

3 of the '134 Patent, and Claims 1, 4, 9, 16, 21, 29, and 36 of the '775 Patent (collectively, the "Asserted Claims"). (Dkt. No. 273 at 4.) The jury also found that Defendant had failed to prove that any of the Asserted Claims were invalid. (*Id.* at 5.) The jury awarded damages in the form of a lump sum for the remaining life of the patents in the amount of \$166,303,391.00. (*Id.* at 6.)

A. Background of the Technology

Base stations include radios that send and receive signals. A signal that is sent by the radio station is called a downlink signal (*e.g.*, the signal that is sent to a cell phone), and a received signal (*e.g.*, a signal that is received by a cell phone) is called an uplink signal.

Sometimes, signals interact with one another to create interference. The resulting interference is sometimes called intermodulation, intermodulation products, passive intermodulation, or harmonics. The patents-in-suit describe methods and apparatuses for removing this type of interference.

B. The '134 Patent

The '134 Patent provides a method and apparatus for removing intermodulation products from signals of interest. It explains that wireless communications systems are often subject to interfering signals that inhibit the receiver from receiving the intended signal. *Id.* at 1:55–60. To address this problem, the patent teaches sampling the entire band in which signals of interest *and* the interference generating signals may be received to create a bit stream.¹ *See id.* at 2:5–8. The resulting bit stream is then processed to isolate the two types of signals, after which the interference is cancelled from the information signals. *See id.* at 2:8–18.

Claim 1, which is exemplary, recites:

1. A method comprising:

¹ A bit stream is a digital representation of the analog signals.

over-sampling, at a desired frequency, a passband of received signals to create a bit stream, wherein the received signals include signals of interest and interference generating signals, the interference generating signals capable of generating intermodulation products inband of the signals of interest;

isolating signals of interest in the bit stream using one or more decimating filters;

isolating source signals that generate one or more inter modulation products inband of the signal of interest using one or more decimating filters;

computing an estimate of each of the one or more intermodulation products from the source signals that generate the one or more intermodulation products;

cancelling out one or more inband intermodulation products using the estimate of the intermodulation products; and

performing phase and amplitude adjustment on estimations of the intermodulation product interfering signals in a closed loop manner, wherein performing phase and amplitude adjustment of the estimations comprises performing sub-sample phase shifts to make a phase adjustment on the estimations of the intermodulation product interfering signals.

C. The '775 Patent

The '775 Patent is concerned with minimizing the effect of intermodulation products (“IMPs”) on “co-located” devices. It frames the underlying problem as relating to “self communications terminals” and “self-terminals,” which are “[t]he receiver and transmitter of [a] target system.” *Id.* at 5:65–67. There may be additional transmitters “co-located” relative to a self-terminal, and receivers that are located “in the vicinity of the self-terminal,” but are otherwise unrelated. *Id.* at 6:7–12. Transmission by the self-terminal may cause interfering IMPs for nearby receivers. *See, e.g., id.* at 6:37–46 (describing sources of IMPs as including those generated by high-power signals in receivers and IMPs generated in co-located high power transmitters).

Generally, the '775 Patent teaches actively cancelling IMPs by digitally copying the IMPs and canceling the system-generated IMPs in real time. '775 Patent at 6:50–53. “This is accomplished by extracting and isolating copies of the signals that create the IMPs and digitally multiplying them together in the time domain to create a copy of the IMPs generated in the

transmitters and receivers.” *Id.* at 6:53–57.

Claim 1, which is exemplary of the asserted claims, recites:

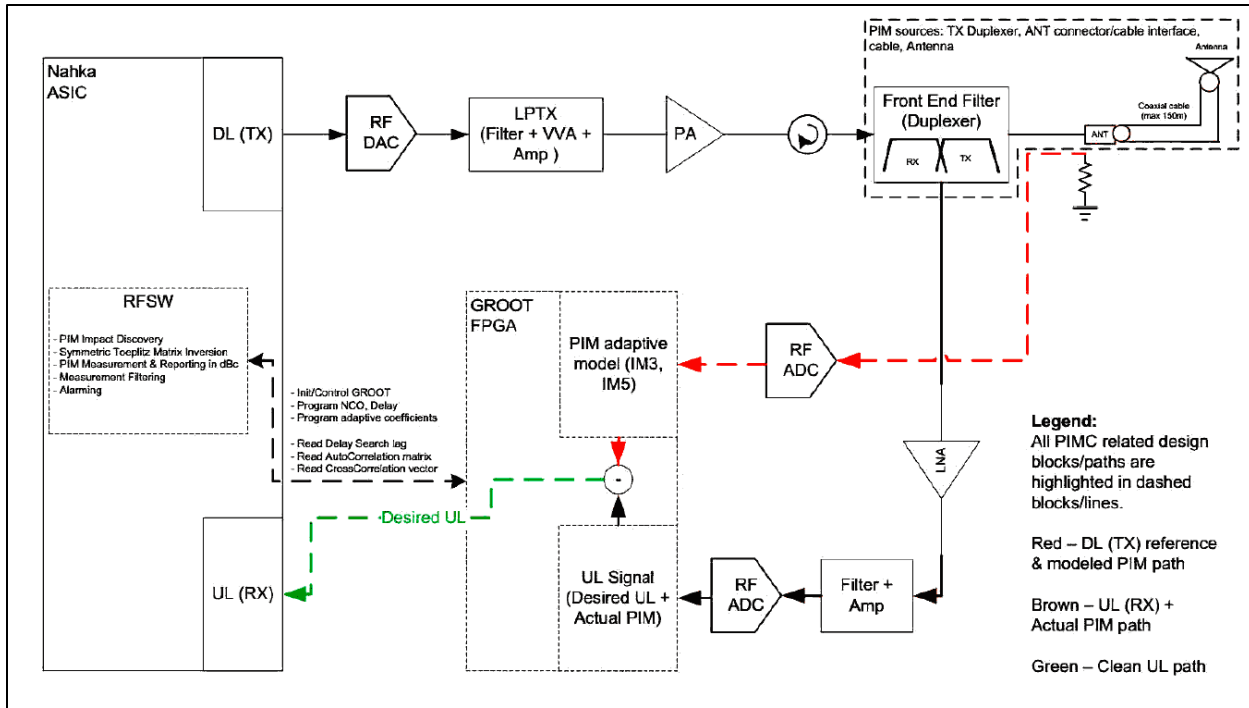
1. A method for performing interference cancellation in a receiver, with a transmitter and the receiver being co-located with each other, the method comprising:

generating intermodulation product (IMP) cancellation signals (ICSs) to cancel passive IMPs in the receiver, continuously and near real time, using copies of transmitter signals of the transmitter, wherein the passive IMPs are generated in passive transmitter components of the transmitter and receiver components of the receiver after a high powered amplifier (HPA) and transmitter filter of the transmitter, wherein the transmitter filter is coupled between the HPA and an antenna used by the transmitter, wherein generating the ICSs is based on a power series description of a non-linear process for generating the IMPs, and includes generating an n-th order ICS by, given three signals S1, S2 and S3, digitally multiplying and filtering $S1 \times S1 \times S2$ and $S1 \times S2 \times S2$ and $S1 \times S2 \times S3$ and $S1 \times S1 \times S3$ and $S2 \times S2 \times S3$ and $S1 \times S3 \times S3$ and $S2 \times S3 \times S3$, where n is an integer.

’775 Patent at 16:54–17:6. Here, S1, S2, and S3 are the signals creating the IMPs.

D. Accused Product Overview

At issue are specific Nokia radios, known internally within Nokia as “Galaxy” radios, and marketed under the name “Airscale” (the “Accused Products”). (Dkt. No. 284 (hereinafter “1/11/2023 Trial Tr.”) at 116:2–117:10.) Both parties’ experts explained the accused functionality with reference to Figure 1 from the Galaxy PIMC (“Passive Intermodulation Cancellation”) Functional Specification.



PX-844 at 14; DX-287 at 14.

The accused PIMC functionality is implemented in a field-programmable gate array (“FGPA”) referred to as “GROOT” internally to Nokia. (See, e.g., Dkt. No. 283 (hereinafter “1/10/2023 Trial Tr.”) at 17:1–11.) The parties agree that the PIMC feature in the accused radios cancels only internal passive intermodulation (“PIM”) caused by the radio’s own downlink transmit signals. (See, e.g., *id.* at 59:17–25, 151:14–16; 1/11/2023 Trial Tr. at 129:10–14, 206:25–207:3; DX-281 at 76.)

The experts both agreed that prior to the RF ADC in the red path in the image above, there are two signals in that path, x_1 and x_2 ; these signals are “some of” the downlink transmit signal. (1/10/2023 Trial Tr. at 41:23–42:3, 142:12–16 (Wells). See 1/11/2023 Trial Tr. at 206:4–10 (Proctor).)

III. LEGAL STANDARD

“Judgment as a matter of law is proper when ‘a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue.’” *Abraham v. Alpha Chi Omega*, 708 F.3d 614, 620 (5th Cir. 2013) (quoting Fed. R. Civ. P. 50(a)). The non-moving party must identify “substantial evidence” to support its positions. *TGIP, Inc. v. AT&T Corp.*, 527 F. Supp. 2d 561, 569 (E.D. Tex. 2007). “Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1363 (Fed. Cir. 2004).

“The Fifth Circuit views all evidence in a light most favorable to the verdict and will reverse a jury’s verdict only if the evidence points so overwhelmingly in favor of one party that reasonable jurors could not arrive at any contrary conclusion.” *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1361 (Fed. Cir. 2018) (citing *Bagby Elevator Co. v. Schindler Elevator Corp.*, 609 F.3d 768, 773 (5th Cir. 2010)). A court must “resolve all conflicting evidence in favor of [the verdict] and refrain from weighing the evidence or making credibility determinations.” *Gomez v. St. Jude Med. Daig. Div. Inc.*, 442 F.3d 919, 937–38 (5th Cir. 2006).

