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**REGISTERED PATENT AGENTS

January 29, 2001

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Box Patent Application

Re: U.S. Non-Provisional Utility Patent Application under 37 C.F.R. § 1.53(b)
Appl. No. *to be assigned*; Filed: *herewith*
For: **Wireless and Wired Cable Modem Application of Universal
Frequency Translation Technology**
Inventors: David F. Sorrells *et al.*
Our Ref: 1744.0140005

Sir:

The following documents are forwarded herewith for appropriate action by the U.S. Patent and Trademark Office:

1. USPTO Utility Patent Application Transmittal Form PTO/SB/05;
2. U.S. Utility Patent Application entitled:

**Wireless and Wired Cable Modem Application of Universal Frequency
Translation Technology**

and naming as inventors:

David F. Sorrells
Michael J. Bultman
Robert W. Cook

Richard C. Looke
Charley D. Moses, Jr.

Commissioner for Patents
January 29, 2001
Page 2

the application comprising:

- a. specification containing:
 - i. 87 pages of description prior to the claims;
 - ii. 6 pages of claims (31 claims);
 - iii. a one page abstract;
 - b. 82 sheets of drawings: (Figures 1A-66);
- 3. 37 C.F.R. § 1.136(a)(3) Authorization to Treat a Reply As Incorporating An Extension of Time; and
 - 4. Two return postcards.

It is respectfully requested that, of the two attached postcards, one be stamped with the filing date of these documents and returned to our courier, and the other, prepaid postcard, be stamped with the filing date and unofficial application number and returned as soon as possible.

This patent application is being submitted under 37 C.F.R. § 1.53(b) without Declaration and without filing fee.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Patrick D. O'Brien
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Pdo:lma
Enclosures

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SKGF Rec. 5/12/00 mac

What Is Claimed Is:

1. A system for down-converting an electromagnetic signal having complex modulations, comprising:

an oscillator to generate an in-phase oscillating signal;

a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;

a first universal frequency down-conversion module to receive the electromagnetic signal and said in-phase oscillating signal;

a second universal frequency down-conversion module to receive the electromagnetic signal and said quadrature-phase oscillating signal; wherein

said first universal frequency down-conversion module further comprising a first universal frequency transfer module and a first storage module, wherein said first universal frequency transfer module samples the electromagnetic signal at a rate that is a function of said in-phase oscillating signal, thereby creating a first sampled signal; and

said second universal frequency down-conversion module further comprising a second universal frequency transfer module and a second storage module, wherein said first universal frequency transfer module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating a second sampled signal.

2. The system of claim 1, wherein said quadrature-phase oscillating signal is out of phase with said in-phase oscillating signal by substantially 90°.

3. The system of claim 1, wherein said first storage device has a first storage first side and a first storage second side, said first storage first side being connected to said first sampled signal, and said first storage second side is connected to a first reference potential, and said second storage device has a second storage first side and a second storage second side, said second

storage first side being connected to said second sampled signal, and said second storage second side is connected to a second reference potential.

4. The system of claim 3, wherein said first storage device is a first capacitor, and said second storage device is a second capacitor.
5. The system of claim 3, wherein said first reference potential is substantially equal to ground, and said second reference potential is substantially equal to ground.
6. The system of claim 1, wherein the electromagnetic signal has a first frequency, said in-phase oscillating signal has a second frequency, and said first sampled signal has a first sampled frequency, and wherein said quadrature phase oscillating signal has a third frequency, and said second sampled signal has a second sampled frequency, wherein said first sampled frequency is substantially equal to the difference between said first frequency and “n” times said second frequency, where “n” is a subharmonic of said first frequency, and said second sampled frequency is substantially equal to the difference between said first frequency and “m” times said third frequency, where “m” is a subharmonic of said first frequency.
7. The system of claim 6, wherein “m” is substantially equal to “n.”
8. The system of claim 6, wherein said first sampled frequency is substantially equal to zero, and said second sampled frequency is substantially equal to zero.
9. The system of claim 1, wherein said first sampled signal is comprised of two or more voltage levels.
10. The system of claim 9, wherein said first sampled signal is comprised of eight voltage levels.

11. The system of claim 9, wherein said first sampled signal is comprised of sixteen voltage levels.
12. The system of claim 1, wherein said second sampled signal is comprised of two or more voltage levels.
13. The system of claim 12, wherein said second sampled signal is comprised of eight voltage levels.
14. The system of claim 12, wherein said second sampled signal is comprised of sixteen voltage levels.
15. The system of claim 1, wherein said first sampled signal is a first information output signal, and said second sampled signal is a second information output signal.
16. The system of claim 1, further comprising a first amplifier receiving said first sampled signal and outputting a first amplified signal, and a second amplifier receiving said second sampled signal and outputting a second amplified signal.
17. The system of claim 16, further comprising a first filter receiving said first amplified signal and outputting a first filtered signal, and a second filter receiving said second amplified signal and outputting a second filtered signal.
18. The system of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal.

19. The system of claim 1, wherein the electromagnetic signal has been transmitted over a coaxial cable to a cable modem.

20. The system of claim 1, wherein the electromagnetic signal has been transmitted by a wireless method to a cable modem.

21. A multiphase transmitting system, comprising:

an oscillator to generate an in-phase oscillating signal;

a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;

a first universal frequency translation module to receive said in-phase oscillating signal and a first information signal, wherein said in-phase oscillating signal causes said first universal frequency translation module to gate said first information signal and thereby generate a first periodic signal having a first plurality of harmonics, said first periodic signal having an amplitude that is a function of said first information signal;

a second universal frequency translation module to receive said quadrature-phase oscillating signal and a second information signal, wherein said quadrature-phase oscillating signal causes said second universal frequency translation module to gate said second information signal and thereby generate a second periodic signal having a second plurality of harmonics, said second periodic signal having an amplitude that is a function of said second information signal;

a summer coupled to said first universal frequency translation module and to said second universal frequency translation module, said summer to receive and combine said first periodic signal and said second periodic signal, and to output a combined periodic signal having a combined plurality of harmonics; and

a filter coupled to said summer, said filter to isolate at least one of said combined plurality of harmonics.

22. The multiphase transmitting system of claim 21, wherein said in-phase oscillating signal and said quadrature-phase oscillating signal have substantially the same frequency and are out of phase with each other by substantially 90°.

23. The multiphase transmitting system of claim 21, further comprising:

a first pulse shaping module connected to said first universal frequency translation module, said first pulse shaping module accepting said in-phase oscillating signal and outputting a first shaped oscillating signal, wherein said first shaped oscillating signal causes said first universal frequency translation module to gate said first information signal;

a second pulse shaping module connected to said second universal frequency translation module, said second pulse shaping module accepting said quadrature-phase oscillating signal and outputting a second shaped oscillating signal, wherein said second shaped oscillating signal causes said second universal frequency translation module to gate said second information signal.

24. The multiphase transmitting system of claim 21, wherein said first information signal is comprised of two or more voltage levels.

25. The multiphase transmitting system of claim 24, wherein said first information signal is comprised of eight voltage levels.

26. The multiphase transmitting system of claim 24, wherein said first information signal is comprised of sixteen voltage levels.

27. The multiphase transmitting system of claim 21, wherein said second information signal is comprised of two or more voltage levels.

28. The multiphase transmitting system of claim 27, wherein said second information signal is comprised of eight voltage levels.

29. The multiphase transmitting system of claim 27, wherein said second information signal is comprised of sixteen voltage levels.

30. The multiphase transmitting system of claim 21, wherein said filter isolates an output signal, said output signal being transmitted from a cable modem over a coaxial cable.

31. The multiphase transmitting system of claim 21, wherein said filter isolates an output signal, said output signal being transmitted from a cable modem via a wireless method.

