

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

TYCHE LICENSING LLC,

Plaintiff,

v.

TEXAS INSTRUMENTS  
INCORPORATED,

Defendant.

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Case No.

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Tyche Licensing LLC (“Tyche” or “Plaintiff”) for its Complaint against Defendant Texas Instruments Incorporated (“TI” or “Defendant”), alleges as follows:

**THE PARTIES**

1. Tyche is a limited liability company organized and existing under the laws of the State of Texas, with its principal place of business located at 100 West Houston Street, Marshall, Texas 75670.

2. Upon information and belief, Defendant TI is a publicly traded corporation organized and existing under the laws of the State of Delaware, with a place of business located at 12500 TI Boulevard, Dallas, Texas 75243.

3. Upon information and belief, TI is a technology company in the business of researching, developing, making, using, and selling semiconductor products, including the TI-branded products accused of infringement in this case by Tyche (the “Accused Products” defined below).

## **JURISDICTION**

4. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) and 1367.

5. This Court has personal jurisdiction over the Defendant consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. Defendant TI has its principal place of business in Dallas, Texas, where it employs more than 20,000 employees.

6. TI has, thereby, committed acts of direct infringement in the United States and in this District in violation of Tyche's intellectual property rights.

7. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1391(b) and 1400(b) because Defendant is subject to personal jurisdiction in this District, has committed acts of patent infringement in this District, and has a regular and established place of business in this District, including at least a commercial manufacturing facility located at 6412 U.S. Highway 75, Sherman, Texas, 75090. In addition to its existing facilities in this District, TI has, upon information and belief, commenced its construction activities with respect to a new \$30 billion chip manufacturing facility also located in this District.<sup>1</sup> Further, Defendant has previously admitted or not contested proper venue in this District in other patent infringement actions.

## **PATENTS-IN-SUIT**

8. On May 31, 2005, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 6,900,087 (the "'087 Patent") entitled "Symmetric Inducting Device for an

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<sup>1</sup> <https://news.ti.com/texas-instruments-to-begin-construction-next-year-on-new-300-mm-semiconductor-wafer-fabrication-plants>

Integrated Circuit Having a Ground Shield.” A true and correct copy of the ’087 Patent is available at <https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=06900087>.

9. On August 1, 2006, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,084,481 (the “’481 Patent”) entitled “Symmetric Inducting Device for an Integrated Circuit Having a Ground Shield.” A true and correct copy of the ’481 Patent is available at <https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=7084481>.

10. Tyche is the sole and exclusive owner of all right, title, and interest in the ’087 Patent and the ’481 Patent (collectively, the “Patents-in-Suit”), and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. Tyche also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

11. Tyche has at all times complied with the marking provisions of 35 U.S.C. § 287 with respect to the Patents-in-Suit.

### **FACTUAL ALLEGATIONS**

12. The Patents-in-Suit generally cover systems and methods related to inducting devices in integrated circuits.

13. The technology described in the ’087 Patent was developed by Rex Everett Lowther and William R. Young of Globespan Virata Inc. By way of example, this technology is implemented today in integrated circuits used in wireless communication devices.

14. The technology described in the ’481 Patent was developed by Rex Everett Lowther and William R. Young of Conexant Systems, Inc. By way of example, this technology is implemented today in integrated circuits used in wireless communication devices.

15. TI has infringed and is continuing to infringe one or more of the Patents-in-Suit by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import devices containing integrated circuits with symmetric inductors (the “Accused Products”). Such products include, but are not limited to, AWR1243, AWR1443, AWR1642, AWR1642ABIGABLQ1, AWR1843, AWR2243, AWR6843, AWR1642ABIGABLQ1, BQ25120, BQ25123YFPT, BQ25125, BQ25150, CC430F5123, CC430F5125, CC430F5133, CC430F5135, CC430F5137, CC430F5143, CC430F5145, CC430F5147, CC430F6125, CC430F6126, CC430F6127, CC430F6135, CC430F6137, CC430F6147, CC620, CC2630, CC1020, CC1021, CC1101, CC110L, CC1120, CC1121, CC1125, CC113L, CC1150, CC115L, CC1175, CC1190, CC1200, CC1201, CC1260, CC1310, CC1311, CC1312, CC1350, CC1352, CC2420, CC2500, CC2510, CC2511, CC2520, CC2530, CC2531, CC2533, CC2550, CC2620, CC2640, CC2642R1FRGZR, CC2650, CC2651, CC2652R, CC2662R-Q1, CC3100, CC3120, CC3130, CC3135, CC3200, CC3220, CC3230S, CC3230F, CC3235, CC4340, SN2611A0, XA1843ABGABL, and any variants and other TI processors within the same product families as those named herein.

