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PRELIMINARY

Frequency Generation Considerations

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Introduction Frequency Generation

By Jimmie L. Holman

Self-education is often the very best path to "enlightenment" or "epiphany".

Frequency generation, control and application have been the source of a lot of confusion for a lot of folks for a very long time. Nearly half of the questions I receive on an almost a daily basis are frequency related and the questions themselves often impossible to properly answer because the logic of the questioner is based largely in misunderstanding, misinformation, or simply a general lack of understanding of the physics and the unfortunate dual use of many terms we often include in our vocabulary.

The method of application and even type of device also plays an important part in how we refer to and use of the term “frequency”. In the following pages, I will attempt a “simple” explanation along with diagrams of pertinent features, characteristics, and initial concerns. We will attempt to graphically illustrate pertinent issues regarding waveform generation and application.

The issues surrounding frequency generation are among the most important aspects to developing and utilizing successful Rife protocols. An understanding of waveform characteristics, generation methods and their limitations, and how this all applies to the equipment being used, and eventually the intended targets, and desired responses is an absolute necessity for useful rife application.

I (Jimmie Holman) am a big believer... from *PERSONAL*, observed, and reported experience, that using even the crudest PC based application and software has its place in our research and experimentation. Do ***NOT*** let financial or technical limitations prevent you from getting started in this research.

I want to emphasize those words... "*research and experimentation*"... because that is precisely what this is. Anyone who considers this (at least in MY and neighboring countries) as "treatment" seriously needs to look at the laws in their respective areas, examine carefully who is allowed to give treatment, and what the legal mandates are as to what that treatment must be for any given malady. Especially examine the possible legal repercussions/charges which can be filed in many areas. It would be wonderful if this environment were not the case, but at least understanding it exists it is a starting place for us... a starting place with considerable background freely shared by our predecessors of 60 or so years. I believe we know having so much information openly available for easy access and sharing is rarely the case or opportunity when considering many other closed technical fields.

To begin with, it would all be very nice if we all had easy access to high quality "medical grade" computer controlled function generators. I'm not even sure such thing currently exists in my country. A $5000-$10,000 function generator certified in THIS country would most likely sell for MANY, MANY, MANY, times that. Example: A very simple handheld TENS circuit in this country, which can easily be built for $15-20 sells here in the US by "prescription only" for $800-900... or MORE and is very restricted and regulated including all markings, instructions, and documentation. What would you guess a high quality $5000 function generator MIGHT sell for? I personally shudder to think.

Realistically, there are FEW among us that have the resources OR the need to equip ourselves in that manner. We each personally consider the "trade-offs"... although we ***DO*** need to understand the deficiencies inherent in our educated decisions. I don't think ANYONE will argue that there are limitations and considerations in using PC based software as the base frequency generation tool.

I personally have/own, a host of various commercial function generator solutions which I use constantly... with commercial names like Tektronix, Signametrics, Hewlett-Packard, Southwest Technologies, and more, some of which have PC-based control circuitry. I would not expect even one of those pieces to be used by anyone but the most serious developer. I also have a host of "other devices" as well for comparison purposes, i.e. Square-One (Bob Hansen), Kinnaman (Ed Heft), Geny2 (no longer being produced), F-Scan (TB-Elects.) and I've used many others too. The fact remains; I've found "limitations" for my use, to each and every device... REGARDLESS of price. I can constantly recognize and *note* "*improvements*" needed to better utilize them for our perceived or envisioned environments. I'm sure this will always be the case, and our needs and requirement s will evolve right along with our understanding and development of the technology.

Left to Right: SquareOne, Kinnaman, F-Scan

Each of these devices had their own unique niches yet each, regardless of cost, has its own limitations.

Shown here (left) is RIFEforLIFE's first generation SquareGENpro+ (with optional dual trace oscilloscope). Shown on right is a custom HV plasma system developed by Mr. Holman, which incorporates the computer controlled precision frequency generation and monitoring hardware with a new plasma drive system.

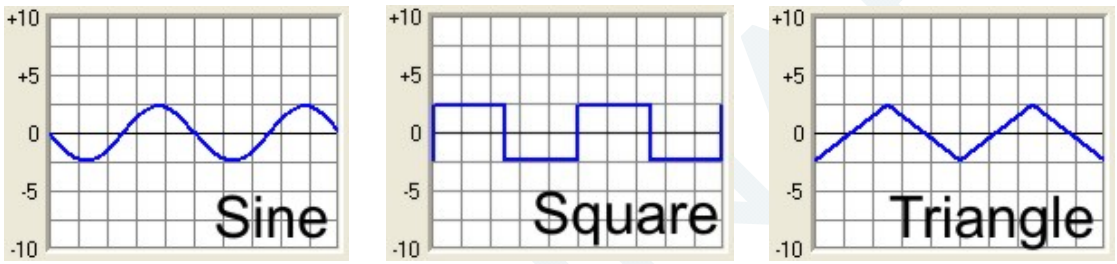
Let's begin by examining and addressing specific issues and characteristics:

Waveform, Frequency, Application

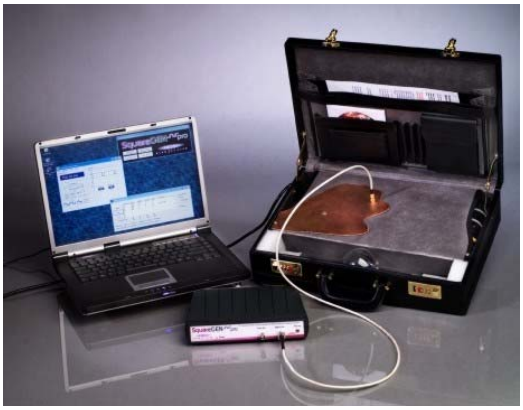
Waveform

Most fellow "*Rifers*" and those working in areas of bioresonance and bioenergetics well realize that we have worked in the past, primarily with square wave signals. Most non-technical persons we have found, do not understand why a square wave is used, what it looks like, or the importance of the characteristics of the waveform itself. A pictorial comparison with other waveform's and characteristics may assist the novice better understand the relationships and attributes of our selection.

