Form PTO-1594 (Rev. 01-09)
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U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

RECORDATION FORM COVER SHEET
TRADEMARKS ONLY

To the Director of the U. S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies):
GEMFIRE CORPORATION

☐ Individual(s) ☐ Association
☐ General Partnership ☐ Limited Partnership
☒ Corporation- State: California
☐ Other

Citizenship (see guidelines)

Additional names of conveying parties attached? ☐ Yes ☒ No

2. Name and address of receiving party(ies)
Additional names, addresses, or citizenship attached? ☐ Yes ☒ No

Name: Square 1 Bank
Internal Address: Lee Conner
Street Address: 406 Blackwell Street
City: Durham
State: North Carolina
Country: USA Zip: 27701

☐ Association Citizenship
☐ General Partnership Citizenship
☐ Limited Partnership Citizenship
☒ Corporation Citizenship North Carolina
☐ Other Citizenship

If assignee is not domiciled in the United States, a domestic representative designation is attached: ☐ Yes ☐ No
(Designations must be a separate document from assignment)

3. Nature of conveyance)/Execution Date(s) :
Execution Date(s) March 17, 2009

☐ Assignment ☐ Merger
☒ Security Agreement ☐ Change of Name
☐ Other

4. Application number(s) or registration number(s) and identification or description of the Trademark.
A. Trademark Application No.(s)
76/195,143 and others as described on Exhibit C attached

B. Trademark Registration No.(s)

Additional sheet(s) attached? ☒ Yes ☐ No

C. Identification or Description of Trademark(s) (and Filing Date if Application or Registration Number is unknown):
Gemfire Bringing New Ideas to Light

5. Name & address of party to whom correspondence concerning document should be mailed:
Name: Square 1 Bank
Internal Address: Lee Conner
Street Address: 406 Blackwell Street, Suite 240
City: Durham
State: North Carolina Zip: 27701
Phone Number: 919-314-3099
Fax Number: 919-354-1278 NEW
Email Address: loandocsdept@square1bank.com

6. Total number of applications and registrations involved: 5

7. Total fee (37 CFR 2.6(b)(6) & 3.41) $ 140

☒ Authorized to be charged to deposit account
☐ Enclosed

8. Payment Information:

Deposit Account Number 50-3822
Authorized User Name Lee Conner

9. Signature: Lee Conner/LKC
Signature

6-9-09
Date

Lee Conner
Name of Person Signing

Total number of pages including cover sheet, attachments, and document: 10

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O. Box 1450, Alexandria, VA 22313-1450

CH $140.00 503822 76195143

EXHIBIT C

TRADEMARKS

Description	Registration/ Application Number	Registration/ Application Date
Gemfire Bringing new ideas to light (and design)	76195143	1/11/2001
Gemfire Bringing new ideas to light	76194015	1/11/2001
Bringing new ideas to light	76246058	4/26/2001
Gemfire	75440326	2/25/1998
Gemfire Photonic [Not being pursued – will lapse]	76682411	9/28/2007

INTELLECTUAL PROPERTY SECURITY AGREEMENT

THIS INTELLECTUAL PROPERTY SECURITY AGREEMENT is entered into as of March 17, 2009 by and between SQUARE 1 BANK ("*Bank*") and GEMFIRE CORPORATION, a California corporation ("*Grantor*").

RECITALS

A. Bank has agreed to make certain advances of money and to extend certain financial accommodation to Grantor (the "Loans") in the amounts and manner set forth in that certain Loan and Security Agreement by and between Bank and Grantor dated of March 17, 2009 (as the same may be amended, modified or supplemented from time to time, the "Loan Agreement"; capitalized terms used herein are used as defined in the Loan Agreement), which is subordinated to the rights of holders of certain "Senior Notes" pursuant to that subordination agreement referenced in the Loan Agreement.

B. Bank is willing to extend and to continue to extend financial accommodations to Grantor, but only upon the condition, among others, that Grantor shall grant to Bank a security interest in certain Copyrights, Trademarks and Patents to secure the obligations of Grantor under the Loan Agreement.

