



## LICENSE BACK AGREEMENT

This License Agreement is entered into as of ~~November 14~~ November 14, 2000 (this "Agreement"), by and between TERACONNECT, INC., a Delaware corporation ("TeraConnect"), and LOCKHEED MARTIN CORPORATION, a Maryland corporation (together with its Subsidiaries and Affiliates, "Lockheed Martin").

### WITNESSETH:

WHEREAS, Lockheed Martin, TeraConnect and the Investors named therein have entered into a Transaction Agreement dated as of November 14, 2000 (the "Transaction Agreement") pursuant to which, among other things, Lockheed Martin has agreed to contribute and assign and TeraConnect has agreed to accept and assume substantially all of the assets used primarily in the Parallel Lightwave Networks Initiative (as defined in the Transaction Agreement) and certain liabilities of Lockheed Martin arising from or relating to the Parallel Lightwave Networks Initiative; and

WHEREAS, pursuant to the terms of the Transaction Agreement, TeraConnect desires to grant and Lockheed Martin desires to accept, on its own behalf and on behalf of its Affiliates, a license under the TeraConnect Licensed Technology (as such term is defined below) on the terms set forth herein.

NOW, THEREFORE, the parties hereto, in consideration of the mutual agreements contained herein, the receipt and sufficiency of which are hereby acknowledged, do hereby agree as follows:

1. Definitions. Capitalized terms used but not defined herein shall have the meanings given to them in the Transaction Agreement. The following terms shall have the meanings provided:

"Commercial Applications" means any and all applications other than Non-Commercial Applications.

"COTS TeraConnect Products" means TeraConnect Products that are listed in a catalogue that is published or otherwise made available for inspection by customers generally and are offered for sale to the general public in substantial quantities at the established catalogue prices.

"COTS Non-TeraConnect Products" means Non-TeraConnect Products that are listed in a catalogue that is published or otherwise made available for inspection by customers generally

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and are offered for sale to the general public in substantial quantities at the established catalogue prices.

"Licensed Patents" means the patent applications listed on Exhibit A attached hereto and any United States or foreign reissues, divisions, renewals, extensions, provisionals, continuations, continuations-in-part thereof or substitutes therefor, or patents issuing therefrom.

"Licensed Trade Secrets" means Trade Secrets, other than Transferred Trade Secrets, that are necessary or useful to develop, manufacture, distribute or commercially exploit the TeraConnect Products and have arisen or exist within the Sanders business unit of Lockheed Martin; ~~provided, however, Licensed Trade Secrets do not include Trade Secrets licensed by Lockheed Martin (through Sanders) from a third party which are subject to restrictions that prevent the sublicensing of such Trade Secrets to third parties, such as TeraConnect~~

"Non-Commercial Applications" means all governmental, military, aeronautical, and space uses including but not limited to sales to any Governmental Authority and all ruggedized and militarized products. For purposes hereof, "ruggedized" means (i) radiation hardened, (ii) tempest-modified, (iii) shock and/or vibration resistant, or (iv) modified to meet certain thermal parameters, in each case arising from or relating to government requirements or governmentally sponsored, military, space, or intelligence activities.

"Non-COTS Non-TeraConnect Products" means any and all Non-TeraConnect Products other than COTS TeraConnect Products.

"Non-COTS TeraConnect Products" means any and all TeraConnect Products other than COTS TeraConnect Products.

"Non-TeraConnect Products" means any and all products other than TeraConnect Products.

"TeraConnect Improvements" means any and all systems or methods developed by TeraConnect that would be covered by an issued claim of any of the Licensed Patents.

"TeraConnect Licensed Technology" shall mean all Licensed Patents, Transferred Trade Secrets and TeraConnect Improvements.

"TeraConnect Products" means (i) optoelectronic interconnect modules using integrated circuit arrays of emitters and / or detectors to link board to board, server to server, router to network(s), multi-racks, workstations, supercomputers, solid state memory, processor to memory, processor to processor, and processor to communication nodes, (ii) products for providing high speed telecommunications and data network links utilizing optoelectronic interconnect modules using integrated circuit arrays, or (iii) products for providing switching functions utilizing optoelectronic interconnect modules using integrated circuit arrays.