A waveform is simply a graphical plot of amplitude or relative amount of energy (voltage in this case), over time. The amplitude is typically being displayed on the vertical scale and time being displayed on the horizontal scale. The number of times this pattern repeats per second corresponds to our "frequencies".

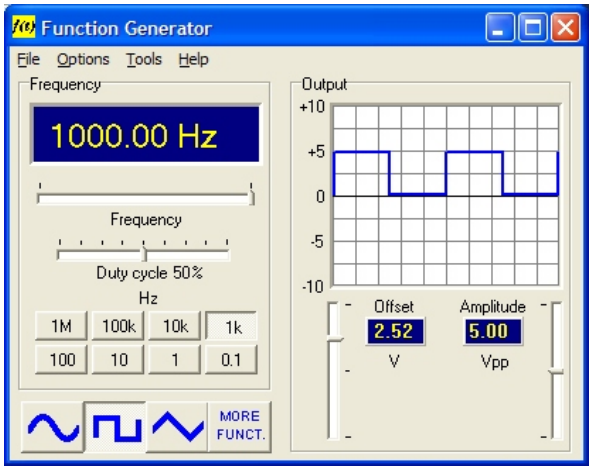


Most quality test/laboratory grade function generators are capable of generating all of the basic waveforms to frequencies far in excess of what is needed by the typical Rife experimenter. High-end laboratory grade function generators are also capable of programmability and even arbitrary waveform generation. The versatility and extent of this programmability and specialized waveforms can be very helpful in actual and practical Rife and bioenergetics operations and applications. It is not specifically important to the user's better understanding of the basics. In other words, it is a desired feature but not necessarily a requirement.



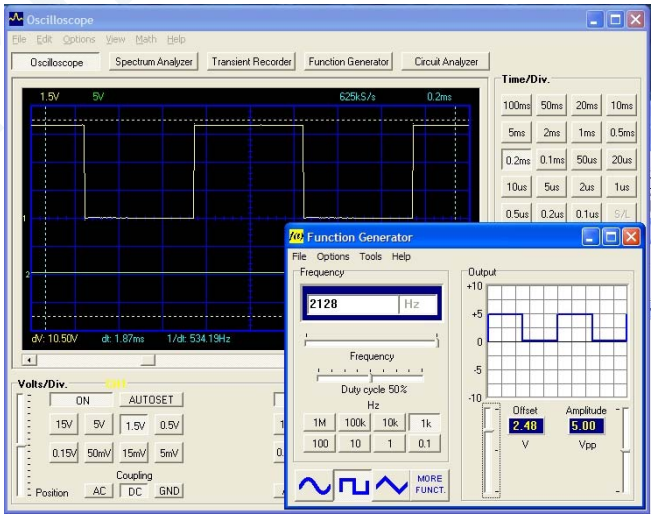
Note: *The Pulsed Technologies PT-PFG system provides all of the above mentioned features including the optionally ability to display and capture content. Most of the pictures and captured illustrations in this document have been created from the Pulsed Technologies hardware and software using real data captured during actual operations. Admittedly, many of these advanced optional features are not typically needed by most practical-level users, but provide invaluable resources to the serious researcher and experimenter. A well designed and full-featured unit will provide the user a well thought out and appropriate component for entry-level through advanced work. For this reason, and because of its built in recording and illustrating capabilities, most of this documentation will be utilizing and referring to Pulsed Technologies hardware and software for these examples.*

Frequency Generation



Most function generators have, at the very least, some form of frequency selection, and waveform selection. Either can be done in any number of ways. As you can see in the Function Generator frame, bottom left area of the, you have multiple waveform types to select from the "pushbutton menu", specifically SIN, SQUARE, TRIANGLE (also known with variations as "saw tooth"). The graphic representations shown in the previous illustrations accurately depict their respective waveforms for obvious reasons. There are also often on better quality units other variations of these basic 3 included as well. Although not important at this point in our discussion, this particular unit also includes the ability for arbitrary, user created, unlimited library of waveforms to be implemented. An important side note, however, the ability to construct and use specialized waveforms may be very advantageous to the serious user to best utilize certain aspects and component designs. Although outside the scope of this primer, at a future date we hope to have extensive technical information, samples, and illustrated examples available.

