



Silicon Laboratories, Inc.
v.
Cresta Technology Corporation

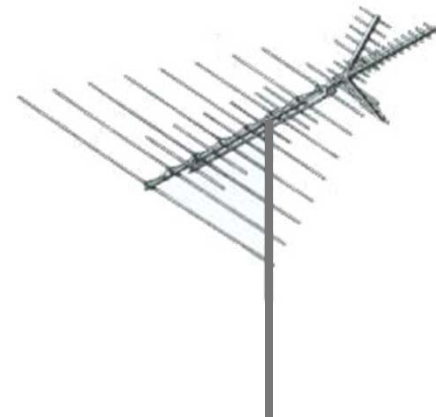
Combined Hearing
IPR2015-00615 ('585 Patent)
IPR2015-00626 ('792 patent)

June 1, 2016

Michael R. Fleming
Benjamin Haber

Cresta Ex 2040-1
Silicon v Cresta¹
IPR2015-00626

Video Is Transmitted In Multiple Formats



'585 Patent

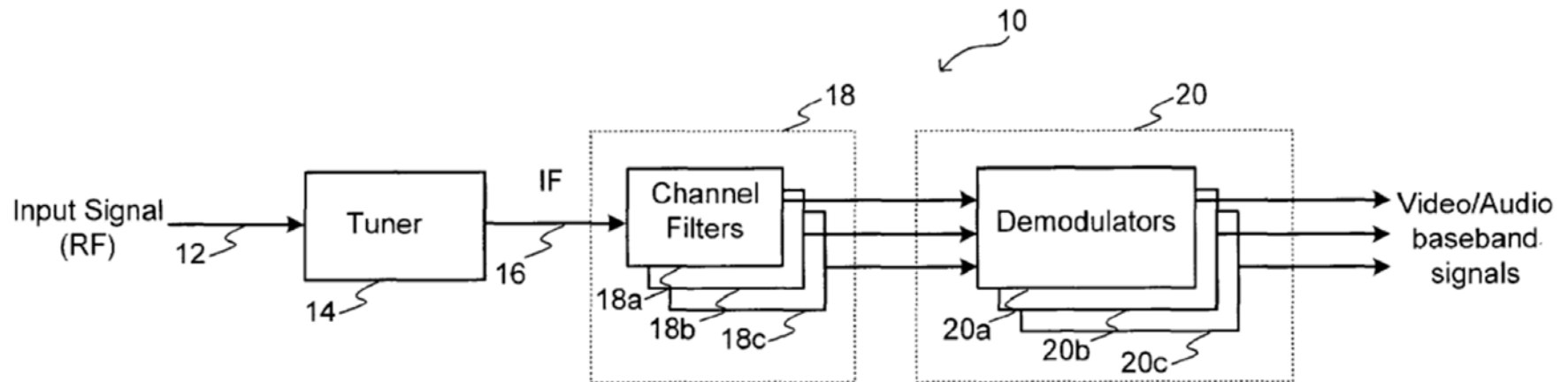


Figure 1 ***(Prior Art)***

'585 Patent

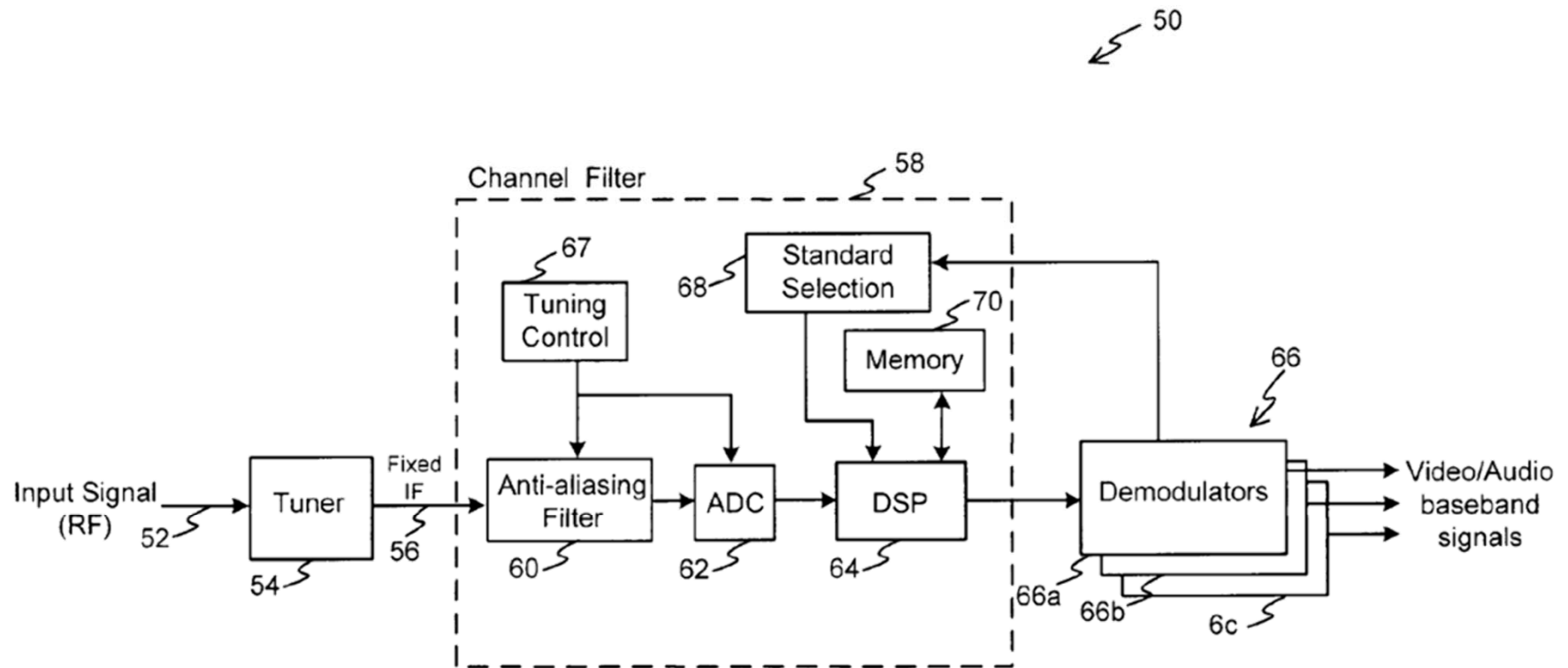


Figure 2

'792 Patent

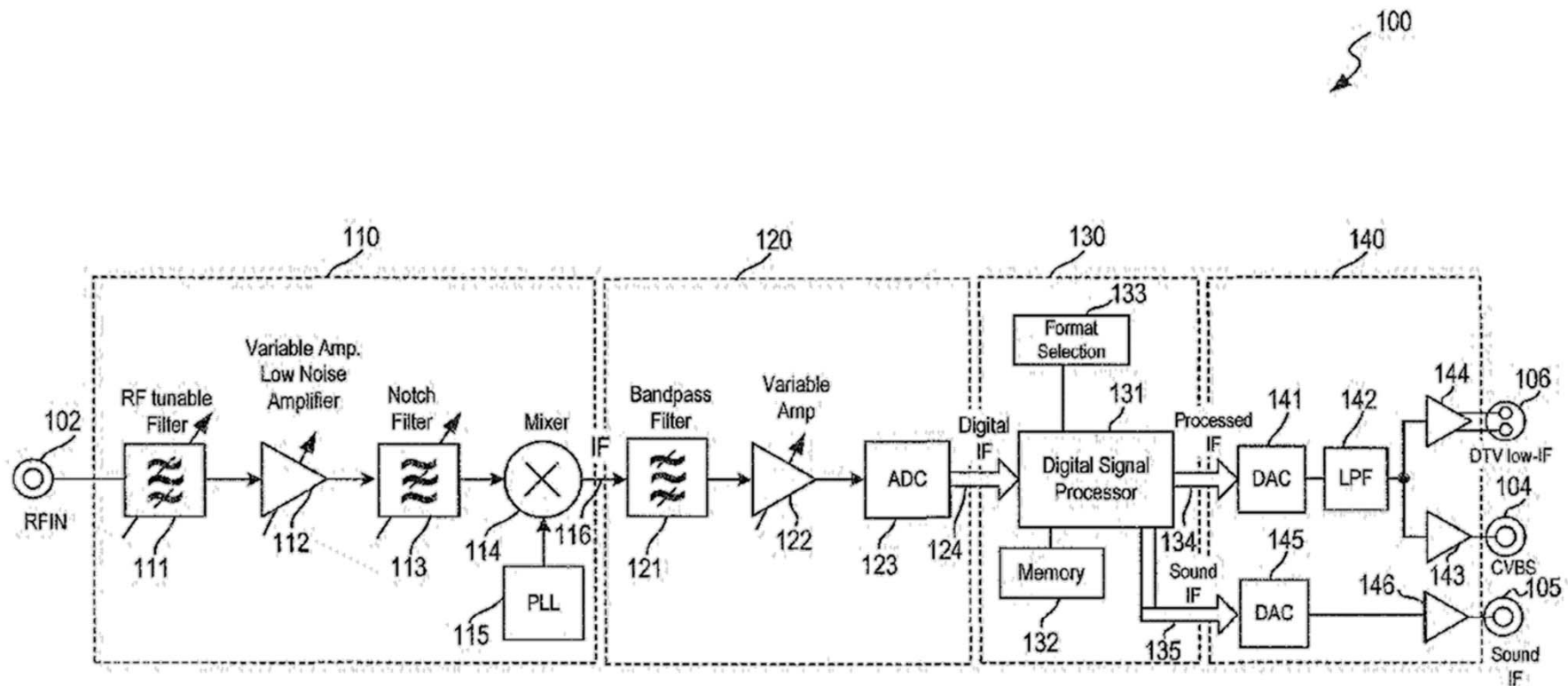


Fig. 1

Ground 1 (-00615)

1. A receiver comprising:
a tuner for receiving input RF signals and for converting said input RF signals to intermediate signals having an intermediate frequency (IF), said input RF signals encoding information in one of a plurality of formats; and
a channel filter for receiving the intermediate signals, said channel filter comprising:
an anti-aliasing filter for filtering said intermediate signals;
an analog-to-digital converter for sampling said filtered intermediate signals and generating a digital representation thereof;
a signal processor for processing said digital representation of said intermediate signals in accordance with said format of said input RF signal, said signal processor generating digital output signals indicative of information encoded in said input RF signal; and
a plurality of demodulators, each coupled to receive output signals from said signal processor, each of said demodulators for demodulating said digital output signals according to one of said formats of said input RF signal, each of said demodulators generating video and audio baseband signals corresponding to said format of said input RF signal.