IV. ANALYSIS

A. Whether Finesse Presented Sufficient Evidence for the Jury to Find Infringement of the ’134 Patent

- i. **Whether there was substantial evidence presented for the jury to find that the Accused Product do not sample any “passband of received signals” to create a “bitstream” that includes both the “signals of interest” and “the interference generating signals.”**

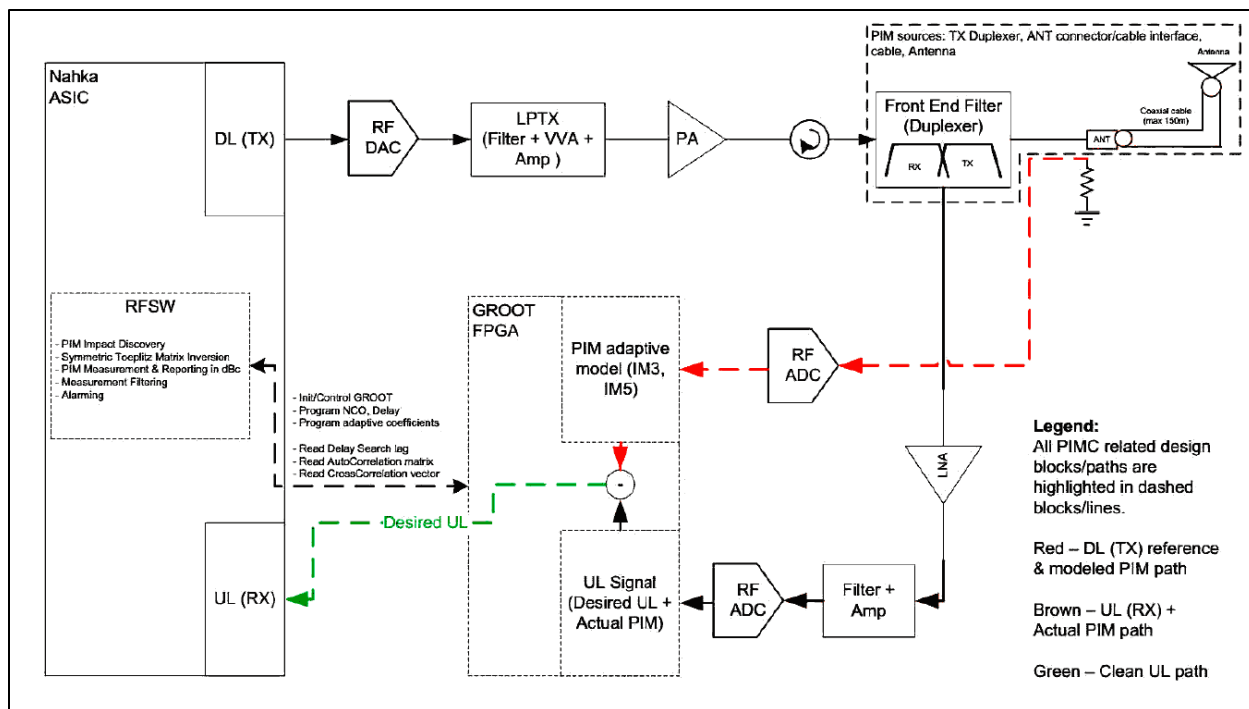
Each asserted claim of the ’134 Patent (claims 1–3) contains the following element:

[over-sampling/sampling], at a desired frequency, a passband of received signals to create a bit stream, wherein the received signals include signals of interest and interference generating signals, the interference generating signals capable of generating intermodulation products inband of the signals of interest.

Defendants make three arguments as to why this element was not satisfied: (1) the Accused Products do not create a bit stream with two types of signals, (2) the accused “downlink transmit reference signals” cannot be the claimed “signals of interest,” and (3) the accused “modeled PIM path” cannot be the claimed “interference generating signals.”

(a) Whether the Accused Product creates a bit stream with “signals of interest” and “interference generating signals.”

Defendants first argue that there was insufficient evidence for the jury to find that the Accused Products do not create a bit stream with two types of signals, as is required by the claims. (Dkt. No. 294 at 8–10.) According to Defendants, Dr. Wells, Finesse’s expert, could not identify a bit stream including both types of signals because the Nokia radios never sample a passband of signals that includes more than one type of signal. (*Id.* at 8–9 (citing DX-287 at 14; *id.* at 41:23–42:3 (Wells)).) Indeed, at trial Dr. Wells explained that the uplink receive path is the brown path and “is the path that’s received from the cell phone . . . and it has the actual PIM path . . . [s]o that’s the signals that’s got the interference on it.” (*Id.* at 8–9 (citing 1/10/2023 Trial Tr. at 42:10–24).)



(DX-287 at 14.) Thus, the received uplink signals and the transmitted downlink signals are sent to the GROOT FPGA via separate paths, and they are processed using separate analog-to-digital converters, so “they never are combined into a single bit stream,” as Defendants’ expert, Mr. James Proctor, testified. (*Id.* at 9 (citing 1/11/2023 Trial Tr. at 216:17–217:2 (Proctor)).)

In opposition, Plaintiff contends that the Accused Products infringe the “bit stream” claim limitations. (Dkt. No. 308 at 6.) The ADC accepts as inputs the analog signals on the red path and creates a digital stream. (*Id.* at 6–7 (citing 1/10/2023 Trial Tr. at 47:9–20; 49:9–14; 55:6–23; 56:1–10).) Moreover, the sampled passband of signals contains both a signal of interest and interference generating signals. (*Id.* at 8.) Evidence was presented that the RF ADC samples two signals (1/10/2023 Trial Tr. at 52:5) (“that red path has two inputs”); Nokia’s documentation confirms that two signals are carried on the red path, (*id.* at 143:20–22 (“[Fig. 1] is saying that the red path is the downlink TX reference and the modeled PIM path. It’s the two signals.”), 164:1–11 (“this modeled/reference PIM signal is obtained ... from the combined carrier transmit signal”); PX-855

at Fig. 1, PX-1963); the two signals converted by the RF ADC correspond to the signal of interest and the interference generating signals, (1/10/2023 Trial Tr. at 143:12–13 (“It converts the two signals coming into it, which are the interference generating signal and the signal of interest.”)); the red path following the RF ADC containing both the signal of interest and the interference generating signals is a bit stream, (*id.* at 47:15–20 (“we have a digital signal, a bit stream, coming out on the left [from the ADC]”), 56:8–10 (“I know this is all in the bit stream because that is all happening in that digital signal processing. It is going on digital signals, so it’s being done on a bit stream.”)); and those two signals are used in the PIM adaptive model to generate the estimates of the intermodulation products, (*id.* at 59:18–20 (“there’s actually two inputs, X1 and X2. So this is that red path that contains two signals, and it comes into this non-linear block.”)). (Dkt. No. 308 at 8 (also citing 1/10/2023 Trial Tr. at 40:12–43:17, 46:17–47:10, 49:7–53:1, 56:21–57:19, 58:4–7, 58:14–22, 59:15–25, 61:2–8, 75:19–24, 163:10–164:11; Dkt. 281-3).)

Plaintiff argues that Dr. Wells did not identify the brown path as the path containing interference generating signals. (*Id.* at 8–9) Moreover, the jury was not required to believe Defendants’ witness, Mr. Proctor. (*Id.* at 9–10 (citing *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 151 (2000); *Gomez*, 442 F.3d at 933 (court must “resolve all conflicting evidence in favor of [the verdict]”).)

In reply, Defendants argue that Dr. Wells admitted that x1 and x2 are downlink transmit reference signals. (Dkt. No. 313 at 2 (citing 1/10/2023 Trial Tr. at 59:17–25, 151:14–16).) Dr. Wells’ conclusory mapping of x1 and x2 to both the “signals of interest” and the “interference generating signals” is insufficient as a matter of law. (*Id.* (citing *Yoon Ja Kim v. ConAgra Foods, Inc.*, 465 F.3d 1312, 1320 (Fed. Cir. 2006) (affirming judgment as a matter of law of noninfringement where patentee’s expert offered only conclusory, unsupported testimony)).)

Defendants further argue that Dr. Wells did not show how either x_1 or x_2 “mix in the nonlinearities to produce intermodulation products that fall inband of the signal of interest.” (*Id.* at 5.) This is required for the “interference generating signals” limitation. (*Id.* at 5 (citing Dkt. No. 294 at 12).)

Plaintiff, in its sur-reply, argues that Defendants waived the argument that Finesse did not prove the “interference generating signals” that produce intermodulation products “inband of the signal of interest” because it was not raised in 50(a), was not present in Defendants’ opening brief (other than in a conclusory footnote) and was raised for the first time in reply. (Dkt. No. 329 at 1, 6.) The Court rejected Defendants’ theory that the base stations only try to receive the uplink signal. (*Id.* at 2 (citing Dkt. No. 241 at 23).)

Plaintiff further argues it presented evidence that the ADC samples two signals, the signal of interest and the interference generating signal. (*Id.* at 5.) Defendants’ argument that Finesse did not show the interference generating signal mixing in the nonlinearities to produce PIM inband of the signal of interest is waived because it was not raised at the Rule 50(a) stage. (*Id.* at 7.) In addition to the evidence cited in the Response, there was evidence that the Accused Products cause their own inband PIM. (*Id.* (citing Dkt. No. 282 (hereinafter “1/9/2023 Trial Tr.”) 290:25–291:9, 294:4–11).) The jury also heard testimony explaining how that occurs in the bands of spectrum allocated to AT&T’s network and used in the bands in the Accused Products. (*Id.* (citing 1/10/2023 Trial Tr. 23:17–24:9; Dkt. 281-3 at 14–16).) Further, Dr. Wells specifically testified that one of the two signals in the red path was “causing the intermodulation products in band at the signal of interest.” (*Id.* (citing 1/10/2023 Trial Tr. at 52:22–53:1).)

The Court finds that Plaintiff presented sufficient evidence for the jury to find that a bit stream is created with signals of interest and interference generating signals. During cross examination, Dr. Wells testified that there are two signals entering the RF ADC, and that those are

signals of interest and the interference generating signals. (1/10/2023 Trial Tr. at 143:10–13 (“Q. So I’ll try this. The RF ADC does not convert from analog-to-digital a modeled PIM path. Correct? A. It converts the two signals coming into it, which are the interference generating signal and the signal of interest.”).) Dr. Wells is clearly referring to x1 and x2. (*Id.* at 142:12–16 (“Q. So then upstream of the RF ADC, before the copy of the transmit signal gets to the RF ADC, there is no modeled PIM on that signal, is there? A. Well, there’s – there’s two signals on that red path because we know that because there’s the x1 and the x2.”).) Moreover, it is the RF ADC that creates the bit stream. (*See, e.g., id.* at 143:10–13.)

Defendants’ argument that Dr. Wells did not demonstrate that the “interference generating signals” are “signals that mix in the nonlinearities to produce intermodulation products that fall inband of the signal of interest”² is faulty on two grounds. First, this argument was not made at 50(a), so it is waived. Second, there was sufficient evidence for the jury to find that this limitation was met. By way of background, Dr. Wells provided the testimony discussed below in connection with these limitations:

isolating signals of interest in the bit stream using one or more decimating filters;

isolating source signals that generate one or more inter modulation products inband of the signal of interest using one or more decimating filters;

Dr. Wells testified as follows:

Q. And where in GROOT are the decimating filters?

A. So that's shown in this excerpt here from PX 855. It says, the post linear block consists of an RxFIR filter, so it consists of a filter, whose primary aim is to decimate the modeled signal. In other words, that's a decimating filter.