"Trade Secrets" means information and materials, including a formula, pattern,

compilation, device, method, technique or process, that, (i) derives independent economic value, actual or potential, from not being generally known to other persons who can obtain economic value from its disclosure or use, and is the subject of efforts that are reasonable under the circumstances to maintain its secrecy; or (ii) relates to any records, drawings, blueprints, shop diagrams, information related to design or manufacturing activities, computer assisted design (CAD), inputs and outputs, test results, test procedures, test chips, device prototypes, customer lists and customer requirements, supplier or supply chain management, cost or pricing information, design rules, process flows, fabrication methods, design specifications and tolerances.

"Transferred Employees" has the meaning set forth in the Transaction Agreement.

"Transferred Trade Secrets" has the meaning set forth on Exhibit B attached hereto.

2. License.

(a) Subject to the terms of this Agreement, TeraConnect hereby grants to Lockheed Martin an exclusive, irrevocable, perpetual, fully paid-up, royalty-free, world-wide right and license under TeraConnect Licensed Technology, to make, have made, use, reproduce, import, distribute, sell, offer for sale, disclose, transmit, create derivative works and improve Non-COTS Non-TeraConnect Products and Non-COTS TeraConnect Products for Non-Commercial Applications, except that Lockheed Martin's rights shall be subject to the rights granted to TeraConnect in the License Agreement between TeraConnect and Lockheed Martin of even date herewith.

(b) Subject to the terms of this Agreement and any rights of the United States government, and in addition to the grants set forth in Section 2(a) above, TeraConnect hereby grants to Lockheed Martin a non-exclusive, irrevocable, perpetual, fully paid-up, royalty-free, world-wide right and license under TeraConnect Licensed Technology, to make, have made, use, reproduce, import, distribute, sell, offer for sale, disclose, transmit, create derivative works and improve COTS Non-TeraConnect Products for Commercial Applications and Non-Commercial Applications and Non-COTS Non-TeraConnect Products for Commercial Applications.

(c) The licenses granted herein shall be for a perpetual term and will not terminate unless agreed to in writing by Lockheed Martin or as a result of a material breach by Lockheed Martin of its obligations hereunder.

(d) The licenses granted in accordance with this Agreement shall be freely transferable and sublicenseable by Lockheed Martin to any successor through merger or otherwise or acquisition of all or substantially all of the business or assets of its Sanders business unit, and in the event of such transfer, TeraConnect agrees that Lockheed Martin shall be granted by the transferee a sublicense of the scope of license granted hereunder.

(e) In the event that TeraConnect determines not to pursue any of the

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Licensed Parents contemplated by the TeraConnect Licensed Technology or otherwise abandons any of the TeraConnect Licensed Technology, TeraConnect shall notify Lockheed Martin and, at Lockheed Martin's option, Lockheed Martin may obtain the prosecution file and prosecute the patent at its own cost and expense.

3. License Fees and Royalties. Lockheed Martin and its Affiliates (and any permitted assignee or sublicensee) shall not be obligated to (i) pay license fees or royalties for any use of the Licensed Technology permitted hereby or (ii) provide any accounting in respect thereof.

4. Confidentiality. Lockheed Martin agrees that all TeraConnect Licensed Technology constituting Confidential Information licensed under, provided or otherwise made available to Lockheed Martin in connection with this Agreement shall be treated as if provided under Section 6.02(b) of the Transaction Agreement (whether or not the Transaction Agreement is in effect or has been terminated) and shall be protected as Confidential Information throughout the term of this Agreement.

5. Infringement Claims.

(a) Each party shall provide the other party hereto with prompt notice of any alleged, actual or threatened infringement or other improper use of the Licensed Technology of which such party becomes aware. Upon discovery of such infringement, the parties agree to confer and decide upon an appropriate course of action.

(b) TeraConnect retains the right, but not the obligation, to take action to institute and prosecute any actions for any infringement or alleged infringement, and otherwise to take appropriate action for infringement of and improper use in Commercial Applications. In the event TeraConnect elects not to take action and Lockheed Martin can demonstrate that its business is directly affected by such infringement, Lockheed Martin may institute actions on Lockheed Martin's behalf and expense. Lockheed Martin shall have full and absolute authority with respect to any claims for infringement of or improper use in Non-Commercial Applications. The party instituting such action shall be solely responsible for all costs and expenses (including attorneys' fees) of prosecuting such actions. Any damages, costs or other amounts recovered through such proceedings for such purposes shall be retained by such party. In the event either party (the "Invoking Party") institutes any action, the other party shall join such proceeding if necessary as a party and shall provide the Invoking Party with all reasonably requested assistance in connection with such proceedings, and the Invoking Party shall reimburse the other party's reasonable out-of-pocket costs of providing such assistance.