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Amendments

In the Claims:

Please cancel claims ~~6~~, ~~7~~, and ~~8~~, without prejudice or disclaimer.

Please substitute the following claims 1-5 and 9-31 for the pending claims 1-5 and 9-31:

1.(Amended) A cable modem for down-converting an electromagnetic signal having complex modulations, comprising:

an oscillator to generate an in-phase oscillating signal;

a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;

a first universal frequency down-conversion module to receive the electromagnetic signal and said in-phase oscillating signal;

a second universal frequency down-conversion module to receive the electromagnetic signal and said quadrature-phase oscillating signal; wherein

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said first universal frequency down-conversion module further comprising a first universal frequency translation module and a first storage module, wherein said first universal frequency translation module samples the electromagnetic signal at a rate that is a function of said in-phase oscillating signal, thereby creating a first sampled signal; and

said second universal frequency down-conversion module further comprising a second universal frequency translation module and a second storage module, wherein said first universal frequency translation module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating a second sampled signal.

2.(Amended) The cable modem of claim 1, wherein said quadrature-phase oscillating signal is out of phase with said in-phase oscillating signal by substantially 90°.

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3.(Amended) The cable modem of claim 1, wherein said first storage device has a first storage first port and a first storage second port, said first storage first port being connected to said first sampled signal, and said first storage second port is connected to a first reference potential, and said second storage device has a second storage first port and a second storage second port, said second storage first port being connected to said second sampled signal, and said second storage second port is connected to a second reference potential.

4.(Amended) The cable modem of claim 3, wherein said first storage device is a first capacitor, and said second storage device is a second capacitor.

5.(Amended) The cable modem of claim 3, wherein said first reference potential is substantially equal to ground, and said second reference potential is substantially equal to ground.

9.(Amended) The cable modem of claim 1, wherein said first sampled signal is comprised of two or more voltage levels.

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10.(Amended) The cable modem of claim 9, wherein said first sampled signal is comprised of eight voltage levels.

11.(Amended) The cable modem of claim 9, wherein said first sampled signal is comprised of sixteen voltage levels.

12.(Amended) The cable modem of claim 1, wherein said second sampled signal is comprised of two or more voltage levels.

13.(Amended) The cable modem of claim 12, wherein said second sampled signal is comprised of eight voltage levels.

14.(Amended) The cable modem of claim 12, wherein said second sampled signal is comprised of sixteen voltage levels.

15.(Amended) The cable modem of claim 1, wherein said first sampled signal is a first information output signal, and said second sampled signal is a second information output signal.

16.(Amended) The cable modem of claim 1, further comprising a first amplifier receiving said first sampled signal and outputting a first amplified signal, and a second amplifier receiving said second sampled signal and outputting a second amplified signal.

A2
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17.(Amended) The cable modem of claim 16, further comprising a first filter receiving said first amplified signal and outputting a first filtered signal, and a second filter receiving said second amplified signal and outputting a second filtered signal.

18.(Amended) The cable modem of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal.

19.(Amended) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted over a coaxial cable to the cable modem.

20.(Amended) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted by a wireless method to the cable modem.

21.(Amended) A cable modem, comprising:
an oscillator to generate an in-phase oscillating signal;
a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;

a first universal frequency translation module to receive said in-phase oscillating signal and a first information signal, wherein said in-phase oscillating signal causes said first universal frequency translation module to gate said first information signal and thereby generate a first periodic signal having a first plurality of harmonics;

a second universal frequency translation module to receive said quadrature-phase oscillating signal and a second information signal, wherein said quadrature-phase oscillating signal causes said second universal frequency translation module to gate said second information signal and thereby generate a second periodic signal having a second plurality of harmonics;

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a summer coupled to said first universal frequency translation module and to said second universal frequency translation module, said summer to receive and combine said first periodic signal and said second periodic signal, and to output a combined periodic signal having a combined plurality of harmonics; and

a filter coupled to said summer, said filter to isolate at least one of said combined plurality of harmonics.

22.(Amended) The cable modem of claim 21, wherein said in-phase oscillating signal and said quadrature-phase oscillating signal have substantially the same frequency and are out of phase with each other by substantially 90°.

23.(Amended) The cable modem of claim 21, further comprising:

a first pulse shaping module connected to said first universal frequency translation module, said first pulse shaping module accepting said in-phase oscillating signal and outputting a first shaped oscillating signal, wherein said first shaped oscillating signal causes said first universal frequency translation module to gate said first information signal;

a second pulse shaping module connected to said second universal frequency translation module, said second pulse shaping module accepting said quadrature-phase oscillating signal and outputting a second shaped oscillating signal, wherein said second shaped oscillating

signal causes said second universal frequency translation module to gate said second information signal.

24.(Amended) The cable modem of claim 21, wherein said first information signal is comprised of two or more voltage levels.

25.(Amended) The cable modem of claim 24, wherein said first information signal is comprised of eight voltage levels.

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26.(Amended) The cable modem of claim 24, wherein said first information signal is comprised of sixteen voltage levels.

27.(Amended) The cable modem of claim 21, wherein said second information signal is comprised of two or more voltage levels.

28.(Amended) The cable modem of claim 27, wherein said second information signal is comprised of eight voltage levels.

29.(Amended) The cable modem of claim 27, wherein said second information signal is comprised of sixteen voltage levels.

30.(Amended) The cable modem of claim 21, wherein said filter isolates an output signal, said output signal being transmitted from the cable modem over a coaxial cable.

31.(Amended) The cable modem of claim 21, wherein said filter isolates an output signal, said output signal being transmitted from the cable modem via a wireless method.

Remarks

Consideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-5 and 9-31 are pending in the application, with claims 1 and 21 being the independent claims. Claims 6, 7, and 8 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. Claims 1-5 and 9-31 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

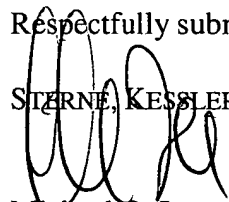
Conclusion

Applicants believe that the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.


Michael Q. Lee
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Date: 8/30/01

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Version with markings to show changes made

In the Claims:

1.(Amended) A [system] cable modem for down-converting an electromagnetic signal having complex modulations, comprising:

an oscillator to generate an in-phase oscillating signal;

a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;

a first universal frequency down-conversion module to receive the electromagnetic signal and said in-phase oscillating signal;

a second universal frequency down-conversion module to receive the electromagnetic signal and said quadrature-phase oscillating signal; wherein

said first universal frequency down-conversion module further comprising a first universal frequency [transfer] translation module and a first storage module, wherein said first universal frequency [transfer] translation module samples the electromagnetic signal at a rate that is a function of said in-phase oscillating signal, thereby creating a first sampled signal; and

said second universal frequency down-conversion module further comprising a second universal frequency [transfer] translation module and a second storage module, wherein said first universal frequency [transfer] translation module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating a second sampled signal.

2.(Amended) The [system] cable modem of claim 1, wherein said quadrature-phase oscillating signal is out of phase with said in-phase oscillating signal by substantially 90°.

3.(Amended) The [system] cable modem of claim 1, wherein said first storage device has a first storage first [side] port and a first storage second [side] port, said first storage first [side] port being

connected to said first sampled signal, and said first storage second [side] port is connected to a first reference potential, and said second storage device has a second storage first [side] port and a second storage second [side] port, said second storage first [side] port being connected to said second sampled signal, and said second storage second [side] port is connected to a second reference potential.

4.(Amended) The [system] cable modem of claim 3, wherein said first storage device is a first capacitor, and said second storage device is a second capacitor.

5.(Amended) The [system] cable modem of claim 3, wherein said first reference potential is substantially equal to ground, and said second reference potential is substantially equal to ground.