10. The receiver of claim 1, wherein said signal processor applies one of a plurality of finite impulse response filters to said digital representation of said intermediate signal, each of said plurality of finite impulse response corresponding to a format of said input RF signal.

11. The receiver of claim 10, wherein said plurality of finite impulse response filters are stored in a memory, and said signal processor indexes said memory to retrieve one of said plurality of finite impulse response filters.

Ground 3 (-00626)

1. A television receiver comprising:

a frequency conversion circuit for receiving an input RF signal and for converting the input RF signal to an intermediate frequency signal having an intermediate frequency (IF), the input RF signal encoding information in one of a plurality of television signal formats;

an analog-to-digital converter for sampling the intermediate frequency signal and generating a digital representation thereof;

a signal processor for processing the digital representation of the intermediate frequency signal in accordance with the television signal format of the input RF signal, the signal processor generating digital output signals indicative of information encoded in the input RF signal, wherein the signal processor applies one of a plurality of finite impulse response filters to the digital representation of the intermediate frequency signal, each of the plurality of finite impulse response corresponding to a format of the input RF signal; and

a signal output circuit for receiving the digital output signals from the signal processor and for providing one or more output signals corresponding to the digital output signals.

24. The television receiver of claim 1, wherein the plurality of finite impulse response filters are stored in a memory, and the signal processor indexes the memory to retrieve one of the plurality of finite impulse response filters.

Claim 11 describes retrieving from memory one complete FIR filter corresponding to exactly one format

- **Claim 11 adds the feature of retrieving one complete FIR filter from a memory that stores multiple FIR filters**
- **Referring back to claim 10, the one FIR filter corresponds to the “format of said input RF signal.”**
- **As the Board construed previously regarding claim 1, the processing occurs in “exactly one format.”**
- **So each FIR filter of claim 11 corresponds to exactly one format**

Claim 11's signal processor retrieves the corresponding FIR filter to processes in accordance with the incoming RF

- **Claim 11 adds the signal processor processing the incoming RF in accordance with its format by retrieving from memory the FIR filter that corresponds to the format of the incoming data**
- **This precludes parallel processing by that signal processor**
- **The signal processor of claim 11 loads the exact FIR filter corresponding to format of the input RF**

Patent Owner contends that, under the broadest reasonable interpretation in light of the specification, the phrase excludes processing a plurality of formats in parallel. Prelim. Resp. 17. **We agree.**

The Board also agreed in IPR2014-00728 FWD that the claims preclude parallel processing

format.” Patent Owner contends that, under the broadest reasonable interpretation in light of the specification, the phrases exclude processing a plurality of formats in parallel. PO Resp. 13, 16. We agree, and, accordingly, construe the phrases to require processing in accordance with the exactly one format in which each received input RF signal is encoded.

Claim 11

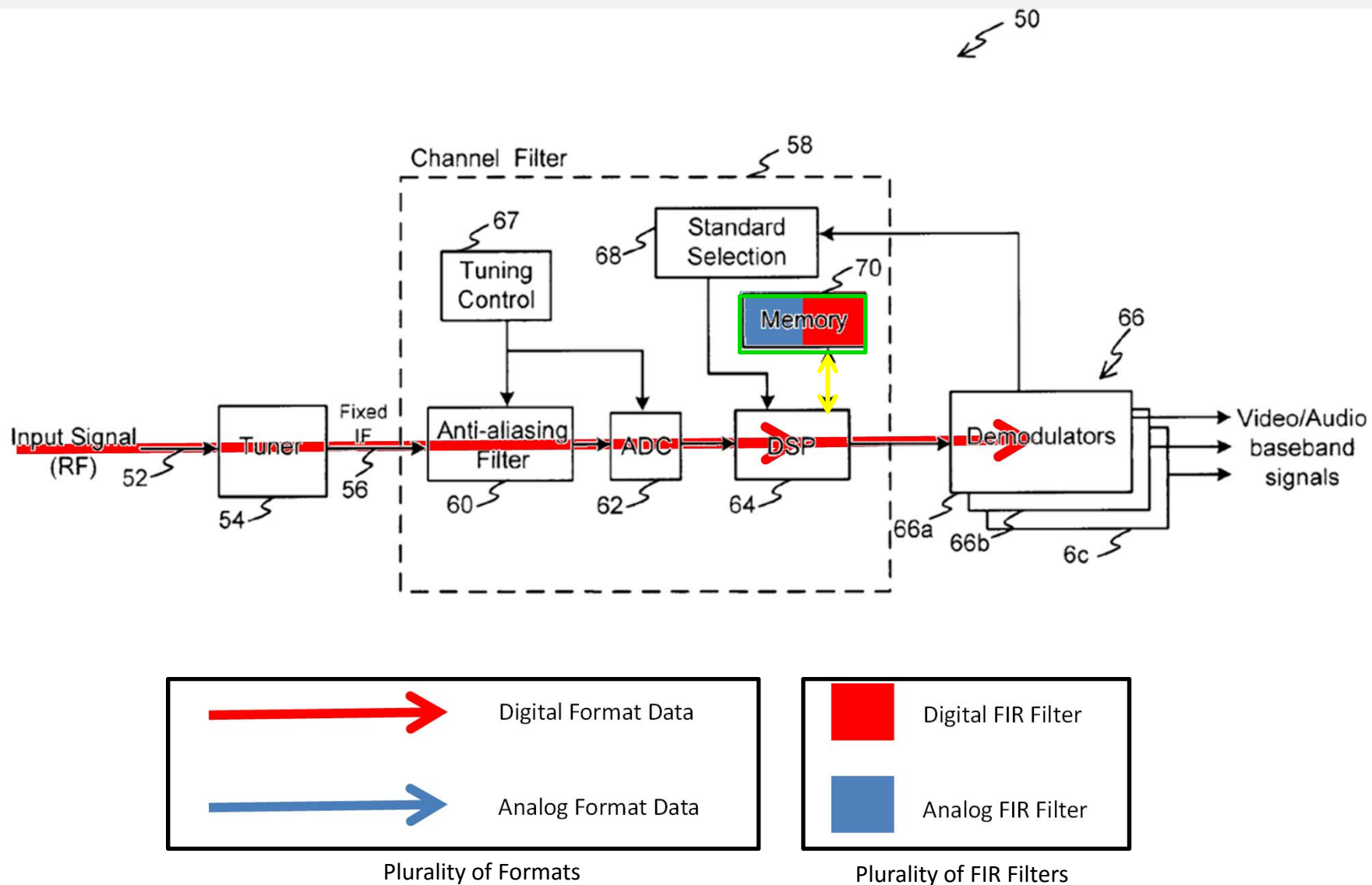


Figure 2

Fundamental flaws in Petitioner's grounds:

11. The receiver of claim 10, wherein said plurality of finite impulse response filters are stored in a memory, and said signal processor indexes said memory to retrieve one of said plurality of finite impulse response filters.

- No teaching of a signal processor retrieving one of a plurality of FIR filters corresponding to the format of the input RF and processing in accordance with the format of the input RF.
- No teaching of more than 1 FIR filter in memory

The obviousness ground fails for 3 independent reasons, each sufficient to deny the Petition

- **Petitioner's combination of prior art is missing key structural claim elements, so there can be no prima facie case of obviousness**
- **Petitioner's only alleged reason/motivation to combine comes from hindsight, not the actual references**
- **Petitioner has advanced no evidence on a "reasonable expectation of success"**