C. Pursuant to the terms of the Loan Agreement, Grantor has granted to Bank a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Loan Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

To secure its obligations under the Loan Agreement, Grantor grants and pledges to Bank a security interest in all of Grantor's right, title and interest in, to and under its Intellectual Property (including without limitation those Copyrights, Patents and Trademarks listed on Exhibits A, B and C hereto), and including without limitation all proceeds thereof (such as, by way of example but not by way of limitation, license royalties and proceeds of infringement suits), the right to sue for past, present and future infringements, all rights corresponding thereto throughout the world and all re-issues, divisions continuations, renewals, extensions and continuations-in-part thereof (collectively, "Intellectual Property Collateral").

This security interest is granted in conjunction with the security interest granted to Bank under the Loan Agreement. The rights and remedies of Bank with respect to the security interest granted hereby are in addition to those set forth in the Loan Agreement and the other Loan Documents, and those which are now or hereafter available to Bank as a matter of law or equity. Each right, power and remedy of Bank provided for herein or in the Loan Agreement or any of the Loan Documents, or now or hereafter existing at law or in equity shall be cumulative and

concurrent and shall be in addition to every right, power or remedy provided for herein and the exercise by Bank of any one or more of the rights, powers or remedies provided for in this Intellectual Property Security Agreement, the Loan Agreement or any of the other Loan Documents, or now or hereafter existing at law or in equity, shall not preclude the simultaneous or later exercise by any person, including Bank, of any or all other rights, powers or remedies.

Grantor represents and warrants that, to the best of its knowledge, Exhibits A, B, and C attached hereto set forth any and all intellectual property rights in connection to which Grantor has registered or filed an application with either the United States Patent and Trademark Office or the United States Copyright Office, as applicable.

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

GEMFIRE CORPORATION

By: _____
Richard Tompane,
Chief Executive Officer

Address of Grantor:

1220 Page Street
Fremont, CA 94538

BANK:

SQUARE 1 BANK

By: _____
MARK PLOSKI

Title: VICE PRESIDENT

Address of Bank:

406 Blackwell Street, Suite 240
Durham, NC 27701
Attn: Loan Documentation Department

EXHIBIT A

COPYRIGHTS

Description	Registration Number	Registration Date
VOA reference design	VAu000522002	9/10/2001
Gemfire variable optical attenuator reference design	TXu001015532	9/13/2001

EXHIBIT B

PATENT APPLICATIONS

Description	Serial Number	Filing Date
Optical device with reduced temperature dependence	12/130823	5/30/2008
Multi-channel laser pump source for optical amplifiers	11/768150	6/25/2007
Tunable dispersion compensation apparatus*	11/308045	3/3/2006

* **assigned to Lucent Technologies and Gemfire**

EXHIBIT B CONTINUED

REGISTERED PATENTS

Description or Title	Registration Number	Registration Date
Arrayed waveguide grating with reduced channel passband asymmetry	7492991	2/17/2009
Short reach optical interconnect*	7471856	12/30/2008
Optical device with reduced temperature dependence	7397986	7/8/2008
Folded AWG architecture	7382953	6/3/2008
Integrated optical isolator array	7263247	8/28/2007
Multi-channel laser pump source for optical amplifiers	7235150	6/26/2007
Low-loss optical waveguide crossovers using an out-of-plane waveguide	7215854	5/8/2007
Thermo-optic switch having fast rise-time	7171064	1/30/2007
Low-loss optical waveguide crossovers using an out-of-plane waveguide	7062130	6/13/2006
Low Loss Optical Switching System	7003188	2/21/2006
1xN or Nx1 Optical Switch having a Plurality of Movable Light Guiding Structures	6990264	1/24/2006
Method and apparatus for changing the optical intensity of an optical signal using a movable light transmissive structure	6954579	10/11/2005
Dynamic alignment of optical fibers to optical circuit devices such as planar lightwave circuits	6937335	8/30/2005
Device and method for variable attenuation of an optical channel	6856752	2/15/2005
Optoelectronic and photonic devices formed of materials which inhibit degradation and failure**	6842545	1/11/2005
Structures that correct for thermal distortion in an optical device formed of thermally dissimilar materials	6836583	12/28/2004