Q. And how do you know that the decimating filter is isolating the signals of interest?

² Dr. Wells testified that “source signals” and “interference generating signals” are the same. (Dkt. No. 294 at 12 (citing 1/10/2023 Trial Tr. at 144:21–23.) Defendants’ argument is based on the Court’s construction of “source signals,” which is provided. (Dkt. No. 294 at 12 (citing Dkt. No. 88-1).)

A. Well, we know that from the second sentence because it says that this decimating filter is needed to LPF, that means to low pass filter, the desired intermodulation signals falling in the uplink band from the transmit carrier. The transmit carrier is what was shown in red on that previous slide there.

So it's saying that this decimating filter, it needs to low pass filter, it needs to take the desired intermodulations away from that red path. So it's saying it takes it, filters out, it isolates that red path. That red path contains the signals of interest.

...

Q. And so what was your overall conclusion for this limitation?

A. So this requirement is present in GROOT, so I put a tick, a checkmark, on the right-hand side.

...

Q. And if we look back at figure 1, where do you see the source signals coming in?

A. Well, we know that this red path, it includes the signals of interest, it includes the interference generating signals, which is also the source signals. So we know that comes in through the red path.

Q. And how do you know that these source signals are signals that mix in the non-linearities to produce intermodulation products?

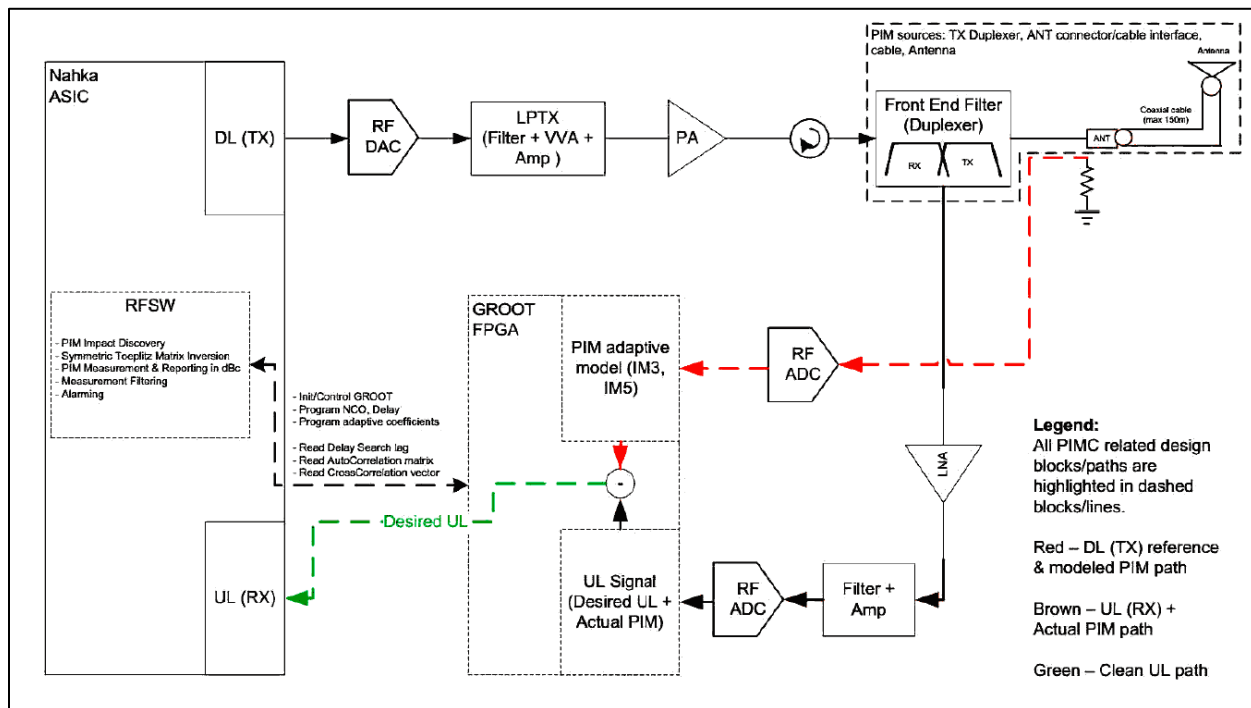
A. Because that's what – that's what causes these intermodulation products. It's the combination of the interference generating signal.

Q. And how do you know that it's making intermodulation products that fall in-band of the signal of interest?

A. Because that's what we're trying to cancel out. We're trying – this causes the in-band intermodulations that we're trying to cancel out of the receive signal.

(1/10/2023 Trial Tr. at 55:6–57:19.) When discussing the “isolating signals of interest” limitations Dr. Wells testified that there is a decimating filter in GROOT, that the decimating filter isolates the signal of interest, and further confirmed that this limitation was met because these steps took place in GROOT. (*Id.* at 55:6–56:14.) Then, shortly thereafter, when asked “where do you see the source signals coming in?” Dr. Wells testified that the red path contains signals of interest and

interference generating signals, which are the same as source signals. (*Id.* at 57:3–8.) Based on the preceding testimony, it was reasonable for the jury to infer that Dr. Wells the source signals enter GROOT via the red path.



DX-287 at 14. A reasonable jury could also infer that since the source signals enter GROOT from the red path, they are sampled by the RF ADC. DX-287 shows that the signals entering GROOT come from the RF ADC alone. Taking this in combination with Dr. Wells’ testimony that he knew the source signals in GROOT “mix in the non-linearities to produce intermodulation products” “[b]ecause that’s what ... causes these intermodulation products” and that he knew the source signals are “making intermodulation products that fall in-band of the signal of interest” “[b]ecause that’s what we’re trying to cancel out,” it was reasonable for the jury to infer that the interference signals (which are the same as source signals) entering the RF ADC are signals that are sampled to create a bit stream and are “signals that mix in the nonlinearities to produce intermodulation products that fall inband of the signal of interest.”

Defendants cite *CommScope Techs. LLC v. Dali Wireless Inc.* in their “Legal Standard” section for the proposition that an expert who offers conclusory testimony should not be credited, but it is distinguishable. (Dkt. No. 294 at 6 (citing *CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1297 (Fed. Cir. 2021).) There, the Federal Circuit reversed the District Court’s denial of judgment as a matter of law of noninfringement. *CommScope Techs.*, 10 F.4th at 1291. The key limitation was “switching a controller off to disconnect signal representative of the output of the power amplifier.” *Id.* at 1291. The Federal Circuit affirmed the construction of “switching a controller off” as “switching a controller to a nonoperating state.” *Id.* at 1295–96. The District Court, in denying judgment as a matter of law of noninfringement, relied upon the following evidence:

[A.] ... So the first step in this operating phase is to switch a controller off. And the [district court] define[d] that [to] mean[] placing the controller in a non-operating state so that you disconnect the signal from the output of the [power amplifier]. So in a sense you turn the feedback off. And the [internal] documents show a switch. This is the simplest schematic I could find. And I have circled it in red there. And various other schematics show that switch as well. So it meets this limitation.

Q. And what did you identify as the switch?

A. Well, the actual switch circuit is a series of transistors that switch the actual RF signal on and off. And it is also associated with a logic that controls it that is on the [Field Programmable Gate Array], all those things being on the [motherboard].

Id. at 1296. In reversing the District Court, the Federal Circuit reasoned:

The key portion of Dr. Kenney’s testimony above never states that either the switch or the controller is rendered “nonoperating.” Rather, the testimony points to the result that “you turn the feedback off” rather than the specific mechanism claimed to achieve that result—“switching a controller off.” This testimony from Dr. Kenney thus does not provide substantial evidence to support the jury’s finding that the FlexWave meets the district court's claim construction.

Id. at 1297. The Federal Circuit also relied on un rebutted testimony showing that the controller was not switched off. *See id.* at 1297–98. Here, by contrast, Dr. Wells identified an “interference

generating signal,” testified that it was the same as a “source signal,” and put forward sufficient evidence for the jury to infer that the “source signal” met its construction and was sampled by the RF ADC.

Yoon Ja Kim v. ConAgra Foods, Inc. is also distinguishable. 465 F.3d 1212 (Fed. Cir. 2006). There, the Federal Circuit affirmed the District Court's grant of judgment as a matter of law of non-infringement. *Id.* at 1317, 1326. The patent-at-issue's claims began with the preface “consisting essentially of,” which means there can be “no infringement where the accused product contains additional, unclaimed [elements] that materially affect the basic and novel properties of the invention.” *Id.* at 1319–20. At trial, Plaintiff's expert testified that the accused product did not contain additional elements that would have materially affected its characteristics. *Id.* However, the expert “did not support this determination with any examinations or tests of the actual accused products.” *Id.* Accordingly, the Federal Circuit affirmed the District Court's decision to grant judgment as a matter of law with respect to non-infringement. The present case is different. As discussed above, Dr. Wells provided much more than a bare conclusory statement that the Accused Products “[over-sample/sample], a passband of received signals to create a bit stream, wherein the received signals include ... interference generating signals, the interference generating signals capable of generating intermodulation products inband of the signals of interest.”

The Court is also not convinced by Defendants' argument Dr. Wells mapped both “signals of interest” and “interference generating signals” to the same component. Dr. Wells testified that “upstream of the RF ADC” “there's two signals on that red path because we know that because there's the x1 and the x2.” (1/10/2023 Trial Tr. at 142:12–16.) Dr. Wells then testified that the RF ADC “converts the two signals coming into it, which are the interference generating signal and the

signal of interest.” (1/10/2023 Trial Tr. at 143:12–13.) Dr. Wells mapped the two signals entering the RF ADC to two separate elements in the claims, not one signal to two separate elements.

(b) Whether the “downlink transmit reference signals” can be the claimed “signals of interest.”

