

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

FRAUNHOFER-GESELLSCHAFT ZUR  
FÖRDERUNG DER ANGEWANDTEN  
FORSCHUNG E.V.,

Plaintiff,

vs.

SIRIUS XM RADIO INC.,

Defendant.

**1:17CV184**

**MEMORANDUM & ORDER**

This matter is before the Court after a November 4, 2025, bench trial. This is a patent dispute involving several patents covering satellite radio technology.<sup>1</sup> The Court previously entered summary judgment in favor of Defendant, Sirius XM Radio Inc. (“SXM”), because Plaintiff’s, Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (“Fraunhofer”), infringement claims were barred by equitable estoppel. See D.I. 816. Specifically, Fraunhofer figuratively sat on its hands for years while SXM used its patented technology. On appeal, the Federal Circuit agreed summary judgment was appropriate on two elements of the equitable estoppel defense: (1) Fraunhofer’s conduct was misleading and (2) SXM was prejudiced by Fraunhofer’s misleading conduct. *Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. v. Sirius XM Radio Inc.*, 138 F.4th 1373, 1378–80, 1382–83 (Fed. Cir. 2025). But the panel concluded there was a dispute of material fact concerning SXM’s reliance. *Id.* at 1380–82. On remand, the Court took the Federal Circuit’s roadmap, bifurcated the issue of equitable estoppel, and scheduled a bench trial on the reliance element.

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<sup>1</sup> U.S. Patents 6,314,289, 6,931,084, 6,993,084, and 7,061,997.

## I. BACKGROUND

The following background is taken from this Court's prior order, D.I. 836:

This is a patent dispute in the world of satellite radio. Fraunhofer, a German company, developed various inventions related to multicarrier modulation technology. *Fraunhofer*, 138 F.4th at 1376. SXM used this technology in its commercial satellite radio product. *Id.*

SXM—through its predecessor in interest XM—began using Fraunhofer's technology in the late 1990s. *Id.* Through a series of mergers, bankruptcies, and licensing agreements, SXM continues to use that technology today. *Id.* at 1376–77.

SXM's use of Fraunhofer's technology was not preordained. Back in 2008, SXM faced a branching path between two radio systems that required different hardware: a high band system that used Fraunhofer's technology and a low band system that did not. *Id.* at 1377. In part, believing it had a license to use the patented technology, SXM opted for the high band system and abandoned the low band system over the next few years. *Id.*

According to Fraunhofer, SXM got it wrong. Without getting into unnecessary detail, Fraunhofer believes SXM's sublicense was terminated in 2010 bankruptcy proceedings. *Id.* Basically, Fraunhofer believes SXM has been infringing its patents since at least 2010. *Id.*

Fraunhofer did not raise this issue with SXM in 2010. *Id.* Instead, it waited five years to spring its infringement theory on SXM. *Id.* After negotiations failed, it sued in federal court. After some procedural twists and turns, the parties moved for summary judgment. The Court entered summary judgment in favor of SXM on its equitable estoppel theory. *Id.* Specifically, it concluded there was no dispute of material fact that: “(1) [Fraunhofer] engage[d] in misleading conduct that” led SXM “to reasonably infer that [Fraunhofer] [did] not intend to assert its patent against” SXM; (2) SXM “relie[d] on that conduct; and (3) as a result of that reliance, [SXM] would be materially prejudiced if [Fraunhofer] [was] allowed to proceed with its infringement action.” See *Id.* (quoting *Ferring B.V. v. Allergan, Inc.*, 980 F.3d 841, 853 (Fed. Cir. 2020)) (elements of equitable estoppel).

On appeal, the Federal Circuit reversed but did not disclaim the Court's analysis wholesale. It “agree[d] with the district court's conclusion that

Fraunhofer's more-than-five-year silence in asserting infringement, in light of its clear knowledge of that infringement, rose to the level misleading conduct.” *Fraunhofer*, 138 F.4th at 1380. And, “should SXM be able to establish at trial that it relied on Fraunhofer's misleading conduct in connection with its decision to migrate to the accused high-band system as opposed to the non-infringing low-band alternative, then it has adequately established that it was prejudiced by that silence.” *Id.* at 1382–83. But, citing other business reasons for migrating to high band, the panel concluded there was a fact dispute about whether SXM relied on Fraunhofer’s misleading conduct—precluding summary judgment. *Id.* at 1381. Basically, “[t]here may have been sufficient circumstantial evidence to permit a factfinder to find reliance but the existing record does not compel such a finding.” *Id.* at 1381–82.