Claims 6, 7, and 8 are sought to be cancelled without prejudice or disclaimer.

9.(Amended) The [system] cable modem of claim 1, wherein said first sampled signal is comprised of two or more voltage levels.

10.(Amended) The [system] cable modem of claim 9, wherein said first sampled signal is comprised of eight voltage levels.

11.(Amended) The [system] cable modem of claim 9, wherein said first sampled signal is comprised of sixteen voltage levels.

12.(Amended) The [system] cable modem of claim 1, wherein said second sampled signal is comprised of two or more voltage levels.

13.(Amended) The [system] cable modem of claim 12, wherein said second sampled signal is comprised of eight voltage levels.

14.(Amended) The [system] cable modem of claim 12, wherein said second sampled signal is comprised of sixteen voltage levels.

15.(Amended) The [system] cable modem of claim 1, wherein said first sampled signal is a first information output signal, and said second sampled signal is a second information output signal.

16.(Amended) The [system] cable modem of claim 1, further comprising a first amplifier receiving said first sampled signal and outputting a first amplified signal, and a second amplifier receiving said second sampled signal and outputting a second amplified signal.

17.(Amended) The [system] cable modem of claim 16, further comprising a first filter receiving said first amplified signal and outputting a first filtered signal, and a second filter receiving said second amplified signal and outputting a second filtered signal.

18.(Amended) The [system] cable modem of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal.

19.(Amended) The [system] cable modem of claim 1, wherein the electromagnetic signal has been transmitted over a coaxial cable to [a] the cable modem.

20.(Amended) The [system] cable modem of claim 1, wherein the electromagnetic signal has been transmitted by a wireless method to [a] the cable modem.

21.(Amended) A [multiphase transmitting system] cable modem, comprising:
an oscillator to generate an in-phase oscillating signal;

a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;

a first universal frequency translation module to receive said in-phase oscillating signal and a first information signal, wherein said in-phase oscillating signal causes said first universal frequency translation module to gate said first information signal and thereby generate a first periodic signal having a first plurality of harmonics[, said first periodic signal having an amplitude that is a function of said first information signal];

a second universal frequency translation module to receive said quadrature-phase oscillating signal and a second information signal, wherein said quadrature-phase oscillating signal causes said second universal frequency translation module to gate said second information signal and thereby generate a second periodic signal having a second plurality of harmonics[, said second periodic signal having an amplitude that is a function of said second information signal];

a summer coupled to said first universal frequency translation module and to said second universal frequency translation module, said summer to receive and combine said first periodic signal and said second periodic signal, and to output a combined periodic signal having a combined plurality of harmonics; and

a filter coupled to said summer, said filter to isolate at least one of said combined plurality of harmonics.

22.(Amended) The [multiphase transmitting system] cable modem of claim 21, wherein said in-phase oscillating signal and said quadrature-phase oscillating signal have substantially the same frequency and are out of phase with each other by substantially 90°.

23.(Amended) The [multiphase transmitting system] cable modem of claim 21, further comprising:

a first pulse shaping module connected to said first universal frequency translation module, said first pulse shaping module accepting said in-phase oscillating signal and outputting a

first shaped oscillating signal, wherein said first shaped oscillating signal causes said first universal frequency translation module to gate said first information signal;

a second pulse shaping module connected to said second universal frequency translation module, said second pulse shaping module accepting said quadrature-phase oscillating signal and outputting a second shaped oscillating signal, wherein said second shaped oscillating signal causes said second universal frequency translation module to gate said second information signal.

24.(Amended) The [multiphase transmitting system] cable modem of claim 21, wherein said first information signal is comprised of two or more voltage levels.

25.(Amended) The [multiphase transmitting system] cable modem of claim 24, wherein said first information signal is comprised of eight voltage levels.

26.(Amended) The [multiphase transmitting system] cable modem of claim 24, wherein said first information signal is comprised of sixteen voltage levels.

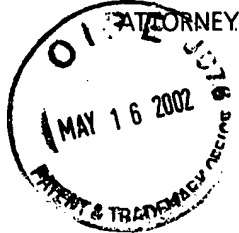
27.(Amended) The [multiphase transmitting system] cable modem of claim 21, wherein said second information signal is comprised of two or more voltage levels.

28.(Amended) The [multiphase transmitting system] cable modem of claim 27, wherein said second information signal is comprised of eight voltage levels.

29.(Amended) The [multiphase transmitting system] cable modem of claim 27, wherein said second information signal is comprised of sixteen voltage levels.

30.(Amended) The [multiphase transmitting system] cable modem of claim 21, wherein said filter isolates an output signal, said output signal being transmitted from [a] the cable modem over a coaxial cable.

31.(Amended) The [multiphase transmitting system] cable modem of claim 21, wherein said filter isolates an output signal, said output signal being transmitted from [a] the cable modem via a wireless method.



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May 16, 2002

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Washington, D.C. 20231

Art Unit 2683

Re: U.S. Utility Patent Application
Appl. No. 09/770,675; Filed: January 29, 2001
For: **Wireless and Wired Cable Modem Applications
of Universal Frequency Translation Technology**
Inventors: Sorrells *et al.*
Our Ref: 1744.0140005

RECEIVED

MAY 21 2002

Technology Center 2600

Sir:

Transmitted herewith for appropriate action are the following documents:

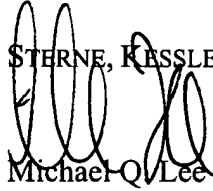
1. PTO Fee Transmittal (Form PTO/SB/17);
2. Second Preliminary Amendment;
3. Our check no. 35204 in the amount of \$462.00 to cover:
(a) \$ 84.00 excess independent claims, and
(b) \$378.00 excess total claims; and
4. One return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
May 16, 2002
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,


STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Enclosures

MQL/sjc

SKGF_DC1:14937.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:

Sorrells *et al.*

Appl. No. 09/770,675

Filed: January 29, 2001

For: **Wireless and Wired Cable Modem
Applications of Universal
Frequency Translation
Technology**

Confirmation No. 5430

Art Unit: 2683

Examiner: Nguyen, L.

Atty. Docket: 1744.0140005

#7/B PRE
B.D.
5-22-02

Second Preliminary Amendment

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MAY 21 2002
Technology Center 2600

Sir:

Prior to examination of the captioned application, please enter the following Amendment. This Amendment is provided in the following format:

- (A) A clean version of each replacement paragraph/section/claim along with clear instructions for entry;
- (B) Starting on a separate page, appropriate remarks and arguments. 37 C.F.R. § 1.111 and MPEP 714; and
- (C) Starting on a separate page, a marked-up version entitled: "Version with markings to show changes made."

It is not believed that extensions of time or fees for net addition of claims are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, then such extensions of time are hereby petitioned under 37 CFR § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to Deposit Account No. 19-0036.

