

# Patent Points

NOW STARTING MY 25<sup>TH</sup> YEAR...

## Patent Issued in only 6 Months !

We recently had a patent issue in less than 6 months from its filing date. Patents typically take 2-3 years to issue. Even more astonishing is that this was a very complex patent in the Digital Signal Processing (DSP) area. Symbols are converted to the frequency domain, demodulated, and error-corrected, then re-encoded and compared to stored symbols before processing to generate a decision feedback channel estimate that is conjugated and multiplied by a prior estimate to generate a new Sampling Frequency Offset (SFO) estimate to adjust compensation.

Patent # 10,135,660 was filed in June and issued in November of the same year (2018). This was an original filing, not based on any earlier filing. This patent was filed with formal drawings, a full set of 20 claims, and a listing of prior-art patents found in our pre-filing patent search. It has been my experience that such professional-looking applications with preliminary searches are more likely to get an early allowance.

Congratulations Inventors !

## Sell Your Patent ?

Thinking of selling your patent ? Consider some recent statistics on patent sales transactions for 2018.

Of the 400 or so patent portfolios for sale in 2018, the average asking price for a US patent was 176K\$, with a range from 16K\$ to 675K\$ per patent. Actual sales prices are less than asking prices, but the final sales data are often confidential.

What are the chances that the patent brokers can sell your patent ? Of the 14 largest patent brokerage firms, most sell only 10% of their patents for sale. Only 2 patent brokerage firms sold more than 20% of their listed patents.

Even patents that have been listed for sale for 3 years have only a 33% success rate.

Much like the late-night TV commercials offering to market your invention, but statistically almost never making money for the inventor, even the professional patent brokerages have a very low sales rate.

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## Changes Ahead ?

One factor limiting demand for patents is the recent Supreme Court *Alice* decision that limited software patents. The new PTO director is looking into a simplified patentability test that patent examiners would use. This new simplified test could clear up patentability issues making software patents more predictable and thus valuable.

A few US senators are holding closed-door meetings with large technology companies and patent experts to discuss ways to re-write the patent laws. It is possible that congress will amend the patent laws to overcome problems with the Supreme Court's *Alice* decision.



## Supreme On-Sale Changes?

The US Supreme court is currently considering a new law may have changed the on-sale bar. The on-sale bar prevents you from filing a patent when the underlying invention was sold more than one year before your patent's filing date. However, the sale does not have to be consummated. Even a mere offer to sell can trigger the so-called on-sale bar.

The underlying reason for the on-sale bar is that the government grants a monopoly on your invention for a limited time period of 20 years from your filing date. If you were to wait 5 years to file your patent, and you were selling the product during those 5 years, you would effectively have 25 years to profit off your invention. To prevent this extension, the government gives you only a one-year grace period to file your invention after you start commercially exploiting it.

All sorts of situations and questions about the on-sale bar arise. What if marketing is going to customers and offering to sell the invention without the inventor knowing ? That is still an offer

to sell and starts the one-year period. Was the marketing discussion really an offer to sell ? If a price was quoted, it probably was. Maybe even a price range or suggested price might count. Maybe not. Different judges could rule differently on the same set of facts for these close situations. What if the product has not yet been fabricated ? Probably not yet on-sale until the first products are manufactured, but even prototypes may be sufficient to trigger the start of the on-sale period. What if the product is being revised or improved or tweaked ? Very hard to tell when the judge would start the one-year period. Maybe the very first silicon or maybe the final version.

What if marketing used non-disclosure agreements when offering to sell the new invention ? In the past, these secret sales would count for the on-sale bar, but the new America Invents Act (ACA) patent law added the phrase "otherwise available to the public". Does this mean that only public sales count, not private or confidential sales ?

The Supreme court recently heard arguments about how this should apply to the on-sale bar. One argument is that a secret or confidential offer to sell would not trigger the on-sale bar, because these private sales are not "otherwise available to the public". However, others argued that allowing secret or private sales to not trigger the one-year on-sale-bar period would allow the inventor to extend his monopoly period. Some argued that all sales are inherently public, so the on-sale bar is triggered by all sales, both public sales and private sales. But others argued that some private sales would not trigger the on-sale bar.

There was discussion that the on-sale bar cannot apply to some early invention exploitation activities, such as obtaining venture funding. So talking to a venture capitalist or to a banker would not be on-sale. Of course, no public disclosure of the invention should be made, or that would trigger the one-year grace period for a publication or for public knowledge.

Inventors should be careful to file as early as possible so that regardless of how the courts decide these issues, the patent is filed well within a year of any questionable activity. Non-disclosure agreements should be used, but with the understanding that they may not provide 100% protection. Inventors must especially be careful about making public disclosure, such as for technical papers or marketing materials.



US010135660B1

(12) **United States Patent**  
**Zhu et al.**

(10) **Patent No.:** **US 10,135,660 B1**  
(45) **Date of Patent:** **Nov. 20, 2018**

(54) **SAMPLING FREQUENCY OFFSET TRACKING BASED ON DECISION FEEDBACK CHANNEL ESTIMATION**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) **U.S. Cl.**  
CPC .... **H04L 27/2655** (2013.01); **H04L 25/03057** (2013.01); **H04L 27/265** (2013.01)

(58) **Field of Classification Search**  
CPC ..... H04L 27/2655; H04L 25/03057; H04L 27/265  
See application file for complete search history.

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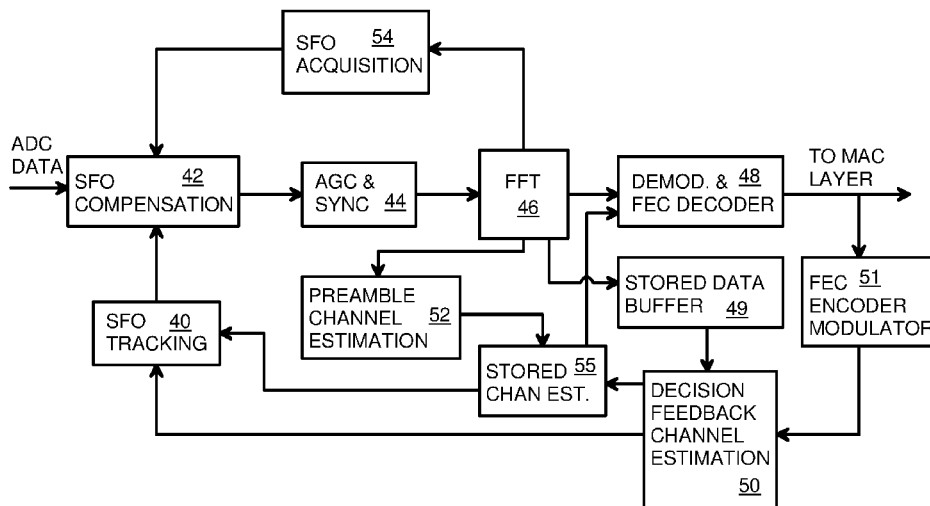
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(57) **ABSTRACT**

A Sampling Frequency Offset (SFO) tracking and estimation circuit performs SFO compensation on incoming data. A SFO acquisition module makes an initial coarse estimate using a Network Time Base (NTB) from the Media-Access-Controller (MAC) layer, or from the physical layer using adjacent synchronization symbols. A preamble channel estimator compares a frequency-domain preamble symbol to a reference symbol to generate a first channel estimate. As additional symbols are received, converted to the frequency domain, demodulated, and error corrected, the resulting data are re-error-encoded and compared to the same symbol stored before error correction and demodulation to generate a decision feedback channel estimate. The conjugate of the decision feedback channel estimate is multiplied by the last channel estimate to generate a new SFO estimate that is scaled by a filter constant and used to adjust SFO compensation. Each symbol generates a new estimate without using pilots.

**20 Claims, 9 Drawing Sheets**



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## 532 Patents Issued

After 24 years of writing patents as a full-time Patent Agent, 532 applications that I've written have now issued as patents. Congratulations inventors!

You can view the 532 issued patents I've written at:

[www.gpatent.com](http://www.gpatent.com)

## Rates Set for 2019

My hourly rate for 2019 will be \$280 per hour, billed in quarter-hour increments. Fixed-price quotes are available for patent applications to facilitate budgeting and avoid expensive surprises.

Prosecution work such as amendments and other paperwork is billed at the hourly rate. Litigation-support work is billed at a higher rate. Patent searches are billed at a flat \$500 for U.S. abstract searches. Patents can be viewed on-line.

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**Address Correction Requested**