6. Miscellaneous Provisions.

(a) Governing Law. This Agreement shall be construed in accordance with and governed by the law of the State of Delaware (without regard to the choice of law provisions thereof).

(b) Notices. Any notices, requests and other communications to any party hereunder shall be in writing (including telecopy or similar writing) and shall be given,

if to Lockheed Martin:

Lockheed Martin Corporation  
6801 Rockledge Drive  
Bethesda, Maryland 20817  
Attention: Frank H. Menaker, Esq.  
Senior Vice President and General Counsel  
Telecopy: (301) 897-6791

with a copy to:

Lockheed Martin Corporation  
Sanders, A Lockheed Martin Company  
Legal Department (NHQ 1-719)  
P.O. Box 868  
Nashua, New Hampshire 03061-0868  
Attention: Kevin M. Perkins, Esq.  
Telecopy: (603) 885-2167

and

King & Spalding  
1730 Pennsylvania Avenue, N.W.  
Washington, D.C. 20006  
Attention: David A. Gibbons, Esq.  
Telecopy: (202) 626-3737

If to TeraConnect:

TeraConnect, Inc.  
65 Spit Brook Road,  
Nashua, New Hampshire 03061  
Attention: Scott Papineau  
Telecopy: (603) ~~885-9192~~

with a copy to:

Ropes & Gray  
One International Place  
Boston, Massachusetts 02110  
Attention: Diana L. Cooper, Esq.  
Telecopy: (617) 951-7050

or to such other address or telecopy number and such other copies as such party may hereafter specify by notice to the other parties. Each such notice or other communication shall be effective (i) if given by telecopy, when such telecopy is transmitted to the telecopy number specified in this Section 6(b) and evidence of receipt is received or (ii) if given by other means, upon delivery or refusal of delivery at the address specified in this Section 6(b).

(c) **Amendments; Waivers.** Any provision of this Agreement may be amended or waived prior to the First Closing Date if, and only if, such amendment or waiver is in writing and signed, in the case of an amendment, by each party, or in the case of a waiver, by the party against whom the waiver is to be effective. No failure or delay by any party in exercising any right, power or privilege under this Agreement shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

(d) **Successors and Assigns.** Except as expressly provided in this Agreement, the provisions of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided, however, that no party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without the written consent of the other party. Notwithstanding the foregoing, Lockheed Martin may freely assign this Agreement, and the rights and obligations hereunder, to any successor through merger or otherwise or acquisition of all or substantially all of the business or assets of Sanders.

(e) **Construction.** The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favoring or disfavoring either party by virtue of the authorship of any of the provisions of this Agreement. Any reference to any federal, state, local or foreign statute or law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise. As used in this Agreement, any reference to the masculine, feminine or neuter gender shall include all genders, the plural shall include the singular, and the singular shall include the plural.

(f) **Counterparts; Effectiveness.** This Agreement may be signed in counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement shall become effective when each party shall have received a counterpart hereof signed by the other party hereto.

(g) **Severability.** Any provision of this Agreement that is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions of this Agreement or affecting the validity or enforceability of such provision in any other jurisdiction. To the extent any provision of this Agreement is determined to be prohibited or unenforceable in any jurisdiction, TeraConnect and Lockheed Martin agree to use reasonable commercial efforts to

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substitute one or more valid, legal and enforceable provisions that, insofar as practicable, implement the purposes and intent of the prohibited or unenforceable provision.

(h) **Captions.** The captions used herein are included for convenience of reference only and shall be ignored in the construction or interpretation hereof.

(i) **No Third Party Beneficiaries.** This Agreement shall not confer any rights or remedies upon any Person other than TeraConnect, Lockheed Martin and their respective successors and permitted assigns.

(j) **Further Assurances.** Each party, upon the reasonable request of the other party, agrees to perform all further acts and execute, acknowledge and deliver any documents which may be reasonably necessary, appropriate or desirable to carry out the intent and purposes of this Agreement.

(k) **Compliance with Laws.** In executing the rights hereunder and as a restriction to the rights granted herein, the parties shall comply with all applicable laws, regulations and orders in all applicable jurisdictions.




IN WITNESS WHEREOF, the parties hereto have duly executed and delivered this Agreement, as of the date first above written.

TERACONNECT, INC.


By: \_\_\_\_\_  
Name:  
Title:

LOCKHEED MARTIN CORPORATION

By:  \_\_\_\_\_  
Name: Walter F. Havenstein  
Title: President  
Sanders, A Lockheed Martin Company

IN WITNESS WHEREOF, the parties hereto have duly executed and delivered this Agreement, as of the date first above written.