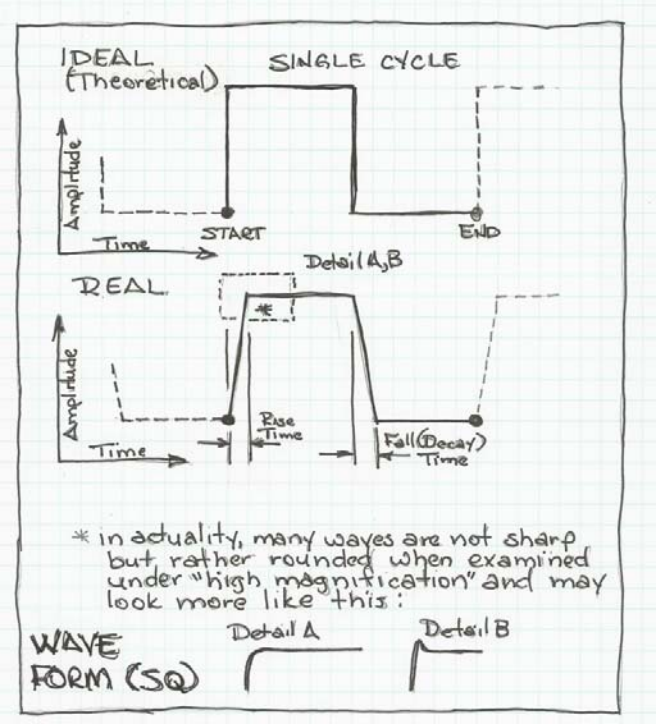
Oscilloscope & Function Generator



Show here is a typical screen generating a 2128 Hz square wave signal. The graphic representations on the function generator segment of this pictorial, (lower right), is an ideal representation of what the function generator he is trying to do. The Pulsed Technologies oscilloscope representation is a precise and accurate depiction of what is being measured and monitored under actual load conditions. The oscilloscope controls allow the user to view the data from a variety of perspectives based on user selectable scales of time and amplitude. An analogy to a microscope would to be to allow the viewer to zoom in or out on an object with very precise control. What should be noted here for later use is the exceptionally fast "rise time" and "fall time", (also known as "decay"). Rise time is the front edge for the square wave. The fall time is the trailing edge of the waveform. In a theoretical world, the rise time would be 0, in other words, instantaneous. Likewise for the fall time. In practical terms however, we do not live in the theoretical world and each rise times and fall times can be measured and even displayed. The measured accuracy of the waveform is one of the best indicators of the quality of the equipment.

Proper matching of device is still another important consideration with other components is necessary to insure best performance.

The first part of this illustration indicates an ideal or theoretical square wave form… which is basically an on an "on and off" signal. When switched on and off, the transition to the next state is theoretically immediate.



The second segment of this illustration shows in an exaggerated example, but realistic and necessary to understand component of the wave form itself. That is, the transition from one state to the other, (off to on or on to off), does not happen instantaneously. The amount of time this transition takes place is affected by many factors, but is often a good measure of whether a signal generator is appropriate for a particular environment.

Other deficiencies which also typically occur are at the transition points as shown in both details in the third segment of this illustration. The poor waveform shape is often the result of overloading, poor improper or non-existent impedance considerations, or simply using a device in a manner or with equipment it was never intended or designed to integrate. Unfortunately, many devices being sold as Rife components are being utilized in environments for which they were not designed and the unfortunate degradation of waveform accuracy is unnoticed by the user.

Important Note: Depending on the type of equipment being utilized, other waveforms may be more appropriate or very advantageous for efficient use of some new equipment designs.

TO BE ADDED [why leading edge is important – relate to referenced technical papers (if not still classified)]

Most researchers (I've discussed these issues with) agree the specific waveform characteristics, attributes, and components are apparently very related to the physics by which all this seems to work or affect physiology at the molecular and cellular level. Much "formal" study has ***ALREADY*** been done in this and as we learn and experience more, we can better correlate the existing science to what is applicable for our use.

WAVEFORM ACCURACY

Waveform accuracy is without a doubt, in my opinion, one of the weakest points of *BOTH* "sound card" output as well as “PC speaker” output. This inability to produce decent waveform is inherent in many manufacturers designs. This can vary greatly from PC to PC depending on design. In the best of cases, I have seen relatively decent waveforms at certain frequencies with both types of platforms, but this can and almost always does, vary a *LOT* across the usable frequency spectrum for which it was designed... from good to ***TERRIBLE***!

Better Waveform = Better Results? It is thought by most researcher that "better waveform" and waver "shape" typically equates to "better results and responses" As a general rule I agree completely, however, I would ***NOT*** even begin to dictate what another person’s criteria or expectations might be nor would it be appropriate to assume their environment or needs.

Different types of use may require different degrees of accuracy. For example, I personally, as the result of 2 serious car wrecks, utilize the most simplest of contact applications ***ON MYSELF***. This was after months of almost ***DAILY*** "conventional” medical and chiropractic treatment.

Actually the only real relief I was receiving or noticing was the conventional TENS treatments at the respective offices of BOTH the doctor and the chiropractor... both providing different explanations as to how it was working and the reasons for its use. Having a technical background I had absolutely NO PROBLEM constructing something simple to test the Rife “theories” which quite frankly, at the time, I considered was simply the "quack medicine" it was universally labeled (in my technical world). As skeptical as I was, I was pleasantly surprised to see how wrong I was in my UNEDUCATED assumption. This worked for me, FAR better than ANYTHING the doctors had applied using VERY EXPENSIVE "approved" equipment. The treatment, therapy, drugs, TENS, etc had failed to seriously correct and alleviate the associated pain. It was ONLY through the (off the record) suggestions, guidance, and explanations of a dedicated chiropractor that I realized there might be a possible alternative solution.

