

August 22, 2024

VIA PRIORITY FEDEX – CONFIDENTIAL – SUBJECT TO RULE 408

James Witmond, General Counsel
Murata Electronics North America, Inc.
3330 Cumberland Blvd. SE, Suite 700,
Atlanta, GA 30339

Yoshitaka Tanino, Vice President
Legal & IP Group, Corporate Unit
Murata Manufacturing Co., Ltd.,
10-1, Higashikotari 1-chome
Nagaokakyo-shi, Kyoto 617-8555, Japan

Re: Murata's Infringement of U.S. Patent No. 7,489,914

Dear Sirs:

Meunier Carlin & Curfman ("MCC") represents Georgia Tech Research Corporation ("GTRC"), a non-profit corporation and affiliated organization of the Georgia Institute of Technology ("Georgia Tech") responsible for maintaining, licensing, and enforcing innovations created by researchers and faculty at Georgia Tech. We understand that Murata has a history of working with Georgia Tech, and that Murata has recently inquired about licensing several of GTRC's patented technologies.

In the interest of open dialogue, we are reaching out with a matter that requires Murata's immediate attention and resolution.

GTRC owns patents disclosing and claiming inventions relating to RF devices comprising multi-layer LCP substrates—patents that are not part of Murata's current licensing discussions with GTRC. One such patent is U.S. Patent No. 7,489,914 ("the '914 Patent") (attached as **Exhibit 1**), entitled, "Multi-Band RF Transceiver with Passive Reuse In Organic Substrates." This patent was filed April 25, 2005, claims priority to 2003, and was duly issued by the United States Patent and Trademark Office on February 10, 2009.

From 2006 to 2009, Murata engaged in discussions with Jacket Micro Devices, Inc. ("JMD"), an organization founded by former researchers and faculty members of Georgia Tech (including inventors of the '914 Patent). At that time, JMD was the exclusive licensee of the '914 patent.

Through discussions with JMD, Murata sought information about the multi-layer LCP technology disclosed in GTRC's patents, including specifically relating to the '914 Patent. Moreover, Murata entered

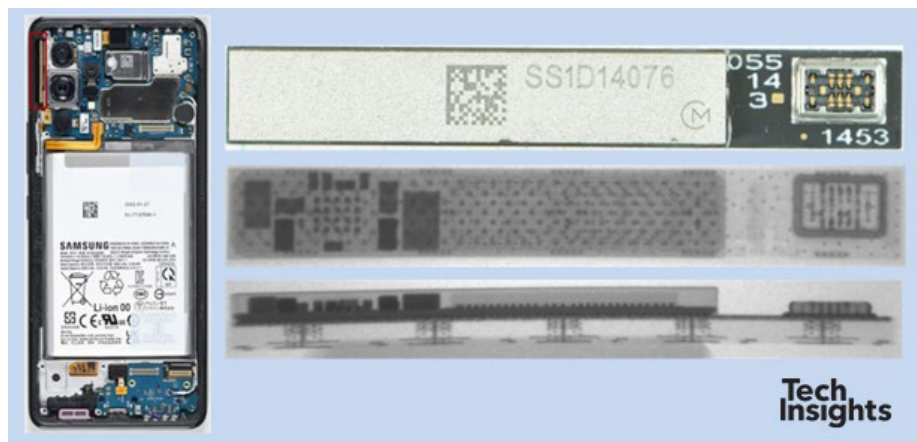
into discussions with JMD relating to a potential sub-license to make and sell GTRC's organic-based substrate technology, including the multi-layer RF inventions of the '914 Patent.

While Murata engaged in extensive discussions with JMD regarding the multi-layer LCP substrate inventions, no relationship ever materialized between Murata and JMD—and Murata never became a licensee of the '914 Patent.

However—despite Murata's intimate knowledge of the '914 patent and lack of authorization to practice the inventions disclosed therein—it has come to GTRC's attention that Murata has been making and selling multi-layer LCP products (also branded "MetroCirc™") that embody claims of the '914 Patent.