Defendants next argue that the accused “downlink transmit reference signals” cannot be the claimed “signals of interest.” The Court construed “signal(s) of interest” to be “with respect to the receiver, a signal that the receiver is trying to receive and send, in digital form, to the baseband processor,” as it was explicitly defined in the patent. (Dkt. No. 294 at 10 (citing Dkt. No. 88-1; PX-3 at 6:7–9).) Dr. Wells mapped the “downlink transmit reference signals” to the claimed “signals of interest.” (*Id.* (citing 1/10/2023 Trial Tr. (Wells) at 50:18–19).) This is not the signal that the receiver is trying to receive and process. (*Id.*) Thus, Dr. Wells improperly conflated received signals with the transmitted signals. (*Id.*)

The downlink transmit reference signals are not the signals the radio receiver is trying to receive, but the signals the radio is transmitting to a handset. (*Id.* at 10–11 (citing 1/11/2023 Trial Tr. at 127:1–3, 219:16–25, 221:20–222:5).) As a matter of law, sampling transmitted signals cannot satisfy the requirement of sampling “received signals.” (*Id.* at 11 (citing *Omega Patents, LLC v. CalAmp Corp.*, 920 F.3d 1337, 1345 (Fed. Cir. 2019) (“receiver” limitation not met where accused product contained only a transmitter); *RFID Tracker, Ltd. v. Wal-Mart Stores, Inc.*, 342 F. App’x 628, 632 (Fed. Cir. 2009) (similar)).) A claim limitation cannot be constructed as encompassing its antithesis. (*Id.* (citing, among others, *Moore U.S.A., Inc. v. Standard Reg.*, 229 F.3d 1091, 1106 (Fed. Cir. 2000); *Asyst Techs., Inc. v. Emtrak, Inc.*, 402 F.3d 1188, 1195 (Fed. Cir. 2005) (similar); *Brilliant Instruments, Inc. v. GuideTech, LLC*, 707 F.3d 1342, 1347-48 (Fed. Cir. 2013) (similar)).)

Defendants further contend that Dr. Wells improperly mapped an analog-to-digital converter as a “receiver,” and this does not comport with the description of the receiver in the specification of the patent. (*Id.* at 11–12 (citing 1/10/2023 Trial Tr. at 21:4–7; DX-287 at 14; PX-3 at Figure 2A; PX-3 at 3:49-54; 1/11/2023 Trial Tr. (Proctor) at 293:18–19).)

Moreover, Defendants contend that Dr. Wells improperly mapped the GROOT FPGA as the “baseband processor” because unrebutted testimony confirmed that the GROOT FPGA does not operate at baseband—at a frequency near 0 Hz. (*Id.* at 11–12 (citing Dkt. No. 88-1; PX-3 at 6:7–9; 1/10/2023 Trial Tr. at 51:3–10 (Wells); 1/11/2023 Trial Tr. at 126:5–10 (Proctor)).) Baseband operations occur elsewhere, on a different chip. (*Id.* at 12 (citing 1/11/2023 Trial Tr. at 125:2–24 (Proctor)).)

In opposition, Plaintiff argues that the Accused Products infringe the “signals of interest” claim limitations. (Dkt. No. 308 at 3.) The parties previously agreed on a construction for “signal(s) of interest” so Defendants cannot now argue against it. (*Id.*) The agreed construction is: “with respect to the receiver, a signal that the receiver is trying to receive and send, in digital form, to the baseband processor.” (*Id.* (citing Dkt. No. 79 at 2.) Neither the claims nor the construction equate “signal of interest” with “received uplink signal.” (*Id.*) Dr. Wells testified that the “downlink TX reference is the signal of interest,” and testified that it is being “received because ... we have this RF ADC that receives th[e] signal and it converts it into a digital path.” (*Id.* at 4 (citing 1/10/2023 Trial Tr. at 50:14–51:23).) Further, Dr. Wells testified that “even though it’s labeled downlink TX, it’s actually with respect to the receiver a signal that the receiver is trying to receive. Therefore, it meets the Court’s construction of a signal of interest.” (*Id.* (citing 1/10/2023 Trial Tr. at 51:20–23).) In Defendants’ own documentation the red path below shows that the “DL (TX) reference” signal is flowing towards a receiver, the RF ADC, and not away from

one. (*Id.*) Moreover, the documentation for the RF ADC shows that the manufacturer, TI, titles it and describes it as a receiver. (*Id.* at 5 (citing PX-827 at 1).) Thus, as Dr. Wells testified, the DL (TX) reference signal is received, not transmitted. (Dkt. No. 308 at 4–5 (citing 1/10/2023 Trial Tr. at 51:11–23).) Defendants cannot now raise claim construction arguments as to “receiver,” in order to argue that an ADC is not a receiver. (*Id.* at 5.)

Plaintiff further argues that the jury saw evidence that the GROOT FGPA was considered a baseband processor. (*Id.* (citing PX-839 at 286).) Defendants also ignore Dr. Wells’ testimony that the GROOT FPGA sets the baseband signal. (*Id.* (citing 1/10/2023 Trial Tr. at 105:22–106:3).) Moreover, Defendants’ own witness testified that the PIM-C was deployed at the baseband. (*Id.* (citing 1/10/2023 Trial Tr. (Loddeke) at 290:15–21).) Defendants’ arguments that the baseband processor must operate near 0 Hz and that baseband operations are performed on a different chip lack documentary support and the jury was entitled to weigh the credibility of the witnesses to reject Defendants’ theories in finding for Finesse. (*Id.* at 5–6.)

In reply, Defendants contend that they are not asking the Court to reconstrue “signal of interest.” (Dkt. No. 313 at 3.) The ADC is not a receiver as claimed by the patent—the whole point of the patent is to remove a specific type of interference from a signal that the receiver is trying to receive. (*Id.* at 4.)

In its sur-reply, Plaintiffs re-urge that Defendants are simply trying to re-argue the claim construction of “signal of interest.” (Dkt. No. 329 at 2.)

The Court finds that Defendants’ arguments are flawed. The downlink transmit signals can be the claimed “signals of interest.” The agreed construction of this term was “with respect to the receiver, a signal that the receiver is trying to receive and send, in digital form, to the baseband processor.” (Dkt. No. 79 at 2.) The jury heard evidence that the downlink transmit signals enter

the RF ADC. (*See, e.g.*, 1/10/2023 Trial Tr. at 143:10–13.) Moreover, Plaintiff put on evidence that the RF ADC was a receiver and was trying to send the downlink transmit signal to the GROOT FPGA, which it identified as a baseband processor. (*Id.* at 50:14–51:23, 105:22–106:3.) This is sufficient. Plaintiff need not show that the baseband processor operates at or near 0 Hz as Defendants suggest. This was neither in the claims nor in the agreed construction. Finally, the cases Defendants cite for the proposition that a claim cannot be construed to encompass its antithesis are distinguishable—those cases all concerned structural components, not digital components. *See Moore U.S.A.*, 229 F.3d at 1094–1105; *Asyst Techs.*, 402 F.3d at 1190–92; *Brilliant Instruments*, 707 F.3d at 1343.

(c) Whether the “modeled PIM path” can be the claimed “interference generating signals.”

Finally, Defendants argue that the accused “modeled PIM path” cannot be the claimed “interference generating signals. (Dkt. No. 294 at 12–14.) Dr. Wells’ infringement analysis fails, according to Defendants, because, even if the downlink transmit reference signals were the “signals of interest,” he does not identify “interference generating signals.” (*Id.* at 12.) The Court did not construe “interference generating signals” though it did construe “source signals” and the experts agree the two terms are one and the same. (*Id.* (citing 1/10/2023 Trial Tr. at 144:21–23.) The construction of “source signals” is “signals that mix in the nonlinearities to produce intermodulation products that fall inband of the signal of interest.” (*Id.* (citing Dkt. No. 88-1).)

Defendants argue that Dr. Wells improperly mapped the “interference generating signals to the “modeled PIM path” because it is not input to the analog-to-digital converter along that path. (*Id.* at 13 (citing 1/10/2023 Trial Tr. at 141:10–14 (Wells); 1/11/2023 Trial Tr. (Davis) at 128:21–23, 129:19–24; *id.* at (Proctor) 220:15–24; 1/10/2023 Trial Tr. (Wells) at 151:14–16; 1/11/2023 Trial Tr. (Davis) at 129:10–14.) Further, if the “modeled PIM path” is not the interference

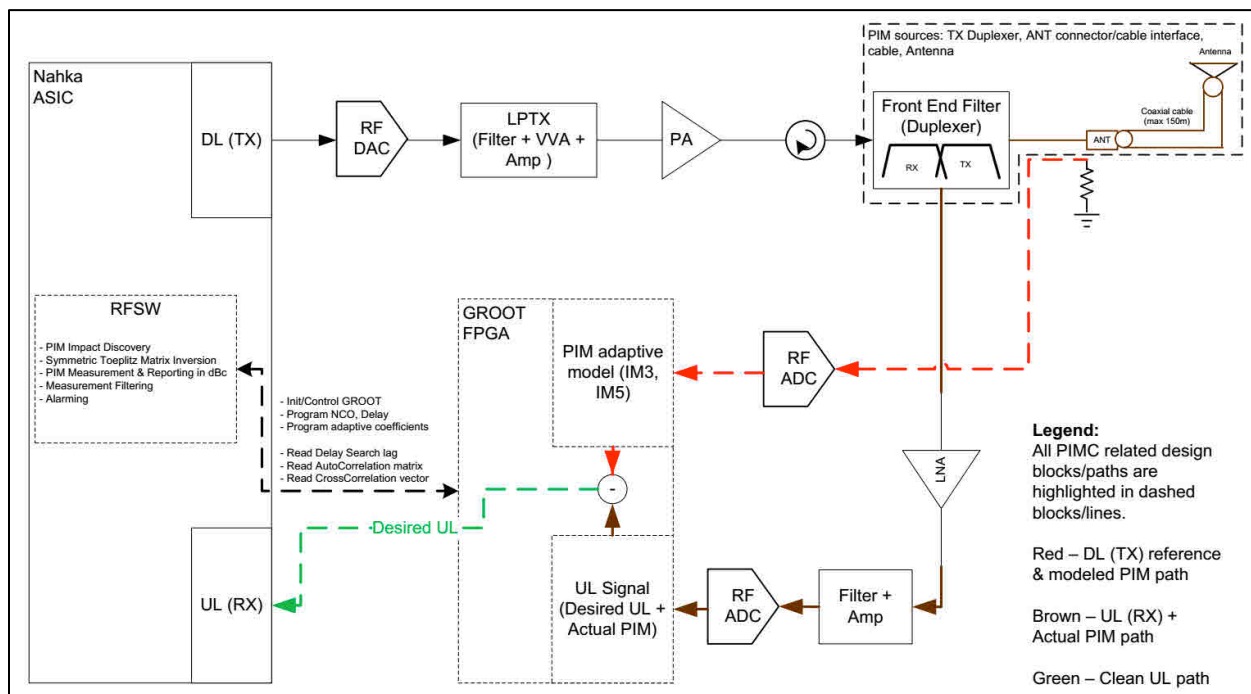
generating signal, the only other possible thing that Dr. Wells has pointed to would be the downlink reference signals, which he already mapped to the claimed “signals of interest.” (*Id.* at 13; Dkt. No. 333 at 55:7–56:13.) Of course, the downlink transmit reference signals that Dr. Wells identified cannot be both the “signals of interest” and the “interference generating signals.” (Dkt. No. 294 at 13 (citing *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1561–62 (Fed. Cir. 1991); *Lantech, Inc. v. Keip Mach. Co.*, 32 F.3d 542, 546 (Fed. Cir. 1994).)