The primary difference between the conventional treatments I was receiving and that which I was able to do myself was that the computer was selecting specific pain related frequencies to target. Although I was using the simplest of devices, with little consideration to waveform, I still received what was comparatively FAR MORE effective use of my time and energies... it was simply a matter of frequency!!!

This was undoubtedly this revelation where I personally grew in my "Rife education and development. I STILL use basically that same contact-type setup for that type of application... even preferred over the Bare-Rife setups I have on hand. Self-education is often the very best path to "enlightenment" or "epiphany".

Frequency

The square waveform is chosen above all other waveform's because of its rich harmonic content. The harmonic content far exceeds that of other waveform's.

Harmonics Defined

It is extremely important that any user of resonant frequency technologies comprehend each of the definitions regarding harmonics.

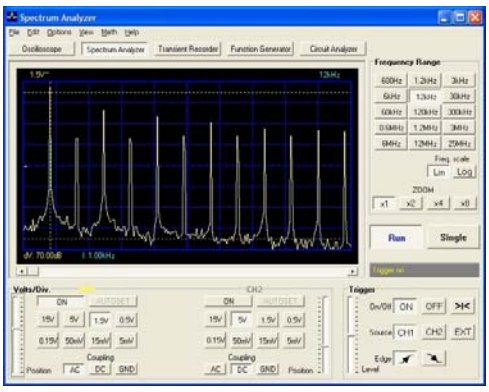
har·mon·ic (här-mŏn'ĭk) *n.*

1. …
    a. Any of a series of musical tones whose frequencies are integral multiples of the frequency of a fundamental tone.
    b. A tone produced on a stringed instrument by lightly touching an open or stopped vibrating string at a given fraction of its length so that both segments vibrate. Also called **overtone, partial, partial tone**.
2. **harmonics** *(used with a sing. verb)* The theory or study of the physical properties and characteristics of musical sound.
3. *Physics.* A wave whose frequency is a whole-number multiple of that of another.

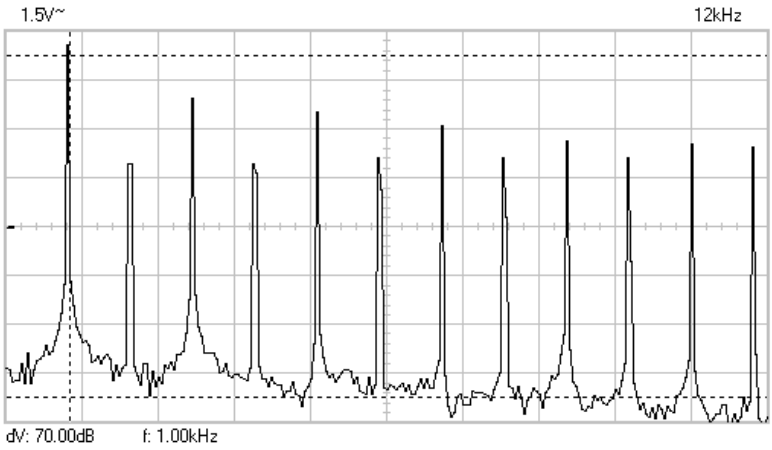
Source: The American Heritage® Dictionary of the English Language, Fourth Edition.

As mentioned above, we use square waves because they are "harmonic rich".

A practical demonstration of frequency, harmonics, and resonance, might be best demonstrated through the analogy of the piano, whereas the player hits the single note "middle C" on the keyboard. The hammer clearly strikes ONLY the strings of middle C causing them to vibrate. Every other "C" string on the piano also begins to "sympathetically" vibrate, also releasing its individual sound. The further away from the original set of strings, the less intense (amplitude) the sound. The RIFEforLIFE SquareGEN pro Spectrum Analyzer here has been used to display and capture these harmonic sounds and clearly shows the mathematically periodic harmonics of the single fundamental frequency.

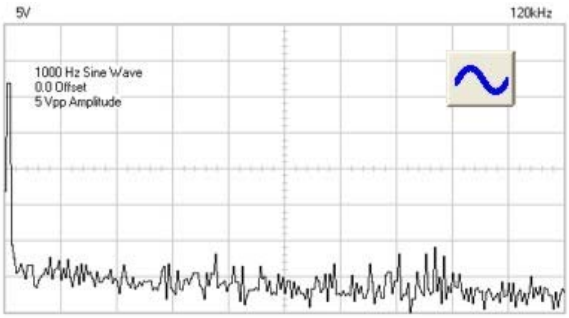


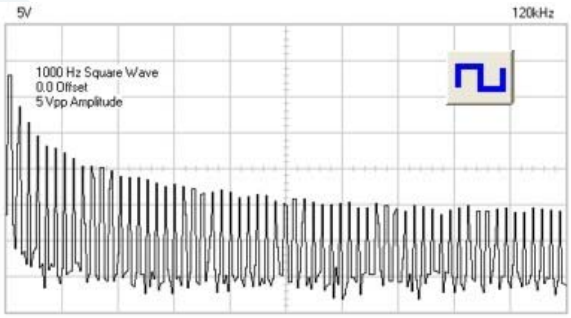
Pulsed Technologies' Spectrum Analyzer



Square Wave at 1000 Hz (1kHz)

The 1000 Hz square wave being generated here (known as the fundamental frequency) clearly shows in the spectral analysis of the regular harmonics, multiples of the actual frequency, up the scale in this case which is 120,000 Hz. It is it is more likely a harmonic (one of the actual multiples) is the actual effective Mortal Oscillatory Rate (MOR) than is the original fundamental generated frequency.