**COUNT I**  
**(Infringement of the '087 Patent)**

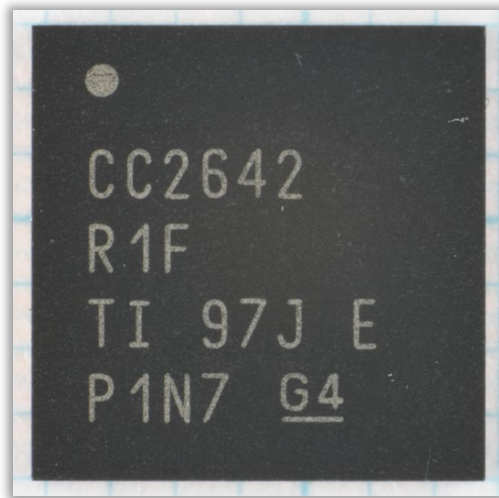
16. Paragraphs 1 through 15 are incorporated by reference as if fully set forth herein.

17. Tyche has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '087 Patent.

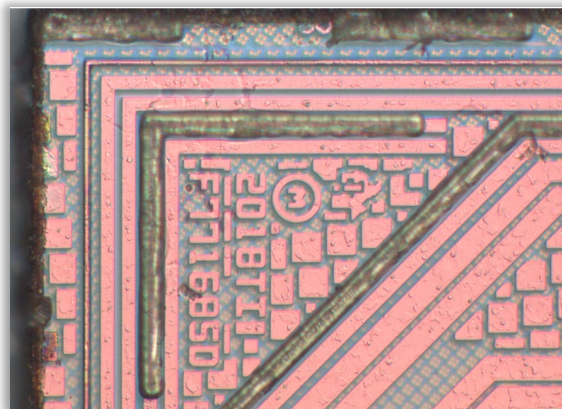
18. Defendant has and continues to directly infringe the '087 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States the Accused Products made using the patented methods, including, but not limited to, products that satisfy each and every

limitation of one or more claims of the '087 Patent. Upon information and belief, such products include at least TI processors containing a symmetric inductor with current routers in an integrated circuit.

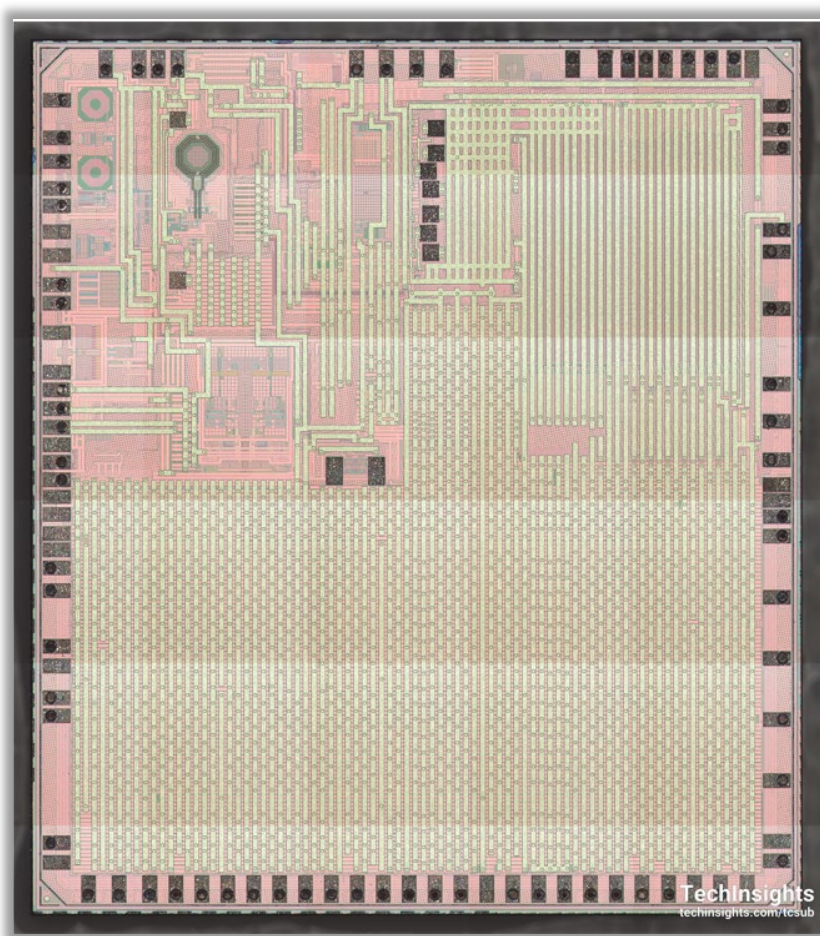
19. For example, Defendant has and continues to directly infringe at least claim 17 of the '087 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include a symmetric inducting device for an integrated circuit. For example, the Accused Products, including the TI CC2642R1FRGZR processor, include a symmetric inducting device for an integrated circuit. The symmetric inducting device is produced by performing a method of forming a symmetric inducting device for an integrated circuit. The method includes patterning one or more pairs of current path regions in a main metal layer that overlays a working surface of a substrate of an integrated circuit, wherein each pair of current path regions are patterned to be generally symmetric about a plane of symmetry that is perpendicular to the working surface of the substrate.



