicate corresponding or analogous elements.

DETAILED DESCRIPTION

In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the invention. However, it will be understood by those skilled in the art that the present invention may be practiced without these specific details. In other instances, well-known methods, procedures, components and circuits have not been described in detail so as not to obscure the present invention.

Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the

specification discussions utilizing terms such as "processing", "computing", "calculating", "determining", or the like, refer to the action and/or processes of a computer or computing system, or similar electronic computing device, that manipulate and/or transform data represented as physical, such as electronic, quantities within the computing system's registers and/or memories into other data similarly represented as physical quantities within the computing system's memories, registers or other such information storage, transmission or display devices.

Embodiments of the present invention may include apparatuses for performing the operations herein. This apparatus may be specially constructed for the desired purposes, or it may comprise a general purpose computer selectively activated or reconfigured by a computer program stored in the computer. Such a computer program may be stored in a computer readable storage medium, such as, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, magnetic-optical disks, read-only memories (ROMs), random access memories (RAMs) electrically programmable read-only memories (EPROMs), electrically erasable and programmable read only memories (EEPROMs), magnetic or optical cards, or any other type of media suitable for storing electronic instructions, and capable of being coupled to a computer system bus.

The processes and displays presented herein are not inherently related to any particular computer or other apparatus. Various general purpose systems may be used with programs in accordance with the teachings herein, or it may prove convenient to construct a more specialized apparatus to perform the desired method. The desired structure for a variety of these systems will appear from the description below. In addition, embodiments of the present invention are not described with reference to any particular programming language. It will be appreciated that a variety of programming languages may be used to implement the teachings of the inventions as described herein.

As part of the present invention, a receiver may receive a signal associated with a communication channel at a specific frequency. An analog to digital converter may generate a digital signal correlated to the received signal and the digital signal may be passed through a digital filter configured to filter the digital signal and pass frequency components at or around the frequency of the communication channel's specific frequency. A digital to analog converter may generate an analog signal correlated to the filtered digital signal and a transmitter may transmit the analog signal.

According to some embodiments of the present invention, there may be included a second digital filter configured to pass frequency components at or around a second frequency associated with a second communication channel.

According to some embodiments of the present invention, there may be included a down-converter to down-convert a received signal to an intermediate signal. An up-converter may also be included to up-convert to a transmission frequency an analog signal correlated to the filtered digital signal.

Turning now to FIG. **2**, there is shown a block diagram of a bi-directional repeater **100** with a digital channelizer according to the present invention. The bi-directional repeater **100** may include two basic sections: (A) an upstream or up-link section which receives signals from a mobile device (e.g. cell phone) and retransmits the signal to a base-station; and (B) a downstream or down-link section which receives signals from a base-station and retransmits the signals to a mobile device.

Looking first at the up-link section (A) from left to right on FIG. **2**, there may be an input filter **110U**, which for this example, may be a radio frequency ("RF") filter, or more specifically, may be a filter tuned to pass frequencies in the range of 800 to 830 MHz, for example. The input RF filter **110U** may receive signals from an antenna and may pass frequencies in the frequency range of one or more communication channels to be repeated to a down converter **120U**. The down converter **120U** may mix a received signal with a sine or cosine wave of a given frequency such that the received signal is down-converted to an intermediate frequency ("IF"). Either the input RF filter **110U** or the down converter **120U** may include a signal amplifier (Not shown in FIG. **2**). An analog to digital ("A/D") converter **130U** may sample the IF signal and may generate a digital signal representing the sampled IF signal. The digital signal representing the IF signal may enter digital filter bank **140U**. FIG. **3** shows a more detailed view of digital filter bank **140U** including digital filters **140***a* to **140***d*.

Turning now to FIG. **3**, there is shown a block diagram of a digital filter bank **140U** including digital filters **140***a* to **140***d*. A digital signal entering digital filter bank **140U** may be applied to each of the digital filters **140***a* through **140***d* and the output of each of the digital filters may be combined by an adder **142** or by a functionally equivalent device. Each of the filters within the filter bank **140U** may have a separate and distinct frequency response. Digital filters are well known in the field of communications. Implementation of a digital filter bank may be performed on a single or multiple processors (e.g. DSP) or may be implemented on a single or multiple dedicated digital filtering circuits. In the example of FIG. **3**, there is shown four discrete digital filter circuits. As part of some embodiment of the present invention, digital filters **140***a* through **140***d* may be field programmable digital filters ("FPDF"). That is, each filter's transfer function, along with its frequency response, may be reprogrammed or adjusted.

Turning now to FIGS. **4**A through **4**B, there are shown examples of possible frequency responses for digital filters **140***a* through **140***d* of FIG. **3**, where digital filters **140***a* through **140***b* correspond to the first through the fourth communication channels exemplified in FIG. **1**A, respectively. That is, the impulse response or frequency transfer characteristic for each digital filter **140***a* through **140***d* may be separately set or adjusted to pass frequency components of a digital signal that are at or around the carrier frequency of the filter's corresponding communication channel. For example; digital filter **140***a* may be programmed with a transfer function having a band pass frequency response peaking at or around the carrier frequency of the first communication channel shown in FIG. **1**A; Digital filter **140***b* may be programmed with a transfer function having a band pass frequency response peaking at or around the carrier frequency of the second communication channel shown in FIG. **1**A, etc . . .

The design of digital filters and digital filter transfer functions is well known. Although specific filters and transfer functions are mentioned above, any digital filter and transfer function combination, currently known or to be devised in the future, may be used as part of the present invention.

Now turning back to FIG. **2**, there is shown, directly after the digital filter bank **140U**, a digital to analog converter ("D/A") **150U**. The D/A **150U** may convert the filtered digital signal output of the digital filter bank **140U** to an analog signal, which analog signal may then be up-converted by up-converter **160U** to the original fre-

quency which was received at input RF filter **110**U. An output filter **170**U may be used to remove any harmonics which may have been introduced into the signal by the up-converter **160**U. Either the up-converter **160**U or the output RF filter **170**U may include a signal amplifier (not shown in FIG. **2**). The filtered signal may then propagate to and out of a transmission antenna.

The downstream or down-link (B) section of the bi-directional repeater **100** may almost mirror the up-stream section (A) discussed above. A difference being that the input RF filter **110**D, digital filter bank **140**D filters and output RF filter **170**D may be tuned to receive and pass frequencies of downstream communication channels, as opposed to passing frequencies at or around upstream communication channels.

The specific frequency bands to which each of the filters is set may depend on the specific frequencies of the communication channels, upstream and downstream, an operator may wish to repeat within a specific geographic location. The frequencies shown in FIGS. **1**A and **1**B are only examples of such communication channel frequencies. No distinction is made between upstream and downstream channels in FIGS. **1**A and **1**B. However, it will be understood by one of ordinary skill in the art that in a cellular system, there may be a corresponding upstream communication channel for each down stream communication channel. The relation between upstream channel frequency and downstream channel frequency may be fixed, or each may be negotiated separately between a mobile device and a base station.

Turning now to FIG. **5**, there is shown another possible embodiment of a bi-directional repeater **100** according to the present invention. As in the bi-directional repeater of FIG. **2**, there are two sections; (A) an upstream or up-link section, and (B) a downstream or down-link section. Also, as in the embodiment of FIG. **2**, the up-link and down-link sections may substantially mirror one another except for the frequencies they are tuned to pass and retransmit.

Looking at the downstream or down-link section (B) of the bi-directional repeater **100** of FIG. **5**, there may be a duplexer including an input RF filter **110**D. The input RF filter **110**D may lead to a pre-filtering stage **115**D which may include a low noise amplifier ("LNA") and an attenuator. The output of the pre-filtering block **115**D may enter an RF unit **125**D which may down convert the output and may also include an A/D converter. Digital filters in digital filter block **140**D may be similar to the ones described for FIGS. **2**, **3** or **4**A through **4**D, or may be any other digital filters suitable to the present invention. The output of the digital filter block **140**D may enter the RF unit **125**D which may up convert the output and may also include a D/A converter. A power amplifier block **145**D may include an attenuator, a high-power amplifier, and a power monitor. An automatic gain control circuit ("AGC") may adjust the attenuator such that the output signal from the power amplifier block **145**D remains substantially steady. The output signal of the power amplifier block **145**D may propagate to and through a duplexer including an output filter **170**D.

As for the bi-directional repeater **100** in FIG. **2**, the bi-directional repeater **100** of FIG. **5** may be configured to repeat specific sets of communication channels, at or around specific carrier frequencies, in the upstream direction, and to repeat specific sets of communication channels, at or around specific carrier frequencies, in the downstream direction. Digital filters in the digital filter banks or block, **140**U and **140**D, may be adjusted to pass only frequencies at or around the carrier frequencies of the relevant communication channels. Carrier frequency offsets due to up-conversion or down-conversion may be taken into account and compensated for within the digital filters. Furthermore, the bi-directional repeater **100** of the present invention may be adjusted to notch out narrow band noise interference within the communication channels' frequency band.

While certain features of the invention have been illustrated and described herein, many modifications, substitutions, changes, and equivalents will now occur to those skilled in the art. It is, therefore, to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit of the invention.

What is claimed:

1. A method of retransmitting a communication channel comprising:

receiving a signal having a frequency within a frequency range of the communication channel;

generating a digital signal correlated to the received signal;

filtering the digital signal with a digital filter bank configured to pass a plurality of frequency components within said frequency range, wherein said digital filter bank is able to generate a separate and distinct transfer function for each of at least some of said frequency components;

generating an analog signal correlated to the filtered digital signal; and

transmitting the analog signal correlated to the filtered digital signal.

2. The method according to claim **1**, further comprising down-converting the received signal to an intermediate frequency prior to generating a digital signal.

3. The method according to claim **2**, further comprising up-converting the analog signal correlated to the filtered digital signal prior to transmitting the analog signal.

4. A method of retransmitting a communication channel comprising:

receiving a signal having a frequency within a frequency range of the communication channel;

generating a digital signal correlated to the received signal;

filtering the digital signal with a digital filter bank configured to pass a plurality of frequency components within said frequency range, wherein said digital filter bank is able to generate a separate and distinct transfer function for each of at least some of said frequency components;

generating an analog signal correlated to the filtered digital signal;

transmitting the analog signal correlated to the filtered digital signal; and

filtering the digital signal with a second digital filter bank configured to pass a plurality of frequency components within a second frequency range, associated with a second communication channel, wherein said digital filter bank is able to generate a separate and distinct transfer function for each of at least some of said frequency components.

5. The method according to claim **4**, further comprising combining the digital signals out from each of said filtering steps and generating an analog signal correlated to the combined digital signal.

6. The method according to claim **5**, further comprising transmitting the analog signal correlated to the combined digital signal.

7. A system for retransmitting a communication channel within a predetermined frequency range, said system comprising:

a receiver to receive a signal having a frequency within the frequency range of the communication channel;

an analog to digital converter to generate a digital signal correlated to the received signal;

a digital filter bank configured to filter the digital signal by passing a plurality of frequency components within said frequency range, wherein said digital filter bank is able to generate a separate and distinct frequency transfer function for each of at least some of said frequency components;

a digital to analog converter to generate an analog signal correlated to the filtered digital signal; and

a transmitter to transmit the analog signal correlated to the filtered digital signal.

8. The system according to claim 7, further comprising a down converter to convert the received signal to an intermediate frequency.

9. The system according to claim 8, further comprising an up converter to convert the analog signal correlated to the filtered digital signal to a transmission frequency.

10. The system according to claim 7, further comprising a second digital filter bank configured to pass a plurality of frequency components within a second frequency range, wherein said digital filter bank is able to generate a separate and distinct transfer function for each of at least some of said frequency components associated with a second communication channel.

11. The system according to claim 10, further comprising a summing unit to combine outputs from said first and second digital filters.

12. The system according to claim 7, wherein said digital filter bank is configured to notch out narrow band noise interference within a frequency band of said communication channel.

13. A system for retransmitting a communication channel within a predetermined frequency range, said system comprising:

a receiver to receive a signal having a frequency within the frequency range of the communication channel;

an analog to digital converter to generate a digital signal correlated to the received signal;

a field programmable digital filter bank configured to filter the digital signal by passing a plurality of frequency components within said frequency range, wherein said digital filter bank is able to generate a separate and distinct transfer function for each of at least some of said frequency components;

a digital to analog converter to generate an analog signal correlated to the filtered digital signal; and

a transmitter to transmit the analog signal correlated to the filtered digital signal.

14. The system according to claim 13, wherein said field programmable digital filter bank is locally controllable.

15. The system according to claim 13, wherein said digital filter is remotely controllable.

16. The system according to claim 13, wherein said filter bank is able to choose an optimal transfer function for each of said plurality of frequency components.

17. A system for retransmitting a communication channel within a predetermined frequency range, said system comprising:

a receiver to receive a signal having a frequency within the frequency range of the communication channel;

a first gain control unit to adjust said signal to produce an input signal;

an analog to digital converter to generate a digital signal correlated to the input signal;

a digital filter bank configured to filter the digital signal by passing a plurality of frequency components within said frequency range, wherein said digital filter bank is able to generate a separate and distinct transfer function for each of at least some of said frequency components;

a digital to analog converter to generate an analog signal correlated to the filtered digital signal;

a second gain control unit to adjust said analog signal to produce a desired output signal; and

a transmitter to transmit the output signal correlated to the filtered digital signal.

18. The system according to claim 17, wherein said second gain control unit comprises a variable gain amplifier.

19. The system according to claim 17, wherein said digital bank is further configured to filter the digital signal by passing a plurality of frequency components within said frequency range, wherein said digital filter bank is able to generate a separate and distinct filter gain for each of at least some of said frequency components.

* * * * *

EXHIBIT B

US006873823C1

(12) EX PARTE REEXAMINATION CERTIFICATE (7076th)

United States Patent
Hasarchi et al.

(10) **Number: US 6,873,823 C1**
(45) **Certificate Issued: Sep. 22, 2009**

(54) **REPEATER WITH DIGITAL CHANNELIZER**

(75) Inventors: **Abraham Hasarchi**, Yavne (IL); **Alex Baber**, Ramat Gan (IL)

(73) Assignee: **Dekolink Wireless Ltd.**, Qiryat-Arieh, Petah-Tikva (IL)

Reexamination Request:
No. 90/010,159, May 7, 2008

Reexamination Certificate for:
Patent No.: **6,873,823**
Issued: **Mar. 29, 2005**
Appl. No.: **10/175,146**
Filed: **Jun. 20, 2002**

(51) **Int. Cl.**
H04B 7/155 (2006.01)

(52) **U.S. Cl.** **455/11.1**; 375/350; 455/17; 455/21; 455/67.13

(58) **Field of Classification Search** ..... None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

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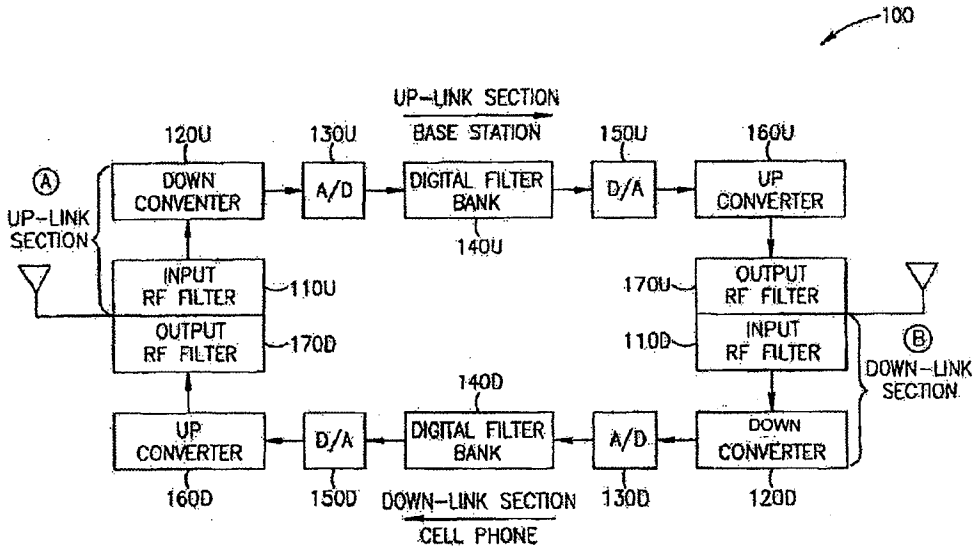
Primary Examiner—Deandra M Hughes

(57) **ABSTRACT**

In order to retransmit a communication channel at a specific frequency, a receiver may receive a signal including the communication channel's specific frequency. An analog to digital converter may generate a digital signal correlated to the received signal and the digital signal may be passed through a digital filter configured to filter the digital signal and pass frequency components at or around the frequency of the communication channel's specific frequency. A digital to analog converter may generate an analog signal correlated to the filtered digital signal and a transmitter may transmit the analog signal.



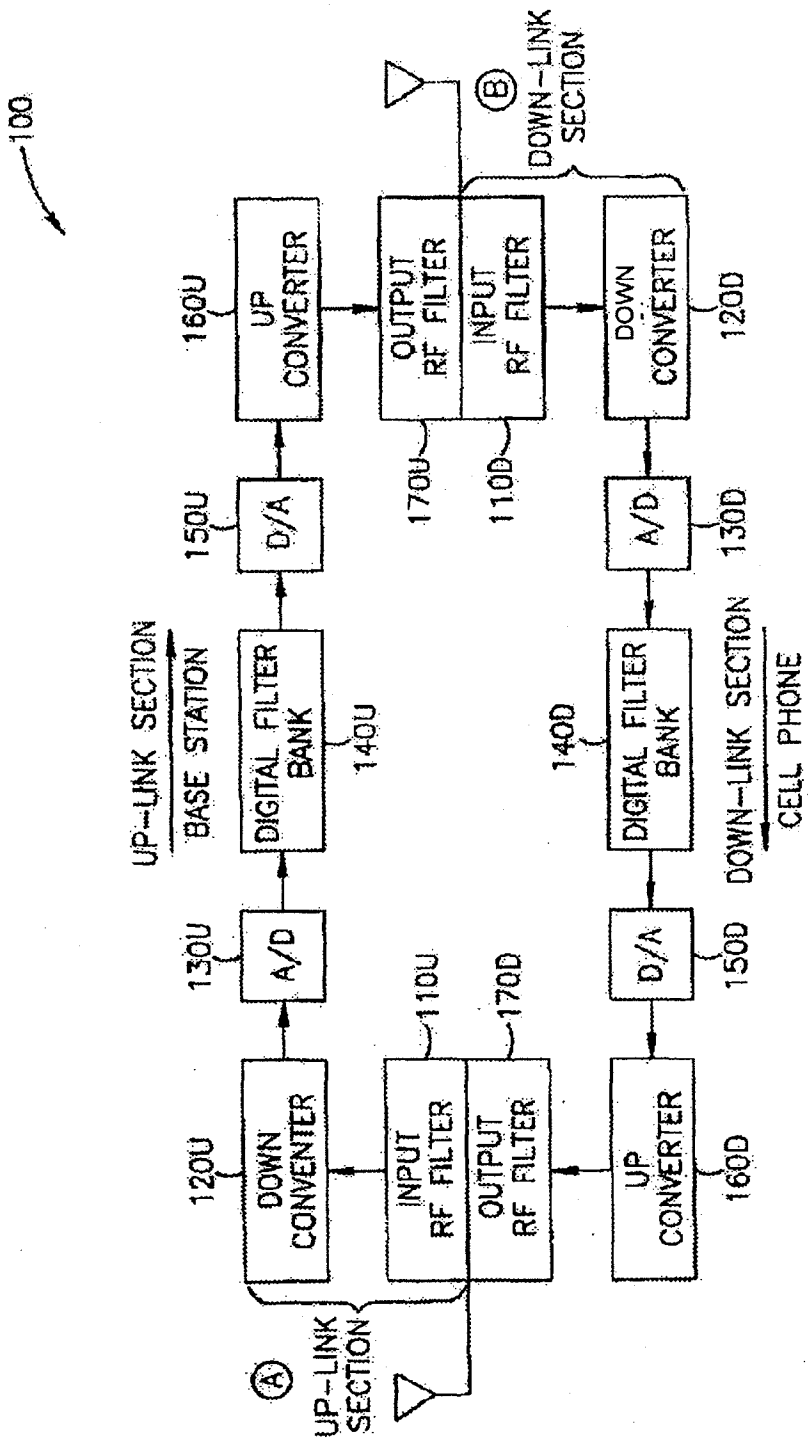


FIG. 2 Amended

EX PARTE REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

THE DRAWING FIGURES HAVE BEEN CHANGED AS FOLLOWS:

In FIG. **2**, the formerly "upconverter" #**120**D, has been changed to an "downconverter".

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Claims **5–6** and **11–12** are cancelled.

Claims **1**, **4**, **7**, **10**, **13–17** and **19** are determined to be patentable as amended.

Claims **2–3**, **8–9** and **18**, dependent on an amended claim, are determined to be patentable.

New claims **20–47** are added and determined to be patentable.

1. A method of retransmitting [a communication channel] *radio signals* comprising:

receiving [a signal] *signals each* having a frequency within a frequency range [of the communication channel];

generating a digital signal correlated to [the] *each* received signal;

filtering the digital [signal] *signals* with a digital filter bank configured to pass a plurality of *signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of* frequency components within said frequency range, wherein said digital filter bank is [able] *programmed* to generate a separate and distinct transfer function for each of at least some of said [frequency components] *channels*;

generating an analog signal correlated to [the] *each* filtered digital signal; and

transmitting the analog signal correlated to [the] *each* filtered digital signal.

4. A method of retransmitting [a communication channel] *radio signals* comprising:

receiving [a signal] *in an uplink section signals each* having a frequency within a *first* frequency range [of the communication channel];

generating a digital signal correlated to [the] *each* received signal;

filtering the digital [signal] *signals* with a *first* digital filter bank configured to pass a plurality of *signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of* frequency components within said frequency range, wherein said *first* digital filter bank is [able] *programmed* to generate a separate and distinct transfer function for each of at least some of said [frequency components] *channels*;

generating an analog signal correlated to [the] *each* filtered digital signal;

transmitting the analog signal correlated to [the] *each* filtered digital signal; and

in a downlink section filtering [the] digital [signal] *signals* with a second digital filter bank configured to pass a plurality of *signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of* frequency components within a second frequency range, associated with [a second communication channel] *said first frequency range*, wherein said *second* digital filter bank is [able] *programmed* to generate a separate and distinct transfer function for each of at least some of said [frequency components] *channels, and*

wherein the downlink section is a mirror of the uplink section except to the associated frequency ranges.

7. A system for retransmitting [a communication channel] *radio signals* within a predetermined frequency range, said system comprising:

a receiver to receive [a signal] *signals each* having a frequency within the frequency range [of the communication channel];

an analog to digital converter to generate a digital signal correlated to [the] *each* received signal;

a digital filter bank configured to filter the digital [signal] *signals* by passing a plurality of *signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of* frequency components within said frequency range, wherein said digital filter bank is [able] *programmed* to generate a separate and distinct frequency transfer function for each of at least some of said [frequency components] *channels*;

a digital to analog converter to generate an analog signal correlated to [the] *each* filtered digital signal; [and]

a transmitter to transmit the analog signal correlated to [the] *each* filtered digital signal*; and*

wherein said digital filter bank is configured to notch out narrow band interference within the frequency band of at least one of said plurality of communication channels.

10. The system according to claim **7**, *wherein said digital filter bank operates in an uplink section and* further comprising *in a downlink section* a second digital filter bank configured to pass a plurality of *signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals having a band of* frequency components within a second frequency range, wherein said *second* digital filter bank is [able] *programmed* to generate a separate and distinct transfer function for each of at least some of said [frequency components associated with a second communication channels] *channels; and*

wherein the downlink section is a mirror of the uplink section.

13. A system for retransmitting [a communication channel] *radio signals* within a predetermined frequency range, said system comprising:

a receiver to receive [a signal] *signals each* having a frequency within the frequency range [of the communication channel];

an analog to digital converter to generate a digital signal correlated to [the] *each* received signal;

a field programmable digital filter bank configured to filter the digital [signal] *signals* by passing a plurality of *sig-*

nals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of frequency components within said frequency range, wherein said digital filter bank is [able] *programmed* to generate a separate and distinct transfer function for each of at least some of said frequency components;

a digital to analog converter to generate an analog signal correlated to [the] *each* filtered digital signal; and

a transmitter to transmit the analog signal correlated to [the] *each* filtered digital signal.

14. The system according to claim **[13]** *16*, wherein said field programmable digital filter bank is locally controllable.

15. The system according to claim **[13]** *16*, wherein said digital filter is remotely controllable.

16. [The] *A* system [according to claim **13**,] *for retransmitting radio signals within a predetermined frequency range, said system comprising:*

a receiver to receive signals each having a frequency within the frequency range;

an analog to digital converter to generate a digital signal correlated to each received signal;

a field programmable digital filter bank configured to filter the digital signals by passing a plurality of signals corresponding to a plurality of communication channels, each channel is configured to pass multiple signals covering a band of frequency components within said frequency range, wherein said digital filter bank is programmed to generate a separate and distinct transfer function for each of at least some of the channels;

a digital to analog converter to generate an analog signal correlated to each filtered digital signal;

a transmitter to transmit the analog signals correlated to each filtered digital signal; and

wherein said filter bank is able to choose an optimal transfer function for each of said plurality of frequency components.

17. A system for retransmitting [a communication channel] *radio signals* within a predetermined frequency range, said system comprising:

a receiver to receive [a signal] *signals each* having a frequency within the frequency range [of the communication channel];

a first gain control unit *including an RF amplifier and variable attenuator* to adjust said signal [to produce an input signal] *level*;

an RF down converter unit to produce an input signal;

an analog to digital converter to generate a digital signal correlated to [the] *each* input signal;

a digital filter bank configured to filter the digital [signal] *signals* by passing a plurality of *signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of* frequency components within said frequency range, wherein said digital filter bank is [able] *programmed* to generate a separate and distinct transfer function for each of at least some of said [frequency components] *channels*;

a digital to analog converter to generate an analog signal correlated to [the] *each* filtered digital signal;

an RF up converter;

a second gain control unit *including an RF amplifier and a variable attenuator* to adjust said analog [signal] *signals such that the power of the output signal remains substantially steady* to produce a desired output signal; and

a transmitter to transmit the output [signal] *signals* correlated to [the] *each* filtered digital signal.

19. The system according to claim **17**, wherein said digital filter is further configured [to filter the digital signal by passing a plurality of frequency component within said frequency range, wherein said digital filter band is able] to generate a separate and distinct filter gain for each of at least some of said [frequency components] *channels*.

20. The method of claim 1, wherein said digital filter bank is programmed to generate a separate and distinct transfer function respectively for each channel.

21. The method of claim 1, wherein at least one transfer function notches out narrowband interference within the frequency band of its communication channel.

22. The method of claim 1, wherein said digital filter bank is able to choose an optimal transfer function for each of said plurality of communication channels.

23. The method of claim 1, further comprising the step of variably attenuating the received signal to adjust it; and

RF down converting the attenuated signal to an IF down converted frequency, prior to generating the digital signal.

24. The method of claim 23, and further comprising the step of up converting to RF the analog signals generated, and variably attenuating the RF signals to adjust them such that the power of the signals transmitted remains substantially steady.

25. The method of claim 4, wherein said digital filter bank is programmed to generate a separate and distinct transfer function respectively for each channel.

26. The method of claim 4, wherein at least one transfer function notches out narrow band interference within the frequency band of its communication channel.

27. The method of claim 4, wherein said digital filter bank is able to choose an optimal transfer function for each of said plurality of communication channels.

28. The method of claim 4, further comprising the step of variably attenuating the received signal to adjust its level, and

RF down converting the attenuated signal to an IF frequency prior to generating the digital signal.

29. The method of claim 28, and further comprising the step of up converting to RF the analog signals generated, and variably attenuating the RF signals to adjust them such that the power of the signals transmitted remains substantially steady.

30. The system of claim 7, wherein said digital filter bank is programmed to generate a separate and distinct frequency transfer function for each of said channels.

31. The system of claim 7, wherein said filter bank is able to choose an optimal transfer function for each of said plurality of communication channels.

32. The system of claim 7, and further comprising:

a variable attenuator to adjust the level of the received signals, and

an RF down converter to down convert the adjusted signals to IF, the analog to digital converter receiving the output from the down converter.

33. The system of claim 32, and further comprising an up converter unit to up convert to RF the analog signals generated, and

a further variable attenuator for attenuating the RF signals to adjust them such that the power of the signals transmitted remains substantially steady.

34. The system of claim 16, wherein said filter bank is programmed to generate a separate and distinct transfer function respectively for each of said channel filters.

35. The system of claim 16, wherein at least one transfer function notches out narrow band interference within the frequency band of its communication channel.

36. The system of claim 16, and further comprising:

a variable attenuator to adjust the received signals and

an RF down converter to down convert the adjusted signals to RF, the analog to digital converter receiving the output from the down converter.

37. The system of claim 36, and further comprising a up converter unit to up convert to RF the analog signals generated, and

a further variable attenuator for attenuating the RF signals to adjust them such that the power of the signals transmitted remains substantially steady.

38. The system of claim 17, wherein at least one transfer function notches out narrow band interference within the frequency band of its communication channel.

39. The system of claim 17, wherein said digital filter band is able to choose an optimal transfer function for each of said plurality of communication channels.

40. A method of transmitting radio signals, comprising:

receiving signals each having a frequency within a frequency range;

attenuating the received signals to adjust it;

RF down converting the attenuated signals to IF frequency;

generating a digital signal correlated to each received signal;

filtering the digital signals with a digital filter bank configured to pass signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of frequency components within said frequency range, wherein said digital filter bank is programmed to generate a separate and distinct transfer function for each of at least some of said channels, at least one transfer function notching out narrow band interference within the frequency band of its communication channel,

generating an analog signal correlated to each filtered digital signal, and

transmitting the analog signal correlated to each filtered digital signal.

41. A method as in claim 40, wherein said digital filter bank is programmed to generate has a separate and distinct transfer function respectively for each channel.

42. The method of claim 41, wherein said digital filter bank is able to choose an optimal transfer function for each of said plurality of communication channels.

43. The method of claim 40, and further comprising the step of up converting to RF the analog signals generated, and variably attenuating the RF signals to adjust them such that the power of the signals transmitted remains substantially steady.

44. A system for retransmitting radio signals within a predetermined frequency range, said system comprising:

a receiver to receive signals each having a frequency within the frequency range;

a first variable attenuator unit to adjust said signal level to produce an input signal;

an RF down converter to down convert the input signal to IF;

an analog to digital converter to generate a digital signal correlated to each down converted input signal;

a digital filter bank configured to filter the digital signals by passing signals corresponding to a plurality of communication channels, wherein each channel is configured to pass multiple signals covering a band of frequency components within said frequency range, wherein said digital filter bank is programmed to generate a separate and distinct transfer function for each of at least some of said channels, at least one transfer function notching out narrowband interference within the frequency band of its communication channel;

a digital to analog converter to generate an analog signal correlated to each filtered signal, and

a transmitter to transmit the analog signal correlated to each filtered digital signal.

45. The system of claim 44, wherein said filter bank is programmed to generate a separate and distinct frequency transfer function for each of said channel filters.

46. The system of claim 44, wherein said filter bank is able to choose an optimal transfer function for each of said plurality of communication channels.

47. The system of claim 44, and further comprising a up converter unit to up convert to RF the analog signals generated, and

a further variable attenuator for attenuating the RF signals to adjust them such that the power of the signals transmitted remains substantially steady.

* * * * *

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

NOTICE OF ASSIGNMENT TO UNITED STATES MAGISTRATE JUDGE FOR DISCOVERY

This case has been assigned to District Judge Michael Fitzgerald and the assigned discovery Magistrate Judge is Michael Wilner.

The case number on all documents filed with the Court should read as follows:

CV12- 4938 MWF (MRWx)

Pursuant to General Order 05-07 of the United States District Court for the Central District of California, the Magistrate Judge has been designated to hear discovery related motions.

All discovery related motions should be noticed on the calendar of the Magistrate Judge

==========

NOTICE TO COUNSEL

A copy of this notice must be served with the summons and complaint on all defendants (if a removal action is filed, a copy of this notice must be served on all plaintiffs).

Subsequent documents must be filed at the following location:

[X] **Western Division**
312 N. Spring St., Rm. G-8
Los Angeles, CA 90012

[ ] **Southern Division**
411 West Fourth St., Rm. 1-053
Santa Ana, CA 92701-4516

[ ] **Eastern Division**
3470 Twelfth St., Rm. 134
Riverside, CA 92501

Failure to file at the proper location will result in your documents being returned to you.

Name & Address:
David Halberstadter (State Bar No. 107033)
KATTEN MUCHIN ROSENMAN LLP
2029 Century Park East, Suite 2600
Los Angeles, CA 90067
Telephone: (310) 788-4408

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

AXELL WIRELESS LTD.,

PLAINTIFF(S)

v.

ADVANCED RF TECHNOLOGIES, INC. and ADRF KOREA CO., LTD.

DEFENDANT(S).

CASE NUMBER

CV12-4938-MWF(MRWx)

SUMMONS

TO: DEFENDANT(S):

A lawsuit has been filed against you.

Within 21 days after service of this summons on you (not counting the day you received it), you must serve on the plaintiff an answer to the attached ☑ complaint ☐ _____ amended complaint ☐ counterclaim ☐ cross-claim or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff's attorney, David Halberstadter, whose address is Katten Muchin Rosenman, 2029 Century Park East, Suite 2600, Los Angeles, CA 90067. If you fail to do so, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

Clerk, U.S. District Court

Dated: JUN - 6 2012

By: MARILYN [illegible]
Deputy Clerk

(Seal of the Court)

[Use 60 days if the defendant is the United States or a United States agency, or is an officer or employee of the United States. Allowed 60 days by Rule 12(a)(3)].

UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA

CIVIL COVER SHEET

I (a) PLAINTIFFS (Check box if you are representing yourself ☐)

Axell Wireless, Ltd.

DEFENDANTS

Advanced RF Technologies, Inc. and ADRF Korea Co., Ltd.

(b) Attorneys (Firm Name, Address and Telephone Number. If you are representing yourself, provide same.)

David Halberstadter (State Bar No. 107033)
KATTEN MUCHIN ROSENMAN LLP
2029 Century Park East, Suite 2600
Los Angeles, California 90067
Telephone: (310) 788-4570

Attorneys (If Known)

II. BASIS OF JURISDICTION (Place an X in one box only.)

- ☐ 1 U.S. Government Plaintiff
- ☒ 3 Federal Question (U.S. Government Not a Party)
- ☐ 2 U.S. Government Defendant
- ☐ 4 Diversity (Indicate Citizenship of Parties in Item III)

III. CITIZENSHIP OF PRINCIPAL PARTIES - For Diversity Cases Only (Place an X in one box for plaintiff and one for defendant.)

	PTF	DEF		PTF	DEF
Citizen of This State	☐ 1	☐ 1	Incorporated or Principal Place of Business in this State	☐ 4	☐ 4
Citizen of Another State	☐ 2	☐ 2	Incorporated and Principal Place of Business in Another State	☐ 5	☐ 5
Citizen or Subject of a Foreign Country	☐ 3	☐ 3	Foreign Nation	☐ 6	☐ 6

IV. ORIGIN (Place an X in one box only.)

☒ 1 Original Proceeding ☐ 2 Removed from State Court ☐ 3 Remanded from Appellate Court ☐ 4 Reinstated or Reopened ☐ 5 Transferred from another district (specify): ☐ 6 Multi-District Litigation ☐ 7 Appeal to District Judge from Magistrate Judge

V. REQUESTED IN COMPLAINT: JURY DEMAND: ☐ Yes ☒ No (Check 'Yes' only if demanded in complaint.)

CLASS ACTION under F.R.C.P. 23: ☐ Yes ☒ No ☒ **MONEY DEMANDED IN COMPLAINT: $** according to proof

VI. CAUSE OF ACTION (Cite the U.S. Civil Statute under which you are filing and write a brief statement of cause. Do not cite jurisdictional statutes unless diversity.)

35 U.S.C. §271 This is an action for patent infringement.

VII. NATURE OF SUIT (Place an X in one box only.)

OTHER STATUTES
- ☐ 400 State Reapportionment
- ☐ 410 Antitrust
- ☐ 430 Banks and Banking
- ☐ 450 Commerce/ICC Rates/etc.
- ☐ 460 Deportation
- ☐ 470 Racketeer Influenced and Corrupt Organizations
- ☐ 480 Consumer Credit
- ☐ 490 Cable/Sat TV
- ☐ 810 Selective Service
- ☐ 850 Securities/Commodities/ Exchange
- ☐ 875 Customer Challenge 12 USC 3410
- ☐ 890 Other Statutory Actions
- ☐ 891 Agricultural Act
- ☐ 892 Economic Stabilization Act
- ☐ 893 Environmental Matters
- ☐ 894 Energy Allocation Act
- ☐ 895 Freedom of Info. Act
- ☐ 900 Appeal of Fee Determination Under Equal Access to Justice
- ☐ 950 Constitutionality of State Statutes

CONTRACT
- ☐ 110 Insurance
- ☐ 120 Marine
- ☐ 130 Miller Act
- ☐ 140 Negotiable Instrument
- ☐ 150 Recovery of Overpayment & Enforcement of Judgment
- ☐ 151 Medicare Act
- ☐ 152 Recovery of Defaulted Student Loan (Excl. Veterans)
- ☐ 153 Recovery of Overpayment of Veteran's Benefits
- ☐ 160 Stockholders' Suits
- ☐ 190 Other Contract
- ☐ 195 Contract Product Liability
- ☐ 196 Franchise

REAL PROPERTY
- ☐ 210 Land Condemnation
- ☐ 220 Foreclosure
- ☐ 230 Rent Lease & Ejectment
- ☐ 240 Torts to Land
- ☐ 245 Tort Product Liability
- ☐ 290 All Other Real Property

TORTS PERSONAL INJURY
- ☐ 310 Airplane
- ☐ 315 Airplane Product Liability
- ☐ 320 Assault, Libel & Slander
- ☐ 330 Fed. Employers' Liability
- ☐ 340 Marine
- ☐ 345 Marine Product Liability
- ☐ 350 Motor Vehicle
- ☐ 355 Motor Vehicle Product Liability
- ☐ 360 Other Personal Injury
- ☐ 362 Personal Injury-Med Malpractice
- ☐ 365 Personal Injury-Product Liability
- ☐ 368 Asbestos Personal Injury Product Liability

IMMIGRATION
- ☐ 462 Naturalization Application
- ☐ 463 Habeas Corpus-Alien Detainee
- ☐ 465 Other Immigration Actions

TORTS PERSONAL PROPERTY
- ☐ 370 Other Fraud
- ☐ 371 Truth in Lending
- ☐ 380 Other Personal Property Damage
- ☐ 385 Property Damage Product Liability

BANKRUPTCY
- ☐ 422 Appeal 28 USC 158
- ☐ 423 Withdrawal 28 USC 157

CIVIL RIGHTS
- ☐ 441 Voting
- ☐ 442 Employment
- ☐ 443 Housing/Accommodations
- ☐ 444 Welfare
- ☐ 445 American with Disabilities - Employment
- ☐ 446 American with Disabilities - Other
- ☐ 440 Other Civil Rights

PRISONER PETITIONS
- ☐ 510 Motions to Vacate Sentence Habeas Corpus
- ☐ 530 General
- ☐ 535 Death Penalty
- ☐ 540 Mandamus/ Other
- ☐ 550 Civil Rights
- ☐ 555 Prison Condition

FORFEITURE/ PENALTY
- ☐ 610 Agriculture
- ☐ 620 Other Food & Drug
- ☐ 625 Drug Related Seizure of Property 21 USC 881
- ☐ 630 Liquor Laws
- ☐ 640 R.R. & Truck
- ☐ 650 Airline Regs
- ☐ 660 Occupational Safety/Health
- ☐ 690 Other

LABOR
- ☐ 710 Fair Labor Standards Act
- ☐ 720 Labor/Mgmt. Relations
- ☐ 730 Labor/Mgmt. Reporting & Disclosure Act
- ☐ 740 Railway Labor Act
- ☐ 790 Other Labor Litigation
- ☐ 791 Empl. Ret. Inc. Security Act

PROPERTY RIGHTS
- ☐ 820 Copyrights
- ☒ 830 Patent
- ☐ 840 Trademark

SOCIAL SECURITY
- ☐ 861 HIA (1395ff)
- ☐ 862 Black Lung (923)
- ☐ 863 DIWC/DIWW (405(g))
- ☐ 864 SSID Title XVI
- ☐ 865 RSI (405(g))

FEDERAL TAX SUITS
- ☐ 870 Taxes (U.S. Plaintiff or Defendant)
- ☐ 871 IRS - Third Party 26 USC 7609

CV12-4938

FOR OFFICE USE ONLY: Case Number: _____

AFTER COMPLETING THE FRONT SIDE OF FORM CV-71, COMPLETE THE INFORMATION REQUESTED BELOW.

UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA

CIVIL COVER SHEET

VIII(a). IDENTICAL CASES: Has this action been previously filed in this court and dismissed, remanded or closed? [X] No [ ] Yes

If yes, list case number(s):

VIII(b). RELATED CASES: Have any cases been previously filed in this court that are related to the present case? [ ] No [X] Yes

If yes, list case number(s): 12-CV-4211 (SJO)(FFM)

Civil cases are deemed related if a previously filed case and the present case:

(Check all boxes that apply)

[X] A. Arise from the same or closely related transactions, happenings, or events; or

[X] B. Call for determination of the same or substantially related or similar questions of law and fact; or

[ ] C. For other reasons would entail substantial duplication of labor if heard by different judges; or

[X] D. Involve the same patent, trademark or copyright, and one of the factors identified above in a, b or c also is present.

IX. VENUE: (When completing the following information, use an additional sheet if necessary.)

(a) List the County in this District; California County outside of this District; State if other than California; or Foreign Country, in which **EACH** named plaintiff resides.

[ ] Check here if the government, its agencies or employees is a named plaintiff. If this box is checked, go to item (b).

County in this District:*	California County outside of this District; State, if other than California; or Foreign Country
	United Kingdom

(b) List the County in this District; California County outside of this District; State if other than California; or Foreign Country, in which **EACH** named defendant resides.

[ ] Check here if the government, its agencies or employees is a named defendant. If this box is checked, go to item (c).

County in this District:*	California County outside of this District; State, if other than California; or Foreign Country
Los Angeles County	

(c) List the County in this District; California County outside of this District; State if other than California; or Foreign Country, in which **EACH** claim arose.

Note: In land condemnation cases, use the location of the tract of land involved.

County in this District:*	California County outside of this District; State, if other than California; or Foreign Country
Los Angeles County	

*** Los Angeles, Orange, San Bernardino, Riverside, Ventura, Santa Barbara, or San Luis Obispo Counties**

Note: In land condemnation cases, use the location of the tract of land involved

X. SIGNATURE OF ATTORNEY (OR PRO PER): _____ **Date** 6/5/12

Notice to Counsel/Parties: The CV-71 (JS-44) Civil Cover Sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law. This form, approved by the Judicial Conference of the United States in September 1974, is required pursuant to Local Rule 3-1 is not filed but is used by the Clerk of the Court for the purpose of statistics, venue and initiating the civil docket sheet. (For more detailed instructions, see separate instructions sheet.)

Key to Statistical codes relating to Social Security Cases:

Nature of Suit Code	Abbreviation	Substantive Statement of Cause of Action
861	HIA	All claims for health insurance benefits (Medicare) under Title 18, Part A, of the Social Security Act, as amended. Also, include claims by hospitals, skilled nursing facilities, etc., for certification as providers of services under the program. (42 U.S.C. 1935FF(b))
862	BL	All claims for "Black Lung" benefits under Title 4, Part B, of the Federal Coal Mine Health and Safety Act of 1969. (30 U.S.C. 923)
863	DIWC	All claims filed by insured workers for disability insurance benefits under Title 2 of the Social Security Act, as amended; plus all claims filed for child's insurance benefits based on disability. (42 U.S.C. 405(g))
863	DIWW	All claims filed for widows or widowers insurance benefits based on disability under Title 2 of the Social Security Act, as amended. (42 U.S.C. 405(g))
864	SSID	All claims for supplemental security income payments based upon disability filed under Title 16 of the Social Security Act, as amended.
865	RSI	All claims for retirement (old age) and survivors benefits under Title 2 of the Social Security Act, as amended. (42 U.S.C. (g))