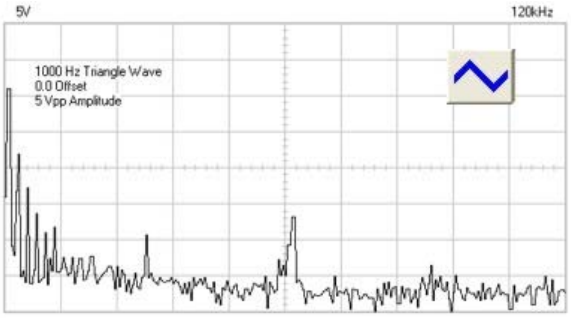




The spectral analysis shown here is the same 1000 Hz tone, displayed here across a wider spectrum in the various notated waveforms. Note how much richer the spectral content is for the square wave. ***ESPECIALLY*** take notice that these measurable harmonics reach far outside the typical audio spectrum.

The Triangle Waveform Does include limited harmonics, but not near that exhibited in the square waveform.

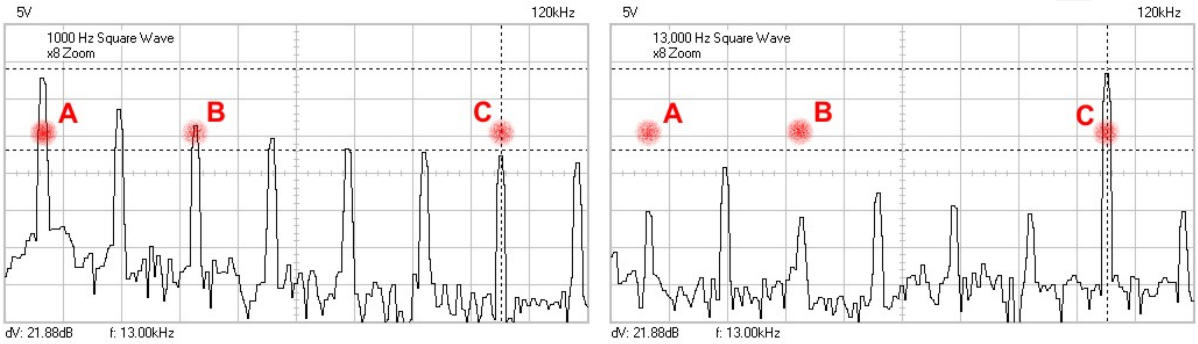
It is this both the phenomena of resonance and the harmonic content being generated that are the foundations of the application of Resonant Frequency Therapy.



It is very likely NOT the sound frequencies… but rather harmonics "doing the job".

In the following 2 illustrations hypothetical pathogens A, B, and C have MORS marked in RED. In the first illustration the Frequency being produced is 1000 Hz, represented by the first and largest peak. You can clearly see multiple incremental harmonics. Pathogen A would naturally be affected by the fundamental frequency, as would pathogen B by the harmonic. However, the minimal amplitude required to affect pathogen C is below that required.

By ***NOT*** relying on harmonics, we can generate the 13,000 Hz signal to directly "hit" our target. Being the fundamental frequency, our amplitude is at its highest. While we can still rely on harmonics further up the scale, this gives us a "starting point" much closer to the intended target.



It is important to note, that while sound card and pc speaker applications are quite limited in range (15-15,000 Hz … maybe 25,000) the new generation of quality function/signal generators typically go into the millions of Hz with fine and precise resolution. While devices of the past have been made to utilize these limited frequency ranges, some of the EMEM-types feel quite fortunate to be able to hit 15,000 Hz as their "top end". Recent developments and better understanding of plasmas coupled with some of the fantastic custom tubes now available have enabled fundamental frequencies in excess of 100,000 Hz, (I've actually gotten over 200,000 Hz on our development system). The new developments in this technology should prove quite exciting over the coming years.

Frequency Lists

Most of us are of course familiar with the frequency lists. These are typically a listing of MORs (Mortal Oscillatory Rates), that is, the frequency (rate) at which a particular pathogen or target is resonant to the point of devitalization, destruction, or is desirably stimulated to bring about an overall beneficial effect. These lists should ONLY be considered "starting points" for your research. Perhaps one of the issues that have perturbed me the most over the years is the poor quality of many of the designs made available to folks over the years. Many of these equipment designs incorporate protocols into their self-contained function generators assigning arbitrary "codes" to the frequencies or frequency sets. The user is isolated to the point they never can know if the frequency is really the one THEY would choose, or if it is in actuality generating the frequency it indicates. Furthermore, many of these devices prohibit the user from implementing accurate control …even when desired. I have checked some of these devices and found that some ate not EVER actually producing the indicated frequency. In many cases it is close, others it may be many Hz away from the indicated frequency. The price the user paid for the device was NOT an indication of accuracy or performance. Some of the most expensive devices are ones I

personally found to be "most lacking". However, we must consider the fact that these available frequency lists have been assembled over the years using a wide variety of types of equipment and devices, by people with wide and varying levels of expertise. At the very best, we should consider this ***ONLY A STARTING POINT*** for any investigation.

Frequency Accuracy

Accurate, consistent, and reliable performance of signal generation is highly desired for effective targeting and most operations. However, armed with a good understanding of characteristics, attributes, limitations and techniques, even modest equipment can be utilized to provide most users a workable and effective environment.