Defendants point out that Finesse argued in closing that whether the “modeled PIM path” is on the red line does not matter, but the only thing Dr. Wells expressly identified as an interference generating signal is the modeled PIM path. (*Id.* (citing Dkt. No. 286 (hereinafter “1/13/2023 Trial Tr.”) (Finesse’s closing) at 44:23–45:2; 1/10/2023 Trial Tr. at 141:10–14).) Moreover, the part of the diagram that Finesse identified in closing as being part of the PIM path is well after the bit stream ends, and thus shows that Dr. Wells did not identify an “interference generating signal.” (*Id.* (citing 1/13/2023 Trial Tr. (Finesse’s closing) at 45:3–6; DX-287 at 14; DDX-5.030).) Per the claim language, the “interference generating signal” must be received and sampled to *create* the bit stream (that includes the “interference generating signal” and the “signals of interest,” not be a part of the bit stream after it is created. In other words, the thing that Dr. Wells identified as the “interference generating signal,” the PIM path, cannot satisfy the claim language because it is the bit stream, not a “received signal” as required by the claim. (*See id.* at 13–14.)

In opposition, Plaintiff argues that Dr. Wells explained to the jury that the red path in PX-855 contains two signals and that the documentation describes these signals as the downlink reference signal and the modeled PIM path. (Dkt. No. 308 at 10 (citing 1/10/2023 Trial Tr. at 47:15–20, 52:5, 56:8–10, 56:21–57:19, 141:19–23, 143:12–13, 143:20–22, 164:1–11).) Moreover,

Dr. Wells never identified either x1 or x2 as both the “signal of interest” and the “interference generating signal.” (*Id.*) Plaintiff further argues that it is not required to demonstrate infringement in accordance with Defendants’ viewpoint—Plaintiff is not required to identify another type of signal sampled in the same passband as the downlink transmit reference signal. (Dkt. No. 308 at 10–11 (citing *OPTi, Inc. v. VIA Techs., Inc.*, 65 F. Supp. 3d 465, 479 (E.D. Tex. 2014) (“Presented with clearly sufficient expert testimony of equivalence, VIA cannot obtain JMOL simply by demanding another and further level of specificity, much like a young child repeatedly asking a parent ‘but why’ after each successive explanation.”).)

The Court finds Defendants’ arguments persuasive to the extent that the modeled PIM cannot be the claimed “interference generating signal,” but this does not warrant granting judgment as a matter of law. Under Plaintiff’s theory, the Accused Products infringe because the red path in the image below contains the “DL (TX) reference signal & modeled PIM.”



(DX-287 at 14.) This was Plaintiff’s main theory at trial. The “modeled PIM path” is the only thing Dr. Wells expressly mapped to the “interference generating signals.” (Dkt. No. 294 at 13 (citing

1/10/2023 Trial Tr. at 141:10–14.) The problem with this is that Dr. Wells also testified that the PIM Model is generated in the GROOT FPGA. (1/10/2023 Trial Tr. at 151:84–8 (“Q. Okay. Now, if we go back to the previous slide, your slide 58, there is no modeled PIM until the signal reaches the block, the non-linear block that we just looked at, which is within the GROOT FPGA. Correct? A. That's where the PIM model is generated.”).) The plain language of the claim requires that the Accused Products contain a “passband of received signals” that is “over-sampled” or “sampled,” and the claim further requires that the over-sampled/sampled signals include “interference generating signals.” The PIM model cannot be the “interference generating signal[],” because Plaintiff’s expert testified that it is *generated* in the GROOT FPGA, which is after the RF ADC. (*Id.*) Thus, the RF ADC never “samples” or “over-samples” the PIM model to create a bit stream. Plaintiff argues that there was substantial evidence for the jury to find infringement under this theory because testimony and documentary evidence show that the red path contains two signals, the downlink reference signal and the PIM path. This is true. But the claims do not require a pathway containing two types of signals. They require that two types of signals be sampled/over-sampled to create a bit stream. And the PIM path is not sampled.

However, as explained above, the Court finds that there was sufficient evidence for the jury to find that the Accused Products create a bit stream with both a “signal of interest” and a “interference generating signal.” Accordingly, notwithstanding that the modeled PIM path cannot be the claimed “interference generating signal,” the Court finds that judgment as a matter of law as to non-infringement of the ‘134 Patent is not warranted.

- ii. **Whether there was substantial evidence for the jury to find that the accused radios isolate the “signals of interest” and the “interference generating signals” from the bit stream used in the decimating filter.**

Claims 1–3 contain the following two elements:

isolating signals of interest in the bit stream using one or more decimating filters;

isolating source signals that generate one or more intermodulation products inband of the signal of interest using one or more decimating filters;

Defendants argue that the accused radios do not “isolate” the “signals of interest” and the “interference generating signals” from the bit stream because, as described above, no bit stream containing both the “signals of interest” and the “interference generating signals” is ever created—they are processed in separate data streams. (Dkt. No. 294 at 14 citing (DX-287 at 14; 1/11/2023 Trial Tr. (Proctor) at 217:19–25).)

Defendants further argue that Dr. Wells did not show “isolating” because he equated “removing,” *i.e.*, discarding, the signal to isolating the signal. (Dkt. No. 294 at 14 (citing 1/10/2023 Trial Tr. at 54:5–6 (Wells)).) This is inconsistent with the way the patent specification uses the word “isolating” which makes clear that isolation is done to “keep” the signals so that they can be used to cancel the intermodulation products. (Dkt. No. 294 at 14–15 (citing ’134 Patent at Claims 1–3; *id.* at 11:28–31; *id.* at 11:8–11).) Dr. Wells does not show how the “isolated” signals are used. (Dkt. No. 294 at 15 (citing 1/10/2023 Trial Tr. (Wells) at 54:1–56:14).)

In opposition, Plaintiff argues that there was sufficient evidence for the jury to find that the Accused Products “isolate[e]” the signals of interest and the interference generating signals. The red path in PX-855 contains two signals, the signal of interest and the interference generating signal. (Dkt. No. 308 at 11 (citing 1/10/2023 Trial Tr. at 47:15–20, 52:5, 56:8–10, 56:21–57:19, 141:19–23, 143:12–13, 143:20–22, 164:1–11).) Plaintiff argues that the claim says “isolate” not “keep.” (*Id.*) Defendants are improperly attempting to read in a limitation into the claim. (*Id.* (citing *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001); *Tech Pharm. Servs. v. Alixa Rx*, 2018 WL 11351583, at *6 (E.D. Tex. Dec. 20, 2018) (party may not propose a new definition post-trial, even if it is attempting to provide a more detailed

definition of the common meaning), *aff'd*, 810 F. App'x 887 (Fed. Cir. 2020)).) The term was afforded its plain and ordinary meaning, which the jury was free to rely upon at trial. (*Id.* at 11–12 (citing *KAIST IP US LLC v. Samsung Elecs. Co.*, 439 F. Supp. 3d 860, 874 (E.D. Tex. 2020)).) Moreover, Plaintiff argues it put forth substantial evidence that the “isolation” limitation was met. (*Id.* at 12–13 (citing 1/10/2023 Trial Tr. at 53:8–16, 53:19–22, 53:23–24, 55:6–23, 57:5–58:10, 55:6–23, 83:23–84:1; PX-839 § 3.4; PX-855 at -1973).) Dr. Wells testified that the decimating filter isolated the signals of interest and the source signals in the path, and that the low pass filter “[took] the desired intermodulation away from [the] red path.” (*Id.* at 13 (citing 1/10/2023 Trial Tr. at 55:6–23, 57:5–58:10, 83:23–84:10.)

In reply, Defendants argue that “removing” the signal is not isolating it; the claims require using the isolated interference generating signals to model and cancel the PIM. (Dkt. No. 313 at 6.)

In its sur-reply, Plaintiff argues that Defendants waived their “isolate” argument. (Dkt. No. 329 at 1.) Moreover, Defendants are improperly reading a limitation into the claim. (*Id.* at 3–4.) Defendants presented substantial evidence as to the meaning of “isolation.” (*Id.* at 6.)

The Court is not persuaded by Defendants’ arguments. Plaintiff and Defendants presented conflicting evidence on the plain and ordinary meaning of “isolate,” and the jury was entitled to credit the version presented Plaintiff. (*See* 1/10/2023 Trial Tr. at 53:8–16, 53:19–22, 53:23–24, 55:6–23, 57:5–58:10, 55:6–23, 83:23–84:1; PX-839 § 3.4; PX-855 at -1973.) Moreover, the Court will not read a limitation from the specification into the claim language, particularly at this stage. *SciMed Life*, 242 F.3d at 1340.

- iii. **Whether there was substantial evidence for the jury to find that the accused radios perform phase and amplitude adjustments “in a closed loop manner.”**

Claims 1–3 contain the following element:

performing phase and amplitude adjustment on estimations of the intermodulation product interfering signals in a closed loop manner, wherein performing phase and amplitude adjustment of the estimations comprises performing sub-sample phase shifts to make a phase adjustment on the estimations of the intermodulation product interfering signals.

Defendants make two arguments as to why the evidence presented to the jury was not sufficient to show that the Accused Products infringed this element: (1) the “closed loop” limitation is not satisfied, and (2) the Accused Products do not meet the “sub sample phase shift” limitation. (Dkt. No. 294 at 15–22.)

Defendants also note that the following claim limitation was added in during prosecution to obtain allowance: “performing sub-sample phase shifts to make a phase adjustment on the estimations of the intermodulation product signals.” (*Id.* at 15 (citing PX-1 (’134 Patent File History) 7/30/2007 Response to Office Action at 3; *id.* at 10-18-2007 Notice of Allowance).)

(a) Whether there was substantial evidence that the Accused Products infringe the “closed loop manner” limitation.

Defendants first argue that the accused radios do not perform phase and amplitude adjustment “in a closed loop manner.” (Dkt. No. 294 at 15.) Defendants requested construction of this term in summary judgment briefing, but the Court declined to construe this term. (*Id.* (citing Dkt. No. 241 (Report & Recommendation) at 18–19; Dkt. No. 253 (Order Adopting R&R)).) The Defendants maintain that this was legal error. (*Id.* at 16 (citing *Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1319–20, (Fed. Cir. 2016) (citing *O2 Micro Int’l, Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008)) (“By determining only that the terms should be given their plain and ordinary meaning, the court left this question of claim scope unanswered, leaving it for the jury to decide. This was legal error.”)).)