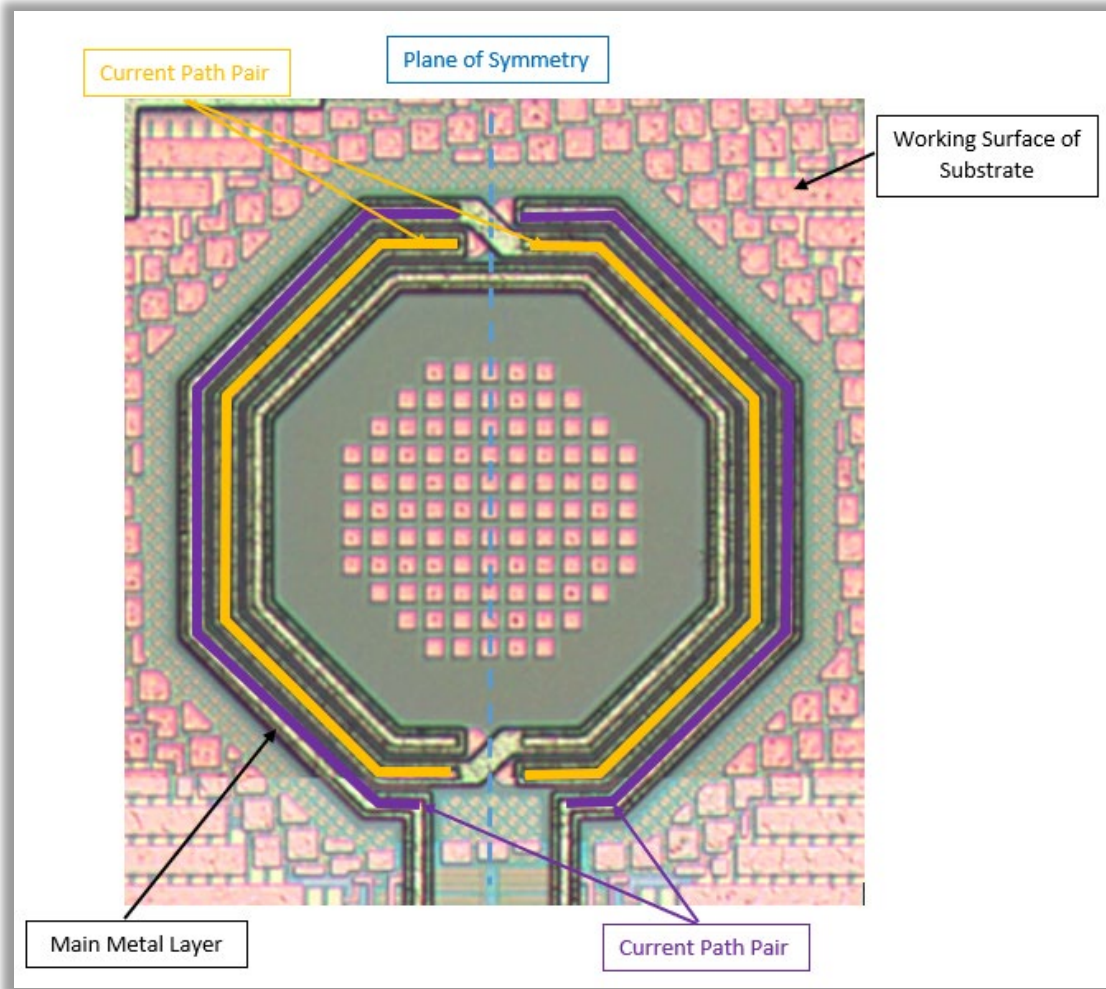
TI CC2642R1FRGZR Processor Package Top.