We have seen, the mortal oscillatory rates of most maladies/pathogens given in the common frequency lists are for very specific frequencies.

In reality, like any other living things, mutations naturally occur. These mutations likely have their own but slightly different MOR, although they will typically be clustered very near the original. In addition, the amplitudes, amount of signal), required to affect the intended targets may also very.

Although accurate targeting of MOR frequency is quite important, failure to consider these adjacent offspring can lead to problems just as bad as the first which does not respond in any way to the frequencies commonly listed. It is just as important to target on those "possible" adjacent pathogens as it is the ones on the list. It is for this reason accurate frequency generation and manipulation is important.

A user which does not take this into consideration can:

1. receive less than optimal response/results
2. actually create a situation that is far worse and does not respond to any of their "suggested" protocols
3. waste a LOT of time, money and effort

The most commonly reported observations from this scenario is a user who may receive basic treatment on a well meaning friend's equipment. The subject will often see an immediate reaction/response. In actuality, the equipment is doing precisely as intended. However, without ALSO addressing the adjacent issues (often not possible on some machines), the symptoms may return with a vengeance and not respond AT ALL to the original set of frequencies.

In most cases, few people are in a position to better tell what is effectively "working" than the test subject/experimenter themselves. Without this persons responses, understanding and direct participation, successful long term effects are quite limited.

***Note:** it is believed by many, that the instability of the equipment utilized during Rife's days was actually a benefit. The frequency instability was likely quite effective in wavering around the single target*

frequency, actively targeting not only the primarily focus, but also the adjacent mutated offspring as well.

Today's modern equipment is quite stable and good equipment is capable of fractional and intentional specific incremental focus in a controlled manner.

Without a doubt this is an issue that needs attention from several perspectives and several considerations:

Mathematical/Hardware Errors: We have long known that there are mathematical error and limitations in the generation processes of BOTH the software AND the PC hardware. We also well know that these errors can vary from PC to PC. This has been well explained, documented, and elaborated *on* over the years by quite a few excellent researchers. While the end user does NOT have to understand the technical reasons, he most assuredly should be aware that these errors exist. By the same consideration, he should ALSO be made well aware that MANY off the shelf test grade function generators ALSO exhibit a degree of drift and inaccuracy equal to or exceeding those known mathematical and hardware errors or limitations. It should also clearly pointed out, that even the highest dollar function generators must be kept in calibration, (or be self-calibrating), if they are to be used as a reference and for absolute accurate generation.

Microsoft Windows: I probably should NOT even start on this... I abhor this program and all the technical problems it CAUSES... which is why I mostly use Linux. I DO realize however this is the ONLY operating system many folks feel is practically available to them... but these inherent problems are also the reason many of the software programs are DOS based, so as NOT to introduce the errors caused by Windows Input/Output control in that operating environment. We simply need to be well aware of this for our future development.

Sweep/Waver/Deviation: Are actually just terms for intentional frequency manipulations. We have briefly touched in this in earlier; however, we should also probably consider that even our worst equipment today, is probably more stable than the oscillators of Rife's day. It has been speculated more than once that Rife's successes were NOT based as much on frequency accuracy as the accuracy in hitting the target and natural adjacent mutations by the "drift" inherent in his frequency. Not so surprisingly, many or most of the current Rife specific software includes the ability to artificially emulate this very attribute. One of the topics at this years Rife Conference (and the consensus of *many* of those attending) was this was INDEED an important attribute and feature to be noted.

The CAFL List (and others): Brian McInturff's Consolidated Annotated Frequency List in my opinion is without a doubt the very best and most up-to-date of "Starting Places" for frequency selection. Nenah Sylver's (aka Nina Silver) excellent book, "*The Handbook of Rife Frequency Healing*", also has an annotated list and as a printed source, in my opinion, second to none. As researchers and experimenters we should realize several things. These lists are STARTING POINTS... these are what has been reported by others to be effective for their applications.

Any thinking person should usually also consider and be aware of:

1. We do not know the circumstances under which those specific frequencies were tested and,
2. We do not know the technical capabilities and background of the folks utilizing the equipment NOR do we necessarily know their criteria.
3. We have absolutely no idea what type of equipment OR ERROR there was in the user's/submitter's equipment... however... based on personal conversation and history and past posts to the lists ... we can be relatively assured that the users have been generally using the same types of equipment we are using now, with the same types of errors.
4. We should remember that individuals may be using any number of schemes to correct known problems or limitations or that their equipment may not be as sensitive to those limitations BY DESIGN.
5. Because the numbers are presented often vary often times only one Hertz, from one list to another, or even within the same list, that to me seems to be an excellent indication that the numbers being reported ARE most likely representative of "error".
6. Without a doubt, resources, information, and technical discussion like this list is terribly important to the development and refinement of this technology... even if such discussion may be restricted or frowned upon elsewhere.

Effective Targeting

The diagram here represents how important frequency selection and proper manipulation can be to an effective operating procedure.