It is undisputed that Thomson does not teach FIR filters

Thomson, Fig. 1

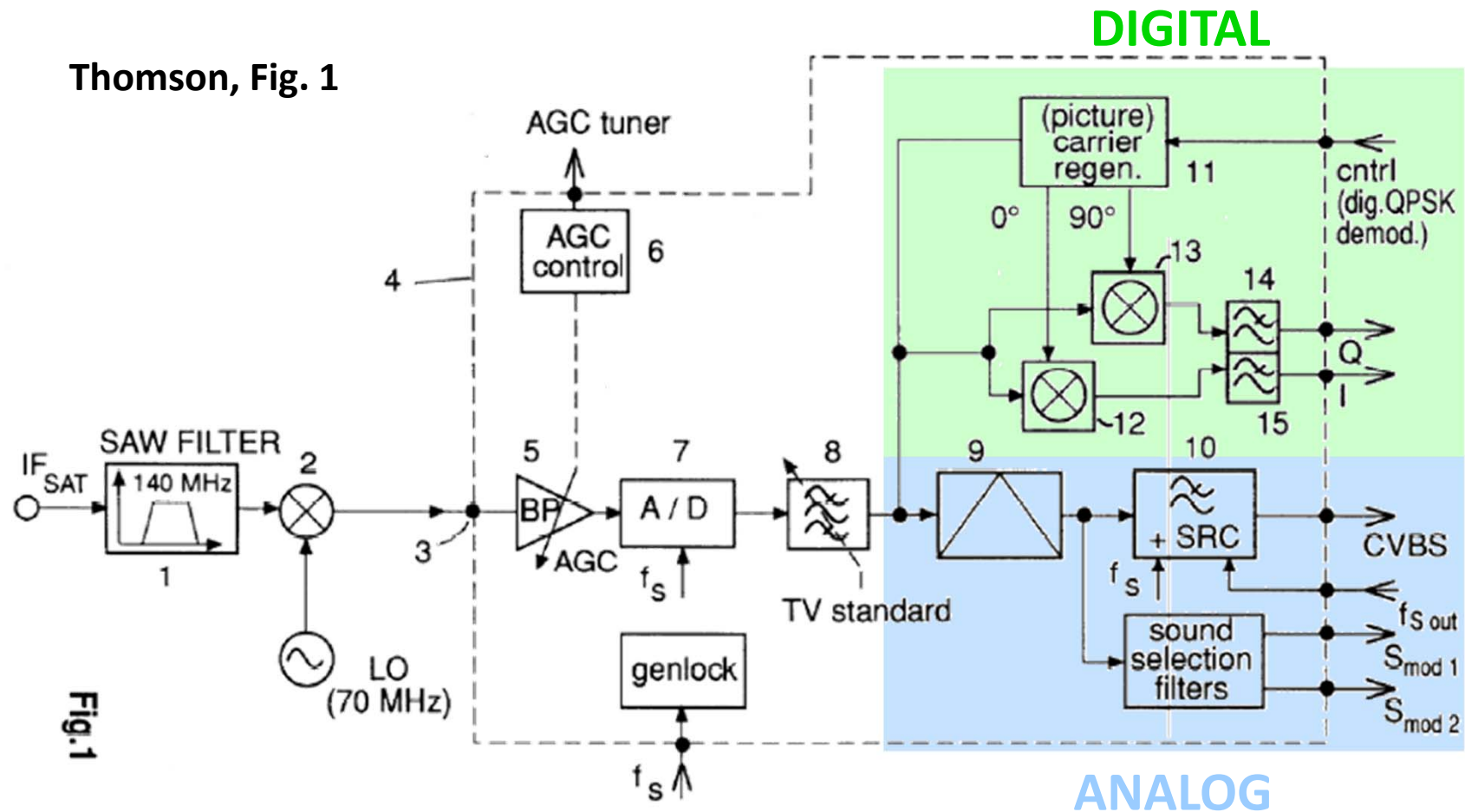


Fig.1

The experts agree that Thomson does not teach FIR filters

1. In Ex. 2038 at 5:20-6:2, Dr. Holberg testified about Ex. 1004 Thomson:

Q. Let's take a look at Exhibit 1004 is Thompson. Thompson doesn't teach Finite Impulse Response Filters, right?

A. Well, it's been awhile since I've read Thompson, let me review that quickly. (Short pause).

A. No, I don't see Thompson referring to a Finite Impulse Response Filter.

Paper 36, at 1

Additionally, there is no disclosure in Thomson of a memory storing a plurality of finite impulse response filters. Indeed, Thomson does not disclose finite impulse response filters at all.

Ex. 2032 (Opris Decl.) , ¶ 97

The experts agree that Harris does not teach a memory storing a plurality of FIR filters

another (e.g. analog to digital). Harris is relied upon for its general teaching of microprocessor programmable FIR filters for a channelized receiver. This is an

Ex. 1061 (Holberg Reply Decl) ¶ 71; Paper 20, at 11-2

6. In Ex. 2038 at 7:24-8:3, Dr. Holberg testified that Ex. 1005 Harris's application is cell phones and at 33:10-15 testified:

Q. So I think we're on the same page here, it's that Harris doesn't teach processing more than one cell phone signal format in a single system, that specific teaching is not in there, in other words?

A. I don't recall seeing that specific teaching, no.

This testimony is relevant to Petitioner's argument in Reply at 7 and 11-12 that

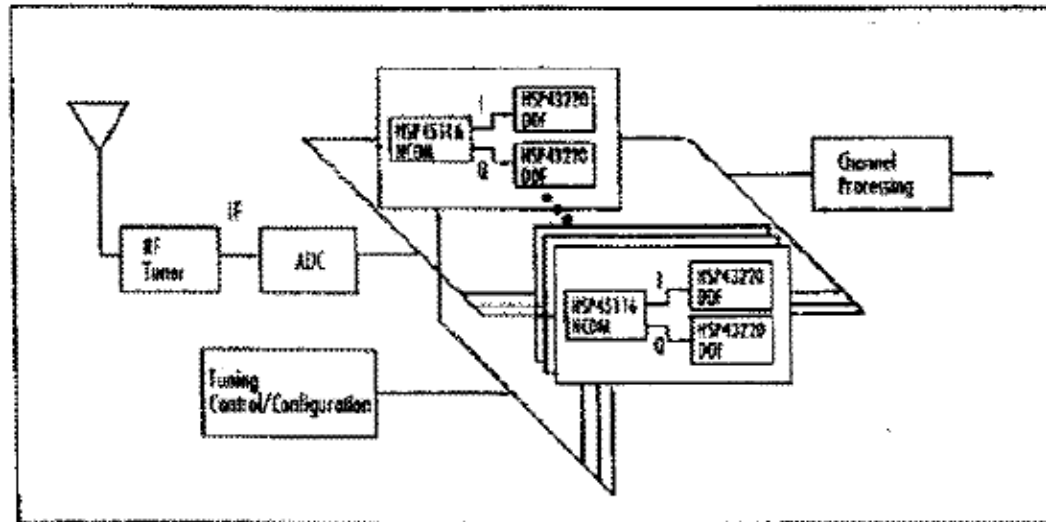
Harris teaches a single filter in lieu of multiple filters and a reason to combine.

Paper 36, at 1

bank of parallel filters in Harris Fig. 6. Notably, Harris does not disclose a memory storing a plurality of finite impulse response filters. Instead, Harris discloses a set

Ex. 2032 (Opris Decl.), ¶ 97

The experts agree that Harris teaches parallel filters



Ex. 1005 Fig. 6

storing a plurality of finite impulse response filters. Instead, Harris discloses a set of parallel finite impulse response filters that are implemented in hardware. As

Ex. 2032 (Opris Decl.), ¶ 97

53. Dr. Opris further characterizes Harris as “disclos[ing] a set of parallel finite impulse response filters that are implemented in hardware.” Opris Dec., ¶97. I agree. He then goes too far by stating that “Harris does not teach or suggest

Ex. 1061 (Holberg Reply Decl) ¶ 53

Petitioner contends in reply that Grumman teaches two different FIR functions. This is wrong

As Dr. Holberg explains, Grumman describes two, complete sets of filter coefficients, with each defining a different filter function, and a processing circuit that switches between these two different sets depending on whether the set is currently active or being updated (as indicated by the “swap” signal).

Paper 20, Reply at 7-8

WRONG!

45. Petitioner is incorrect. Rather than disclosing two separate filters, Grumman only discloses a single adaptive complex filter. Ex. 1008 7:32-35. The two sets of coefficients for the real portion make it adaptive, and similarly for the imaginary portion. But the real and the imaginary portions in Grumman are working simultaneously and in parallel. Together they form a single finite impulse response filter—not two separate finite impulse response filters as alleged by Petitioner.

Grumman teaches only a single FIR Filter

United States Patent [19]

Wedgwood et al.

US005381357A

[11] Patent Number: 5,381,357

[45] Date of Patent: Jan. 10, 1995

[54] COMPLEX ADAPTIVE FIR FILTER

[75] Inventors: Janet E. Wedgwood, Bethpage; John F. Petrosic, New Hyde Park, both of N.Y.

[73] Assignee: Grumman Corporation, Bethpage, N.Y.

[21] Appl. No.: 68,932

[22] Filed: May 28, 1993

[51] Int. Cl.⁵ G06F 15/31

[52] U.S. Cl. 364/724.16; 364/724.19

[58] Field of Search 364/724.16, 724.19, 364/724.13

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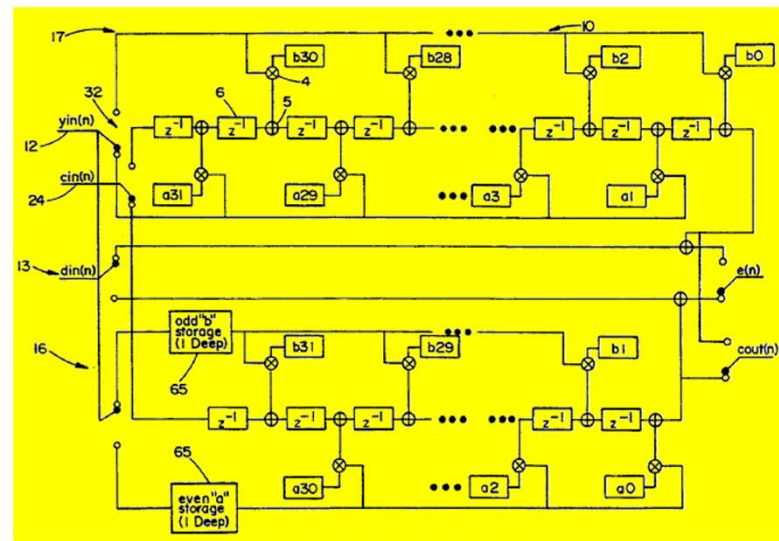
Primary Examiner—David H. Malzahn
Attorney, Agent, or Firm—Scully, Scott, Murphy & Presser

[57] ABSTRACT

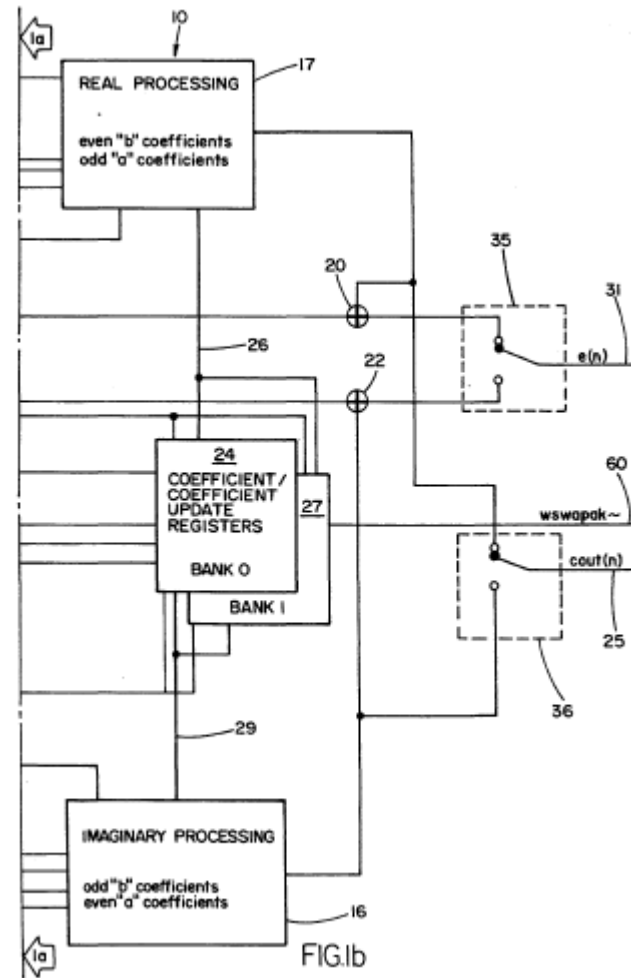
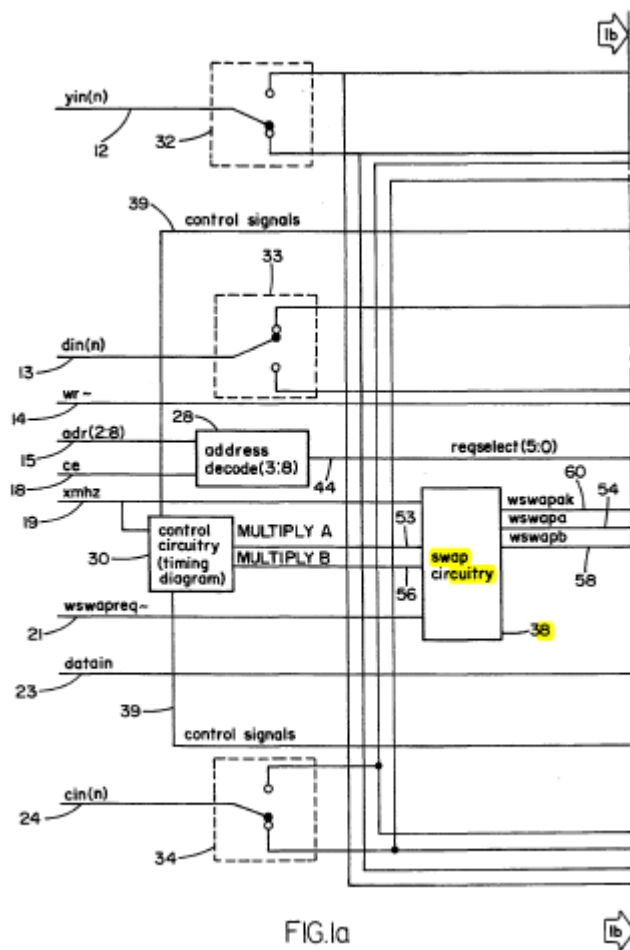
A complex adaptive Finite-Impulse-Response filter for processing complex digital data having real and imagi-

nary data portions that includes a first data path for receiving and processing the real data portion of the complex input and a second data path for receiving and processing the imaginary data portion. Each first and second data path includes a corresponding plurality of adaptive weight circuits and accumulator circuits to perform respectively, multiplications of input data with a set of updatable coefficient data and accumulations of the multiplication results obtained. Two of multiplication results are obtained for each data path and a subset from each are accumulated to form a real output portion and imaginary output portion for the filter. A time delay circuit is provided to allow for proper time multiplexing of the imaginary output portion. The plurality of adaptive weight circuits have associated therewith first and secondary memory storage banks for storing the current coefficient data values. Alternate first and second memory storage banks are provided to receive updated coefficient data for use by the adaptive weight circuits at the request of the host processor. While the coefficient data stored in the first and second memory storage circuits are being used by the adaptive weight circuits for processing thereof, the coefficient data values may be updated in the first alternate and second alternate memory storage banks and vice versa.

13 Claims, 17 Drawing Sheets



Grumman teaches only a single FIR function for a single format



Grumman teaches only a single FIR function for a single format

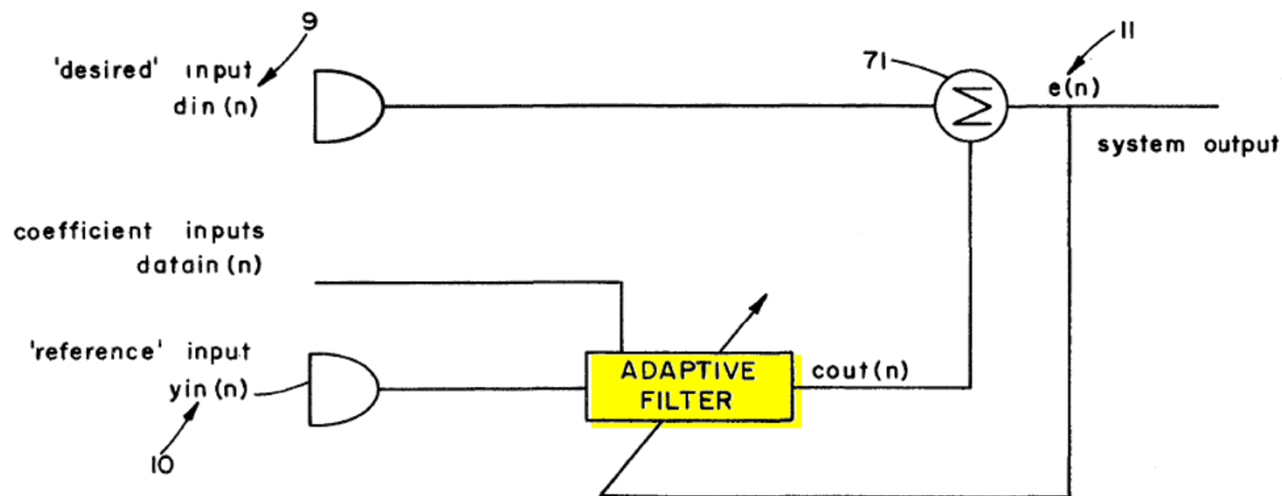


FIG.3

Grumman teaches only a single FIR function for a single format

9. In Ex. 2038 at 12:4-23 Dr. Holberg agrees that Grumman is a single FIR filter and at 5:13-19, Dr. Holberg testified that Ex. 1008 Grumman:

Q. That would be a problem. Take a look at Exhibit 1008 which is Grumman. Grumman doesn't teach television RF signals either, right?

A. That is correct.

Q. And so Grumman doesn't teach more than one television format signal, right?

A. That is correct.

This testimony is relevant to Petitioner's argument in Reply at 7-10 and 11-12 that Grumman teaches an single filter in lieu of multiple filters and provides a reason to combine.

Grumman teaches only a single FIR function for a single format

10. In Ex. 2038 at 15:16-16:4, Dr. Holberg testified that Ex. 1008 Grumman coefficients are for the same formatted signal:

Q. I think I got it. It's a single signal but the underlying information might be varying?

A. Yeah. I mean, it's -- if you look at figure 4a, it's showing what Y_n looks like. I mean, it's -- it's -- that's the arrangement of the Y_n values over time, and -- but as you can see the way the diagram shows, at any given point in time, Y_n can be a one or a zero and that's just whatever is coming from is determining that.

Q. Yeah. So that's the -- the information, I would say, on the signal maybe changing?

A. Yeah, I believe that's a fair way to say it.



Q. And the characteristics, the underlying structure of the signal is going to be just what it is?

A. Right.

This testimony is relevant to Petitioner's argument that in Reply at 7-10 and 11-12 that Grumman teaches two sets of filter coefficients, one for each format, and provides a reason to combine.

Critical structural claim elements of Claim 11 are missing from Petitioner's alleged combination

11. The receiver of claim 10, wherein said plurality of finite impulse response filters are stored in a memory, and said signal processor indexes said memory to retrieve one of said plurality of finite impulse response filters.

- Thomson – No FIR filter 
- Harris – No signal processor retrieving from memory one FIR Filter from a plurality of FIR Filters
 - No memory storing a plurality of FIR Filters 
- Grumman – No memory with a plurality of FIR filters
 - The separate memory locations each include coefficients for a single FIR function for a single format
- None of the references in the combination – a signal processor processing the incoming RF in accordance with its format by retrieving from memory the FIR filter that corresponds to the format of the incoming data

Silicon Labs' obviousness combination shifts in its Reply

Petitioner relies on Grumman for its dual memory bank architecture, each bank storing filter coefficients for a separate FIR filter function. A POSITA would have been motivated to use this programmable memory architecture to implement the adaptive filter in Thomson because it would have resulted in minimal interruption of the television signal during a context switch from one television format to another (e.g. analog to digital). Harris is relied upon for its general teaching of microprocessor programmable FIR filters for a channelized receiver. This is an

Paper 20, Reply at 11-12

Now pointing to only Thomson and Grumman's "dual memory bank architecture" highlights that the combination fails to teach all structural elements of the claim

Silicon Labs' obviousness combination shifts in its Reply

The Thomson–Grumman combination fails to meet claim 11

11. The receiver of claim 10, wherein said plurality of finite impulse response filters are stored in a memory, and said signal processor indexes said memory to retrieve one of said plurality of finite impulse response filters.

- None of the references in the combination – a memory storing a plurality of FIR filters, each Fir filter having a different function, the function corresponding to the one of a plurality of RF signal formats
- None of the references in the combination – a signal processor processing the incoming RF in accordance with its format by retrieving from memory the FIR filter that corresponds to the format of the incoming data

Vague “skill in the art” cannot bridge the gaps



“the level of skill in the art is a prism or lens through which a judge or jury views the prior art and the claimed invention. This reference point prevents these deciders from using their own insight or, worse yet, hindsight, to gauge obviousness. Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment. Skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies the primary guarantee of objectivity in the process”

Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1324 (Fed. Cir. 1999).


Vague “skill in the art” cannot bridge the gaps



Considering an “important structural limitation,” the Federal Circuit held that “[t]he determination of patentability of claims with this limitation therefore requires a core factual finding, and as such, requires more than a conclusory statement from either [Petitioner] or the Board.”

K/S Himpp v. Hear-Wear Techs., LLC, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014)

The obviousness ground fails for 3 independent reasons, each sufficient to deny the Petition

- **Petitioner's combination of prior art is missing key structural claim elements, so there can be no prima facie case of obviousness** 
- **Petitioner's only alleged reason/motivation to combine comes from hindsight, not the actual references**
- **Petitioner has advanced no evidence on a "reasonable expectation of success"**

No motivation to combine the multiple filters of Thomson with the single FIR filter of Grumman



“It was [Petitioner’s] burden to demonstrate both ‘**that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention**, and that the skilled artisan would have had a reasonable expectation of success in doing so.’”

Intelligent Bio-System v. Illumina, Case No. 15-1693, 2016 WL 2620512, at *6, (Fed. Cir. May 9, 2016)

The single motivation asserted by Petitioner comes from hindsight, not the actual references

to do the required calculations.” (*Id.* at 2:68–3:2). In short, storing FIR filter coefficients in memory as does Grumman, yields a plurality of FIR filters that that minimize delay when switching between different FIR filters. (Ex. 1009, ¶ 64).

Paper 1, Petition at 46

storing filter coefficients for a separate FIR filter function. A POSITA would have been motivated to use this programmable memory architecture to implement the adaptive filter in Thomson because it would have resulted in minimal interruption of the television signal during a context switch from one television format to another (e.g. analog to digital). Harris is relied upon for its general teaching of

Paper 20, Reply at 11

The single motivation asserted by Petitioner comes from hindsight, not the actual references

2. In Ex. 2038 at 35:18-36:1, Dr. Holberg testified about Ex. 1004 Thomson:

Q. Thompson does not teach that there would be an interruption of the television signal during a contact switch from one television format to another?

A. Thompson is silent on whether there would be or would not be, it doesn't discuss that.

Q. It doesn't have that particular teaching?

A. Yeah, it doesn't discuss whether there's interruption or not when you change one context to the other as you say.

This testimony is relevant to Petitioner's argument in Reply at 7 and 11-12 that

Thomson teaches an adaptive filter and provides a reason to combine.

The single motivation asserted by Petitioner comes from hindsight, not the actual references

3. In Ex. 2038 at 6:3-14, Dr. Holberg testified about Ex. 1004 Thomson:

Q. Regarding the receiver of Thompson, do you believe that there was a problem with that receiver relating to a delay from switching from one television format to another?

A. I don't know.

Q. You don't have an opinion one way or the other?

A. No.



Q. Thompson doesn't teach specifically that there was a problem between switching from one format to another, right?

A. I don't recall that.

This testimony is relevant to Petitioner's argument in Reply at 7 and 11-12 that

Thomson teaches an adaptive filter and provides a reason to combine.

The obviousness ground fails for 3 independent reasons, each sufficient to deny the Petition

- **Petitioner's combination of prior art is missing key structural claim elements, so there can be no prima facie case of obviousness** 
- **Petitioner's only alleged reason/motivation to combine comes from hindsight, not the actual references** 
- **Petitioner has advanced no evidence on a "reasonable expectation of success"**

Petitioner presents NO EVIDENCE on a reasonable expectation of success






“It was [Petitioner’s] burden to demonstrate both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and **that the skilled artisan would have had a reasonable expectation of success in doing so.**’”

Intelligent Bio-System v. Illumina, Case No. 15-1693, 2016 WL 2620512, at *6, (Fed. Cir. May 9, 2016)

Grumman's single FIR filter in multiple memory banks would not successfully reach claim 11

101. Therefore, Grumman is fundamentally mismatched with the combination of Thomson and Harris. The techniques of Grumman could not be applied to the filters disclosed in Harris to enable entire filters to be stored in memory. The stated goal of Grumman, to error-correct the real and imaginary components of a single finite impulse response filter by storing coefficients in memory, would not provide a reason to store a plurality of *entire* finite impulse response filters in memory, nor would it naturally apply to a system like Harris with multiple parallel and distinct filters. This is particularly true because the

The obviousness ground fails for 3 independent reasons, each sufficient to deny the Petition

- **Petitioner's combination of prior art is missing key structural claim elements, so there can be no prima facie case of obviousness** 
- **Petitioner's only alleged reason/motivation to combine comes from hindsight, not the actual references** 
- **Petitioner has advanced no evidence on a "reasonable expectation of success"** 

All grounds based on Zenith fail

(2) claims 13, 15, and 20 as unpatentable under 35 U.S.C. § 103(a) over Thomson, Harris, and Zenith; and
(3) claim 14 as unpatentable under 35 U.S.C. § 103(a) over Thomson, Harris, Zenith, and Birleson;

'585, -00615 Institution Decision

(3) claims 26 and 28 as unpatentable under 35 U.S.C. § 103(a) over Thomson, Harris, and Zenith;
(4) claim 27 as unpatentable under 35 U.S.C. § 103(a) over Thomson, Harris, Zenith, and Birleson; and

'792, -00626 Institution Decision

The Zenith combinations fail because they are missing two key structural elements

- **Do not teach “detecting carrier signals”**
- **Do not teach a select signal “indicative of a format”**

'585 Claims 15 and 20: “detecting carrier signals”

15. The receiver of claim 13, wherein said standard selection circuit generates said select signal by detecting carrier signals identifying one of said formats of said input RF signals.

20. The method of claim 19, further comprising: generating said select signal by detecting carrier signals in said input RF signal identifying said format of said input RF signal.

'792 Claim 28: “detecting carrier signals”

28. The television receiver of claim 26, wherein the format/standard selection circuit generates the select signal by detecting carrier signals identifying one of the formats of the input RF signals.

Silicon Labs' new arguments are untimely and should be excluded



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SILICON LABORATORIES, INC.
Petitioner

v.

CRESTA TECHNOLOGY CORPORATION
Patent Owner

Case IPR Unassigned
Patent 7,075,585

Title: Broadband Receiver Having a Multistandard

PETITION FOR INTER PARTES REVIEW OF
U.S. PATENT NO. 7,075,585
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104

Mail Stop PATENT BOARD
U.S. Patent Trial & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

"Carrier Signal"
claim construction

Thomson + Harris
+ Zenith + Balaban

Silicon Labs' construction for “carrier signals” is not supported by the patent

As Dr. Holberg explains, the BRI of “carrier signals” is “[a] wave having at least one characteristic that may be varied from a known reference value by modulation.” Holberg Rep., ¶33 (quoting IEEE Dictionary). The IEEE Dictionary

Paper 20 at 5

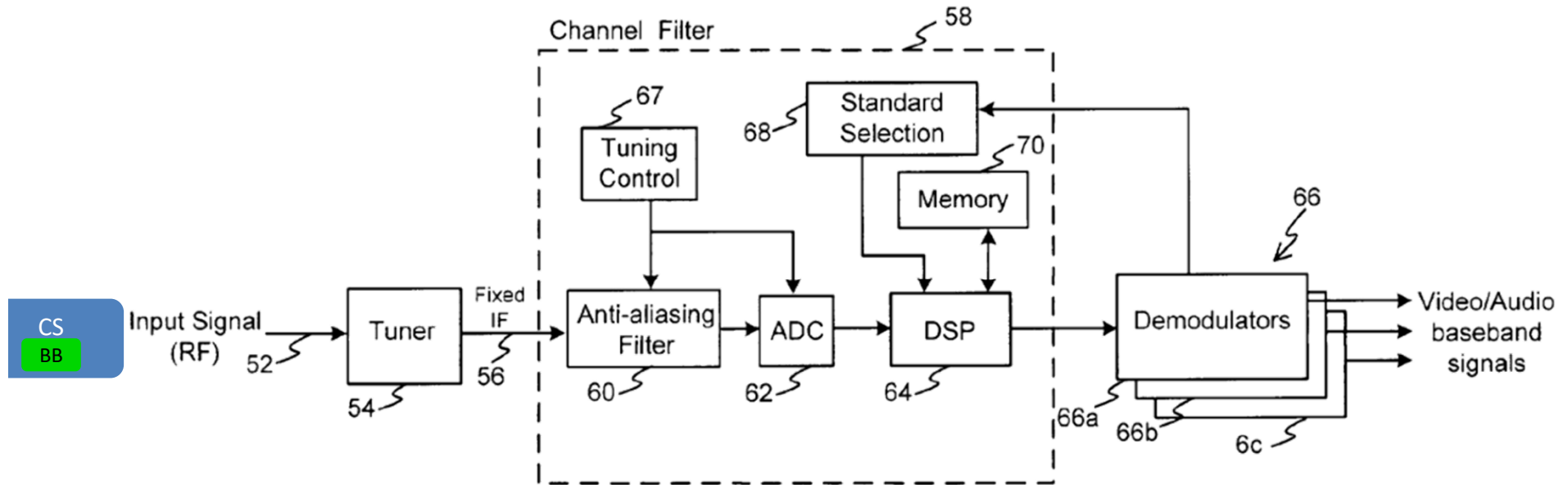
- **Any** wave
- **Any** characteristic
- Varied from **any** known reference
- By **any** type of modulation

“Carrier signals” as used in the patent is not as broad as Silicon Labs suggests

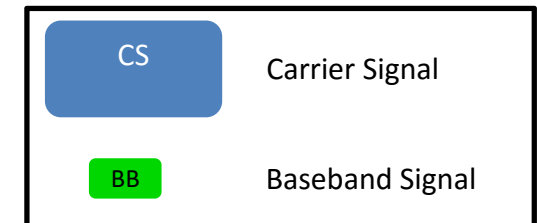
15. The receiver of claim 13, wherein said standard selection circuit generates said select signal by detecting carrier signals identifying one of said formats of said input RF signals.

- **Limited** to RF
- **Limited** to signals input to a television receiver
- **Limited** to modulation that will be removed by a plurality of TV demodulators

Carrier signal detection in the specification



Standard selection circuit 68 can be implemented in one of many ways. The selection of the correct standard can be made manually by the user of the television system, such as by activating a switch, or the selection can be made automatically by providing an auto-detection capability in TV receiver 50. In the present embodiment, auto-detection is implemented by detecting in the baseband signals the presence or absence of carrier signals which uniquely identify the television standards. For example, analog television signals can be identified by the analog visual carrier signal while digital television signals can be identified by the pilot carrier. Each demodulator in bank 66 generates a signal which is fed back to standard selection circuit 68 indicating which television standard the input signal is encoded. In other embodiments, other means for selecting between the different standards can be used.



Input RF

Dr. Opris did not “try to distance himself” from the specification. He explained what it means.

standards.” Ex. 1001 at 5:12–18. During his deposition, Patent Owner’s expert tried to distance himself from the ’585 patent’s own description of the preferred embodiment to justify his opinion. Ex. 1060 at 26:25–27:24. Not only did he

Paper 20, Reply at 14

FALSE

6 Q. And it's described in column 5 as, quote, "auto
7 detection is implemented by detecting in the baseband
8 signals the presence or absence of carrier signals";
9 correct?

10 MR. HABER: Objection. Form.

11 THE WITNESS: That's what the reading of the
12 wording in column 5 is. And, again, my understanding,
13 and any person will understand the same, then the auto
14 detection circuit works by detection (sic) the carrier
15 signals that are uniquely identifying the television
16 standard.

Ex. 1060 at 27:6-16

Dr. Opris did not “try to distance himself” from the specification. He explained what it means.

standards.” Ex. 1001 at 5:12–18. During his deposition, Patent Owner’s expert tried to distance himself from the ’585 patent’s own description of the preferred embodiment to justify his opinion. Ex. 1060 at 26:25–27:24. Not only

FALSE

Paper 20, Reply at 14

2 Q. Am I correct that in column 5, beginning at
3 line 12, the '585 patent says "auto detection is
4 implemented by detecting in the baseband signals the
5 presence or absence of carrier signals which uniquely
6 identify the television standards"?

7 MR. HABER: Objection. Argumentative, form.

8 THE WITNESS: That's what the patent '585 says
9 in Section 5, and what it means is that is auto
10 detection -- auto detect the television standard by
11 detecting the presence or absence of carrier signals
12 which uniquely identify that particular standard.

Ex. 1060 at 28:2-12

Cresta Ex 2040-47
Silicon v Cresta
IPR2015-00626

A demodulator outputs a baseband signal, which does not include transmission modulation

Inc. v. Cresta Tech. Corp., IPR2014-00728, Paper 53 at 12 (PTAB Oct. 21, 2015)
 (“[W]e adopt a construction in which each ‘video and audio baseband signal’ may correspond to a single signal that encodes both video and audio information without transmission modulation.”) (emphasis added). Similarly, Silicon Lab’s

A demodulator outputs a baseband signal, which does not include transmission modulation

Q. What is a carrier signal?

A. It would be, by way of example, a local radio station is KLBJ, 590 AM band, and it's transmitted on a carrier signal of 590 kilohertz, I believe. So that is a – the carrier is the signal that is used to carry the modulation.

Q. So the carrier signal is part of the transmission modulation?

...

A. Yes.

Q. ... The output of the digital demodulator, is that also a baseband signal?

...

A. Yes.

Q. ... And so the output of the analog demodulator and the digital demodulator, they do not include transmission modulation. Right?

A. Correct.

Ex. 2033 at 50:9-51:1. This interpretation is consistent with the Board's construction of the term "baseband signal" in IPR2014-00728. *See Silicon Labs.*,

The experts agree that Zenith's demodulator outputs a baseband signal

52:14-21 (“Q. So the RFN is a received analog modulated signal, it goes through the system, it goes through the demodulator, the information is demodulated, there is some underlying television content information in the signal, and *the sync debt [SYNC DET 20] operates on that demodulated underlying analog information?*”)

A. *Yes.*”) (emphasis added).

Paper 16, POR at 42 (Citing Holberg Deposition)

93. First, Zenith’ SYNC DET 20 does not detect any carrier signal. The SYNC DET is coupled to the output of the analog demodulator, which outputs baseband signals (*i.e.*, CVBS, shown in Thomson’s Fig. 1). A CVBS signal does not contain the carrier; in fact, removing the carrier is the entire purpose of the demodulator. Because the SYNC DET does not detect carrier signals, the limitation is not met.

Ex. 2032 (Opris Deposition) ¶ 93

Zenith does not detect carrier signals

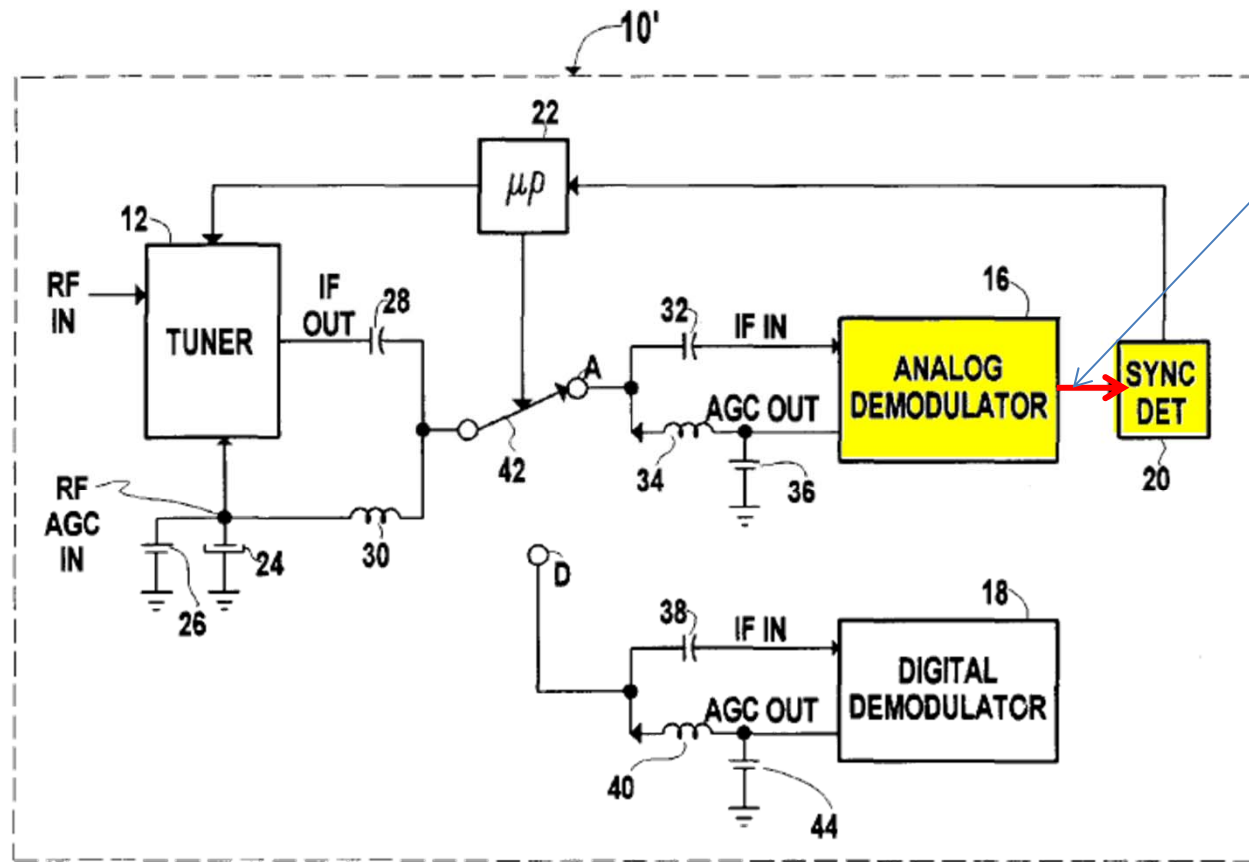
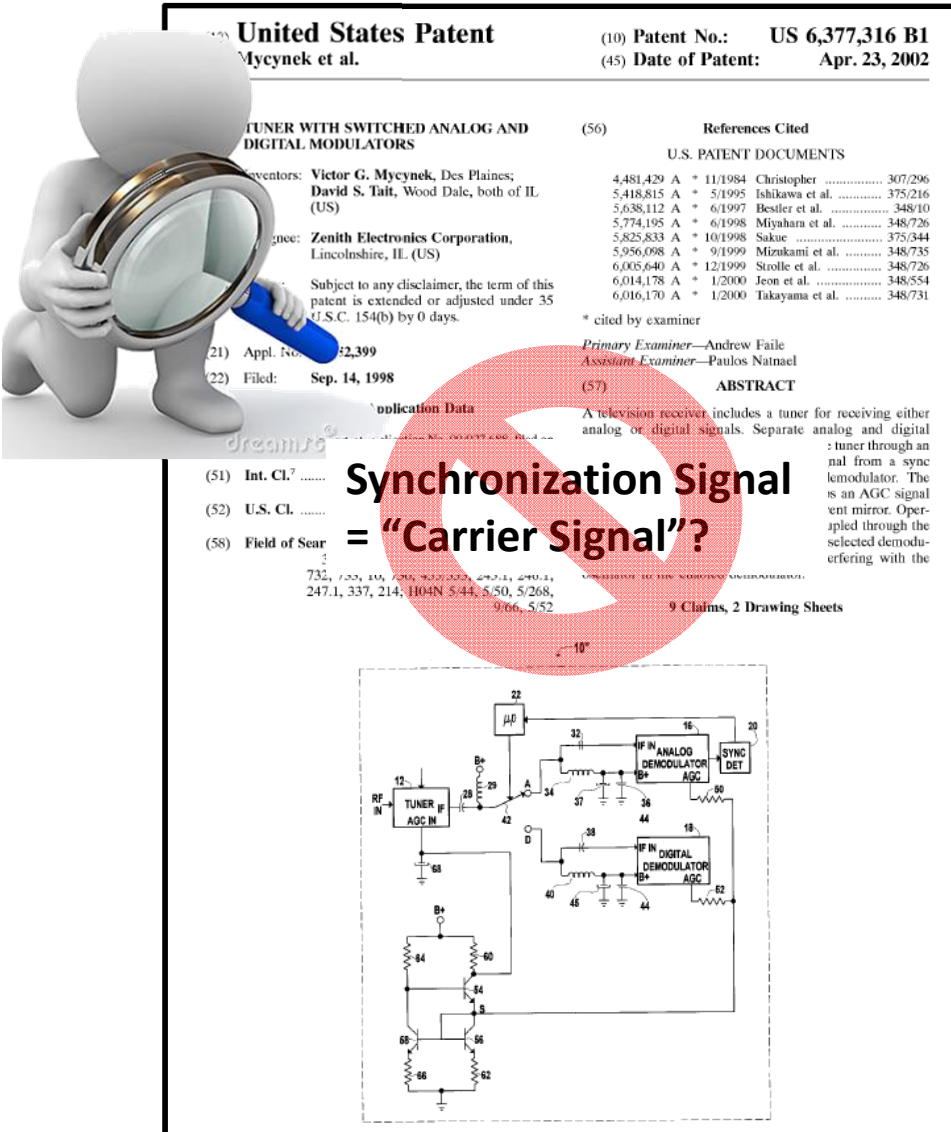


FIG. 2

Not a
Carrier
Signal

Zenith does not describe “sync det” as detecting carrier signals, so Balaban untimely added to mix



I know what to do!
Let's just add a new
reference, **Balaban!**

The Zenith-based combinations fail because they are missing two key structural elements

- Do not teach “detecting carrier signals”
- Do not teach a select signal “indicative of a format”



‘585 Claim 13 (and dependents): “indicative of a format of said input RF signal”

13. The receiver of claim 10, wherein said channel filter further comprises a standard selection circuit coupled to said signal processor, said standard selection circuit generating a select signal **indicative of a format of said input RF signal** and said signal processor selecting a finite impulse response filter in response to said select signal.

**“comprises information about the
format of said input RF signal”**

‘792 Claim 26 (and dependents): “indicative of a format of said input RF signal”

26. The television receiver of claim 1, further comprising a format/standard selection circuit coupled to the signal processor, the format/standard selection circuit generating a **select signal indicative of a format of the input RF signal** and the signal processor selecting a finite impulse response filter in response to the select signal.

**“comprises information about the
format of said input RF signal”**

Claim 13 (and dependents):
“indicative of a format of said input RF signal”
“comprises information about the format of said input RF signal”

Standard selection circuit 68 can be implemented in one of many ways. The selection of the correct standard can be made manually by the user of the television system, such as by activating a switch, or the selection can be made automatically by providing an auto-detection capability in TV receiver 50. In the present embodiment, auto-detection is implemented by detecting in the baseband signals the presence or absence of carrier signals which uniquely identify the television standards. For example, analog television signals can be identified by the analog visual carrier signal while digital television signals can be identified by the pilot carrier. Each demodulator in bank 66 generates a signal which is fed back to standard selection circuit 68 indicating which television standard the input signal is encoded. In other embodiments, other means for selecting between the different standards can be used.

Patent Owner's extrinsic evidence is consistent with the intrinsic evidence

“comprises information about the format of said input RF signal”

indicative {-dik'ə-} *a.* **1** serving as a sign or indication (of); suggestive (of). **2** (*Gram.*) (of a mood of verbs) expressing fact. ~*n.*
1 the indicative mood. **2** a verb in this mood. **indicatively** *adv.*

Silicon Labs improperly uses another word in this dictionary to contradict the intrinsic record and claim language

Silicon Labs' extrinsic evidence contradicts the plain claim language

(of).” *Id.* at 8 (quoting Ex. 2034). The dictionary also defines “indication” as “clue, evidence, . . . , hint, inkling, intimation, manifestation, . . . , suggestion, symbol, token .” Ex. 2034 at 2. Ironically, “information about” is not among these

**Silicon Labs improperly uses another word in this dictionary to
contradict the intrinsic record and claim language**

Silicon Labs' construction contradicts the plain claim language

Silicon Labs' Proposed construction is plainly wrong:

Under its construction, in a claim requiring a signal “indicative of a format of the format of said input RF,” the signal may not be actually indicative of the format.

1. In Ex. 2038 at 27:22-28:9, Dr. Holberg testified:

Q. So I understand. Under your claim construction, select signal may or may not actually be indicative of the format, right?

A. I say the select signal would nonetheless provide an indication of the format, i.e., a clue, evidence or hint that may or may not be -- that may or may not be indicative of the actual format.

Q. Okay. And so I'm focusing on that last part here.

A. Yeah.

Q. The select signal may or may not be actually indicative of the format, right?

A. Right.

This testimony is relevant to Petitioner's argument in Reply at 1-4 as to the scope of Petitioner's claim construction.

Zenith does not teach a select signal “indicative of a format of the input RF”

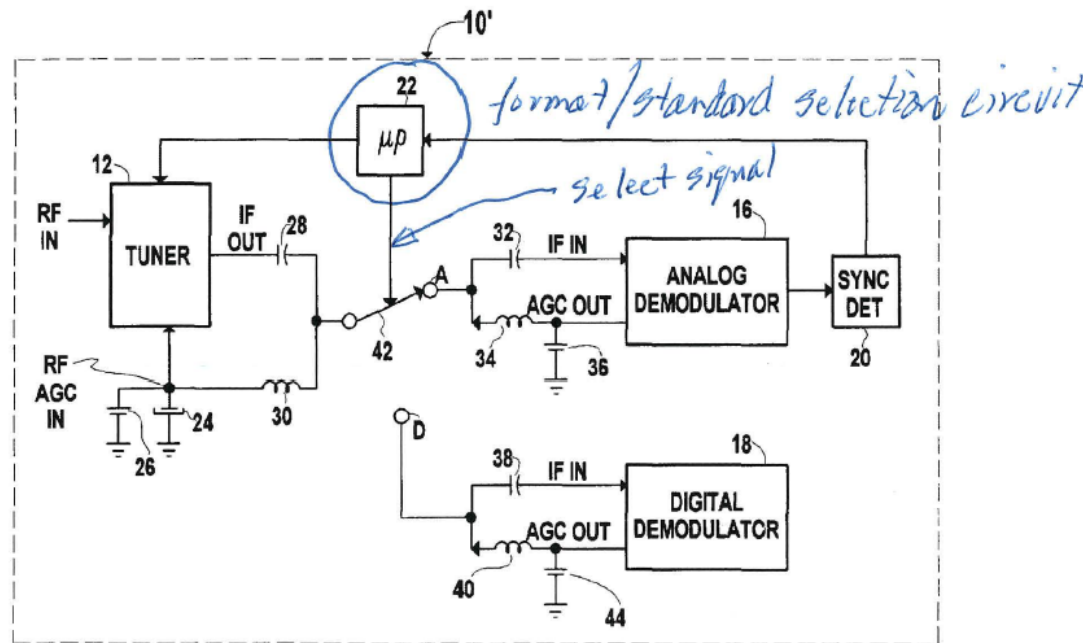


FIG. 2

Silicon Lab's expert identified the output of Zenith's μP as the "select signal." Ex. 2033 at 37:24-38:6 ("[C]an you identify for me the select signal, 2.2, in Figure 2? A. That would be the output of the microprocessor. Q. Can you just identify that on the figure? And what did you identify? A. The output of the microprocessor block 22.").

Zenith provides the state of only the analog demodulator, nothing about input RF

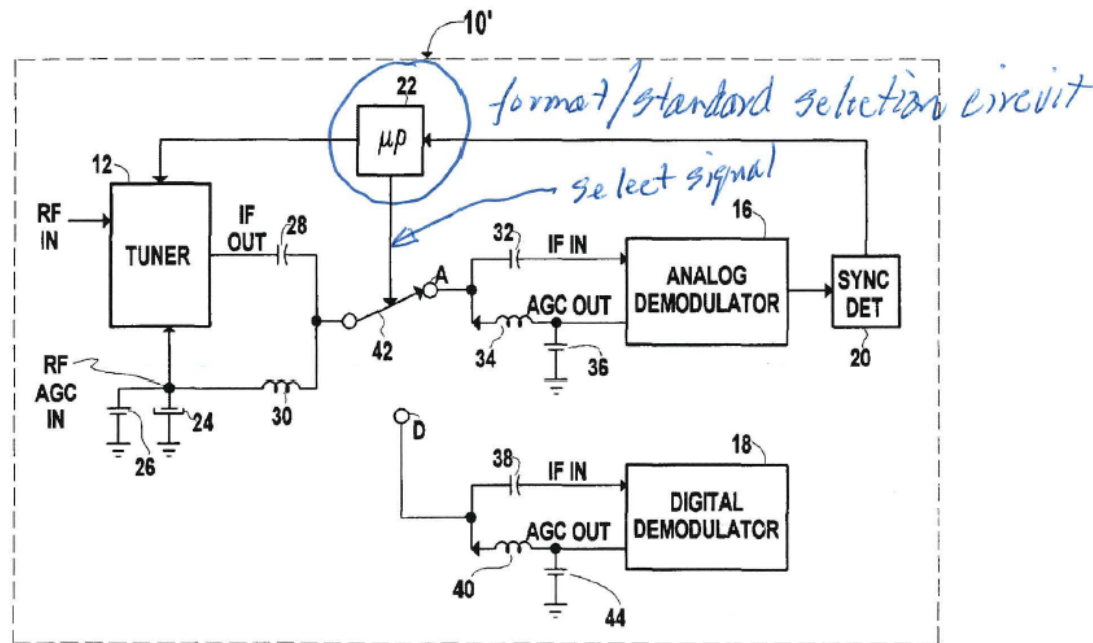


FIG. 2

Q. And in figure two, SYNC DET 20 will detect the presence of the analog synchronization signal, right?

A. It's the sync detector which is detecting the sync signal from the analog demodulator, yes.

Zenith provides the state of only the analog demodulator, nothing about input RF

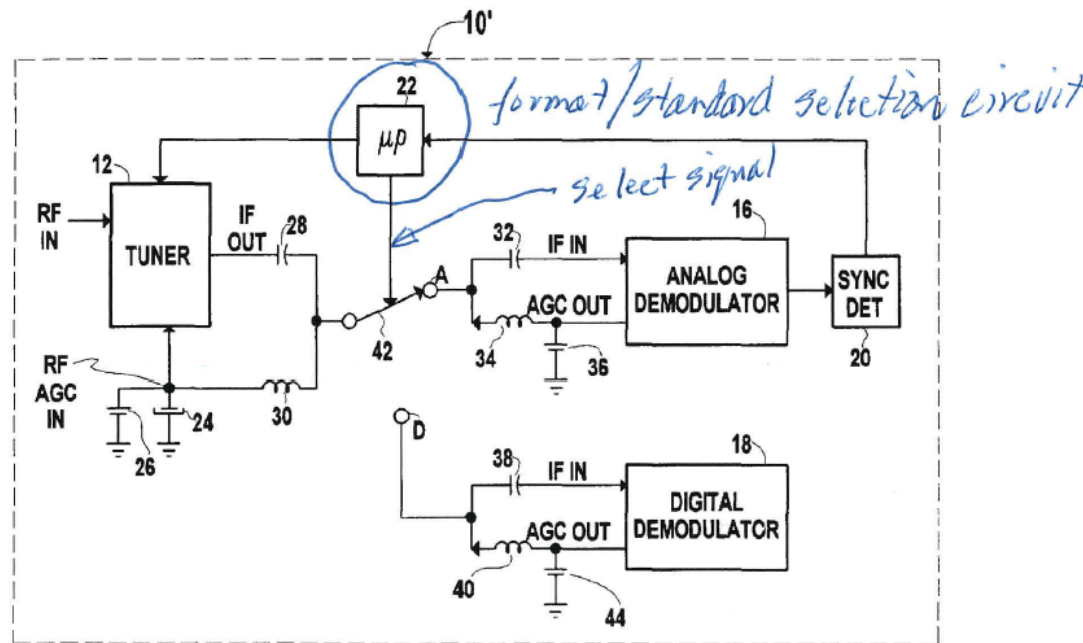


FIG. 2

Q. Now, if switch 42 was connected to the D terminal, and we did look at what the sync detector was detecting, the only thing it would detect would be absence of the analog demodulator signal, right?

A. Yes. If switch 42 were connected to Terminal D, the sync detector would not detect any analog sync signals.

Zenith does not provide any information about the digital demodulator or input RF

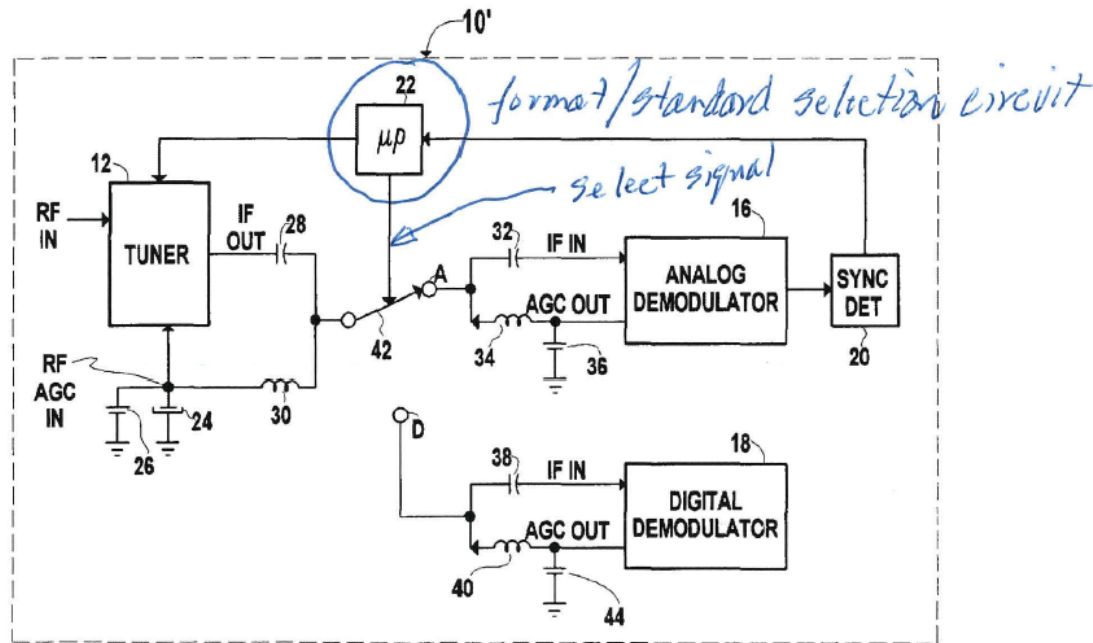


FIG. 2

Q. And SYNC DET 20 is not connected to the digital demodulator 18, right?

A. No, it is not.

Q. So it doesn't detect the output of digital demodulator 18, correct?

A. Correct.

Zenith does not provide any information about the digital demodulator or input RF

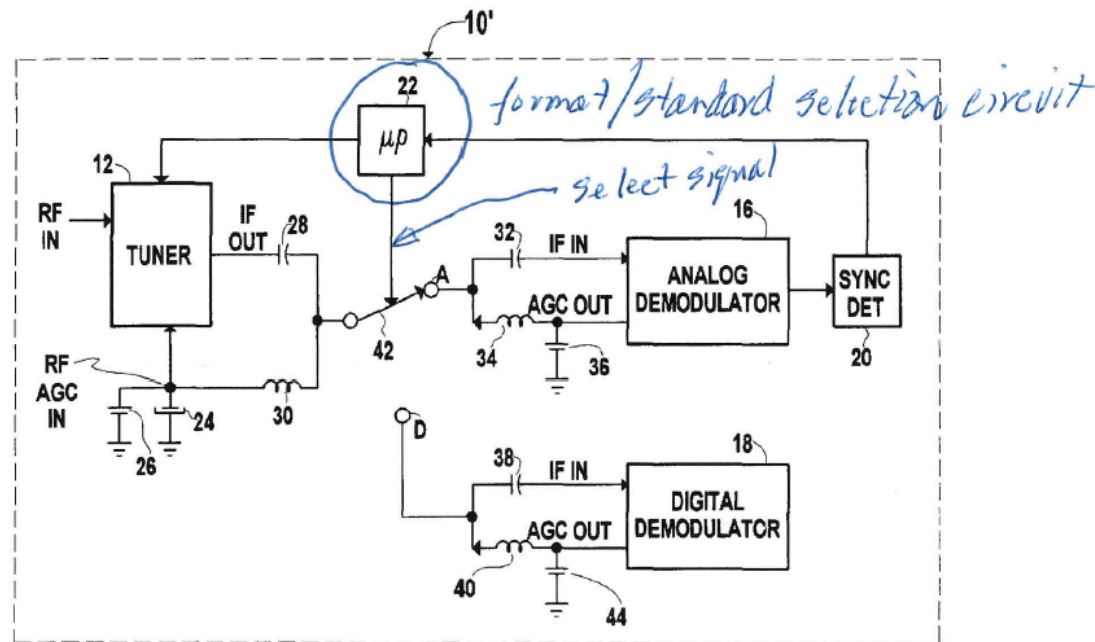


FIG. 2

Q. Now if switch 42 was instead connected to the D pole, sync detector 20 does not detect the presence of a digital demodulator signal, right?

A. That is correct.

The Zenith combinations fail because they are missing two key structural elements

- Do not teach “detecting carrier signals”
- Do not teach a select signal “indicative of a format”



Silicon Labs' new arguments are untimely and should be excluded



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SILICON LABORATORIES, INC.
Petitioner

v.

CRESTA TECHNOLOGY CORPORATION
Patent Owner

Case IPR Unassigned
Patent 7,075,585

Title: Broadband Receiver Having a Multistandard

PETITION FOR INTER PARTES REVIEW OF
U.S. PATENT NO. 7,075,585
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104

Mail Stop PATENT BOARD
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Alexandria, VA 22313-1450

"Carrier Signal"
claim construction

Thomson + Harris
+ Zenith + Balaban

Silicon Labs' new arguments are untimely and should be excluded



“Unlike district court litigation —where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material —the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute.”

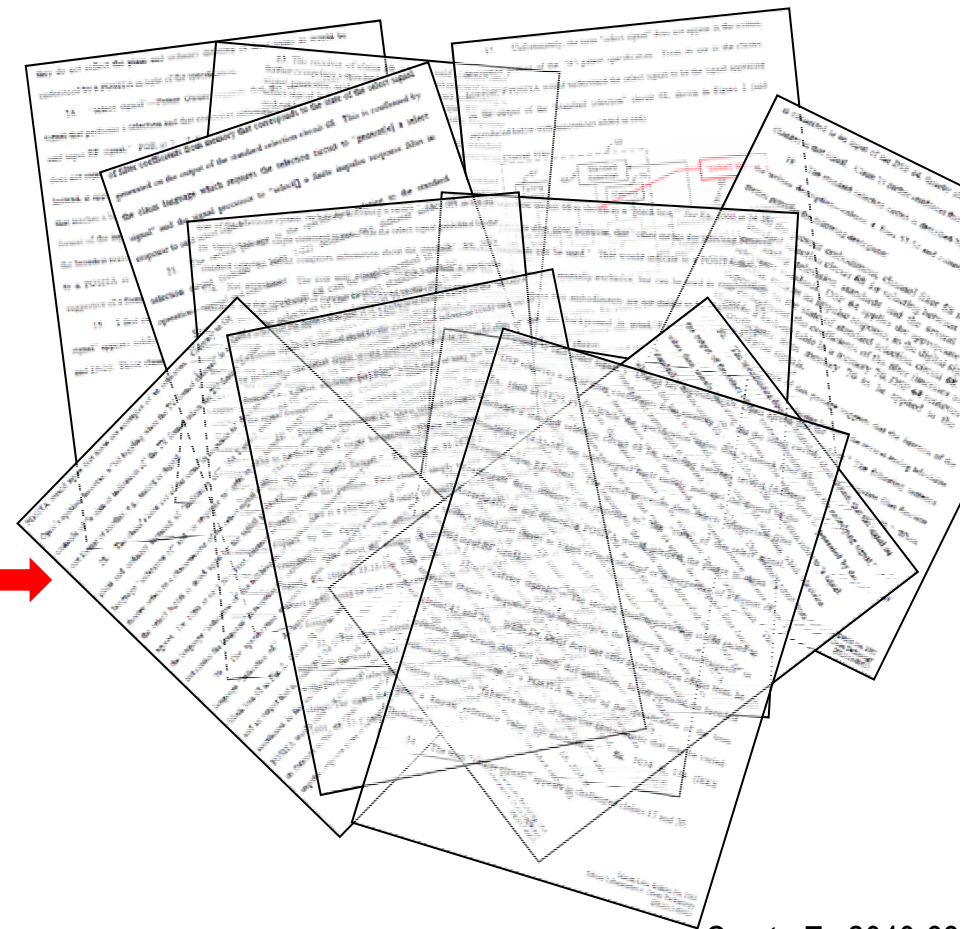
Intelligent Bio-System v. Illumina, Case No. 15-1693, 2016 WL 2620512, slip op. at 16, (Fed. Cir. May 9, 2016)

Silicon Labs' improper incorporation by reference

37 CFR 42.6(a)(3) – “Arguments must not be incorporated by reference from one document into another document.”

Patent Owner’s proposed construction suffers from two fatal flaws. The first is that it misconstrues “indicative.” Patent Owner concedes that the plain and ordinary meaning of “indicative” is “serving as a sign or indication (of); suggestive (of).” *Id.* at 8 (quoting Ex. 2034). The dictionary also defines “indication” as “clue, evidence, . . . , hint, inkling, intimation, manifestation, . . . , suggestion, symbol, token.” Ex. 2034 at 2. Ironically, “information about” is not among these different forms. Patent Owner makes that up out of whole cloth. POR at 7. Thus, the plain and ordinary meaning of this phrase, based on Patent Owner’s own extrinsic evidence, is “a select signal that serves as a sign or indication of or is suggestive of a format of said input RF signal.” Holberg Rep., ¶¶14–32.

Paper 20, at 2



New evidence, arguments, and unexplained declaration paragraphs should be excluded

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B.	Cresta Moves to Exclude paragraphs 33-44 of Holberg's Reply Declaration (Ex. 1061) as not timely presented and irrelevant because it has never been discussed in a substantive paper	4
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