TI CC2642R1FRGZR Processor Die Marking.



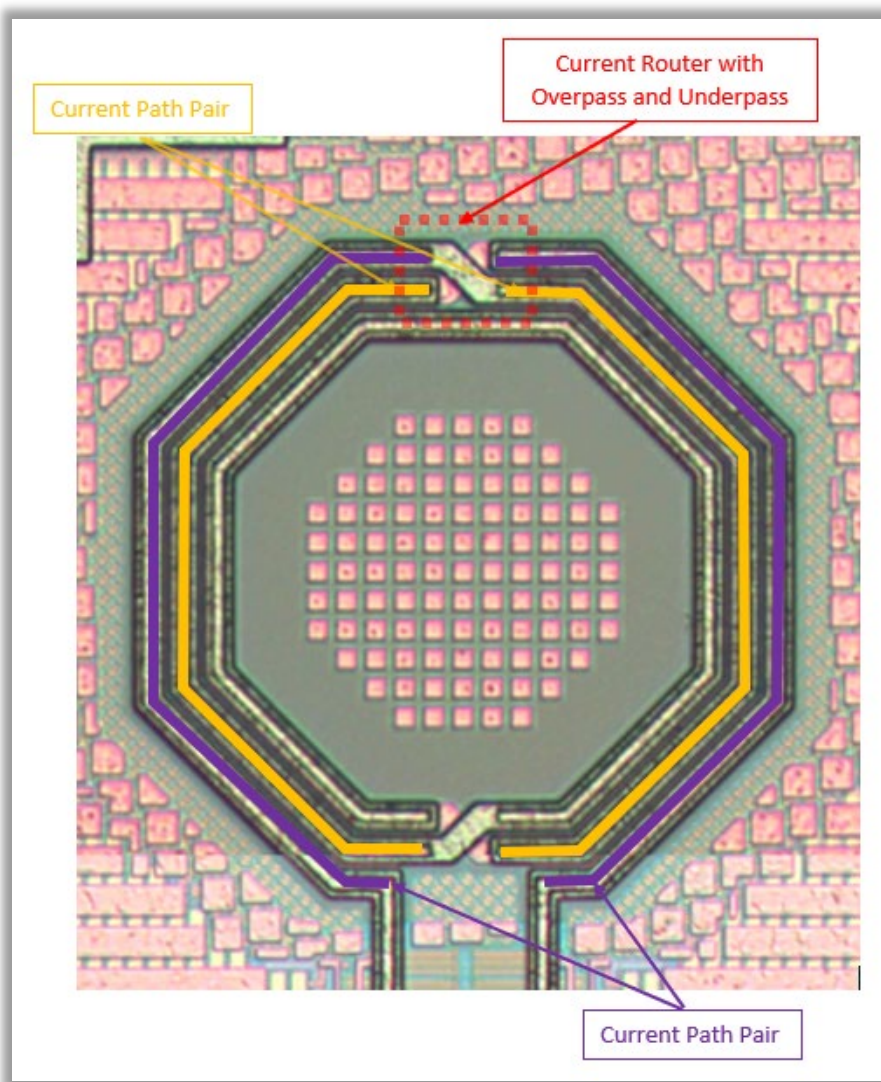
TI CC2642R1FRGZR Processor Die with Integrated Circuits.



TI CC2642R1FRGZR Processor Inductor.

20. In integrated circuits, metal current paths are patterned in a working surface of a substrate. In order to save valuable space, and to design circuits in which components do not interfere with each other, differential circuits can be used. Differential circuits comprise a first circuit that produces desired voltages and currents, and a second identical circuit that produces opposite voltages and currents. This design cancels out undesirable natural parasitic effects in the circuit. Symmetric inducting devices are useful in differential circuits. The pairs of current paths are patterned to be symmetric about the plane of symmetry, which is perpendicular to the working surface.