Proper construction of the term would require feedback to refine the estimates of the intermodulation products using the output of the passive intermodulation cancellation. (*Id.* at 16–

17 (citing Dkt. No. 135 (Mot. for Summ. J. '134 Patent) at 4–7, 15–18; Dkt. 174 at 1–4; Dkt. No. 249 (Objections to Report and Recommendation) at 1–4; Webster’s New Collegiate Dictionary (9th ed. 1991); Collins Dictionary (2023), <https://www.collinsdictionary.com/us/dictionary/english/closed-loop>; Newton’s Telecom Dictionary (26th ed. 2011); Comprehensive Dictionary of Electrical Engineering 110 (1999); PX-3 at 9:45–59, 16:53–63, 17:4–51).) Defendants’ experts explained at trial the plain meaning of “closed loop” to a POSITA means controlling the output using feedback. (*Id.* at 17 (citing 1/11/2023 Trial Tr. (Davis) at 138:12–20; *id.* at 229:2–7).) Defendants’ expert further explained that open loop systems, by contrast, have no feedback. (*Id.* (citing 1/11/2023 Trial Tr. at 138:21–24).) The patent confirms that a closed loop system requires feedback. (*Id.* at 17–18 (citing PX-3 at Figure 2a (annotated); *id.* at 9:45–59, 16:53–63, 17:4–51).)

Defendants argue that Plaintiff’s contrary understanding of the term’s scope is unsubstantiated and wrong. (*Id.* at 18.) Finesse did not provide substantial evidence that the delay search in the accused product is performed in a closed loop manner. (*Id.*) Finesse’s expert, Dr. Wells, testified that a POSITA would understand closed loop to be “where you take some sort of signal or something and you try and hold it at a certain value.” (*Id.* (citing 1/10/2023 Trial Tr. at 66:13–22).) Dr. Wells identified a “wide delay search” and a “narrow delay search” as supposedly showing closed loop but did not provide substantial evidence that the delay search is performed in a closed loop manner. (*Id.* (citing 1/10/2023 Trial Tr. at 66:23–67:18 (discussing PX 855 at NOK_FIN_00001979)).) Finesse offered no response or rebuttal to testimony from Defendants’ experts that the PIMC feature in the Accused Products is not a closed loop but instead an open loop. (*Id.* at 18–19 (citing 1/10/2023 Trial Tr. at 138:25–139:6, 229:20–22; 139:7–12; 138:25–139:6, 229:20–22).) The product documentation that Dr. Wells relies on does not show that the

“delay search” is performed “in a closed loop manner” because Dr. Wells does not identify any feedback. (*Id.* at 19–20 (citing ’134 Patent at Claims 1–3; PX-855; PX 855 at NOK_FIN_00001979; 1/10/2023 Trial Tr. (Wells) at 67:3–18).) Dr. Wells’ testimony as to the delay search was so conclusory and contrary to evidence that no reasonable juror could have relied on it under any construction. (*Id.* at 20.) Another witness, Mr. Davis, offered unrebutted testimony that the accused radios do not implement a “wide delay search” or a “narrow delay search” but simply a delay search, and that a review of the source code would have confirmed how the delay search is actually implemented. (*Id.* (citing 1/11/2023 Trial Tr. at 140:18–142:1).) Dr. Wells testified that he was not relying on the source code for his infringement analysis and that he was not an expert in reading and writing source code. (*Id.* (citing 1/11/2023 Trial Tr. at 18:13–14, 18:24–19:1).) No reasonable jury could have relied on Dr. Wells’ basis for concluding that the Accused Products meet the limitation. (*Id.*)

In its opposition, Plaintiff argues that the term “closed loop” was unconstrued and unchallenged. (Dkt. No. 308 at 13.) This same argument, that “closed loop” requires “feedback” was rejected at the summary judgment stage. (*Id.* at 13–14 (citing Dkt. No. 253; *U.S. Silica Co. v. Amberger Kaolinwerke Eduard Kick GmbH & Co. KG*, No. 2:20-cv-298-JRG, 2023 WL 2542600, *4 (E.D. Tex. Mar. 15, 2023)).) The jury was entitled to listen to Plaintiff’s expert and not Defendants’. (*Id.* at 14 (citing *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1261 (Fed. Cir. 2013); *KAIST IP US LLC v. Samsung Elecs. Co., Ltd.*, 439 F. Supp. 3d 860, 874 (E.D. Tex. 2020)).)

Plaintiff further contends that Dr. Wells provided substantial evidence regarding the plain and ordinary meaning of the term “closed loop manner” and that it was satisfied. (*Id.*) Dr. Wells testified as to the meaning of “closed loop manner”: that it meant “where you take some sort of

signal or something and you try and hold it at a certain value, and then this is in a closed loop manner.” (*Id.* (citing 1/10/2023 Trial Tr. at 66:13–17, 6:18–22; 66:23–68:6, 79:17–81:24).) Further, Dr. Wells demonstrated how the Nokia radios operate in a closed loop manner. (*Id.* at 14–15.) He then testified that the Nokia radios continuously update and align the cancellation signal with the uplink signal from a user device. (*Id.* at 15 (citing 1/10/2023 Trial Tr. at 66:19–22, 67:8–11).) The annotated figure that Defendants present in their brief was never presented to the jury. (*Id.* (citing *LNP Eng’g Plastics, Inc. v. Miller Waste Mills, Inc.*, 275 F.3d 1347, 1353 (Fed. Cir. 2001)).) The Defendants’ attacks on the delay searches identified by Dr. Wells fails on multiple grounds. (*Id.*)

Plaintiff argues that it had no obligation to rebut Defendants’ witness’s testimony that the system was open loop. (*Id.* at 15–16 (citing 1/11/2023 Trial Tr. at 138:25–139:6, 300:19–301:18).) The jury was free to entirely reject the testimony of Defendants’ witnesses. (*Id.* at 16 (citing *Reeves*, 530 U.S. at 150 (weighing evidence and credibility is jury function); *Core Wireless*, 880 F.3d at 1364 (jury may reject expert’s testimony that has been contradicted or impeached); *Hearing Components*, 2009 WL 593836 at *1 (jury may reject testimony of “interested witness”); *X Techs., Inc. v. Marvin Text Sys., Inc.*, 719 F.3d 406, 411 (5th Cir. 2013) (court “disregard[s] all evidence favorable to the moving party that the jury is not required to believe”)).) The Defendants’ construction is not the Court’s construction. (*Id.*) “Feedback” is not required by the claim. (*Id.* at 16–17.)

In its reply Defendants argue that Finesse does not address the *O2 Micro* issue raised by Defendants. (Dkt. No. 313 at 6.) Defendants presented un rebutted evidence that the system was completely open loop. (*Id.* at 7 (citing 1/11/2023 Trial Tr. at 138:12–139:18).) Well’s testimony that running PIM estimation “again and again” does not show that there is feedback, or that it

meets Well's own definition of closed loop: "where you take some sort of signal and hold it at a certain value." (*Id.* at 7.) Plaintiff's argument that Figure 1 of PX-855 shows feedback is unsupported attorney argument. (*Id.*) Dr. Wells' testimony and definition of "sub-sample phase adjustment" is contrary to the specification of the patent. (*Id.*)

In its sur-reply, Plaintiff argues that the Court has already ruled that "closed loop manner" should not be foreclosed from its plain and ordinary meaning. (Dkt. No. 329 at 2, 4 (citing Dkt. No. 241 at 16–20).) The Defendants are improperly importing limitations from the specification re the "sub-sample phase shift" limitation. (*Id.* at 4–5.) Defendants failed to raise this argument at either the *Markman* or the 50(a) stage. Defendants ignore the difference between "closed loop" and "closed loop manner." (*Id.* at 7.) The jury was allowed to disregard Mr. Davis' testimony to the contrary. (*Id.* at 8.) Any *O2 Micro* issue is waived at the judgment as a matter of law stage. (*Id.* (citing *Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1321 (Fed. Cir. 2003); *Tech Pharm. Servs.*, 2018 WL 11351583, at *6.) Defendants' suggestion that the jury could not look at an arrow in Figure 1 clearly pointing back and forth between Nahka and GROOT deprives it of its basic role as a fact finder. (*Id.*)

The Court does not find Defendants' arguments persuasive. "Closed loop manner" was given its plain and ordinary meaning and "it is too late at the JMOL stage to argue for or adopt a new and more detailed interpretation of the claim language and test the jury verdict by that new and more detailed interpretation." *HP*, 340 F.3d at 1321. Moreover, as described above, both sides gave conflicting evidence as to its definition and whether it was present in the Accused Products. (*See* 1/10/2023 Trial Tr. at 66:13–17, 6:18–22; 66:23–68:6, 79:17–81:24; 1/11/2023 Trial Tr. at 138:12–139:18.) The jury was entitled to credit Plaintiff's evidence, and apparently did. *Reeves*, 530 U.S. at 151; *Gomez*, 442 F.3d at 933.

(b) Whether there was substantial evidence that the Accused Products infringe the “sub-sample phase shifts” limitation.

Defendants also argue that Finesse has not introduced substantial evidence that the Accused Products meet the “sub sample phase shifts” limitation. (Dkt. No. 294 at 20–22.) Dr. Wells testified that “a sub-sample phase shift means that you perform that phase shift after everything has been reduced in sampling which is after that decimating filter,” and that the Accused Products perform sub-sample phase shifts due to a delay built into the decimating filter. (*Id.* at 21 (citing 1/10/2023 Trial Tr. at 65:20–23; *id.* at 65:24-4 (discussing PX-839)).) This indicates that because the samples are filtered, the phase shift is being done on a subset of samples, which is not a “sub-sample phase shift.” (*Id.* (citing 1/10/2023 Trial Tr. at 65:24–4 (discussing PX-839)).) This conclusion is bare and unsupported and cannot form a substantial basis for the jury’s verdict. (*Id.* (citing *Kim*, 465 F.3d at 1320; *Dominion Energy, Inc. v. Alstom Grid LLC*, 725 F. App’x 980, 986 (Fed. Cir. 2018)).) It does not establish that the phase shifts are being done on a subsampled basis, let alone explain how or why such phase shifts are accomplished. (*Id.*) The ’134 Patent explains that “subsample phase shift” means performing a phase shift with a delay of less than one sample by interpolating between samples. (*Id.* (citing PX-3 at 27:55–60, Figure 11, Figure 13).) Mr. Davis provided unrebutted testimony that the RX Delay cited by Dr. Wells is not performed at a sub-sample level. (*Id.* (citing 1/11/2023 Trial Tr. at 142:12–143:1).)