THE RECEIVED FOLIO NUMBER 00000002 190036

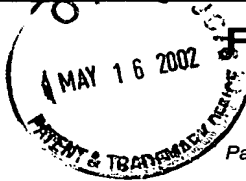
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1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any overpayment to: Deposit Account Number: 19-0036 Deposit Account Name: Sterne, Kessler, Goldstein & Fox P.L.L.C. ☐ Charge Any Additional Fee Required Under 37 CFR §§ 1.16 and 1.17 ☐ Applicant claims small entity status See 37 CFR 1.27 2. ☒ Payment Enclosed: ☒ Check ☐ Credit card ☐ Money Order ☒ Other* *Charge any deficiencies or credit any overpayments in the fees or fee calculations of Parts 1, 2 and 3 below to Deposit Account No. 19-0036.		3. ADDITIONAL FEES <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Large Entity</th> <th colspan="2">Small Entity</th> <th rowspan="2">Fee Description</th> <th rowspan="2">Fee paid</th> </tr> <tr> <th>Fee Code</th> <th>Fee (\$)</th> <th>Fee Code</th> <th>Fee (\$)</th> </tr> </thead> <tbody> <tr><td>105</td><td>130</td><td>205</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>127</td><td>50</td><td>227</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet</td><td></td></tr> <tr><td>139</td><td>130</td><td>139</td><td>130</td><td>Non-English specification</td><td></td></tr> <tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td>For filing a request for <i>ex parte</i> reexamination</td><td></td></tr> <tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>115</td><td>110</td><td>215</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>116</td><td>400</td><td>216</td><td>200</td><td>Extension for reply within second month</td><td></td></tr> <tr><td>117</td><td>920</td><td>217</td><td>460</td><td>Extension for reply within third month</td><td></td></tr> <tr><td>118</td><td>1,440</td><td>218</td><td>720</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>128</td><td>1,960</td><td>228</td><td>980</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>119</td><td>320</td><td>219</td><td>160</td><td>Notice of Appeal</td><td></td></tr> <tr><td>120</td><td>320</td><td>220</td><td>160</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>121</td><td>280</td><td>221</td><td>140</td><td>Request for oral hearing</td><td></td></tr> <tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>140</td><td>110</td><td>240</td><td>55</td><td>Petition to revive - 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Name (Print/Type)	Michael Q. Lee	Registration No. (Attorney/Agent)	35,239																																																																																																																																																																																		
Signature	Linda E. Alcorn, Reg. No. 39,588	Telephone	202-371-2600																																																																																																																																																																																		
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WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

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SKGF Rev. 10/01/01 mnac

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SKGF_DC1:14922.1

MEDIATEX EX. 1002

Amendments

In the Claims

Please add the following new claims:

- 81
- 32. A cable modem, comprising:
a down-converter, including:
a switch,
a storage device coupled to said switch, and
a control signal generator coupled to said switch.
33. The cable modem of claim 32, further comprising:
an up-converter, including:
an acceptance module, and
a harmonic generation and extraction module (HGEM) coupled to said acceptance module.
34. The cable modem of claim 33, wherein said up-converter further comprises:
a transmission module coupled to said HGEM.
35. The cable modem of claim 33, wherein said HGEM comprises:
a second switch, including:
a first port that receives a bias signal;
a second port that receives a control signal; and
a third port.
36. The cable modem of claim 35, wherein said HGEM further comprises:
a filter, coupled to said second switch.

37. The cable modem of claim 36, wherein said filter is coupled to said first port of said second switch.
38. The cable modem of claim 35, wherein a harmonically rich signal is output from a port coupled to said first port of said switch.
39. The cable modem of claim 35, wherein said third port is coupled to one of a reference and an information signal..
40. The cable modem of claim 35, wherein said bias signal is a function of an information signal.
41. The cable modem of claim 35, wherein said control signal is a function of an information signal.
42. The cable modem of claim 35, wherein at least one of said control signal and said bias signal is a function of at least one information signal.
43. The cable modem of claim 32, wherein said switch comprises:
a first port;
a second port; and
a third port.
44. The cable modem of claim 43, wherein said first port receives an input signal, said second port receives a control signal generated by said control signal generator, and said third port is coupled to said storage device.
45. The cable modem of claim 43, wherein said first port is coupled to said storage device, said second port receives a control signal generated by said control signal generator, and said third port is coupled to a reference.

46. A system, comprising:
a computer; and
a cable modem, coupled to said computer, comprising:
a down-converter, including:
a switch,
a storage device coupled to said switch, and
a control signal generator coupled to said switch.
47. The system of claim 46, wherein said switch comprises:
a first port;
a second port; and
a third port.
48. The system of claim 47, wherein said first port receives an input signal, said second port receives a control signal generated by said control signal generator, and said third port is coupled to said storage device.
49. The system of claim 47, wherein said first port is coupled to said storage device, said second port receives a control signal generated by said control signal generator, and said third port is coupled to a reference.
50. The system of claim 46, wherein said cable modem further comprises:
an up-converter, including:
an acceptance module, and
a harmonic generation and extraction module (HGEM) coupled to said acceptance module.
51. The cable modem of claim 50, wherein said HGEM comprises:
a second switch, including:
a first port that receives a bias signal;

a second port that receives a control signal; and
a third port.

52. The cable modem of claim 51, wherein said HGEM further comprises:
a filter, coupled to said second switch.

B1
cont

53. The cable modem of claim 51, wherein said bias signal is a function of an information signal.
54. The cable modem of claim 51, wherein said control signal is a function of an information signal.
55. The cable modem of claim 51, wherein at least one of said control signal and said bias signal is a function of at least one information signal. --
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Remarks

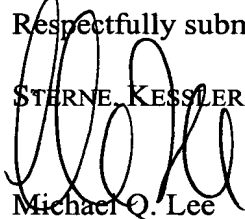
Upon entry of the foregoing amendment, claims 1-5 and 9-55 are pending in the application. Claims 32-55 are sought to be added. These changes are not believed to include any new matter, and their entry is respectfully requested.

Conclusion

Applicants believe that the present application is in condition for allowance, and respectfully request such allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided. Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.


Michael Q. Lee

Attorney for Applicants
Registration No. 35,239

Date: 5/16/02

1100 New York Avenue NW, #600
Washington, D.C. 20005-3934
(202) 371-2600

Version with markings to show changes made

In the Claims

Claims 32-55 are sought to be added.

SKGF_DC1:12534.2



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430

26111 7590 11/30/2004

STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

TRAN, PABLO N

ART UNIT PAPER NUMBER

2685

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

9/2

Office Action Summary	Application No.	Applicant(s)	
	09/770,675	SORRELLS ET AL	
	Examiner	Art Unit	
	Pablo N Tran	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-55 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) ☐ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) ☐ Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, drawn to a cable modem for down-converting an electromagnetic signal having complex modulation wherein the first universal frequency translation module samples the electromagnetic signal at a rate that is a function of the in-phase oscillating signal and the first and second universal frequency translation module samples the electromagnetic signal at a rate that is a function of the in-phase oscillating signal.
 - II. Claims 21-31, drawn to a cable modem having a first and second universal frequency translation module wherein the in-phase oscillating signal causes the first universal frequency translation module to gate the first information signal and thereby generate a first periodic signal having a first plurality of harmonics and the quadrature-phase oscillating signal causes the second universal frequency translation module to gate the second information signal and thereby generate a second periodic signal having a second plurality of harmonics.
 - III. Claims 32-46, drawn to a cable modem having a switch, a storage device and a control signal generator coupled to the switch.

2. The inventions are distinct, each from the other because:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group II has separate utility such as a cable modem having a first and second universal frequency translation module wherein the in-phase oscillating signal causes the first universal frequency translation module to gate the first information signal and thereby generate a first periodic signal having a first plurality of harmonics and the quadrature-phase oscillating signal causes the second universal frequency translation module to gate the second information signal and thereby generate a second periodic signal having a second plurality of harmonics. See MPEP § 806.05(d).

Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group III has separate utility such as to a cable modem having a switch, a storage device and a control signal generator coupled to the switch. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their recognized divergent subject matter and different searches are required for each group.

4. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Art Unit: 2685

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

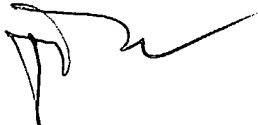
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Art Unit: 2685

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

November 22, 2004

PABLO N. TRAN
PRIMARY EXAMINER



AU2685



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*Practice Limited to
Federal Agencies

December 28, 2004

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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 2685

Re: U.S. Utility Patent Application
Appl. No. 09/770,675; Filed: January 29, 2001
For: **Wireless and Wired Cable Modem Applications of Universal
Frequency Translation Technology**
Inventor: David SORRELLS
Our Ref: 1744.0140005

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Amendment and Reply to Restriction Requirement; and
2. One (1) return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Michael Q. Lee
Attorney for Applicant
Registration No. 35,239

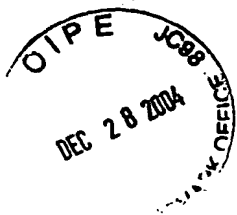
MQL/NDD/sjc
Enclosure

346606_1.DOC

Sterne, Kessler, Goldstein & Fox P.L.L.C. : 1100 New York Avenue, NW : Washington, DC 20005 : 202.371.2600 f 202.371.2540 : www.skpf.com

MEDIATEK EX. 1002

Page 37 of 85



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

David SORRELLS

Appl. No.: 09/770,675

Filed: January 29, 2001

For: **Wireless and Wired Cable Modem
Applications of Universal
Frequency Translation Technology**

Confirmation No.: 5430

Art Unit: 2685

Examiner: Tran, Pablo N.

Atty. Docket: 1744.0140005

Amendment and Reply to Restriction Requirement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Office Action dated November 30, 2004, Applicant submits the following Amendment and Remarks. This Amendment is provided in the following format:

- (A) Each section begins on a separate sheet;
- (B) Starting on a separate sheet, amendments to the specification by presenting replacement paragraphs marked up to show changes made;
- (C) Starting on a separate sheet, a complete listing of all of the claims:
 - in ascending order;
 - with status identifiers; and
 - with markings in the currently amended claims;
- (D) Starting on a separate sheet, the Remarks.

It is not believed that extensions of time or fees for net addition of claims are required beyond those that may otherwise be provided for in documents accompanying

this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (currently amended) A cable modem for down-converting an electromagnetic signal having complex modulations, comprising:
 - an oscillator to generate an in-phase oscillating signal;
 - a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;
 - a first ~~universal~~ frequency down-conversion module to receive the electromagnetic signal and said in-phase oscillating signal;
 - a second ~~universal~~ frequency down-conversion module to receive the electromagnetic signal and said quadrature-phase oscillating signal; wherein
 - said first ~~universal~~ frequency down-conversion module further ~~comprising~~ comprises a first ~~universal~~ frequency translation module and a first storage module, wherein said first ~~universal~~ frequency translation module samples the electromagnetic signal at a rate that is a function of said in-phase oscillating signal, thereby creating a first sampled signal; and
 - said second ~~universal~~ frequency down-conversion module further ~~comprising~~ comprises a second ~~universal~~ frequency translation module and a second storage module, wherein said ~~first~~ second ~~universal~~ frequency translation module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating a second sampled signal.

2. (currently amended) The cable modem of claim 1, wherein said quadrature-phase oscillating signal is out of phase with said in-phase oscillating signal by substantially 90 [[°]] degrees.

3. (previously presented) The cable modem of claim 1, wherein said first storage device has a first storage first port and a first storage second port, said first storage first port being connected to said first sampled signal, and said first storage second port is connected to a first reference potential, and said second storage device has a second storage first port and a second storage second port, said second storage first port being connected to said second sampled signal, and said second storage second port is connected to a second reference potential.

4. (previously presented) The cable modem of claim 3, wherein said first storage device is a first capacitor, and said second storage device is a second capacitor.

5. (previously presented) The system of claim 3, wherein said first reference potential is substantially equal to ground, and said second reference potential is substantially equal to ground.

6-8. (canceled)

9. (previously presented) The cable modem of claim 1, wherein said first sampled signal is comprised of two or more voltage levels.

10. (previously presented) The cable modem of claim 9, wherein said first sampled signal is comprised of eight voltage levels.

11. (previously presented) The cable modem of claim 9, wherein said first sampled signal is comprised of sixteen voltage levels.

12. (previously presented) The cable modem of claim 1, wherein said second sampled signal is comprised of two or more voltage levels.

13. (previously presented) The cable modem of claim 12, wherein said second sampled signal is comprised of eight voltage levels.

14. (previously presented) The cable modem of claim 12, wherein said second sampled signal is comprised of sixteen voltage levels.

15. (previously presented) The cable modem of claim 1, wherein said first sampled signal is a first information output signal, and said second sampled signal is a second information output signal.

16. (previously presented) The cable modem of claim 1, further comprising a first amplifier receiving said first sampled signal and outputting a first amplified signal, and a second amplifier receiving said second sampled signal and outputting a second amplified signal.

17. (previously presented) The cable modem of claim 16, further comprising a first filter receiving said first amplified signal and outputting a first filtered signal, and a second filter receiving said second amplified signal and outputting a second filtered signal.

18. (previously presented) The cable modem of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal.

19. (previously presented) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted over a coaxial cable to the cable modem.

20. (previously presented) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted by a wireless method to the cable modem.

21-55. (withdrawn)

56. (new) The cable modem of claim 1, wherein said first frequency translation module comprises a first switch coupled to said first storage module, and said second frequency translation module comprises a second switch coupled to said second storage module, and

wherein said first frequency down-conversion module further comprises a first control signal generator coupled to said first switch and coupled to receive said in-phase

oscillating signal, and said second frequency down-conversion module further comprises a second control signal generator coupled to said second switch and coupled to receive said quadrature-phase oscillating signal.

57. (new) The cable modem of claim 56, wherein each of said first and second switches comprises:

- a first port;
- a second port; and
- a third port.

58. (new) The cable modem of claim 57, wherein said first port of said first switch receives the electromagnetic signal, said second port of said first switch receives a first control signal generated by said first control signal generator, and said third port of said first switch is coupled to said first storage device, and

wherein said first port of said second switch receives the electromagnetic signal, said second port of said second switch receives a second control signal generated by said second control signal generator, and said third port of said second switch is coupled to said second storage device.

59. (new) The cable modem of claim 57, wherein said first port of said first switch is coupled to said first storage device, said second port of said first switch receives a first control signal generated by said first control signal generator, and said third port of said first switch is coupled to a first reference, and

wherein said first port of said second switch is coupled to said second storage device, said second port of said second switch receives a second control signal generated by said second control signal generator, and said third port of said second switch is coupled to a second reference.

Remarks

Upon entry of the foregoing amendment, claims 1-5 and 9-59 are pending in the application, with claims 1, 21, 32, and 46 being the independent claims. Claims 6-8 were previously cancelled. Claims 1 and 2 are sought to be amended and new claims 56-59 are sought to be added. New claims 56-59 generally correspond to claims 32 and 43-45. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Reconsideration of this Application is respectfully requested.

Election of the Invention to Be Examined

Applicant hereby provisionally elects to prosecute the invention of Group I, represented by claims 1-5 and 9-20. This election is made without prejudice to or disclaimer of the other claims or inventions disclosed.

This election is made without traverse.

New claims 56-59 have been added. These claims generally correspond to claims 32 and 43-45 of Group III. Applicant asserts that new claims 56-59 are properly within the scope of Group I, and request that they be examined by the Examiner.

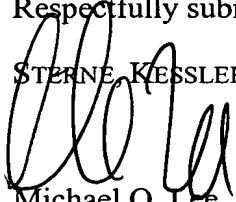
Applicant notes the following errors in the Detailed Action mailed November 30, 2004. With respect to Group I, claims 6-8 were previously canceled in a Preliminary Amendment filed August 30, 2001. Thus, Group I should include claims 1-5 and 9-20. Additionally, the characterization of Group I should state that the *second* universal frequency translation module samples the electromagnetic signal at a rate that is a function of the *quadrature-phase* oscillating signal. Furthermore, claims 47-55 are

shown as pending in the Office Action Summary, but the Examiner did not include these claims in any of the three Groups. Because claims 47-55 depend from claim 46, Applicant assumes these claims are to be included in Group III.