21. Additionally, the aforementioned method of forming a symmetric inducting device for an integrated circuit includes forming current routers having an overpass and an underpass to selectively couple one current path region in a pair of current path regions to another current path region in another pair of current path regions, wherein a width of the overpass is formed narrower than the width of the underpass to approximate resistances through the overpass and the underpass.



TI CC2642R1FRGZR Processor Inductor.

22. In order to form a differential circuit with opposing voltages and currents, an overpass region and an underpass region are formed to selectively couple one current path region



in a pair of current path regions to another current path region in another pair of current path regions. This has the effect of minimizing undesirable parasitic effects. The overpass metal layer has less sheet resistance than the underpass metal layer. For the inductor to function as desired, and for current to flow through all current path regions, the overpass and underpass have approximately equal resistance. Therefore, in order to approximate resistances through the overpass and underpass, and to compensate for less sheet resistance in the overpass layer, the overpass is formed narrower than the underpass.

23. Defendant has and continues to indirectly infringe one or more claims of the '087 Patent, including claim 17, by knowingly and intentionally inducing others, including third-party semiconductor foundries, other types of third-party manufacturers, customers, and/or end-users to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States the Accused Products.

24. Defendant, with knowledge that these products, and/or the manufacture thereof, infringe the '087 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce direct infringement of the '087 Patent by contracting for the third-party manufacture of, and/or providing the Accused Products to direct infringers.

25. Defendant has induced infringement by others, including third-party semiconductor foundries, other types of third-party manufacturers, customers, and/or end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others infringe the '087 Patent, but while remaining willfully blind to the infringement.

26. Defendant has and continues to infringe one or more claims of the '087 Patent by importing into the United States or offering to sell, selling, or using within the United States a product which is made by a process patented in the United States.

27. Tyche has suffered damages as a result of Defendant's direct and indirect infringement of the '087 Patent in an amount to be proved at trial.

**COUNT II**  
**(Infringement of the '481 Patent)**

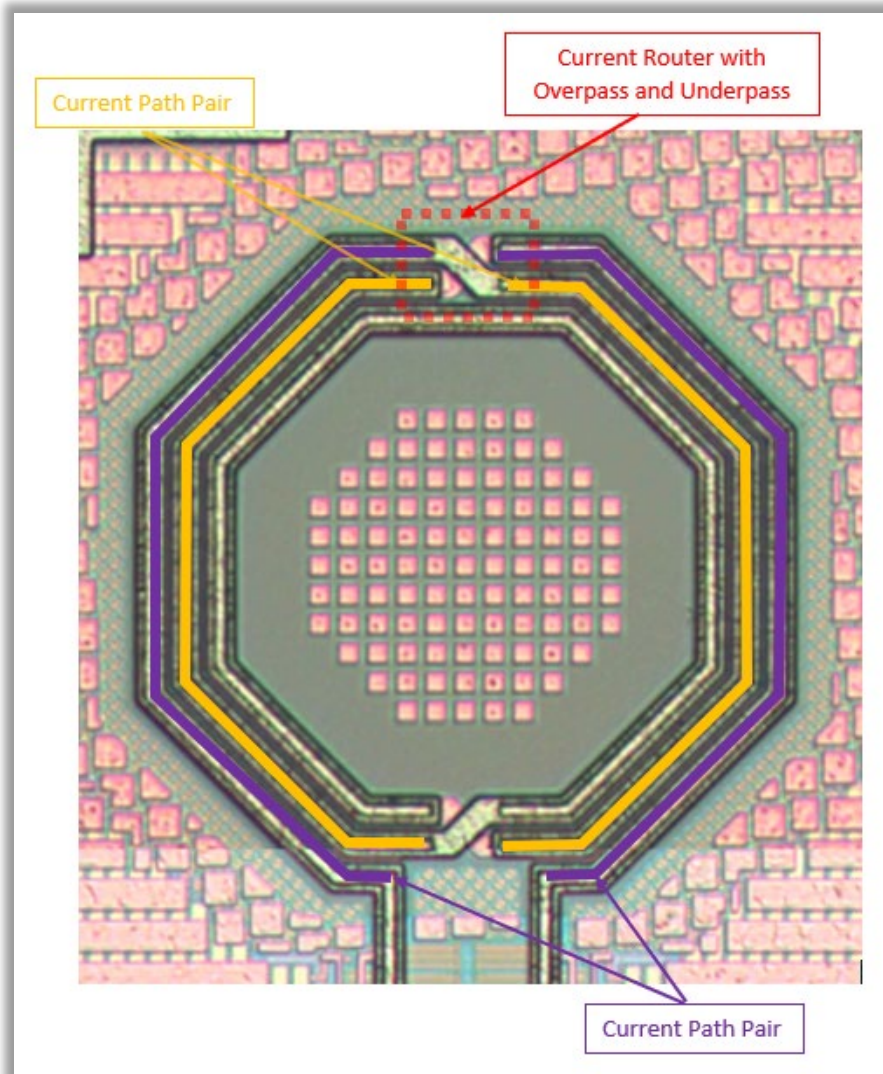
28. Paragraphs 1 through 15 are incorporated by reference as if fully set forth herein.