Description or Title	Registration Number	Registration Date
Structures that correct for thermal distortion in an optical device formed of thermally dissimilar materials	6807331	10/19/2004
Broadly tunable distributed bragg reflector structure processing	6806114	10/19/2004
Photodefinition of optical devices	6724968	4/20/2004
Method and apparatus for switching optical signals using rotatable optically transmissive microstructure	6694071	2/17/2004
Optical switching element having movable optically transmissive microstructure	6690847	2/10/2004
Method for Forming Separately Optimized Waveguide Structures in Optical Materials	6650819	11/18/2003
Optical switching system that uses movable microstructures to switch optical signals in three dimensions	6647170	11/11/2003
Low loss optical switching system	6647168	11/11/2003
Methods for forming waveguides in optical materials	6641743	11/4/2003
Hetero-interface avalance photodetector	6583482	6/24/2003
Integrated optical circulator array	6580842	6/17/2003
Doped fiber amplifier utilizing integrated circulator array	6560387	5/6/2003
Electrical connection scheme for optical devices**	6556734	4/29/2003
Display panel with electrically-controlled waveguide-routing	6522794	2/18/2003
Low voltage elextro-optic modulator with integrated driver	6522793	2/18/2003
Anti-waveguide routing structure**	6507681	1/14/2003
Integrated surface-emitting laser and modulator device	6459716	10/1/2002
Wavelength-tunable semiconductor laser diode	6459709	10/1/2002
Device and method for variable attenuation of an optical channel	6434318	8/13/2002
Laser with electrically-controlled grating reflector	RE37,809	7/30/2002

Description or Title	Registration Number	Registration Date
Method of manipulating optical wave energy using patterned electro-optic structures	6393172	5/21/2002
Planar hetero-interface photodetector	6384462	5/7/2002
Thermo-optic switch having fast rise-time**	6351578	2/26/2002
Connection system for optical redundancy	6325553	12/4/2001
Method for joining wafers at a low temperature and low stress	6316332	11/13/2001
Optoelectronic and photonic devices formed of materials which inhibit degradation and failure**	6236774	5/22/2001
Optically integrating pixel microstructure	6208791	3/27/2001
Scanning method and architecture for display	6167169	12/26/2000
Display architecture with waveguide routing and out-plane emission	6141465	10/31/2000
Integrated optical device with phosphor in substrate pit	6118908	9/12/2000
Method for operating a display panel with electrically-controlled waveguide-routing**	6078704	6/20/2000
Connection system for optical redundancy	6049641	4/11/2000
Phosphor RE-radiation in integrated optics	5978524	11/2/1999
Frequency converter optical source for switched waveguide	5912997	6/15/1999
Low loss optical switch inducible refractive index boundary and spaced output target	5911018	6/8/1999
Low insertion loss optical switches in display architecture**	5887089	3/23/1999
Solid state optical data reader using an electric field for routing control	5835458	11/10/1998
Optical frequency channel selection filter with electronically-controlled grating structures	5781670	7/14/1998
Controllable beam director using poled structure	5732177	3/24/1998
Projection display with electrically controlled waveguide routing	5724463	3/3/1998

Description or Title	Registration Number	Registration Date
Method for manipulating optical energy using poled structure	5703710	12/30/1997
Display panel with electrically-controlled waveguide-routing	5664032	9/2/1997
Optical power splitter with electrically-controlled switching structures	5652817	7/29/1997
Projection display with electrically controlled waveguide routing	5647036	7/8/1997
Controllable beam director using poled structure	5630004	5/13/1997
Fabrication of patterned poled dielectric structures and devices	5615041	3/25/1997
Optical power splitter with electrically-controlled switching structures	5586206	12/17/1996
Optical frequency channel selection filter with electronically-controlled grating structures	5581642	12/3/1996
Display panel with electrically-controlled waveguide-routing	5544268	8/6/1996
Method for making devices having a pattern poled structure and pattern poled structure devices	5519802	5/21/1996
Optical source with mode reshaping	5513196	4/30/1996
Polarized frequency-selective optical source	5499256	3/12/1996
ATM switch with electrically-controlled waveguide-routing	5491762	2/13/1996
Method for controllable optical power splitting	5488681	1/30/1996
Method and apparatus for dual resonant laser upconversion	5297156	3/22/1994
Resonant nonlinear laser beam converter	5206868	4/27/1993
Diode-pumped optical parametric oscillator	5134622	7/28/1992
Amplifier-oscillator free electron laser	4999839	3/12/1991
* **assigned to Dow Corning and Gemfire also Int'l filing PCT/US2005/02431**		
** **confirmatory license with US Army**		