A white paper circulated by Murata at an IP Symposium in 2021 explains that—in part because of its superior performance for 5G spectrum—"MetroCirc has [been] used in many RF applications, e.g., RF transmission lines, Wi-Fi antennas or antenna integrated modules (AiMs)." [Murata IEEE White Paper](#) (attached as **Exhibit 9**). Likewise, Murata confirms that its "Multilayer LCP Product is used in smartphones, wearable devices, and other applications...." [Murata High Frequency Devices](#) (attached as **Exhibit 3**).

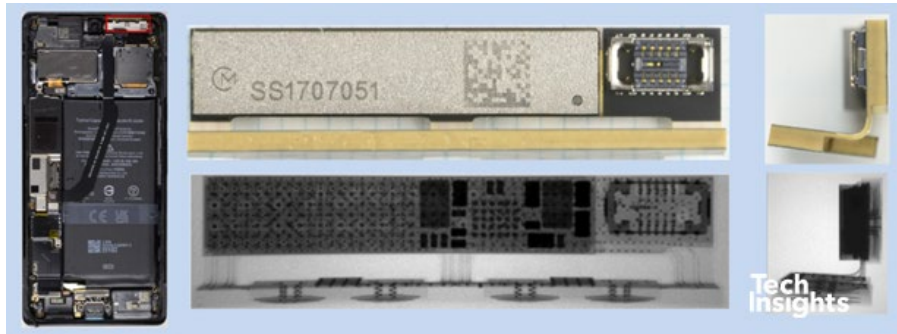
In 2021, it appears that Murata first began selling 5G mmWave RF modules utilizing multi-layer LCP substrates as disclosed and covered by the '914 Patent,¹ including AiM modules sold to Apple, Samsung, and Google as shown below:



Murata's Single Substrate LBKA Module in a Samsung Galaxy A53

¹ As GTRC outlines in its draft complaint and associated claim charts, the specific modules identified herein are only exemplary of Murata's infringing products. The full extent of Murata's infringement is far broader.

² The Tech Insights images can be found online at [Tech Insights - Murata mmWave AiP Modules](#) (attached as **Exhibit 12**).



Murata's Dual Substrate LBKA Module in a Google Pixel Pro 6



Murata's 2FGG LG Module in an Apple iPhone 12

Accordingly, Murata is liable for patent infringement based at least on Murata's manufacturing and selling of multi-layer LCP products that practice one or more claims of the '914 patent. And GTRC is entitled under 35 U.S.C. § 271 to seek recovery from Murata for damages relating to patent infringement, including trebling any damages based on Murata's knowledge and willful infringement of the '914 Patent.

While GTRC does not yet know the full extent of Murata's infringement, as noted above, GTRC is aware that Murata products made and sold by Murata in the United States that practice the '914 Patent include 5G radio frequency AiP modules for the three largest smart phone manufacturers in the world—Apple, Samsung, and Google. Further, publicly available information shows that Murata's sales utilizing the patented technology have been substantial. Indeed, in 2023 alone, Murata reported selling over \$3.1 billion USD of high-frequency products, which includes sales of the infringing multi-layer LCP substrate products.

GTRC is determined to recover any and all damages relating to Murata's infringement of the '914 Patent. For this reason, GTRC has prepared a complaint for filing in the United State District Court for the Northern District of Georgia seeking redress for Murata's infringement. A copy of this draft complaint and associated attachments is attached, which includes detailed claim charts exemplifying Murata's infringement.

Before GTRC proceeds with filing this case, however, and for the mutual benefit of both parties, GTRC believes a discussion with Murata about the potential for a confidential monetary resolution without court intervention may be warranted.

Accordingly, should Murata be interested in negotiating a resolution of this matter without the need for litigation, please contact the undersigned as soon as possible, and in no event later than September 9, 2024. Otherwise, GTRC will have no choice but to proceed with filing the complaint. In that event, GTRC will seek maximum damages for Murata's patent infringement, including seeking trebled damages under 35 U.S.C. § 284 and a reimbursement of GTRC's attorneys' fees as allowed pursuant to 35 U.S.C. § 285.

Thank you for your prompt attention to this matter. GTRC looks forward to Murata's response.

Sincerely yours,



David S. Moreland
Principal

Enclosures: Draft complaint, associated exhibits, and exemplary claim charts (Appendices A to C)