TERACONNECT, INC.

By:   
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

LOCKHEED MARTIN CORPORATION

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

EXHIBIT A

#	Docket	Title
1.	4434	Method For Implementing A Receiver Reserved Channel
2.	4436	Optoelectronic Connector System
3.	4437	Multiple Laser Emitters and Detectors Integrated with Electronic Driver Circuits and Fiber Bundles for use in Bi-directional, High-Speed Computer Network Interconnects
4.	4438	Process of Interdigitization of VCSEL Emitters and Detectors using Blanks as Placeholders
5.	4440	Method For Implementing A Distributed Cross Bar Switch
6.	4442	Bump-On-Bump Structures That Yield Predictable Topology Between Multiple Hybridized Devices
7.	4443	Multiple Etch Stop Layers To Maintain Quality Of Optical Surfaces During Processing
8.	4444	Cluster Integration Approach To Optical Transceiver Arrays And Fiber Bundles
9.	4445	Method And Apparatus For Implementing An Optical Interconnect Using Modulated Detectors
10.	4446	Method And Apparatus For Wafer Scale Integration Using Optoelectronic Transceiver
11.	4447	Optical Bench On A Chip
12.	4449	Optical Integrated Processor Chip
13.	4450	Active Optical Interconnects
14.	4454	Process for creating Optical Transceiver Arrays
15.	4455	High Rate Optical Correlator
16.	4459	High Rate Optical Correlator Implemented On A Substrate
17.	4460	Optical Disc Parallel Read/Write Apparatus
18.	4461	Security Mapping And Auto Reconfiguration
19.	4462	Dark-Field Barriers Between Emitters And Detectors To Prevent Crosstalk
20.	4463	Auto Gain Structure And Feedback Mechanism For Communication Devices
21.	4464	Star Topology Network With Fiber Interconnect On Chip
22.	4466	On-chip WDM broadcast
23.	4477	Parallel Optical Node Controller
24.	4478	Optically Extended Virtual Field Programmable Gate Array
25.	4479	Parallel Optics-based Configurable Pipeline Processor
26.	4508	Self-Configuring Parallel Photonic Network Routing
27.	4509	Spatial Arrangement of Differential Channels
28.	4510	Multipixel Channel Tessellation
29.	4511	Channel Arrangement and Bypassing for Fault Tolerance
30.	4512	Alternate Material Beam Lead Device For Ultra-High Density Interconnection
31.	4513	Technique For Localized Planarization Of Printed Wiring Board For Subsequent Fine Line Processing To Enable Direct Chip Attach Of High Speed, High I/O Count Ics A.K.A., Local Pwb Planarization
32.	4514	Alpha Epoxy Ridge Alternative
33.	4515	Method To Create A Built-In Standoff For Opto-Electronic Devices, A.K.A., Mbe Standoff
34.	4516	Technique For Planarization Of Electrical Fanout Device Attached By Flip Chip
35.	4517	Epoxyless Flip Chip Attach Of Opto-Electronic Devices
36.	4518	Precision Optical Standoff For Spacing Of Optical Components On Opto-Electronic Devices, A.K.A., Epoxy Ridge

#	Docket	Title
37.	4519	Substrateless Interconnect Devices For Ultra-High Density Interconnection
38.	4520	Technique For Flip Chip Attach Of Beam Lead Devices For Ultra-High Density Interconnection, A.K.A., Bump On A Beam
39.	4521	Discrete Pixelation Of 2-D Photo-Sensitive Focal Plane Arrays
40.	4522	Stress Relieving Flip Chip Attach Device For Ultra-High Density Interconnection
41.	4523	Integrated Precision Standoff For Spacing Of Optical Components On Opto-Electronic Devices, A.K.A., The "Greg Grid."
42.	4524	Optical Loop-Back Device for Active Self Test
43.	4525	Self Aligning Optical Interconnect Using Multiple Emitters/Detectors Pairs Per Fiber Channel
44.	4526	Method to Maintain Cleanliness and Perform Open Fiber Control of Fiber Optic Connector
45.	4527	Method to Connect Opto-electronic Components To Fiber Optic Bundles Using A Precision Insert
46.	4528	Direct Optical Interconnect Method for "Inter" and "Intra" IC Data Transfer
47.	4529	Optical Interconnect Method for Circuit Card Assemblies & Backplanes
48.	4530	Right Angle Optical Interconnect Technique
49.	4531	Electro-optical Translator
50.	4532	Configurable Network Interface Controller (NIC)
51.	4533	Parallel Photonic Network Eye Safety Device
52.	4535	<u>Flexible Self-configuring Networks Using Parallel Optical Interconnect</u>
* 53.	4536	Opto-electronic device Using Multiple Emitters and/or Detectors per Fiber Channel
54.	4540	Self Aligning Optical Interconnect Using Multiple Emitters/Detectors Pairs per Fiber Channel

## EXHIBIT B

Transferred Trade Secrets means know-how and Trade Secrets falling within the categories set forth below.