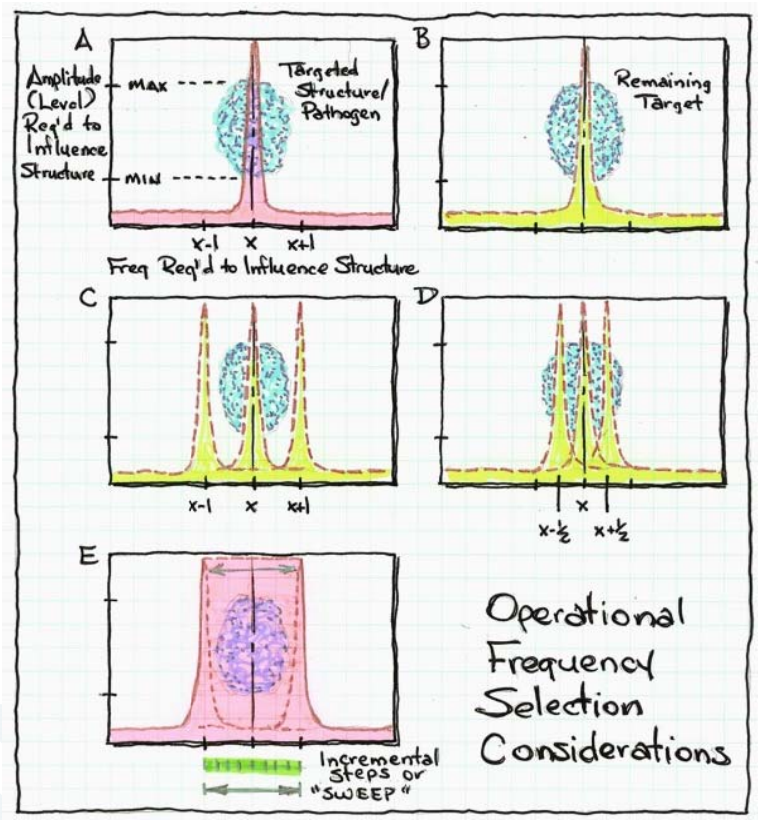


Diagram A shows the spectral emission (red) plotted with x being the MOR. The targeted cells (blue) clustered naturally have a slightly different MOR and varying minimal amounts of energy are required to devitalize each one. The vertical axis indicates the amount of signal present at the given frequency and noted is the minimal and maximum level of power required for effective destruction.

Diagram B shows in the same original pathogen cluster (blue). However the signal generation, now not present (yellow) shows that those cells that were within the realm of its coverage area are now destroyed. However, adjacent "offspring" have not been affected. Continued application of only the frequency shown in Diagram A will continue to ONLY result in the outcome indicated in Diagram B.

Important Note: *Once exposures have ceased, and if no other actions have been taken to devitalize the areas indicated in blue, the pathogen area which HAD effectively been removed will fill back in as mutant offspring of the surviving adjacent surviving/unaffected pathogens continue to propagate.*

Diagram C indicates a multiple frequency approach. While the concept is good, the importance of accurate and minute frequency changes becomes quite apparent. Here, even thought 3 separate frequencies were used, still only one "hit the mark" and in this case, 2/3rds of the time and energies expended were totally wasted.

Diagram D shows that closer frequency increments provide much better and ALMOST complete coverage of the pathogen area but not total coverage of the realm. In many cases, the devitalization is enough to lessen the symptoms enough and relieve the strain on the subjects' body whereas the person's immune system can take care of the rest. If the body however can't fight this battle, left without further exposures, like in Diagram B, the pathogen area will theoretically fill back in with mutant offspring.

Diagram E indicated a best case scenario whereas small incremental steps (often known as a "sweep") completely cover the desired frequency range. As you can see here, the entire pathogen cluster has been encompassed within the realm of exposure. If indeed it effectively devitalized or destroyed, there is no reason to follow up with later exposures for THIS particular target. In practice however, it remains a wise idea to revisit known "hit" areas to make sure any surviving target is kept to an absolute minimum.

Micro stepping

To add content…

As you can likely summate, user understanding is critical in planning and developing an effective protocol. A thorough understanding will allow meaningful modification and the most effective targeting in the least time and effort expended.

Application

Computer "Controlled" Operations

It is this author's opinion and extensive experience that Rife applications are typically best utilized in combination with computer control. Computers now days are not expensive. Depending on your level of need, even very modest or used computers usually provide sufficient resources for most needs. Online capabilities for the acquisition exchange of frequencies, protocols, and general information is invaluable. We hope to soon have even online real-time chat capabilities available from within our commercial and freeware software offerings.

Usability-Convienence

For most of our uses, the computer provides a much needed convenience. It allows:

1. Quick and easy access to the most up to date information, frequency lists, and correspondence with likeminded others.
2. It allows for construction of frequency lists of our own choosing, easy editing, and the ability to keep noteworthy annotations.
3. Software to make the computer a frequency generator is freely and easily accessible to almost any potential user.
4. Advanced command and control for stand-alone systems

Programmability

Without a doubt, most realistic users need to rely on groups of frequencies… not simply rely on a single one. Because of the inter-related nature of so many issues, often even large sequences of frequencies are needed, some being quite effective in relatively short amounts of time, others requiring extended amounts of time for best long-term results. In the case of the radiant devices, (those devices not requiring direct contact), it may often be advantageous for there to be multiple recipients utilizing the equipment and sharing cost, pooling resources, research and ideas. In real practice, multiple persons, even those targeting or studying different afflictions or maladies can easily share a session. The computer can appropriately zip thru just about any user-defined frequency set (sequence) and it is known that many maladies apparently share common frequencies. Being able to start a session and then focus attention on the physiological responses rather than having to dedicate full attention to the operational aspects is quite valuable in practical use.