29. Tyche has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '481 Patent.

30. Defendant has and continues to directly infringe the '481 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States the Accused Products including, but not limited to, products that satisfy each and every limitation of one or more claims of the '481 Patent. Upon information and belief, such products include at least TI processors containing a symmetric inductor with current routers in an integrated circuit.

31. For example, Defendant has and continues to directly infringe at least claim 1 of the '481 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include a current router for an inducting device in an integrated circuit. For example, the Accused Products, including the TI CC2642R1FRGZR processor, include a symmetric inducting device for an integrated circuit, including a current router comprising one or more overpasses to electrically connect select current path regions of the inducting device, the one or more overpasses are made from a conductive layer having a first sheet resistance, each overpass having a first width.

32. Additionally, the Accused Products, including the TI CC2642R1FRGZR processor, include a symmetric inducting device for an integrated circuit, including a current router comprising one or more underpasses to electrically connect different select current path regions of the inducting device, the one or more underpasses are made from a conducting layer having a second different sheet resistance, each underpass having a second different width, wherein the first width of each overpass and the second different width of an associated underpass are adjusted to make the resistance through the overpass approximately equal to the resistance through the associated underpass.



TI CC2642R1FRGZR Processor Inductor.

33. In order to form a differential circuit with opposing voltages and currents, an overpass region and an underpass region are formed to selectively couple one current path region in a pair of current path regions to another current path region in another pair of current path regions. This has the effect of minimizing undesirable parasitic effects. The overpass metal layer has a different sheet resistance than the underpass metal layer. For the inductor to function as desired, and for current to flow through all current path regions, the overpass and underpass have approximately equal resistance. Therefore, in order to approximate resistances through the overpass and underpass, and to compensate for the different sheet resistance in the overpass layer, the overpass is formed to have a different width than the underpass.

34. Defendant has and continues to indirectly infringe one or more claims of the '481 Patent by knowingly and intentionally inducing others, including third-party semiconductor foundries, other types of third-party manufacturers, customers, and/or end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States the Accused Products.

35. Defendant, with knowledge that these products, or the use or manufacture thereof, infringe the '481 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce direct infringement of the '481 Patent by contracting for the third-party manufacture of and/or providing these products to others, including third-party semiconductor foundries, other types of third-party manufacturers, customers, and/or end-users for use in an infringing manner.

36. Defendant has induced infringement by others, including third-party semiconductor foundries, other types of third-party manufacturers, customers, and/or end-users, with the intent to

cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others would infringe the '481 Patent, but while remaining willfully blind to the infringement.

37. Tyche has suffered damages as a result of Defendant's direct and indirect infringement of the '481 Patent in an amount to be proved at trial.

**DEMAND FOR JURY TRIAL**

Plaintiff hereby demands a jury for all issues so triable.

**PRAYER FOR RELIEF**

WHEREFORE, Tyche prays for relief against Defendant as follows:

- a. Entry of judgment declaring that Defendant has directly and/or indirectly infringed one or more claims of each of the Patents-in-Suit;
- b. An order awarding damages sufficient to compensate Tyche for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with interest and costs;
- c. Entry of judgment declaring that this case is exceptional and awarding Tyche its costs and reasonable attorney fees under 35 U.S.C. § 285; and
- d. Such other and further relief as the Court deems just and proper.

Dated: May 16, 2022

Respectfully submitted,

/s/ Alfred R. Fabricant

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