In opposition, Plaintiff argues that Dr. Wells’ testimony as to infringement of the “phase and amplitude” limitations was backed by evidence. (Dkt. No. 308 at 17.) He testified that he had reviewed the source code. (*Id.* (citing 1/10/2023 Trial Tr. at 18:15–23).) Defendants’ expert did not review the source code. (*Id.* at 17–18 (citing 1/11/2023 Trial Tr. at 141:17–142:1, 149:18–25).) Besides, there was substantial evidence of “feedback.” (*Id.* at 18 (citing PX-855, 1/9/2023 Trial Tr. at 303:1–11 (“So just like the NL generates a model, the correlator generates the exact same

model. ... let's say an IM3 was the primary area of concern, then the correlator would run delay search on an IM3, and then that delay, whatever it finds, would be put in the respective NL engine, and that's when cancellation happens.”); 302:20–304:2; PX-832 at -408; PX-839/DX-281 at -751, -752; PX-855 at -1979; PX-858 at -2164.) PX-855 shows phase and amplitude information passed from the GROOT FPGA to the Nahka ASIC and back. (*Id.* at 18.)

Plaintiff also argues that the Accused Products infringe the “sub sample phase shift” limitation. (*Id.* at 18.) Dr. Wells testified that the “sub sample phase shift” limitation “means that you perform that phase shift after everything has been reduced in sampling which is after that decimating filter.” (*Id.* at 19 (citing 1/10/2023 Trial Tr. at 65:10–23).) Dr. Wells testified that the delay adjustments are evidence that “the phase shifts are being done on a sub-sampled basis” after the decimating filter. (*Id.* (citing 1/10/2023 Trial Tr. 64:17–23, 66:1–4).) Moreover, Dr. Wells explained that because “GROOT is a processor that includes the delay functionality that performs the phase adjustments,” when the structure (*i.e.*, the block) talks about mapping the new sample into the time slots of the original samples, that means “that as part of the – that phase shift, you take the time samples, and as you shift them, you actually map them to the new time samples ... [t]hat's part of that phase shift, that delay.” (*Id.* (citing 1/10/2023 Trial Tr. at 80:3–20).) Nothing in Dr. Wells' testimony equates filtering with phase shifting. (*Id.*)

Plaintiff further argues that Defendants attempt to read new limitations into the Asserted Claims by asserting that the limitation requires “‘sub sample phase shift' [to] mean[] performing a phase shift with a delay of less than one sample by interpolating between samples.” Defendants waived this argument long ago. (*Id.* (citing *HP*, 340 F.3d at 1320).) Moreover, patent law prohibits importing limitations into the claim from the specification. (*Id.* at 19–20 (citing *SciMed Life Sys.*, 242 F.3d at 1340); *Wenger Mfg. v. Coating Mach. Sys.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001)).)

Mr. Davis' testimony, which supposedly proves that GROOT does not perform sub-sample phase shifts, is conclusory and inconsistent with the evidence that the Accused Products implemented narrow and wide delay searches. (*Id.* at 20 (citing 1/11/2023 Trial Tr. at 141:1–3, 141:4–6, 140:20–25, PX-855 at 11).) The Court should disregard this testimony, which was directly impeached and contradicted. (*Id.* (citing *Hearing Components*, 2009 WL 593836 at *1).)

Defendants, in their reply, point out that Finesse acknowledges that Dr. Wells' opinions are based on performing a phase shift on a subset of samples rather than a “sub-sample phase adjustment.” (Dkt. No. 313 at 7 (citing Dkt. No. 308 at 19).) Further, the patent describes performing a phase adjustment with a delay of less than one sample. (*Id.* (citing '134 Patent at 27:55-60, Figure 11, Figure 13).) Dr. Wells' interpretation of “sub-sample phase adjustment” is not in the specification. (*Id.* at 7–8.)

Plaintiff, in its sur-reply, argues that Defendants' arguments regarding “sub-sample phase shifts” depend on their proposed claim construction. (*Id.* at 8–9.) Dr. Wells testified that the RX delay in GROOT does reduce sampling based on the decimating filter before performing the phase shift. (*Id.* at 9 (citing 1/10/2023 Trial Tr. at 65:10–66:4).) The jury was entitled not to give Defendants' witness any weight. (*Id.* (citing *Hearing Components*, 2009 WL 593836 at *1; *X Techs.*, 719 F.3d at 411).)

Again, the Court does not find Defendants' arguments persuasive. Dr. Wells gave testimony that the Accused Products perform “sub-sample phase shifts,” and the jury accepted his testimony. (*See* 1/10/2023 Trial Tr. 64:17–23, 65:10–23, 66:1–4, 80:3–20.) *Gomez*, 442 F.3d at 933. Moreover, upon a review of the entire record, the Court finds that Dr. Wells' testimony was not conclusory. Further, Plaintiff did not need to rebut Dr. Davis's testimony, which was impeached and contradicted. *Hearing Components*, 2009 WL 593836 at *1.

B. Whether Finesse Presented Sufficient Evidence for the Jury to Find Infringement of the '775 Patent.

i. Whether there was substantial evidence presented to the jury for it to find that the Accused Products include the S1, S2, and S3 signals recited in the claims and that the Accused Products practice seven multiplications.

Defendant argues that each asserted claim of the '775 Patent requires that three signals, S1, S2, and S3 be used to generate the claimed intermodulation product cancellation signals. (Dkt. No. 294 at 22.) For example, claim 1 provides: “generating an n-th order ICS [intermodulation cancellation signal] by, given three signals S1, S2 and S3, digitally multiplying and filtering $S1 \times S1 \times S2$ and $S1 \times S2 \times S2$ and $S1 \times S2 \times S3$ and $S1 \times S1 \times S3$ and $S2 \times S2 \times S3$ and $S1 \times S3 \times S3$ and $S2 \times S3 \times S3$, where n is an integer.” The Court construed the term “three signals, S1, S2, and S3” to mean “signals which must be separately identifiable, but are not limited to three unique input signals.” (*Id.* at 23 (citing Dkt. No. 241 at 13; Dkt. No. 253).) This limitation is present in all asserted claims from the '775 Patent.

Defendants further argue that Finesse is precluded from offering a doctrine of equivalents theory (and did not) because that limitation was added during prosecution of the '775 Patent to distinguish prior art. (*Id.* at 22–23 (citing Dkt. No. 134-5, 8/18/2016 Response to Office Action at 2, 19; *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1319 (Fed. Cir. 2000); 1/10/2023 Trial Tr. (Wells) at 87:4–12 (“Q: And does AT&T infringe these seven claims literally or under the doctrine of equivalents? A: So in my opinion, AT&T infringes all of these claims literally.”)).)

Defendants further argue that the Court’s claim construction improperly undid the patentee’s surrender of claim scope. (*Id.* at 23 (citing *Becton, Dickinson & Co. v. Tyco Healthcare Grp, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004)); *Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1404–05 (Fed. Cir.

1996) (where a claim provides for two separate elements, a “second portion” and a “return portion,” these two elements “logically cannot be one and the same”); *HTC Corp. v. Cellular Commc’ns Equip., LLC*, 701 F. App’x 978, 982 (Fed. Cir. 2017) (“The strongest evidence for this separation is the claim language itself, which plainly recites two different structures. . . . The separate naming of two structures in the claim strongly implies that the named entities are not one and the same structure.”); *SandBox Logistics LLC v. Proppant Express Inv. LLC*, 813 Fed. App’x 548, (Fed. Cir. 2020)).

Notwithstanding this, Defendants argue that judgment as a matter of law is warranted even under the Court’s claim construction. (*Id.* at 24.) Defendants argue that Dr. Wells admitted that the Accused Products only include two relevant signals and reused one of the signals for his calculations. (*Id.* (citing 1/10/2023 Trial Tr. (Wells) at 150:9–12; *id.* at 155:17–156:3; 1/11/2023 Trial Tr. (Davis) at 131:24–133:16; *id.* (Proctor) at 232:21–234:5; PX-839 (GROOT FGPA Spec.) at NOK_FIN_00000771; DX-832 (Galaxy SW Arch.) at NOK_FIN_00002163); 1/10/2023 Trial Tr. (Wells) at 101:16–102:3; *id.* at 101:2–11; *id.* at 101:16–102:3).)

Defendants contend that, even if the Court’s claim construction could encompass two (as opposed to three) signals, the requirement that they be separately identifiable precludes mapping the same signal twice. (*Id.* (citing Dkt. No. 241 at 13; Dkt. No. 253).) A signal cannot separately identify from itself, the signals must be “distinct component[s].” (*Id.* at 24–25 (quoting *Becton, Dickinson & Co.*, 616 F.3d at 1254).) Dr. Wells cannot pursue a doctrine of equivalents theory because he disclaimed it. (*Id.* at 25.)

Defendants further argue that each asserted claim of the ’775 Patent requires that seven different multiplications take place. (*Id.*) For example, claim 1 recites “generating an n-th order ICS [intermodulation cancellation signal] by, given three signals S1, S2 and S3, digitally

multiplying and filtering $S1 \times S1 \times S2$ and $S1 \times S2 \times S2$ and $S1 \times S2 \times S3$ and $S1 \times S1 \times S3$ and $S2 \times S2 \times S3$ and $S1 \times S3 \times S3$ and $S2 \times S3 \times S3$, where n is an integer.” By equating one of the two signals ($x1$ and $x2$) in the Accused Products to a third signal, there were only three different multiplication possibilities: $(x1) \times (x1) \times (x2)$, $(x1) \times (x2) \times (x2)$, and $(x2) \times (x2) \times (x2)$. (*Id.* at 25–26 (1/10/2023 Trial Tr. at 155:17–158:24).) Even if the same signal can be mapped to two of the claimed signals such that only three multiplications are required, Dr. Wells provided no basis for his conclusion that the Accused Products actually perform such multiplications. (*Id.* at 26.) At most, Dr. Wells referred to PX-858 at 2165, where he testified that the Accused Products meet the claimed multiplications based on the description of the non-linear engine being capable of modeling the multiplications. (*Id.* (citing PX-858 at 2165; 1/11/2023 Trial Tr. at 99:15–101:1).) Dr. Wells never explains how that math maps to the claimed multiplications. (Dkt. No. 294 at 26.)

Defendants further contend that Mr. Proctor explained that Dr. Wells “stopped with a table that showed $S1$, $S2$, $S3$, and then he did a little variable substitution and showed another column with some other formulas, but he didn't connect those formulas that he made with the product. He didn't show it in the product, and there's a good reason for that.” (*Id.* at 27 (quoting 1/11/2023 Trial Tr. at 234:18–22).) Finesse offered no rebuttal or response to Mr. Proctor's testimony that the Accused Products do not use a multiplication methodology at all. (*Id.*) Mr. Proctor explained that the Accused Products use complex signals instead of real signals, so the intermodulation cancellation signals are calculated with complex math rather than real math, which means that the equations used in the product cannot be mapped to the claimed equations. (*Id.* (quoting 1/11/2023 Trial Tr. (Proctor) at 235:7–236:1).) Even if complex math could be mapped to the claims, Dr. Wells merely explains that certain equations that he identified in the documentation have three factors, and this is not sufficient to show that the claimed multiplications are performed. (*Id.* at

27–28 (citing 1/11/2023 Trial Tr. (Wells) at 99:15–101:1; *Kim*, 465 F.3d at 1320; *Dominion Energy*, 725 F. App’x at 986).)