Reconsideration and withdrawal of the Restriction Requirement, and consideration and allowance of all pending claims, are respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Michael Q. Lee
Attorney for Applicant
Registration No. 35,239

Date: 12/28/04

1100 New York Avenue, N.W.
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26111 7590 02/10/2005
STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

TRAN, PABLO N

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 02/10/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/770,675

01/29/2001

David F. Sorrells

1744.0140005

5430

TITLE OF INVENTION: WIRELESS AND WIRED CABLE MODEM APPLICATIONS OF UNIVERSAL FREQUENCY TRANSLATION TECHNOLOGY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	05/10/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
(703) 746-4000**

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

26111 7590 02/10/2005

**STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430

TITLE OF INVENTION: WIRELESS AND WIRED CABLE MODEM APPLICATIONS OF UNIVERSAL FREQUENCY TRANSLATION TECHNOLOGY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	05/10/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
TRAN, PABLO N	2685	455-313000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
 1 _____
 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.
 NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430
26111	7590	02/10/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			TRAN, PABLO N	
			ART UNIT	PAPER NUMBER
			2685	
DATE MAILED: 02/10/2005				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 977 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 977 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability	Application No.	Applicant(s)	
	09/770,675	SORRELLS ET AL.	
	Examiner	Art Unit	
	Pablo N Tran	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/28/05.
2. ☒ The allowed claim(s) is/are 1-5,9-20, and 56-59 re-numbered 1-21.
3. ☒ The drawings filed on 29 January 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. ☒ Notice of References Cited (PTO-892) | 5. ☐ Notice of Informal Patent Application (PTO-152) |
| 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. ☐ Examiner's Amendment/Comment |
| 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. ☒ Examiner's Statement of Reasons for Allowance |
| | 9. ☐ Other _____. |

DETAILED ACTION

Allowable Subject Matter

1. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1, the prior arts of record, in combination or individual, fail to show or make it obvious a cable modem for down-converting an electromagnetic signal having complex modulations having associated circuitry of an oscillator, a phase shifter, a first frequency down-conversion module, and a second frequency down-conversion module, wherein the first frequency down-conversion module samples the electromagnetic signal at a rate that is a function of the in-phase oscillating signal and the second frequency translation module samples the electromagnetic signal at a rate that is a function of the quadrature-phase oscillating signal. Claims 2-5, 9-20, and 56-59 are dependent claims.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941.

Art Unit: 2685

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

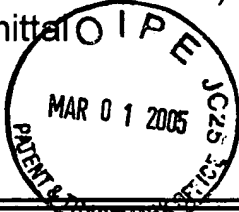
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

PABLO N. TRAN
PRIMARY EXAMINER

February 3, 2005


A2685

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Request
for
Continued Examination (RCE)
TransmittalAddress to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	09/770,675
Filing Date	January 29, 2001
First Named Inventor	David SORRELLS
Art Unit	2685
Examiner Name	Tran, Pablo N.
Attorney Docket Number	1744.0140005

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

ii. ☐ Other _____

b. ☒ Enclosed

i. ☐ Amendment/Reply

iii. ☒ Information Disclosure Statement (IDS)

ii. ☐ Affidavit(s)/ Declaration(s)

iv. ☐ Other _____

2. **Miscellaneous**

a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

b. ☐ Other _____

3. **Fees**

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

The Director is hereby authorized to charge the following fees, or credit any overpayments, to

a. ☐ Deposit Account No. _____ I have enclosed a duplicate copy of this sheet.

i. ☐ RCE fee required under 37 CFR 1.17(e)

ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)

iii. ☐ Other _____

b. ☐ Check in the amount of \$ _____ enclosed

c. ☒ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature		Date	
Name (Print/Type)	Michael Q. Lee	Registration No.	35,239

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature		Date	3/1/05
Name (Print/Type)			

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430
26111	7590	09/12/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			TRAN, PABLO N	
			ART UNIT	PAPER NUMBER
			2685	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



09 / 770,675

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF DRAWING INCONSISTENCY WITH SPECIFICATION

The drawings filed 8/30/01 have been received. However, an inconsistency exists between the drawings and the Brief Description of the Drawings in the specification.

Figures 20G are listed in the Brief Description of the Drawings in the specification but not contained in the Drawings.

Figures _____ are contained in the Drawings but not listed in the Brief Description of the Drawings in the specification.

Applicant is required to correct the above-noted inconsistency within a time period of **ONE MONTH or THIRTY (30) DAYS, whichever is longer**, from the mailing date of this Notice, or within the time remaining in the time period set forth in the Notice of Allowability (Form PTOL-37) to file corrected drawings, whichever is longer. **NO EXTENSION OF THIS TIME PERIOD MAY BE GRANTED UNDER EITHER 37 CFR 1.136 (a) OR (b)**

Failure to correct the above noted inconsistency will result in abandonment of the application.

The file will be held in the Publishing Division to await the correction of the inconsistency.

Return Corrected Drawings/Specification to:

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Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Office of Patent Publication/Publishing Division

Customer Service: 703-308-6789

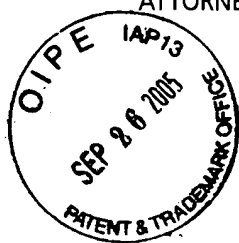
1-888-786-0101

FORM PTO-1631 (REV. 10-03)

MEDIATEK EX. 1002

Page 56 of 85

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Goldstein Fox**
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Of Counsel
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*Admitted only in Maryland
*Admitted only in Virginia
•Practice Limited to
Federal Agencies

September 26, 2005

WRITER'S DIRECT NUMBER:
(202) 772-8674
INTERNET ADDRESS:
MLEE@SKGF.COM

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 2685

Attn: Mail Stop Issue Fee

Re: U.S. Utility Patent Application ✓
Application No. 09/770,675; Filed: January 29, 2001
For: **Wireless and Wired Cable Modem Applications of Universal
Frequency Translation Technology**
Inventor: Sorrells *et al.*
Our Ref: 1744.0140005

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Copy of the Notice of Drawing Inconsistency with Specification;
2. Reply to Notice of Drawing Inconsistency with Specification; and
3. One (1) Return Postcard.

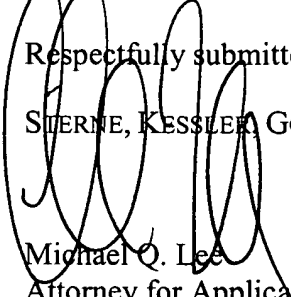
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
September 26, 2005
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.


Michael Q. Lee
Attorney for Applicant
Registration No. 35,239

MQL/srb
Enclosures

446081_1.DOC



UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et. al.*

Appl. No.: 09/770,675

Filed: January 29, 2001

For: **Wireless and Wired Cable Modem
Applications of universal Frequency
Translation Technology**

Confirmation No.: 5430

Art Unit: 2685

Examiner: Tran, Pablo N.

Atty. Docket: 1744.0140005

Reply to Notice of Drawing Inconsistency with Specification

Mail Stop Issue Fee

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Notice of Drawing Inconsistency with Specification dated September 12, 2005, Applicants submit the following Reply.