The Federal Circuit denied the parties’ en banc petitions, issued its mandate, and now this case is back with the Court. The Court has exclusive jurisdiction over this dispute under 28 U.S.C. § 1338.

*Id.* at 1–3.

On November 4, 2025, the Court held a bench trial to determine whether SXM relied on Fraunhofer’s misleading silence for purposes of equitable estoppel. The following constitutes the Court’s findings of fact and conclusions of law pursuant to Fed. R. Civ. P. 52(a).

## **II. FINDINGS OF FACT**

### **A. The Parties**

Fraunhofer is a non-profit research organization existing under the laws of the Federal Republic of Germany. D.I. 860 at 4, ¶ 1. Fraunhofer has developed and patented various inventions relating to multicarrier modulation (“MCM”) technology. That technology is used for Digital Audio Radio Service (“DARS”), otherwise known as satellite radio. D.I. 860 at 5, ¶ 13; *Fraunhofer*, 138 F.4th at 1376.

SXM is a limited liability company organized and existing under the laws of Delaware with its principal place of business at 1221 Avenue of the Americas, New York, New York 10020. D.I. 860 at 4, ¶ 2; *Fraunhofer*, 138 F.4th at 1376. SXM is a satellite radio provider in the United States that broadcasts hundreds of channels as part of its satellite radio service, sells and supplies satellite radio receivers directly to consumers, and works with automobile manufacturers and others involved in the automobile manufacturing process to have satellite radio receivers installed in new vehicles. D.I. 860 at 5–6, ¶ 14; *Fraunhofer*, 138 F.4th at 1376.

## **B. Witnesses**

### **a. Paul Krayeski**

Mr. Krayeski is the Vice President of the Innovation Center Development Team at SXM. D.I. 904 at 18. He has worked at SXM and its predecessor XM for about 20 years. *Id.* Mr. Krayeski is “responsible for the development of the receiver technology which ranges from the embedded chipset development as well as libraries.” *Id.* He also heads a team in charge of “OEM module designs and production test systems.” *Id.*

Mr. Krayeski was involved in “negotiating any agreements that relate to receiver technology that we [SXM] need to license.” *Id.* As a result, Mr. Krayeski was involved in negotiating several agreements with Fraunhofer (and others) from the time he joined XM in 2005. *Id.* at 30–31. Mr. Krayeski also was “extensively involved” in discussions about which satellite radio broadcast system SXM would migrate to after the 2008 merger of Sirius and XM: XM’s high-band system or Sirius’s low-band system. *Id.* at 19. He “was the main management contact for the [legacy] XM system” and worked with his counterpart on the Sirius side. *Id.* at 20. They “built technical organizations together to

conduct a very exhaustive analysis of the two technologies to try to determine if there was a technology advantage of one system versus the other.” *Id.* As discussed below, it was ultimately determined that there was no technology nor perceived cost advantage of one system over the other. *Id.*

**b. Patrick Donnelly**

Patrick Donnelly was the Executive Vice President, General Counsel, and Secretary of Sirius and then SXM from mid-1998 until he retired from those positions in early March 2025. D.I. 904 at 85. Throughout that time, he was an executive officer of SXM, meaning he was one of the officers on SXM’s Executive Leadership Team designated to set policy and execute the business plan of the company. *Id.* at 86; *id.* at 94.

As General Counsel, Mr. Donnelly was in charge of all legal affairs, including contracts, intellectual property rights, litigation, regulatory matters, compliance matters, and government affairs. *Id.* at 86. Mr. Donnelly also had a business role separate from his legal role; for example, he would from time to time play a business role to secure a license, but also a legal role to negotiate the license. *Id.*

Mr. Donnelly participated in SXM’s post-merger evaluation of the high- and low-band systems as well as the decision to migrate to the high-band. He testified: “I was involved primarily in review of the contractual issues associated with migrating new customers from the low band to the high band including the intellectual property rights, the royalty costs, items like that.” *Id.* at 94. He “was a participant in [the migration] decision both at the decision-making point and in the process of evaluating that decision.”

*Id.* at 89; *id.* at 91. And, as a member of the Executive Leadership Team, he was one of the individuals who approved the migration decision. *Id.* at 94.

### **C. SXM's Decision to Migrate to the High-Band System**

To inform the decision to migrate to either the high-band system or low-band system, SXM conducted a detailed evaluation comparing both systems. D.I. 904 at 20–21; SX-15. The results of the evaluation are set out in presentation slides that the evaluation team prepared for executive management at the time. SX-15; D.I. 904 at 20; D.I. 904 at 174. The evaluation team concluded that there were no material differences between the two systems, including with respect to technology and cost, and that “either system would have been suitable for the strategic direction” of the newly merged company. D.I. 904 at 21.

Slide 6 of the presentation stated this conclusion: “Numerous differences exist between the technology used in the two networks, however both networks satisfy the business needs.” SX-15 at SXM-0027631. Likewise, Slide 12 of the presentation stated that for “Service Availability,” “both networks [were] sufficient for vehicular service in CONUS [Continental United States]”; for “Capacity,” “[b]oth systems provide[d] sufficient audio & data capacity to meet the current business needs”; and for “Audio Compression,” “[n]either system can claim a clear advantage in quality.” SX-15 at SXM-0027637-638.

Costs were a “major factor” considered in connection with the analysis. D.I. 904 at 21. SXM was “very cost sensitive” “given the profitability of the two companies.” *Id.* The evaluation concluded that either legacy system “would be cost parity.” *Id.* Consistent with these conclusions, Slide 12 of the presentation stated, “Operational Cost: similar for both networks”; and “Infrastructure Cost: No immediate savings achieved by migrating to

a single network.” SX-15 at SXM-0027637. Slide 6 of the presentation stated that “[g]iven time and resources both platforms can support chipsets with equivalent costs.” SX-15 at SXM0027631.

While the presentation indicated that “the high-band chipset platform currently has an 18-24 month cost advantage,” SX-15 at SXM0027631 (Slide 6), Mr. Krayeski explained that “given the time frame it would take [SXM] to work with automotive makers to migrate their technology . . . all of the cost reductions that were applied to the XM network and XM designs could have easily been migrated to the Sirius designs and therefore [the cost advantage] became a nonissue.” D.I. 904 at 21–22. The presentation went on to conclude there was “no long-term sustainable cost difference between the two systems.” SX-15 at SXM-0027637.

Among other costs, the evaluation team examined the differences between the high-band and low-band systems’ intellectual property royalty costs, like the cost of maintaining licenses for patents and procuring licenses for patents where needed. D.I. 904 at 22–23. The slide deck lists “Royalties” as one of the R&D and SAC (Subscriber Acquisition Costs) related costs the team included in its evaluation. SX-15 at SXM-0027647 (Slide 22).

In connection with its royalties evaluation, SXM did not identify any infringement claims against the high-band system. See SX-15; see *also* D.I. 904 at 98 (Mr. Donnelly testifying that Fraunhofer did not raise any issues from start of migration process until October 2015). Because “there was no knowledge on [SXM’s] part that there was any concern with the patents in question in this case,” SXM’s royalty tracker did not have a

record of the potential patent infringement alleged by Fraunhofer in this case. D.I. 904 at 29; SX-37.

Since the evaluation team concluded that the two systems were essentially equivalent from a technology and cost perspective, SXM turned to the percentage of car manufacturers expected to use the high-band and low-band systems as a deciding factor. D.I. 904 at 23–24; SX-15 at SXM0027631-632 (Slides 6 & 7). As Mr. Wadin explained, “I think it boils down to both systems were equivalent. No marketed differentiation between the two when it came to service availability, consumer acceptance, whether its audio quality, number of channels, any of those things. It really boiled down to, which is the easiest population to migrate? And it was easier to move the 35% to the 65% than the reverse. It really boiled down to that.” D.I. 904 at 193.

Because it was projected that approximately 65% of new vehicles installations would be from car manufacturers using the high-band system and approximately 35% would be from car manufacturers using the low-band system, the company chose to migrate new vehicle installations to the high-band system. See SX-15 at SXM-0027632; D.I. 904 at 23–24; D.I. 904 at 176, 178–179.

As Mr. Krayeski testified, market penetration would not have been used as a deciding factor if the technology and costs did not turn out to be equivalent or “a wash”: “Q. And would the company have considered market penetration if the costs or technology were not equivalent? A. No, I believe that [if] there was a technology advantage in terms of performance or capabilities or underlying cost basis, then I think that would have overridden the OEM penetration.” D.I. 904 at 24.

## **D. Reliance**

### **a. SXM Expected Counter-Parties to Raise Issues**

SXM argues that they expected counter-parties to raise issues if they had any. Mr. Donnelly testified that, while he was General Counsel, it was a “regular occurrence,” “not unusual,” and “part of the job” that issues would come up between SXM and contract counterparties. D.I. 904 at 95. Mr. Donnelly stated that if an issue came up, SXM “would usually try to understand the issue, assess the issue, evaluate the issue, and we’d talk to our counterparty.” *Id.* Mr. Donnelly stated that “if a counterparty wasn’t raising an issue, we properly assume that each party was complying with their obligations” and that if they weren’t they would “notify us, raise an issue, call us up.” *Id.* at 96.

SXM and Fraunhofer were in a long-term, collaborative relationship. *See id.* at 19; *id.* at 96; *id.* at 191. That relationship extended back to 1998 through XM but also included various interactions between SXM and Fraunhofer during the migration process. For example, SXM and Fraunhofer negotiated and executed numerous amendments and addenda to the FFPC through 2013. *See, e.g.,* SX-2; SX-3; SX-5; SX-6. The parties also negotiated and entered agreements concerning other technologies used in the high-band system. *See, e.g.,* SX-13 (software license for audio encoder); SX-41 (patent license for audio encoder). And the parties continued to communicate with each other on a variety of other subject matters, *see, e.g.,* SX-26; occasionally met for dinner, *see, e.g.,* SX-26; and communicated periodically about outstanding invoices, *see, e.g.,* D.I. 904 at 77.

Mr. Donnelly testified that “we relied on the fact, that, you know, had this important counterparty had a problem, that they would have notified us.” D.I. 904 at 98. But Fraunhofer never raised an issue before 2015. *Id.*

SXM also provided examples showing Fraunhofer knew how to raise an issue with SXM. The first example involves technology called the “Turbo Interleaver.” Fraunhofer had agreed to help develop SXM’s “overlay system which extended the bandwidth on the high-band system.” D.I. 904 at 35. During the initial discussions about this work, SXM “understood there were some IP licensing requirements with [France] Telecom for turbo codes.” *Id.* However, “later in the program [Fraunhofer] raised an additional patent that was related to Qualcomm at the time.” *Id.* SXM “did not feel that that was a suitable business arrangement” to obtain a license from Qualcomm “given the market conditions and Qualcomm’s public statements about introducing technology that would be a direct competitor to SiriusXM.” *Id.* So, SXM “requested Fraunhofer to design around this particular intellectual property.” *Id.* at 36. Fraunhofer responded to SXM’s request for a design-around by coming back with a technology, Fraunhofer’s Turbo Interleaver, but “there was some disagreement on the business terms going back to our original contract agreement, so there was a debate/negotiation.” *Id.* The parties’ discussions led to the 2009 FFPC Addendum, which granted SXM license rights to Fraunhofer’s Turbo Interleaver in exchange for royalties. SX-2. The 2009 FFPC Addendum specifically notes that “the use of the FhG Turbo Interleaver is intended by the Parties to limit the need to license third party property . . . .” SX-2 § 1.4(a).

The second example that Fraunhofer knew how to raise an issue with SXM is Fraunhofer’s payment demands. On cross-examination, Fraunhofer’s counsel showed Mr. Krayeski emails in which Fraunhofer sought payments from SXM, including in connection with services Fraunhofer provided for the high-band system. SX-22; SX-23; SX-24; SX-25; SX-28. Fraunhofer was “never shy” about “raising issues about money

that [SXM] owed them.” D.I. 904 at 77. In connection with all the payment demands Fraunhofer made between 2010 and 2015, Fraunhofer “never raised” with SXM the possibility of “a significant patent infringement threat.” *Id.*

#### **b. Consideration of Fraunhofer’s Silence**

At the trial, Mr. Donnelly explained that SXM “consider[ed] Fraunhofer not having raised an issue during that period of time.” D.I. 904 at 98. He testified: “I mean, we relied on the fact, that, you know, had this important counterparty had a problem, that they would have notified us.” *Id.* Mr. Donnelly also testified about how Fraunhofer’s silence influenced SXM’s decision in connection with the migration to the high-band system:

Q. And did Fraunhofer’s silence during this period of time influence Sirius’s migration to the high-band system?

A. Counsel used the word “influence.” Yes. It influenced in the fact that, you know, had they raised an issue, we always – this was a process. We had options. You know, their silence, again, confirmed our analysis of the royalties and the costs associated with migrating new customers from the low band to the high band.

*Id.* Fraunhofer’s silence “confirmed [SXM’s] initial analysis in 2009” that costs between the high- and low-bands were equivalent. *Id.*

Mr. Krayeski similarly testified:

Q. . . . And so did [SXM] consider Fraunhofer having not raised an issue at this time in connection with the ongoing royalty analysis throughout the migration?

A. Yes, if we had—if we had been made cogni[z]ant that there was a potential issue, we would have included it in our technical analysis.

D.I. 904 at 29–30. Mr. Krayeski, with the assistance of counsel, negotiated the various amendments and addenda to the Firm Fixed Price Contract. *Id.* at 30–32. Mr. Krayeski testified that Fraunhofer’s silence “gave us the confidence that we had secured all

appropriate licensing and had factored in all of our costs and . . . in all of our ongoing analysis.” *Id.* at 32–33; see also SX-2, SX-3, SX-5, SX-6.

Along with counsel, Mr. Krayeski also negotiated in the 2011 time frame the audio encoder and decoder software license agreement and the associated patent license agreement for the corresponding intellectual property, the “Hawaii” patents. D.I. 904 at 33–34; SX-13; SX-41. During the negotiations of those two agreements, no one at Fraunhofer said SXM was infringing Fraunhofer’s patents-at-issue. D.I. 904 at 34. Mr. Krayeski testified that Fraunhofer’s silence “gave us confidence that we’d been holistic in reviewing the costs associated with the technology.” *Id.*

And when Mr. Krayeski had dinner with Ernst Eberlein in 2012 during a visit to Germany, Mr. Eberlein did not raise infringement or lost license rights at the dinner or in their follow-up email correspondence—even though Mr. Eberlein specifically discussed the Asserted Patents in that correspondence. D.I. 904 at 43–44; SX-26. In the follow-up correspondence to Messrs. Krayeski and Eberlein’s 2012 dinner, Mr. Eberlein conveyed only that Fraunhofer was “debating whether or not [SXM] would be willing to take over the costs, whether they would just withdraw the patents or offer it to a third party if they could find somebody else that might be interested in that.” D.I. 904 at 44–45; see also *id.* at 80–81 (agreeing that communication set forth three options that did not refer to patent infringement).

Mr. Krayeski stated that Mr. Eberlein’s silence gave him “confidence that [SXM] had rights to migrate.” *Id.* at 45. As Mr. Krayeski explained at trial, “why would they [Fraunhofer] ask—why would they even consider . . . having [SXM] pay the maintenance fees to keep the patents in effect . . . if we [SXM] didn’t have a license.” *Id.* at 62–63.

The email thus “made [Mr. Krayeski] feel that the license we had was still in effect.” *Id.* at 64.

Mr. Donnelly understood the Asserted Patents “were not an issue” “based on the Firm Fixed Price Contract, the 2009 settlement, amendments to the Firm Fixed Price Contract, [and] the silence that Fraunhofer had.” D.I. 904 at 144–45. Mr. Donnelly testified that Fraunhofer’s silence “confirmed the reason we entered into the settlement agreement, that we had properly secured these rights” under the Settlement Agreement. *Id.* at 98.

**c. SXM Continuously Sought to Ensure it had Licenses to Intellectual Property**

Mr. Donnelly testified that “for technology as well as all IP rights, we had a regular practice of evaluating and licensing the technology we needed for this business.” D.I. 904 at 103. That included “securing licenses for the company’s broadcast systems” and “patent licenses.” *Id.* Mr. Wadin similarly testified that SXM sought to ensure that it obtained and then retained IP license rights. D.I. 904 at 195–96, 184–85.

After the Merger, SXM entered into a number of intellectual property licenses. Indeed, Mr. Donnelly estimated that SXM secured IP rights for technology from about 100 companies, paying tens of millions of dollars per year for patent licenses. D.I. 904 at 103–04.

SXM also secured licensing agreements concerning its satellite radio broadcasting systems (both for the high-band and low-band) with numerous third parties beyond Fraunhofer, including DVSI, Scientific Atlanta, Digital Fountain, Immersion, France Telecom, Ibiquity, MPEG, and STMicroelectronics. SX-37 (bottom spreadsheet tabs indicating numerous licensors); D.I. 904 at 27–28.

And SXM entered into many agreements with Fraunhofer. With Fraunhofer, XM and then its successor SXM entered into amendments to the FFPC concerning the high-band system, including: (i) Addendum No. 2 to Amendment No. 8, dated March 5, 2009 (the “2009 FFPC Addendum”), giving SXM license rights to Fraunhofer’s “Turbo Interleaver,” SX-2 at SXM-0024301; (ii) Addendum No. 3 to Amendment No. 8, signed March 5 and 12, 2009, for “HRDEC FPGA Design” work, SX-3 at SXM0024317; (iii) Addendum No. 4 to Amendment No. 8, dated 2010 (the “2010 FFPC Addendum”), for “HRDEC Product Implementation Support,” SX-5; and (iv) Addendum No. 2 to Amendment No. 7, signed February 13, 2013 and effective July 1, 2012 (the “2012 FFPC Addendum”), which, among other things, accepted deliver of work from Fraunhofer, SX-6 at F00384557.

Outside of the FFPC, but still related to the high-band system, SXM entered into agreements with Fraunhofer in 2011 for audio encoding and decoding software relating to audio technology used in the high-band system. SX-13 at F00378654; SX-41. Specifically, in July 2011, SXM and Fraunhofer entered into a Software License Agreement for Audio Encoder and Decoder Software (the “July 2011 Software License Agreement”). SX-13. Also in July 2011, SXM and Fraunhofer entered into a related Patent License Agreement (the “July 2011 Patent License Agreement”). SX-41. These agreements relate to Fraunhofer’s “Hawaii-format” patents. SX-13; SX-41.

Under the July 2011 Software License Agreement and July 2011 Patent License Agreement, and consistent with its corporate practice, SXM obtained licenses from Fraunhofer relating to audio coding software for use in connection with the high-band

system. SX-13 at F00378659 (§ 3); SX-41 at SXM-0053426 (§ 3). Both parties negotiated these contracts with the help of counsel. D.I. 904 at 32.

### III. CONCLUSIONS OF LAW

Equitable estoppel is a defense “addressed to the sound discretion of the trial court.” *A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1041 (Fed. Cir. 1992) (en banc), *abrogated on other grounds by SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC*, 580 U.S. 328 (2017). The defense has three requirements:

(1) the patentee engages in misleading conduct that leads the accused infringer to reasonably infer that the patentee does not intend to assert its patent against the accused infringer; (2) the accused infringer relies on that conduct; and (3) as a result of that reliance, the accused infringer would be materially prejudiced if the patentee is allowed to proceed with its infringement action.

*Fraunhofer*, 138 F.4th at 1378 (quoting *Ferring B.V. v. Allergan, Inc.*, 980 F.3d 841, 853 (Fed. Cir. 2020)). The Federal Circuit has already found that the first and third elements of equitable estoppel have been satisfied, leaving only the reliance element. *Fraunhofer*, 138 F.4th at 1378–80, 1382–83.

“To satisfy the second requirement of equitable estoppel, SXM must show that it, in fact, substantially relied on the misleading conduct of Fraunhofer in connection with taking some action. See *Aukerman*, 960 F.2d at 1042–43. To show reliance, SXM must have had a relationship or communication with Fraunhofer that “lull[ed]” it into a “sense of security” in continuing its use of the accused XM DARS System. *Fraunhofer*, 138 F.4th at 1380; see also *Aukerman*, 960 F.2d at 1043 (“To show reliance, the infringer must have had a relationship or communication with the plaintiff which lulls the infringer into a sense of security in going ahead with” the allegedly-infringing conduct).

As the Federal Circuit has determined in this case, “to show reliance on Fraunhofer’s silence, SXM ‘need not prove precisely what alternative paths it would have taken, or that every marketing decision was based on reliance’ on Fraunhofer’s misleading conduct.” *Fraunhofer*, 138 F.4th at 1380 (quoting *Aspex Eyewear Inc. v. Clariti Eyewear, Inc.*, 605 F.3d 1305, 1312 (Fed. Cir. 2010)). But the Federal Circuit has identified at least two independent ways in which SXM may prove reliance. First, the Federal Circuit has held that SXM can prove reliance by establishing that it “at least *considered* Fraunhofer’s silence or inaction and that such consideration influenced its decision to migrate to the accused high-band system.” See *id.* Second, the Federal Circuit held that SXM can independently establish reliance by showing that it “continuously sought to ensure it had licenses to intellectual property” such that the Court may conclude that SXM “would have taken steps to limit its liability, ‘such as seeking a license,’ had it been threatened with litigation” or “had it known it was exposed to litigation, [SXM] would have sought additional protection against the [A]sserted [P]atents.” See *id.* at 1381.

The preponderance of evidence standard applies to the equitable estoppel elements, including reliance. *Aukerman*, 960 F.2d at 1046. Reliance may be established by direct evidence, circumstantial evidence, or a combination of the two. The Federal Circuit has stated in this case: “[D]irect evidence of a fact is not necessary. Circumstantial evidence is not only sufficient, but may also be more certain, satisfying and persuasive than direct evidence.” *Fraunhofer*, 138 F.4th at 1381 n.4 (internal quotation and citation omitted).

#### IV. DISCUSSION

The Court finds that SXM has established reliance by a preponderance of evidence for two independent reasons. First, SXM has shown that it “considered Fraunhofer’s silence or inaction and that such consideration influenced its decision to migrate to the accused high-band system.” *Fraunhofer*, 138 F.4th at 1380 (emphasis omitted). And second, SXM has shown evidence of its corporate practice that it “continuously sought to ensure it had licenses to intellectual property;” the Court may thus conclude that SXM “would have taken steps to limit its liability, ‘such as seeking a license,’ had it been threatened with litigation” or “had it known it was exposed to litigation, [SXM] would have sought additional protection against the [A]sserted [P]atents.” *Fraunhofer*, 138 F.4th at 1381.

First, SXM has established reliance because it has shown that it “considered Fraunhofer’s silence or inaction and that such consideration influenced its decision to migrate to the accused high-band system.” *Fraunhofer*, 138 F.4th at 1380 (emphasis omitted). To start, SXM thought it was licensed to the Asserted Patents under the Sublicense, as shored up by the Settlement Agreement, followed by Fraunhofer’s silence. SXM considered Fraunhofer’s silence as acquiescence to SXM’s bankruptcy Settlement Agreement. Accordingly, SXM thought it continued to have all necessary rights to use the high-band system. SXM kept moving forward with the migration because it thought it had license rights and there was no reason to divert course.

Additionally, when SXM initially decided to migrate to the high-band system, it evaluated the two systems and found them equivalent, including from the perspective of technology, costs, and other criteria. Costs were a critical factor. They included

operational and licensing costs. The absence of a significant infringement claim against the high-band system, and the absence of significant additional licensing royalties for that system, were incorporated into the analysis. That is, a substantial patent infringement claim, like the one Fraunhofer has asserted here, or royalty in addition to the bankruptcy Settlement Agreement did not go into the royalty or overall cost analysis as SXM migrated to the high-band system. Because the systems were otherwise equivalent, SXM needed a tiebreaker. That tiebreaker became the systems' relative market penetration across car manufacturers installing equipment compatible with either the high-band system or the low-band system; the high-band system's expected market penetration was 65% while the low-band system's was 35%. Had there been a substantial cost difference relating to additional long-term high-band royalties the analysis would have been different. The cost differential between intellectual property cost and cost of conversion between high or low band systems would have been outcome determinative. That analysis was never made because the SXM did not learn of these additional long-term royalties until after it had exclusively committed to the alleged infringing high band system.

During the migration process, SXM thought that the facts on which the initial migration decision was based—including the lack of a significant infringement claim against the high-band system and the equivalent costs of the two systems—had not changed. And in analyzing the costs of the two systems throughout the migration, similar to its continued belief that its rights in the Sublicence remained secure, SXM thought those underlying facts had not changed. This was because Fraunhofer did not raise or assert its infringement claim or otherwise raise any issue with respect to SXM's license

rights to the Asserted Patents either at or for the following five years post-bankruptcy settlement agreement.

SXM continuously evaluated the cost of the migration, such that a substantial change in cost—like an infringement threat or future royalties from Fraunhofer—would have figured in to its ongoing analysis of the lengthy process. On this basis too, SXM considered Fraunhofer’s silence, and Fraunhofer’s silence influenced SXM’s continued migration to the high-band system.

Moreover, SXM’s reliance on Fraunhofer’s silence was reasonable and provides an independent ground to find reliance. SXM reasonably expected entities it did business with to raise an issue if they had one; if they did not raise an issue, that indicated there was none. This expectation especially makes sense here because SXM and Fraunhofer had a close, collaborative, and long-term relationship. The trial record provides examples showing that, from SXM’s perspective, Fraunhofer knew how to and did raise issues with SXM when there was one. In connection with the Turbo Interleaver development efforts, Fraunhofer “raised [a] patent licensing issue” and the parties then “worked it out.” Likewise, when Fraunhofer believed SXM owed it money, including with respect to the high-band system, Fraunhofer was “never shy” about raising those issues with SXM.

Not only did SXM rely on Fraunhofer’s silence generally due to their close relationship, but SXM relied on Fraunhofer’s silence at specific touchpoints after 2010 where Fraunhofer would be most likely to raise an issue with the Asserted Patents if it had one. Therefore, in the context of the parties’ relationship and interactions, SXM’s belief that Fraunhofer would have raised an issue with SXM’s use of the high-band system

if Fraunhofer had one was entirely reasonable, as was SXM's continued migration to the high-band system based on that belief.

Second, SXM has also established reliance because it has shown evidence of its corporate practice that it “continuously sought to ensure it had licenses to intellectual property;” the Court may thus conclude that SXM “would have taken steps to limit its liability, ‘such as seeking a license,’ had it been threatened with litigation” or “had it known it was exposed to litigation, [SXM] would have sought additional protection against the [A]sserted [P]atents.” *Fraunhofer*, 138 F.4th at 1381.

The Court finds that SXM had a corporate practice of seeking, and that it otherwise continuously sought to ensure, that it was licensed to intellectual property rights for its broadcast systems, such as the high-band system. Putting aside the Asserted Patents, SXM continuously entered into and maintained licenses to intellectual property used by the high-band and low-band systems. SXM has entered into numerous licenses with third parties. And, in the course of their lengthy relationship, SXM has entered into many license agreements with Fraunhofer. For example, SXM secured license rights from Fraunhofer in the FFPC and, after the Merger, through negotiated amendments to the FFPC. SXM even paid Fraunhofer in 2014 (and other times) for an additional patent license in connection with a Turbo Interleaver used in its high-band chipsets.

Separate from the FFPC, in July 2011 SXM and Fraunhofer negotiated licenses for SXM to use Fraunhofer's “Hawaii-format” patents in the high-band system. Those agreements, the July 2011 Software License Agreement and July 2011 Patent License Agreement, were in place during the entire period of Fraunhofer's silence. See SX-13 § 8.1; SX-41 § 5. Further, the FFPC, the Sublicense, and the Settlement Agreement also

support SXM's position, regardless of the legal effect of those documents, because they at minimum show SXM attempted to be licensed to the Asserted Patents.

SXM's corporate practice of seeking to be licensed is also bolstered by the events surrounding the development of the Turbo Interleaver, when Fraunhofer raised a patent licensing issue, and, in response, SXM acted to ensure that (i) it did not infringe Qualcomm's patent rights and (ii) it obtained license rights to use Fraunhofer's technology.

SXM also closely tracked its third-party licenses to ensure payments were made and costs were tracked. This too supports SXM's practice of seeking to ensure it was licensed to intellectual property it uses.

Therefore, the Court concludes that had Fraunhofer raised an infringement issue, SXM would have sought to minimize its exposure, either through negotiating a license or pursuing other ways to limit its potential exposure to Fraunhofer's infringement claims. This provides an independent basis for reliance.

In sum, the Court finds that SXM has established that it relied on Fraunhofer's misleading conduct in connection with its decision to migrate to the accused high-band system as opposed to the non-infringing low-band alternative. Therefore, SXM has established the remaining element of reliance and has thus established equitable estoppel.

## **V. CONCLUSION**

Accordingly, the Court finds that Fraunhofer's infringement action is equitably estopped.

A judgment in conformity with these Findings of Fact and Conclusions of Law will issue on this date.

SO ORDERED this 24th day of March, 2026.

BY THE COURT:

s/ Joseph F. Bataillon  
Senior United States District Judge