In opposition, Plaintiff argues that Dr. Wells showed how x1 and x2 could be mapped to S1, S2, and S3. (Dkt. No. 308 at 21 (citing Dkt No. 281-3 at 163; 1/10/2023 Trial Tr. at 101:16–102:19).) Dr. Wells showed where the three unique mathematical results could be found in the GROOT specification, which explains how the two signals can be used to calculate third-order intermodulation products that depend on three signals—S1, S2, and S3. (Dkt. No. 308 at 21–22 (citing 1/10/2023 Trial Tr. at 158:11–18, PX-858 at Fig. 3).) Moreover, Dr. Wells explained PX-858 to the jury in detail. (*Id.* at 22.)

Plaintiff contends that Defendants are improperly using judgment as a matter of law to revisit claim construction rulings, and they failed to challenge the construction in 50(a). (*Id.* at 23.) There is no disclaimer, the inventor stated the new claim language in the excerpt, and the inventor did not distinguish prior art based on it. (Dkt. No. 308 at 23 – 24 (citing *Intervet Am. v. Kee-Vet Labs.*, 887 F.2d 1050, 1053 (Fed. Cir. 1989) (cautioning district courts not to add limitations in construing specific words)). Moreover, the words “distinct,” “independent,” and “unique” are not in the claims nor the Court’s construction. (*Id.* at 24 (citing Dkt. Nos. 154, 202).) The cases Defendants cite concern structural components, not digital components. (*Id.* (citing *Becton, Dickinson & Co.*, 616 F.3d at 1254).)

Plaintiff further argues that the Defendants’ argument regarding the meaning of “separately identifiable” is waived and meritless because it was not raised at 50(a) and their caselaw concerns structural components, not digital ones. (*Id.* at 24–25). Neither the claims nor the Court’s construction require there to be seven unique results. Signals are not “used up,” they may be copied. (*Id.* at 25 (citing 1/11/2023 Trial Tr. at 90:11–16).) Moreover, Defendants cannot ask the

Court to reweigh credibility issues left to the jury. (*Id.* at 26.) Their argument that it is not possible to multiply complex numbers so the relevant claim limitation was impossible to meet conflicts with Dr. Wells' testimony. (Dkt. No. 308 at 26.) The jury was not required to credit Mr. Proctor's testimony. (Dkt. No. 308 at 26 (citing *X Techs.*, 719 F.3d at 411; *Core Wireless*, 880 F.3d at 1364).)

Defendants, in reply, argue that using two signals and reusing one of them to come to a total of three signals is not the same as three "separately identifiable" signals, and no reasonable jury could find as much. (Dkt. No. 313 at 8.) Finesse admits that Dr. Wells did not show seven multiplications in the product. (*Id.*) Finesse acknowledges that Dr. Wells' chart showed the jury how two signals could be used to create third-order intermodulation products and does not show any actual multiplication in the products. (*Id.* at 8–9.) Finesse does not map the three claimed multiplications to the claims—and the claims require specific multiplications. (*Id.* at 9.) For example, Dr. Wells attempted to map $X1.X1.X2'$ to $S1$, $S2$, and $S3$ as follows: (1) $X1$ maps to $S1$; (2) $X1$ also maps to $S2$; and (3) $X2'$ (the complex conjugate of $X2$) maps to $S3$. (1/10/2023 Trial Tr. at 100:17–21.) If that is his mapping, then he would have also had to show that the other claimed multiplications were met—for example, $S1 \times S3 \times S3$. (*Id.*) But the Accused Products do not include a multiplication for $(x1) \times (x2') \times (x2')$ and Dr. Wells did not even attempt to show how that multiplication would be met. (*Id.*) Seven distinct multiplications are required, and the signals must be "separately identifiable." (*Id.* at 9–10.) Dr. Wells did not explain how complex numbers could be mapped to the patent. (*Id.*)

In its sur-reply, Plaintiff argues that Defendant waived their arguments as to claim construction by failing to raise it at 50(a) and their summary judgment motion was not enough; it had already been waived at the summary judgment stage. (Dkt. No. 329 at 1–2.) Moreover, Defendants have no answer to their waiver of any argument on the meaning of "separately

identifiable.” (*Id.* at 2.) The Court has already ruled that “S1, S2, and S3 must be separately identifiable.” (*Id.* at 2, 5 (citing Dkt. No. 241 at 10–13).) Signals do not get “used up” like dollar bills and can be copied and re-used. (*Id.* at 9.) Dr. Wells mapped x1 and x2 to S1, S2, and S3, and explained how they were multiplied together per the GROOT specification. (*Id.*) *Translogic* concerns structural components, not digital components. (*Id.* at 10 (citing 2004 WL 3203958 at *14).) Nothing prohibits complex numbers from being multiplied. (*Id.* (citing *Smith & Nephew, Inc. v. Ethicon, Inc.*, 276 F.3d 1304 (Fed. Cir. 2002) (where method claim “comprises” steps, additional steps may be performed).)

The Court is not convinced by Defendants’ arguments. As a preliminary matter, the Court finds that using two signals, plus a copy of one of those signals is sufficient to meet the Court’s construction of “separately identifiable.” The Court rejected the argument that the signals must be unique at the Summary Judgment stage and will not revisit that ruling here. (Dkt. No. 241 at 13.) Requiring three separate signals would be to require three “unique” signals. Moreover, Plaintiff waived this argument by failing to raise it at the 50(a) stage.

When two signals are used, in addition to a copy of one of those signals, as the three claimed signals, only three multiplications are produced. This too can be sufficient to show infringement because the three multiplications each correspond to multiple of the seven claimed multiplications. In other words, performing three multiplications with two signals and one copy of one of those two signals only produces a maximum of three distinct results, which correspond to two or three of the seven claimed multiplications.

An example would be helpful. Assume that $S1 = a$ and $S2$ and $S3 = b$.

Claimed Multiplication	$S1 = a; S2 = b; S3 = b$
$S1 \times S1 \times S2$	$(a) \times (a) \times (b)$

S1 x S2 x S2	$(a) \times (b) \times (b)$
S1 x S2 x S3	$(a) \times (b) \times (b)$
S1 x S1 x S3	$(a) \times (a) \times (b)$
S2 x S2 x S3	$(b) \times (b) \times (b)$
S1 x S3 x S3	$(a) \times (b) \times (b)$
S2 x S3 x S3	$(b) \times (b) \times (b)$

After substituting a for S1, and b for both S2 and S3, only three unique equations are produced:

1: $(a) \times (a) \times (b)$

2: $(a) \times (b) \times (b)$

3: $(b) \times (b) \times (b)$

Each one of these equations corresponds to more than one claimed multiplication. For example, $(a) \times (a) \times (b)$ maps to both S1 x S1 x S2 and S1 x S1 x S3. Accordingly, Plaintiff need only show three equations that correspond to the seven claimed multiplications after substituting the appropriate variables in.

After a fulsome review of the record, the Court finds that it is not so devoid of supporting evidence as to justify overturning the jury verdict. Dr. Wells testified how the Accused Products perform the three multiplications and showed the jury Nokia documentation demonstrating the same. (1/10/2023 Trial Tr. at 99:4–104:13; PX-858 at 10–11.) This is more than a scintilla of evidence. Indeed, the Court finds that there is substantial evidence to support a finding of infringement.

The Court is not convinced by Defendants’ remaining arguments. As mentioned above, the Court will not revisit the same arguments made (and rejected) during claim construction and

summary judgment at the judgment as a matter of law stage. *HP*, 340 F.3d at 1321. Moreover, Defendants' reurged claim construction argument was not made at the 50(a) hearing, so it is waived. Further, nothing in the claims prohibits complex numbers from being multiplied.

ii. Whether there was substantial evidence for the jury to find that the Accused Products correct PIM in a "co-located" receiver.

All asserted claims from the '775 Patent require "a transmitter and the receiver being co-located."

Defendants argue that the Court improperly rejected Defendants' claim construction request during claim construction. (Dkt. No. 294 at 28.) The proposed construction was based on explicit definitions of "co-located receiver" and "co-located transmitter." (*Id.* (citing Dkt. No. 86 (citing '775 Patent at 5:63–6:14)).) Defendants' proposed construction was "a receiver located in the vicinity of, but not associated with, the transmitter." (*Id.* (quoting Dkt. No. 86 at 22–23).) Transmitters and receivers that are associated are explicitly defined as being a "companion" to each other. (*Id.* (citing PX-4 at 5:63–6:14).) These are mutually exclusive of "co-located" receivers, and the classification depends on whether or not the transmitters and receivers are associated with each other. (*Id.* (citing PX-4 at 5:63–6:14).) Under a proper construction, no reasonable jury could have found infringement of the '775 Patent because the Accused Products only correct PIM generated by the radio's own transmission signals and do not correct PIM for signals transmitted by a transmitter that is in the vicinity of but not associated with the receiver. (*Id.* at 28–29 (citing 1/10/2023 Trial Tr. (Wells) at 59:17–25; *id.* at 151:14–16; 1/11/2023 Trial Tr. (Davis) at 129:10–14; *id.* (Proctor) at 206:25–207:3; DX-281 at 76; Dkt. 86 at 23–26).)

In opposition, Plaintiff argues that Defendants may not revisit this claim construction argument at the judgment as a matter of law stage, and they have waived this argument by not raising it at 50(a). (Dkt. No. 308 at 26 (citing *HP*, 340 F.3d at 1320–21; *Flowers*, 247 F.3d at 238).)

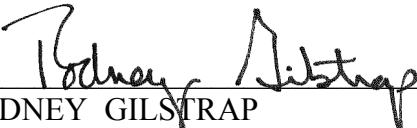
Further, Defendants failed to raise their co-located argument at 50(a) so it too is waived. (Dkt. No. 329 at 2, 5.)

The Court finds that this argument was waived by not raising it at the 50(a) hearing. Moreover, the jury was entitled to credit and accept Plaintiff's definition of "co-located" and evidence showing that this limitation was present in the Accused Products. (*See* 1/10/2023 Trial Tr. at 88:2–9 (Wells); 1/11/2023 Trial Tr. at 260:21–23 (Proctor).) Finally, the Court will not revisit claim construction arguments at the judgment as a matter of law stage. *HP*, 340 F.3d at 1321.

V. CONCLUSION

For the foregoing reasons, Defendants' Motion for JMOL of Non-Infringement (Dkt. No. 294) should be and hereby is **DENIED**.

So ORDERED and SIGNED this 29th day of August, 2023.



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE