


**Affixation**
Direct to Atmosphere Live Performance

Hundreds of individual sound sources live, and real-time. Positional, quantity, environmental, dependancy. Very, very expensive.

**Home Performance Stereo Composite Left Channel Signal w/Optional LFE Bass**

**Home Performance Stereo Composite Right Channel Signal w/Optional LFE Bass**

**Composition** of generated L-R recorded signals. Many details cancel each other out in atmosphere, also because everything is being forced into 2 separated composite signals, 1-Left and 1-Right. Worse when both are divided by any crossover for tweeter, midrange, bass, and woofer speakers. Adding to the Disaster, both the signal, and speaker can only create two dimensional waves. Digitization, and Digital Signal Processing has not solved the problem. Head Related Transfer Functions assume hidden details can be reconstructed, and everything was recorded. Everything was not recorded.

The best music recording available so far in the year 2020, generates the exact same stereo signals to be used on a $15 eBay special, and everything including amplifiers costing over $200,000, speakers costing over $300,000, with supporting D/A converters over $100,000, not to mention the turn table at well over $100,000 up. Surround sound is literally more of the same.

The difference between digital and analog can be significant. Digital can never work with analog, only pretend to. Digital is easier, and less expensive. Money is spent to sound analog.

Singing Wind will create 2^20 signals, 1,048,576 signals inside of both the left, and right channels, in the same size recorded stereo storage file, for a total of 2,097,152 stereo signals. The digital delivery system can be the exact same format, with the Singing Wind decoder included. **Affixation** is now possible with unlimited playback hardware potential, including existing systems. Surround Sound systems are possible with 2^20 Singing Wind signals available per channel. Lower cost materials are possible because individual component performance is reduced.

A music digital storage file for consumer use, can be created from many different formats, including PCM, DSD, MP3, not to mention a few other formats. MP3 is designed to be a smaller digital byte file size, and probably lossy, while DSD is designed to be very a very large digital byte file size, and lossless, with a high over sampling bit rate. PCM is typically somewhere in the middle.

All consumer stereo music digital storage files store a digital representative composite waveform, both for Left, and Right channels, that the audio hardware converts into atmospheric modulation.

Singing Wind decoder will take the digital storage file, and multiply the storage capacity 2^20 = 1,048,576 times. Thus 2 stereo channels will become 2,097,152 stereo signals at the format, and bit rate utilized. A typical stereo signal digital storage file can now store 2,097,152 stereo composite waveforms with a Singing Wind decoder. This has great value that will enable Affixation with existing audio system hardware.

Any existing digital file system, CD, DVD, BLU-ray, internet, ethernet ..., that can be read by the Singing Wind decoder, can be utilized to store, and read a Singing Wind digital storage file, however the Singing Wind digital storage file can not be decoded by any other decoder.

Different from Surround Sound music, and movie system formats, that provide more of the same, just located at a different physical locations providing a minimal quality of sound improvement, 1,048,576 digital waveform signals are available to each and every physical channel location, creating the possibility of local Affixation, at the speaker location.

Each one of the 1,048,576 signals can be utilized by the audio computer to create a new stereo channel composite waveform with no hardware change, creating new possible controls for the consumer, such as an instrument selection dial.

Many new combinations of existing consumer audio system improvements are possible with the addition of a Singing Wind digital music storage file, and Singing Wind decoder.

# Thus began the Numerical Analog Computer

Not only can the Singing Wind digital storage file store musical audio waveforms, it also stores digital data, not directly related to any audio waveform. The best audio recordings are not recordings of the audio waveforms, they are regenerations of everything that created the audio waveform in the first place. This has never been possible before because of all the missing details, now provided by the Singing Wind digital storage file.

Affixation begins with tens, and hundreds of six dimensional atmospheric modulators in close proximity to each other, creating an assembled environmental disturbance called sound. This occupies a space slightly larger than existing high end speaker systems. Unlike existing speaker systems, the output will be X, Y, Z, rotate X, rotate Y, and rotate Z.

Because of the Singing Wind digital storage file, thousands of atmospheric modulators can be simultaneously driven by true analog signals, replacing the single tweeter, mid-range, woofer, and sub-woofer. This is performance wise much less expensive than existing material perfected speaker systems costing more than $300,000 up. At hundreds to one, the output performance of existing systems is reduced by hundreds, greatly reducing the individual atmospheric modulator cost.

Because the speaker performance is reduced by hundreds, the perfected amplifier costing over $100,000 each, one for Left, and one for Right, each one of the low performance atmospheric modulators only requires a few low cost analog components each, possibly a few nickels, and dimes, when supported by the Numerical Analog Computer.

Because the Singing Wind digital storage file provides so much detail not possible before, the Digital to Analog converters that cost over $100,000 are not required. When the Singing Wind digital storage file is connected to the Singing Wind decoder, it can then be connected to the **Aft Numerical Analog Computer**. The **Aft Numerical Analog Computer** is located inside every atmospheric modulator, or speaker location. Connected with fibre optics for data communication, this eliminates the need for any expensive speaker cables from amplifier to speaker. With existing speaker systems, the very expensive amplifiers, and crossover systems both active, and passive are eliminated. Each speaker has its own customized set of data channels. No Digital to Analog converter is required.

The **Aft Numerical Analog Computer** takes the data sent over fiber optic cable, output from the Singing Wind decoder. Because 1,048,576 digital signals that are not limited to digitized waveforms are available, a huge real-time bit pattern is available, exceeding simultaneous transition rates, and output ports of Field Programmable Gate Arrays. No Field Programmable Gate Arrays, costing up to thousands of dollars each are necessary. Most Analog Computers, and Analog Recording Studios have patch panels, that are wire jumpers with jacks that configure the available selection of Analog Processing components that are required to achieve a desired function. Because very expensive converter components are not installed, the simple low cost analog circuitry is reconfigured in real-time, with the huge real-time bit pattern available, to achieve a true electron continuous analog output, eliminating the need for thousands of dollars for electronic components.

Numerical Analog is very different from vinyl records. High performance limitations of vinyl recordings include dynamic range, mechanical system fatigue, damaging environmental storage, with very expensive manufacturing, and shipping cost. The beautiful artwork could be manufactured from existing vinyl manufactures into picture books, and used for Numerical Analog Recordings distributed over the internet.

Numerical Analog is very different from studio tape recorders. No magnetic flux transitions are employed, found with inductors, transformers, tape heads, or tape that contribute to a limited frequency dynamic range. A very expensive high inch per second of tape is required for high frequency fidelity storage. Very sensitive mechanical alignment, electronic alignment, and mechanical wear increase the system cost.

The low cost of electrical components is critical to supporting thousands of Numerical Analog signal channels required for Singing Wind. Custom manufacturing is required to reduce the cost to consumer levels, well below the $100,000.00 of a concert hall grand piano.

**Infinite sampling rate, with infinite bit depth, and no rails that require compression.**

Numerical Analog is a true electrical continuous signal system that will always look down on any digital system, at any digital sampling rate, or any digital bit system. The recording studio can at any time create original digital live masters with Numerical Analog, eliminating the risk of working with a new format. The live analog signal has been recorded for the first time, with all the advantages of digital storage. The Numerical Analog digital file storage rate is greatly increased because the living analog master signal has been recorded, requiring an extreme digital storage file compression system.

Numerical Analog uses no filters of any kind. Numerical Analog has direct information about the signal recorded, where digital is stupid, with no knowledge about what it is doing in any way, shape, or form. Digital is so stupid that it has rails where the signal can be clipped, requiring the horrible fix called compression that distorts the music to keep the signal from running into the rails. Digital clipping is the reason for most critical microphone placements, not superior sound. Too close to the source where all the detail is, and clipping will occur. Too far away and the background begins to interfere, with complete loss of music detail.

The microphone can now be placed where it has never been possible before without extreme compression, gaining intimate musical detail never practical before without horrible compression rates, and or post processing distortion.

Numerical Analog has no rails of any kind. Zero to 200,000 cycles per second, 200 db dynamic range, separated signal from volume, and detailed knowledge about immediate environmental intentions are part of the living recorded Numerical Analog allowing individual instrument, and musician identification, modification, or separation from concert.

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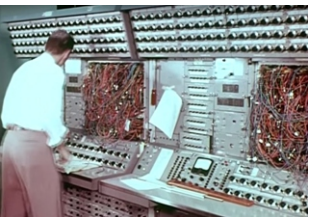
In October 2015, Codex Grandeur L.L.C. Research and Development used the trade name Instrument Quality at the Rocky Mountain Audio Festival RMAF for Singing Wind Audio Numerical Analog to gauge interest at the show. The original paper distributed at that show is available at www.instrumentquality.com.

# Singing Wind



# Numerical Analog

From the instant a continuous musical analog signal is digitized, it is world of very expensive difficulty to reconstruct that same original continuous musical analog waveform, if economically possible. High end audio requires at least five, ten, or fifty plus thousand dollars to reconstruct the original continuous musical analog waveform per channel, or studio produced construction generation of a not so continuous musical analog waveform, all this is before the amplifier, or servo drive even begins the long journey to an elusive high end music audio system.

The very purpose of $100,000.00+ stereo digital to analog converters (DAC, D/A) is simply to get back to the original continuous musical analog signal, or create a continuous musical analog signal. The continuous musical analog signal can not exist in any digital format. Digital is discrete, while Analog is continuous. According to most music professionals, there is a difference between $50.00 digital DAC's, and $100,000.00+ digital DAC's, where more expensive DAC's can almost recreate the original continuous musical analog signal, and less expensive DAC's can not. Many times the analog to digital converters (A/D), or Digital Audio Workstations are not capable of creating a true continuous musical analog signal to be reconstructed in the first place. The working theory is that humans can not hear the missing finite detail, so why bother. A true continuous musical analog signal has no missing finite detail. The missing finite detail will never compound into noise artifacts as it does in Digital Audio Workstations when many sources are combined. The real problem with any digital music recording format is that it never recreates the original continuous musical analog signal.

Numerical Analog has no missing finite detail from the original continuous musical analog signal. No exotic power supplies, no exotic sub 100 femto second digital clocks, no sampling rate's such as 44.1khz CD, 96khz, 192khz, 352.8khz, 2.8224 MHZ = DSD64, DSD128, DSD256, DSD512 ..., and no bit depth specification as 16 bit CD, 24, or 32. No frequency filters, digital or analog are required. Numerical Analog individual waveform components do have unique built in time tracks creating a final delivery assembly of the thousands, and thousands of Numerical Analog music signals to the consumer for the elimination of critical electrical delivery timing paths. Both the addition of new abilities, and elimination of the old critical limitations reduce the cost by many magnitudes, putting the final playback pricing within the range of the consumer market.

Mr. Sanju Chiba, President of ELP Corp. has explained the difference between digital and analog better than anyone I have ever heard. The video is available on Youtube, and the ELP website. Please see the Youtube video "The Laser Turntable (LT) from ELP Corporation" starting about 4 minutes 10 seconds. "**... Never better than analog ...**".

Continuous analog signals can not exist inside a **Digital Computer**, which is why analog to digital conversion is necessary before digital analysis can occur. Therefore no digital analysis is possible before the conversion process. The analog to digital converter literally kills the continuous analog signal, disconnecting each sample from the continuum, and tearing the connection with the past, and future into little bits. The once beautiful living continuous analog signal is now dead forever. The playback and recording signal environment can be analogous to a little fish inside an aquarium with many different kinds of fish, the little fish is cut into little pieces called digital sampling, and permanently disassociated from the past, future, and everything else just so it will be compatible with Digital Computers that can distort even that one sample with digital filtering, and creating future artifacts in the mixing process. Compression is also distortion.

Any digital concept of continuum is only possible from the outside looking in with digital analysis, of a preconceived notion as to what it is, was, or supposed to be because the information is not available from the digital discrete music sample at one single instant in time. Each and every single typical high resolution musical **discrete digital sound sample** from a microphone, or any continuous analog music signal will be 32 bits, or 4 bytes a few hundred thousand times per second per channel, if even that. The once beautiful living continuous analog music signal has disappeared into time forever without being recorded.

The Digital Computer is given the 32 bits, or less per music sample, and stored, edited on a Digital Audio Workstation, mixed into a final product, and sent to the consumer on the digital media of choice. The Digital Computer at the consumer end can only drop the little fish sushi pieces back into the playback and recording signal environment analogy aquarium where they float to the bottom lifelessly. Other different fish in the playback and recording analogy aquarium such as playback room characteristics are chewing away at the digitized sushi fish pieces as they fall to the bottom of the consumer playback environment. This is a major reason for digital conversion being stupid, running into the rails, with no knowledge of the details of the signal, or environment being processed directly inside the digitized music signal.

Continuous analog signals can, and will exist inside of an **Analog Computer,** which is why the signals are analyzed while being recorded inside the **Fore Analog Computer**, creating knowledge about the actual signal being processed, while it is being processed, and captured alive, living well inside the consignment functions.

While still alive, changing with the recording environment including other instruments, and being processed to generate Numerical Analog consignment functions, the Numerical Analog music signals , or the analogous little fish is then frozen stiff with all the details of before and after, so it can be compatible with a Digital Computer. While the analogous little fish can not live, or swim around in the Digital Computer, it can be stored, communicated, and even mixed with a Digital Audio Workstation fitted with real tangible electronic **Fore Analog Computers**, and **Aft Analog Computers**, controlling the living process of the continuous analog music signal.

The analog consignment functions generated are communicated to the digital computer in the form of binary digits (bits) from the analog computer. The Fore Analog Computers, and Aft Analog Computers use extremely high digital bit rates to eliminate serious amounts of physical electronic components, creating a serious mechanical and economic advantage over current existing digital conversion systems. This one single process explodes the data byte requirements, not to mention all the advantages of signal and amplitude separation, environment details, signal source details, dynamic modal modulated resonance chambers, flying deflectors, simultaneous multiple signal source details, and has no equivalent in the existing digital music conversion process.

The consignment function bits then have all the advantages of digital computing, however they can only be returned to continuous analog with the **Aft Analog Computer**, where the process recreates the original, generated, or now edited continuous analog signal. The little fish is thawed inside the Digital Audio Workstation fitted with real tangible electronic **Fore Analog Computers**, and **Aft Analog Computers**, or end product consumer **Aft Analog Computer**, where it is able to swim with the other different fish inside the analogous fish aquarium.

The music is captured alive, and living with the Singing Wind Numerical Analog. Original music works can be generated from living Numerical Analog signals at any time in the future. Mixing hundreds of complicated Numerical Analog recordings without artifacts is self correcting.

Superceding any existing music recording system, public or proprietary, Singing Wind is compatible with any needed proprietary encoder, and or decoder, providing the original Numerical Analog signal for any recording system media, or streaming production ever.

Digital music recording formats with bit rate, sample rate, pattern combinations number in the hundreds to thousands, and seem to be increasing in number almost every year. The general theme is that the closer they can playback the original continuous analog music signal, the better. Almost all digital formats are bounded by serious electronic component filter requirements, very serious expensive digital clocks, and very expensive electrical power component requirements.

With Singing Wind Numerical Analog, the continuous musical analog waveform signal input to the **Fore Analog Computer**, can be the exact continuous musical analog waveform signal output from the **Aft Analog Computer**, if that is desired.

The **Aft Analog Computer** Numerical Analog does not require expensive electrical components specifically for low cost, and low signal count consumer products. Only with the proprietary Codex Grandeur signal compression system with the Hatch Secure Processor protecting the trade secret is this even economically practical, because of the hundreds and thousands of Numerical Analog signals per left, and right channel of Singing Wind atmospheric modulators. Unlimited number of Singing Wind atmospheric modulator positions, and combinations are possible, with unique individual customer masters automatically generated from one master studio Singing Wind Numerical Analog recording.

Singing Wind Numerical Analog is designed to create Instrument Quality music with equal or greater performance of high end audio requiring at least five, ten, or fifty plus thousand dollar digital to analog digital music converters per channel, with multiple channel Numerical Analog true continuous musical analog signals with no missing finite detail, costing well below the fifty dollar digital to analog digital music converter per channel.

Singing Wind Numerical Analog will support consumer products from conventional stereo two channel left and right, up to atmospheric modulators with thousands of channels per station position, left and right stereo to unlimited home theater, concert hall, and stadium positions.

The intention of Singing Wind Numerical Analog is to create music recordings, and create music live that is not physically possible with any existing music recording system format. A true analog computer recording signal system with no necessary filters, far exceeding the analog signal quality of music recording tape recorders, and no digital processing while having all the advantages of digital storage, digital editing, and digital communication.

A product of Codex Grandeur L.L.C. that has no intention of repairing, or improving the existing music audio system in any way, shape, or form. The existing music audio system is not capable of supporting the Fore and Aft Analog Computers, six dimensional X, Y, Z, Rotate X, Rotate Y, Rotate Z, with dynamic modal modulated resonance chambers, and many other fundamental changes required for Singing Wind. Numerical Analog systems will always be capable of any music playback down to MP3, such as when an MP3 file is generated, and sent to the appropriate decoder playback system. Of course all the advantages are completely destroyed.

Public announcement of Singing Wind was six years ago, and it has taken that long to create this new Numerical Analog musical signal system, along with all the manufacturing fundamentals necessary for the physical construction.

Currently one single audio channel is diluted into three or more frequency ranges for the woofer speaker, midrange speaker, and tweeter. Usually more for high end, and each frequency range requires a filter of some kind, from passive to digital, each with problems and overlap of their own. Actually a typical high end stereo system may have five or more speakers on the left, and five or more speakers on the right, with only two signal sources. Surround sound simply compounds these error sources, with a very difficult to achieve correctly, possible improvement in overall signal position, and dispersion. More channels are better at providing more information, however it ends up compounding more of the same fundamental problems. Singing Wind will have **hundreds, and thousands** of individual continuous analog signal sources per every single acoustic modulator position, verses the current one signal source per speaker position.

What started out as a principal of design, that analog was fundamentally better than any digital source six years ago, has now turned into a great economic advantage verses the high cost of high quality digital. Where the best and most expensive digital signal systems can only hope to achieve the continuous quality of analog, we start where they leave off, with over **500+ magnitude** economic gain ratio. No sub 100 femto second digital clocks are required, or expensive power supplies, or hundreds of $10.00 to $20.00 resistors. The $10,000.00 cables connected to the $100,000.00 mono block amplifiers, are both no longer required.

Six years of work have led to both a true Numerical Analog musical signal system that is extremely low cost, also an extreme signal compression system that allows practical storage, and communications over low cost, low bandwidth system components. The extreme compression system will allow the use of very low cost 1 gigabit ethernet links with low cost copper cable to each of the atmospheric modulator positions, carrying up to thousands of Numerical Analog signals each. Enough bandwidth is left over for a few missing packets per second, increasing reliability.

Singing Wind Numerical Analog music signal drives each, and every single one of the atmospheric modulators with **hundreds, and thousands** of simultaneous true continuous analog music signals. The intermix of simultaneous atmospheric modulation with unique and novel active dynamic modal resonance chambers, and flying deflectors, allows the generation of complex sound systems found in many musical instruments, and why we have Instrument Quality as a trade name (RMAF 2015). Singing Wind will exceed the ability of mechanical instruments, and create new instruments not currently possible. No consideration is made to the human audience, such as HRTF, as it is not required.

The low cost of electrical components is critical to supporting thousands of Numerical Analog signal channels required for Singing Wind. Custom manufacturing is required to reduce the cost to consumer levels, well below the $100,000.00 of a concert hall grand piano.

Numerical Analog is a true electrical continuous signal system that will always look down on any digital system, at any digital sampling rate, or any digital bit system. The recording studio can at any time create original digital live masters with Numerical Analog, eliminating the risk of working with a new format. The live analog signal has been recorded for the first time, with all the advantages of digital storage. The Numerical Analog digital storage rate is greatly increased because the living analog signal has been recorded, also requiring an extreme compression system.

Numerical Analog uses no filters of any kind. Numerical Analog has direct information about the signal recorded, where digital is stupid, with no knowledge about what it is doing in any way, shape, or form. Digital is so stupid that it has rails where the signal can be clipped, requiring a horrible fix called compression that distorts the music to keep the signal from running into the rails. Digital clipping is the reason for most critical microphone placements, not superior sound.

Numerical Analog has no rails of any kind. Zero to 200,000 cycles per second, 200 db dynamic range, separated signal from volume, and detailed knowledge about immediate environmental intentions are part of the living recorded Numerical Analog allowing individual instrument, and musician identification, modification, or separation from concert.

Details about individual instruments with different components such as strings or valves is also part of the living recorded signal, or generated from a computer reality.

Separated signal from volume is different from automatic gain control where the overlapping signals can have a unique Separated volume that allows individual instrument, or class control. End user playback controls can now include dynamic volume per selected instrument, or class, instrument component, or class component, group of instruments, vocals, individual vocals, and unlimited classifications. Volume can be dynamic related to ambient playback environment eliminating the need for recording studios to destroy music recordings with over compression for everyone that does not fit into their distribution model.

Introducing a new Instrument Control with dynamic selection range to replace the old Tone control, Numerical Analog is completely programmable both in the recording studio, and in consumer playback. Digital Audio Workstations can be modified to work with Numerical Analog for both the Recording Studio, and Consumer.

Numerical Analog Input ---------- Digital --------- Numerical Analog Output
Fore Analog Computer ------ Digital Computer --- Aft Analog Computer
Microphones ---------- Digital Storage ----- Stereo Playback
Movie Studio Environment ------- Digital Streaming ----- Home Theater
Computer Generated Music --- Digital Communication --- In Home Live Concerts
Studio Recording Environment --- Digital Audio Workstation --- CD, DVD, Blu-Ray,Vinyl

At this time a two million dollar home stereo system will only have access to the very same recorded music that a discount store stereo system has. The physical format of media, and materials have many different possibilities, ranging from low cost to expensive, however the actual content signal system is very similar if not exactly the same. No amount of money can change that with the current music system.

It is not currently possible to purchase a better recorded musical signal system even when the actual recorded music is worth more than money. Singing Wind Numerical Analog allows an infinite variety of playback signal systems, including all current versions, allowing a two million dollar stereo system to sound ultra better than a discount store stereo system ever can. This is achieved without leaving the discount store stereo system behind.

A premium price and profit margin is also achieved with recordings including hundreds and thousands of Numerical Analog continuous signals. It is possible at any time to downgrade the hundreds and thousands of Numerical Analog continuous musical signals into any current format.

Musicians can record Numerical Analog Ultra-Fidelity masters that sell for much more money, and with no extra recording effort will be able to support ANY, and ALL existing digital recording formats with proper encoder's. A 100% pure original continuous Numerical Analog music signal can always be converted to any existing or future digital format, however no digital format can ever be converted back to the original 100% pure original analog signal. The **Numerical Analog** is not simply another digital format, and does require **Analog Computers Fore**, and **Analog Computers Aft**. It is not possible for any digital computer to emulate a true Analog Computer. Analog Computer's are real physical devices.

In a world of internet streaming, there is no practical security to prevent near master quality copies made without permission, and widely distributed for profit of the thief only. Musicians are currently being starved when payed 0.0001 penny per play average, or less with no consideration to length or quality of content.

The customer Numerical Analog compatible system is connected to the Singing Wind Audio web-site where the music purchased is coded for each and every customers **Hatch Secure Processor**. The music is specifically coded for that one single customers Sub-Space Satellite only. It is possible for the content owner to allow limited free playback prior to purchase. Anyone can intercept, copy, and distribute the coded music anywhere, at any time. No monitoring or lawsuits are required. The music can only be played with that one single Sub-Space Satellite Hatch Secure Processor. Different programs are available to allow infrequent migration for the customer ownership with authorization from the musician. This will allow a much higher initial purchase price when the customer has a choice.

**Digital Rights Management (DRM)** are solved with the Numerical Analog compatible system **Hatch Secure Processor**, individual customer custom secure architecture.

Every customer does need to own their own Singing Wind Numerical Analog music compatible system. Musicians maintain complete control with the built-in **Hatch Secure Processor**, included to protect the integrity, and trade-secret lossless continuous Numerical Analog music signal compression system. Customers can be given the right of sale with a musician authorized transaction, and percentage of sale through the Singing Wind website a limited number of times per year. The Hatch Secure Processor located inside the customers Singing Wind system is designed to defeat all existing Supercomputer High Performance Computer Arrays in the world working together against it.

Each customer has their own unique bit pattern recording that will only play on their unique Numerical Analog compatible system. Millions of illegal copies stolen from the internet can only be played on that one single customer Numerical Analog music compatible system. Because each bit pattern customer recording is a unique one time computer generated creation, a single defeat of one recording does not unlock any other Numerical Analog compatible system recordings anywhere.

Musicians can include personalized signatures, live recordings, requested performances for single, or group customers. Profit margins approaching live tour performances are possible without the overhead, stress and time constraints.

Because of the Instrument Quality recordings being dramatically superior in playback, the difference will be worth paying money for. It will not require a music savant to experience the difference between existing technologies, and Instrument Quality music recordings.

# Hatch Secure Processor

Similar to a submarine hatch that is secured for water tight integrity, the Hatch Secure Processor can not be reverse engineered by all the supercomputers in the world working together to defeat the secure data integrity once the hatch is secured.

The Hatch Secure Processor can be secured and numerically become a unique identity unto itself while being mass produced on a consumer electronics product scale. The internet can easily handle the management of each and every two hour music concert, and or movie of each and every single performance sold so that a copy of any Hatch Secure Processor title could be stolen and placed on the internet for random free distribution world wide, and the millions of copies made can and will only be able to playback on the one single customer Instrument Quality controller.

For decades and decades musicians would invest great amounts of money to be published by a record manufacturer, with printing cost of jackets and pictures, creating pallets of music ready for distribution. Because of the profit margins created from all the distribution stages, it became profitable to pirate the original vinyl recording, and bootleg manufacture illegal copies with no profit margin returning to the original investment of time, money, and talent.

Now decades later in a warehouse, those original recordings sit on the same pallet awaiting distribution, and the pirate copies are found on eBay selling at hundreds of dollars each. It is still devastating to the musician all these years later that no income was ever generated. Of course it is much easier than ever to pirate recordings even at home, now that digital has only an excuse of an attempt at data security especially on Blu-ray discs, just enough to say that they did their best, and no one has anything better.

It is the Recording Industry Association of America (RIAA) policy to go after and “lawsuit to death" a Native American mother of four, after turning down a settlement offer of $5,000.00 charges, in 2007 was found liable for $222,000.00 or $9,250.00 per song. In 2009 another jury charged $1,920,000.00 or $80,000.00 per song. Final damages returned to $222,000.00 or $9,250.00 per song in 2012 with no further review in 2013.

Simple due diligence with a small engineering effort will keep the victims from being not only blamed, but turned into criminals. It is not possible to get on the internet and steal anything with your fingers, it is only possible to download what is possible to download. It is very difficult for me to know what is legally free now, and what is not. I do know that all this confusion is only possible with big money political support, and in the year 2015 it is again “Reductio Ad Absurdum", not necessary, and not even possible without an engineered conspiracy of terror caused by Fraud Upon The Court. The claim that no one has had a solution has been a lie for many, many years now.

We are now living in the “Irish Potato Famine” of computer architecture caused from the Intel-Microsoft Monopoly. A few different competing monopoly’s simply offer their different versions of the same “Irish Potato Famine”. The entire world has become a willing victim of low cost consumer electronic products, even to the point where supercomputers use the same processor architectures by the hundreds of thousands at a time. Again “Reductio Ad Absurdum”.

In a numerical world where infinity is everywhere, we are bounded by 1960’s to 1980’s computer architecture foundations only because of the “Irish Potato Famine” Intel-Microsoft Monopoly with posers, and it will end beginning with the Hatch Secure Processor.

The Hatch Secure Processor is not simple data encryption. The entire Hatch Secure Processor computer architecture is dynamic, computer generated so no two computers are ever the same, and never made available to the public. The “Irish Potato Famine” comes from only a few different versions of instruction sets, and all available to the public. Even encrypted instruction sets can be reverse engineered because economically they are cookie cutter stamped in silicon, have a fixed methodology and therefore are not dynamic, so everyone on planet earth shares only a very few different versions. A computer virus can not exist without knowledge of the computer instruction set it is infecting. It will be identified as a virus and destroyed before it can do any damage. The cost of Hatch Secure Processor is a minimal increase in electronics, with 100% physical secured success, compared to a current human terrorism campaign.

In the year 2018, it is only possible to manufacture and mass produce data constructions such as music, movies, computer programs, money, or art, that can be stolen in any way, shape, or form, if and only if, you allow them, or want them to be stolen.

# Selected Instrument Dial
# Numerical Analog Frequency Amplitude Control (NAFAC)

Because of the Hatch Secure Processor, it is possible with the permission of content creator, to send the consumer the actual raw recording material used in the recording studio. Since each customer is given a unique coding format that is in no way, shape, or form compatible with any other customer, and then it is compressed with Codex Grandeur L.L.C. proprietary compression system, the digital file sent to any customer can be copied, intercepted, and stolen, however the millions of stolen files distributed over the internet can only be played back on that one customer playback system.

Most customers would rather not change a studio recording format, and simply press play, however because of the consumer market premium pricing ability per recording in the area of hundreds and thousands of dollars each, it is advantageous to the studio, and creator to provide the ability to edit the finished product, or simply create a new mix in the home concert auditorium.

The Singing Wind Audio home consumer products will provide a Selected Instrument Dial. The individual instruments will be listed, grouped, classed, and adjustable with the Selected Instrument Dial in near realtime for the consumer to adjust. This can be used dynamically, or static to compensate for environmental factors, or listening preferences.

Numerical Analog Frequency Amplitude Control (NAFAC) is a new analog technology for recording both frequency and separated amplitude signals. Phase independent frequency and amplitude dynamic selection, and control with zero filter roll off allow individual instrument identification, and modification even in a composite format of many simultaneous instruments. Human voices are considered a musical instrument also.

Very different from DSP filters now in use, the Fore and Aft Analog Computers are used with control from the digital processor to allow individual selected phase and frequency separation over a 200khz, and 200db wall. These individual characteristics can be combined into a unique individual instrument control dynamically, and used to separate additive composite music signals.

This is all possible with the new Singing Wind Audio Analog Signal Processor (ASP). This ASP ability provides the ability for **Retro-Generation** of previously recorded music, where instruments and voices can be separated, and replaced with new instruments, and voices while retaining all the original musician spirited intention, in new playback environments, new instruments, new voices, in the Singing Wind Audio home concert auditorium.

**MUSIC IS NOT TELECOMMUNICATIONS**. Misapplied telecommunications theory, where sine waves are generated at location A and transmitted to location B for the purpose of communication has been justification for the major FAILURE of music storage, and reproduction. The perception that detecting, and recording the discrete sampled frequency, automatically records all the music detail is not accurate. Almost always with the excuse that a human will never hear the difference. The microphone electrical continuous analog signal output is not limited to generating sine waves.

Instrument Quality music is NOT generated from sine waves. The fact that no practical amount of sine waves will ever create a true square wave, is a practical example of the emperor with no clothes on, where everyone sees a square wave that is not there, only more square than the sine wave's used to create it. A true square wave does not have all the sine wave artifacts all over it. The close enough humans that also claim no one will hear the difference, will never understand the musical detail required for Instrument Quality.

The minimum two frequency discrete sampling rate to detect sine waves in telecommunications for digital recording and transmission reconstruction does not apply in Instrument Quality music storage where the missing detail from minimum two frequency discrete sampling does matter, and is currently misapplied in the music industry. The continuous analog signal has simultaneous infinite bit resolution, and infinite sampling rate. The analog signal can always be downgraded to any discrete digital sampling rate, and any bit resolution, however no discrete digital sampling rate, and no bit resolution can ever recreate the original continuous analog signal.

Frequency based music is missing detail produced from physical music instruments. This is not obvious to humans that believe if their ears do not detect the frequency, it does not matter. Subsonic and supersonic atmospheric modulation does occur with physical music instruments, directly interacting within that physical instrument, and other surrounding musical instruments. The interaction of many musical instruments creates details currently missing in recordings, and difficult or impossible to recreate with the current music architecture. One signal line for left, and one signal line for right, surround, and even immersive sound architecture with one signal line per channel is well below the minimum requirement to achieve Instrument Quality.

Singing Wind Numerical Analog will create, or recreate the music instruments in the home, or home theater with Instrument Quality Music, and not just a sound of music. Singing Wind Numerical Analog output signals will reproduce the atmospheric modulation as existing physical music instruments do, and create new future physical instruments with Instrument Quality performance. The future six dimension atmospheric modulators will be required, however existing voice coil motors, and other technologies called speakers will also be enhanced with the current Singing Wind Numerical Analog signals.

Well meaning telecommunication scientist have determined that there is an entropy rate for data compression. They have been interpreted to mean that in no way, shape, or form, can data be accurately compressed below a certain binary digit compaction without losing integrity. It has been called a Law. The only thing that those well meaning scientist have proven is what they could not do.

My personal goal is to eliminate the disappointment of a Master musician that is, or should be disturbed after listening to existing technology playback. The sound currently played back is more often than not less than what went in, without serious editing. Then after serious editing, it seems to be altered in a way that supports the strengths of existing technology, at a cost of very fine subtle detail that did not survive.

The large number of analog signal line outputs for stereo is specifically required to support active cross-talk without cancellation, active dynamic modal resonance chambers, flying deflectors, and other to be announced Instrument Quality details that are not possible with simply two signal lines for stereo. There is no possibility of surround sound, or immersive sound with one signal line per channel ever achieving Instrument Quality.

# Selected Instrument Dial
# Numerical Analog Frequency Amplitude Control (NAFAC)

Because of the Hatch Secure Processor, it is possible with the permission of content creator, to send the consumer the actual raw recording material used in the recording studio. Since each customer is given a unique coding format that is in no way, shape, or form compatible with any other customer, and then it is compressed with Codex Grandeur L.L.C. proprietary compression system, the digital file sent to any customer can be copied, intercepted, and stolen, however the millions of stolen files distributed over the internet can only be played back on that one customer playback system.

Most customers would rather not change a studio recording format, and simply press play, however because of the consumer market premium pricing ability per recording in the area of hundreds and thousands of dollars each, it is advantageous to the studio, and creator to provide the ability to edit the finished product, or simply create a new mix in the home concert auditorium.

The Singing Wind Audio home consumer products will provide a Selected Instrument Dial. The individual instruments will be listed, grouped, classed, and adjustable with the Selected Instrument Dial in near realtime for the consumer to adjust. This can be used dynamically, or static to compensate for environmental factors, or listening preferences.

Numerical Analog Frequency Amplitude Control (NAFAC) is a new analog technology for recording both frequency and separated amplitude signals. Phase independent frequency and amplitude dynamic selection, and control with zero filter roll off allow individual instrument identification, and modification even in a composite format of many simultaneous instruments. Human voices are considered a musical instrument also.

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In October 2015, Codex Grandeur L.L.C. Research and Development used the trade name Instrument Quality at the Rocky Mountain Audio Festival RMAF for Singing Wind Audio Numerical Analog to gauge interest at the show. The original paper distributed at that show is available at www.instrumentquality.com.