FIG. 20G is listed in the Brief Description of the Drawings section of the specification and is referred to in the Detailed Description of the Preferred Embodiments section of the specification, but is not contained in the Drawings. In the specification, FIG. 20A-1 was incorrectly identified as FIG. 20G. Accordingly, Applicants propose the following corrections to paragraphs [0045] and [0046] of the Brief Description of the Drawings section of the specification and paragraph [0151] of the Detailed Description of the Preferred Embodiments section of the specification:

[0045] FIGS. 20A and ~~20G~~ 20A-1 are exemplary aliasing modules according to embodiments of the invention;

[0046] FIGS. 20B-20F are exemplary waveforms used to describe the operation of the aliasing modules of FIGS. 20A and ~~20G~~ 20A-1;

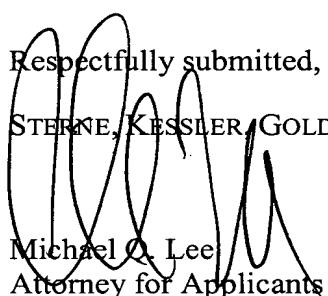
[0151] FIG. 20A illustrates an aliasing module 2000 for down-conversion using a universal frequency translation (UFT) module 2002 which down-converts an EM input signal 2004. In particular embodiments, aliasing module 2000 includes a switch 2008 and a capacitor 2010. The electronic alignment of the circuit components is flexible. That is, in one implementation, switch 2008 is in series with input signal 2004 and capacitor 2010 is shunted to ground (although it may be other than ground in configurations such as differential mode). In a second implementation (see FIG. 20G 20A-1), capacitor 2010 is in series with input signal 2004 and switch 2008 is shunted to ground (although it may be other than ground in configurations such as differential mode). Aliasing module 2000 with UFT module 2002 can be easily tailored to down-convert a wide variety of electromagnetic signals using aliasing frequencies that are well below the frequencies of EM input signal 2004.

The proposed corrections add no new matter to this application. Therefore, Applicants respectfully request that the Office approve the proposed corrections.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.


Michael O. Lee
Attorney for Applicants
Registration No. 35,239

Date: September 26, 2005

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

445683_1.DOC



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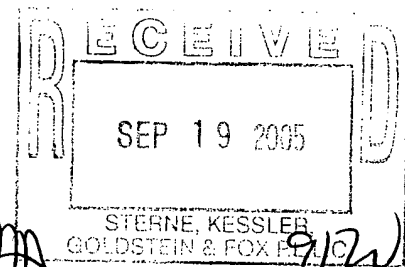
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430
26111	7590	09/12/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			TRAN, PABLO N	
			ART UNIT	PAPER NUMBER

2685

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



MA
MDL
NDD

9/12/05
App 9/20
wdd 9/21

DOCKETED

Drawings due October 12, 2005



09/770,675

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF DRAWING INCONSISTENCY WITH SPECIFICATION

The drawings filed 8/30/01 have been received. However, an inconsistency exists between the drawings and the Brief Description of the Drawings in the specification.

Figures 206 are listed in the Brief Description of the Drawings in the specification but not contained in the Drawings.

Figures _____ are contained in the Drawings but not listed in the Brief Description of the Drawings in the specification.

Applicant is required to correct the above-noted inconsistency within a time period of **ONE MONTH or THIRTY (30) DAYS, whichever is longer**, from the mailing date of this Notice, or within the time remaining in the time period set forth in the Notice of Allowability (Form PTOL-37) to file corrected drawings, whichever is longer. **NO EXTENSION OF THIS TIME PERIOD MAY BE GRANTED UNDER EITHER 37 CFR 1.136 (a) OR (b)**

Failure to correct the above noted inconsistency will result in abandonment of the application.

The file will be held in the Publishing Division to await the correction of the inconsistency.

Return Corrected Drawings/Specification to:

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P.O. Box 1450

Alexandria, VA 22313-1450

Office of Patent Publication/Publishing Division
Customer Service: 703-308-6789
1-888-786-0101

FORM PTO-1631 (REV. 10-03)

MEDIATEK EX. 1002

Page 62 of 85

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UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

26111 7590 12/05/2005

STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

TRAN, PABLO N

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 12/05/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430

TITLE OF INVENTION: WIRELESS AND WIRED CABLE MODEM APPLICATIONS OF UNIVERSAL FREQUENCY TRANSLATION TECHNOLOGY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	03/06/2006

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
(571) 273-2885**

or **Fax**

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26111 7590 12/05/2005

**STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005**

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430

TITLE OF INVENTION: WIRELESS AND WIRED CABLE MODEM APPLICATIONS OF UNIVERSAL FREQUENCY TRANSLATION TECHNOLOGY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$1700	03/06/2006

EXAMINER	ART UNIT	CLASS-SUBCLASS
TRAN, PABLO N	2685	455-313000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
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1	_____
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
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- ☐ Advance Order - # of Copies _____

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- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430
26111	7590	12/05/2005		
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
EXAMINER TRAN, PABLO N				
ART UNIT			PAPER NUMBER	
2685				

DATE MAILED: 12/05/2005

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1134 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1134 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability	Application No.	Applicant(s)	
	09/770,675	SORRELLS ET AL.	
	Examiner	Art Unit	
	Pablo N. Tran	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/01/05.
2. ☒ The allowed claim(s) is/are 1-5,9-20,56-59 re-numbered 1-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☐ Notice of Informal Patent Application (PTO-152) |
| 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>07/01/05, 03/01/05</u> | 7. ☐ Examiner's Amendment/Comment |
| 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. ☒ Examiner's Statement of Reasons for Allowance |
| | 9. ☐ Other _____. |

DETAILED ACTION

Allowable Subject Matter

1. The following is a statement of reasons for the indication of allowable subject matter:

After considering the IDS, submitted on 07/01/05 and 03/01/05, the examiner found no references that read on the claimed subject matters of the invention. Therefore, the invention is allowable base upon the same statement of reason as stated in the prior examiner's Office Action.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Art Unit: 2685

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

September 17, 2005

PABLO N. TRAN
PRIMARY EXAMINER



AU2685



UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

SORRELLS *et al.*

Appl. No.: 09/770,675

Filed: January 29, 2001

For: **Wireless and Wired Cable Modem
Applications of Universal
Frequency Translation Technology**

Confirmation No.: 5430

Art Unit: 2685

Examiner: Tran, Pablo N.

Atty. Docket: 1744.0140005

Amendment Under 37 C.F.R. § 1.312

Mail Stop Issue Fee

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herein is an Amendment Under 37 C.F.R. § 1.312. As payment of the issue fee has not yet been made or is filed herewith, Applicants respectfully submit that filing under 37 C.F.R. § 1.312 is proper. (M.P.E.P. § 714.16.)

It is believed that extensions of time are not required beyond those that may otherwise be provided for in documents accompanying this Amendment. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (previously presented) A cable modem for down-converting an electromagnetic signal having complex modulations, comprising:
 - an oscillator to generate an in-phase oscillating signal;
 - a phase shifter to receive said in-phase oscillating signal and to create a quadrature-phase oscillating signal;
 - a first frequency down-conversion module to receive the electromagnetic signal and said in-phase oscillating signal;
 - a second frequency down-conversion module to receive the electromagnetic signal and said quadrature-phase oscillating signal; wherein
 - said first frequency down-conversion module further comprises a first frequency translation module and a first storage module, wherein said first frequency translation module samples the electromagnetic signal at a rate that is a function of said in-phase oscillating signal, thereby creating a first sampled signal; and
 - said second frequency down-conversion module further comprises a second frequency translation module and a second storage module, wherein said second frequency translation module samples the electromagnetic signal at a rate that is a function of said quadrature-phase oscillating signal, thereby creating a second sampled signal.

2. (previously presented) The cable modem of claim 1, wherein said quadrature-phase oscillating signal is out of phase with said in-phase oscillating signal by substantially 90 degrees.

3. (previously presented) The cable modem of claim 1, wherein said first storage device has a first storage first port and a first storage second port, said first storage first port being connected to said first sampled signal, and said first storage second port is connected to a first reference potential, and said second storage device has a second storage first port and a second storage second port, said second storage first port being connected to said second sampled signal, and said second storage second port is connected to a second reference potential.

4. (previously presented) The cable modem of claim 3, wherein said first storage device is a first capacitor, and said second storage device is a second capacitor.

5. (previously presented) The system of claim 3, wherein said first reference potential is substantially equal to ground, and said second reference potential is substantially equal to ground.

6-8. (previously canceled)

9. (previously presented) The cable modem of claim 1, wherein said first sampled signal is comprised of two or more voltage levels.

10. (previously presented) The cable modem of claim 9, wherein said first sampled signal is comprised of eight voltage levels.

11. (previously presented) The cable modem of claim 9, wherein said first sampled signal is comprised of sixteen voltage levels.

12. (previously presented) The cable modem of claim 1, wherein said second sampled signal is comprised of two or more voltage levels.

13. (previously presented) The cable modem of claim 12, wherein said second sampled signal is comprised of eight voltage levels.

14. (previously presented) The cable modem of claim 12, wherein said second sampled signal is comprised of sixteen voltage levels.

15. (previously presented) The cable modem of claim 1, wherein said first sampled signal is a first information output signal, and said second sampled signal is a second information output signal.

16. (previously presented) The cable modem of claim 1, further comprising a first amplifier receiving said first sampled signal and outputting a first amplified signal,

and a second amplifier receiving said second sampled signal and outputting a second amplified signal.

17. (previously presented) The cable modem of claim 16, further comprising a first filter receiving said first amplified signal and outputting a first filtered signal, and a second filter receiving said second amplified signal and outputting a second filtered signal.

18. (previously presented) The cable modem of claim 1, further comprising a first filter receiving said first sampled signal and outputting a first filtered signal, and a second filter receiving said second sampled signal and outputting a second filtered signal.

19. (previously presented) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted over a coaxial cable to the cable modem.

20. (previously presented) The cable modem of claim 1, wherein the electromagnetic signal has been transmitted by a wireless method to the cable modem.

21-55. (Canceled)

56. (previously presented) The cable modem of claim 1, wherein said first frequency translation module comprises a first switch coupled to said first storage

module, and said second frequency translation module comprises a second switch coupled to said second storage module, and

wherein said first frequency down-conversion module further comprises a first control signal generator coupled to said first switch and coupled to receive said in-phase oscillating signal, and said second frequency down-conversion module further comprises a second control signal generator coupled to said second switch and coupled to receive said quadrature-phase oscillating signal.

57. (previously presented) The cable modem of claim 56, wherein each of said first and second switches comprises:

- a first port;
- a second port; and
- a third port.

58. (previously presented) The cable modem of claim 57, wherein said first port of said first switch receives the electromagnetic signal, said second port of said first switch receives a first control signal generated by said first control signal generator, and said third port of said first switch is coupled to said first storage device, and

wherein said first port of said second switch receives the electromagnetic signal, said second port of said second switch receives a second control signal generated by said second control signal generator, and said third port of said second switch is coupled to said second storage device.

59. (previously presented) The cable modem of claim 57, wherein said first port of said first switch is coupled to said first storage device, said second port of said first switch receives a first control signal generated by said first control signal generator, and said third port of said first switch is coupled to a first reference, and

wherein said first port of said second switch is coupled to said second storage device, said second port of said second switch receives a second control signal generated by said second control signal generator, and said third port of said second switch is coupled to a second reference.

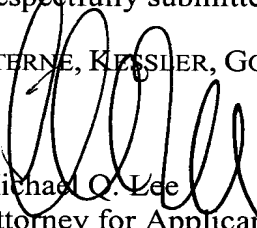
Remarks

Claims 1-5, 9-20 and 56-59 are pending and have been allowed in the Notice of Allowance mailed December 5, 2005. In the foregoing, unelected claims 21-55 have been canceled. In a review of the file, it appears that unelected claims 21-55 were withdrawn from consideration in the Reply to the Restriction Requirement filed December 28, 2004, but had never been explicitly canceled. This paper remedies this informality. These changes are not believed to add new matter, and their entry is respectfully requested.

Reconsideration of this application and entry of the above Amendments are respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



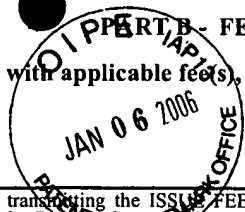
Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Date: January 6, 2006

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

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(Signature)
(Date)

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APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
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EXAMINER	ART UNIT	CLASS-SUBCLASS
TRAN, PABLO N	2685	455-313000

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1 Sterne, Kessler,
2 Goldstein & Fox P.L.L.C.
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

ParkerVision, Inc.

Jacksonville, FL

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

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☒ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 19-0036 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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Authorized Signature _____

Date January 6, 2006

Typed or printed name Michael Q. Lee

Registration No. 35,239

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January 6, 2006

WRITER'S DIRECT NUMBER:
(202) 772-8674

INTERNET ADDRESS:
MLEE@SKGF.COM

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Mail Stop Issue Fee

Re: Allowed U.S. Utility Patent Application
Appl. No. 09/770,675; Filed: January 29, 2001
For: **Wireless and Wired Cable Modem Applications of Universal
Frequency Translation Technology**
Inventors: **SORRELLS et al.**
Our Ref: 1744.0140005

Sir:

In response to the **Notice of Allowance and Fee(s) Due** dated December 5, 2005, the following documents are forwarded for appropriate action by the U.S. Patent and Trademark Office:

1. Issue Fee Transmittal (Form PTOL-85B);
2. Amendment Under 37 C.F.R. § 1.312;
3. One (1) return postcard; and
4. Credit Card Payment Form (PTO-2038) for \$1,703.00 to cover:
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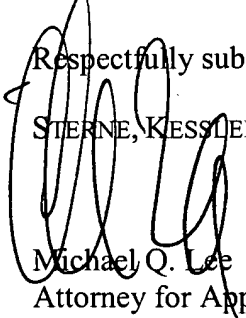
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January 6, 2006
Page 2

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Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.


Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

ML:apg
Enclosures

482127_1.DOC



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,675	01/29/2001	David F. Sorrells	1744.0140005	5430
26111	7590	05/23/2006	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			TRAN, PABLO N	
			ART UNIT	PAPER NUMBER
			2618	

DATE MAILED: 05/23/2006

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APPLICATION NO/ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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09/770 675

01/29/01

SORRELLS ET AL.

1744.0140005

EXAMINER

PABLO TRIN

ART UNIT

PAPER

2618

20060505

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Commissioner for Patents

Per Applicant response on 01/06/06, the cancelation of claims 21-55 is acknowledge.



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WASHINGTON, DC 20005

EXAMINER

TRAN, PABLO N

ART UNIT	PAPER NUMBER
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2618

MAIL DATE	DELIVERY MODE
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04/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

Notice of Allowability*Supplemental*

Application No.

09/770,675

Examiner

Pablo N. Tran

Applicant(s)

SORRELLS ET AL.

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/06/06.
2. ☒ The allowed claim(s) is/are 1-5, 9-20, 56-59 re-numbered 1-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 10/03/05 12/05/05 (pg. 20)
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

PABLO N. TRAN
PRIMARY EXAMINER



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26111 7590 08/17/2007 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER TRAN, PABLO N	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 08/17/2007	DELIVERY MODE PAPER

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The time period for reply, if any, is set in the attached communication.

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Application No.

09/770,675

Examiner

Pablo N. Tran

Applicant(s)

SORRELLS ET AL.

Art Unit

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Paper No./Mail Date 10/28/05, 10/03/05
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