- I. Trade Secrets and know-how described in the patent applications set forth in Exhibit A which is incorporated by reference.
- II. The knowledge of Transferred Employees relating to (i) Trade Secrets and know-how referenced in I above, (ii) Trade Secrets and know-how referenced in III below, (iii) VCSEL Technology (as defined in the License Agreement) or (iv) TeraConnect Products. For clarity, Trade Secrets does not include the knowledge of Transferred Employees arising from technology that was not developed or utilized within the Sanders operating unit of Lockheed Martin.
- III. Trade Secrets and know-how relating to:
  1. Optical Standoff Designs (to provide spacing between opto-electronic devices and optical components) for TeraConnect Products
    - 1.1 Epoxy ridge – the concept and process of creating an epoxy ridge/grid to serve as a precision spacer between transceiver and faceplate\*
    - 1.2 Integrated Optical Standoff Method a.k.a., "Greg Grid,"\*
    - 1.3 Bond the optical component (faceplate or fiber bundle) to the VCSEL/detector array with IR transparent adhesive\*

\*Some information is included in transferred patent applications. Note: Patents have not yet issued.
  2. Transceiver Module Assembly for TeraConnect Products
    - 2.1 Heat sink design specific to TeraConnect products
    - 2.2 Faceplate utilization and designs for TeraConnect modules
    - 2.3 Flex circuit or other boards for mounting to TeraConnect transceiver arrays
      - 2.1.1. Mechanical advantage in attaching to ASIC
      - 2.1.2. Use to provide 90 degree turn of optical component
      - 2.1.3. Implementation of the rigid-flex connector to wire the transceiver to the motherboard, going through a right angle turn
    - 2.4 Optical Flip-chip design for TeraConnect modules
      - 2.1.1. Flip-chip attachment of the interposer or fanout device to flex-circuit
      - 2.1.2. Flip-chip attach of ASIC to motherboard
  3. Alignment of Test of TeraConnect Products
    - 3.1 Optical loop-back assembly and use
      - 3.1.1 Existence of the device itself as applied to TeraConnect Alpha and Beta modules
      - 3.1.2 Use for self-testing TeraConnect modules
      - 3.1.3 Use as alignment tool for TeraConnect fiber optic guide
    - 3.2 Alignment implementation for Alpha and Beta modules
      - 3.1.1. Pitch and roll adjustment

- 3.1.2. Passive alignment of transceiver components
- 3.1.3. Active alignment using loop-back device
- 3.1.4. Active alignment using connectorized fiber bundles
- 3.1.5. Active alignment using connectorized template
- 3.1.6. The implementation of optical handshake to check the link integrity
- 3.1.7. The concept of twisting the fiber bundle by 180 degrees to compensate for channel skew in the ASIC

4. Connector designs for TeraConnect Alpha and Beta Modules

- 4.0 Designs used to connect fiber optic image guides or 2D ordered fiber arrays to TeraConnect transceiver arrays and to bulkheads for optical link passthrough.\*
- \*Ownership in conjunction with Schott Fiber Optics

5. Optical Components for TeraConnect Products

- 5.1 The use of TeraConnect optical faceplates as an interface element with optical fiber bundles or ordered fiber arrays
- 5.2 Fiber optic image guides and ordered fiber arrays as a medium to transmit and receive optical data signals

6. Emitter and detector topology for TeraConnect Products

- 6.1 Inter-digitated emitters and detectors for optical interconnects\*
- 6.2 Separated emitters and detector side by side arrays
- 6.3 Cluster patterns for TeraConnect emitters and detectors\*
- 6.4 The method used to integrate TeraConnect emitter and detector arrays in different patterns (inter-digitated, side-by-side, etc.) on an ASIC

\* Some information is included in transferred patent applications. Note: Patents have not yet issued.

7. Alpha and Beta ASIC designs for TeraConnect products