Wave Sequencing

Because we rarely know the precise frequency needing to be applied, we often have at hand many reported individual frequencies. It may be advantageous to experiment with many separate but related symptoms, and because it is very advantageous to be able to modify on the fly as well as save notations, logs, and various experimental versions, the computer becomes an invaluable tool for frequency generation/control and record keeping.

The capability to rapidly add/change and access frequencies, times, characteristics as well as being able to have a repeatable record of what has been done before, is invaluable in developing usable techniques and protocols. The home PC, desktop or laptop provides this tool at a modest investment. In most cases, a powerful computer is not really required. One with minimal or modest resources will typically suffice.

Computer Frequency Generation

PC Speaker one of the older forms of frequency generation… but one that is still available today uses the computer' internals PC speaker. Important Note: This is NOT to be confused with the PC sound card or built in "sound system" common on most new computers and laptops. IBM used the PC speaker as a diagnostic port to report the overall "health" of the system or to alert of potential problems. To generate this "beep", IBM and the later "compatible" manufacturers triggered a 5v DC voltage on and off rapidly at a rate to cause the sound. It was found this "switch rate" could be manipulated thru software you define tones within a limited audio spectrum with "reasonable accuracy". It MUST be noted, that because of limitation of the circuitry, clock processor speed, inherent mathematical limitations in the preliminary design of PCs, there will ALWAYS be differences in attempted vs. actual generated frequency. Sometimes this difference is quite acceptable, sometime off by quite a bit. Although technically the signal, being switched on and off rapidly is technically a square waveform, in reality, it can vary greatly also. This method however is still a way, folks with very limited budgets, can have many of the desired conveniences, on a shoestring budget.

[show pc speaker connection photo]

Sound Card – The implementation of soundcards into almost all PCs, and notebook computers has really brought low cost specialized signal generation into the hands of many folks that would not otherwise have access. There is a wealth of excellent computer programs for various purposes, many of which are very well suited for the typical Rife experimenter. As in the previous method of PC frequency generation, there are inherent mathematical and hardware induced inaccuracies.

Note: *It is imperative the user be aware that BOTH PC Speaker system and PC Sound card have deficiencies in BOTH frequency accuracy AND waveform output! The latter can be corrected to a significant degree.*

SquareGENsp+ (Signal Processing)

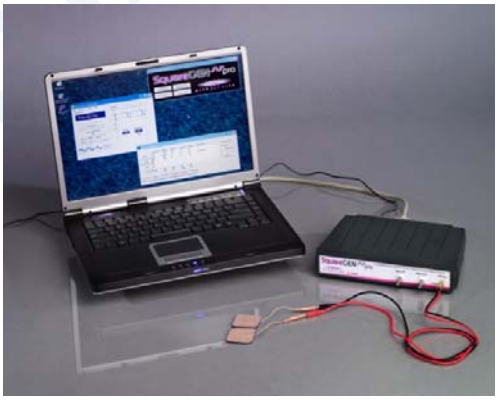
Waveform Correction

As waveform has been openly and repeatedly discussed, (at least on Bob Howard's "rife-list"), several solutions have been publicly and openly offered. Ralph Hartwell's "Wave Shaper" and others are very welcome additions and may be the potential solutions to many folk's concerns.

The SquareGENsp+ shown in the photo includes not only the necessary signal processing for excellent square wave output to pultiple types of devices .. HighVoltage, Bare-Rife, as well as high impedance pad output for use as a contact device.

We should consider and remember EACH of these potential solutions probably has its own unique set of considerations and limitations and might even introduce new problems. We also need to be aware that many of these recommended offerings are for use in a specific environment only. i.e. a device (regardless of price) designed to output a beautiful square wave signal into a 50 ohm load very likely have a terribly output when placed on an animal's skin, (even a human). An output specifically designed to match THAT type of load range of course would be expected to maintain a better waveform. These are all things I personally discuss with developers and users... it isn't any type of secret. It IS a necessary consideration that many devices simply lack.

Computer Control of Equipment



The ideal marriage of computer control and manipulation of dedicated high accuracy frequency generation device hardware provides the ultimate in research capabilities and investigative use with expandable capabilities often implementable through simple, inexpensive software additions, rather than expensive hardware upgrades or replacements.

Safety

Noone... I don't care HOW technically savvy, can absolutely "assume" how another person will use any information, nor should they make those decisions absolutely for the public. It is ridiculous to assume precisely how a person may utilize ANY device or even information... or hopefully how he might ***INNOVATE*** or ***IMPROVE UPON*** or ***UTILIZE*** any information or devices.

Safety is a ***VERY*** relative term. While our governments set standards and guidelines for us in various areas... that varies greatly and is ***OFTEN*** open for interpretation ***AND*** as we have found, is in itself often very misleading.

I myself am one of "those" persons that has terrible debilitating reactions to the "sulfite preservatives" that our own FDA in their "wisdom" deemed "Generally Recognized as Safe"... an additive when on that GRS list was allowed to NOT be disclosed as an ingredient. It was not until after the death of many folks, and public outcry, that it was removed from this list. IT HAD been "legally proven" to the government's standards to be proof to be able to be labeled as ***SAFE!***

I doubt many of us would consider chemotherapy "safe" from ANY perspective. I'm not sure I would subject myself to it under ANY circumstances... yet THAT is "acceptable" conventional treatment

Almost any device can have "innovative" uses. A simple (generally considered "safe") extension cord, has numerous practical applications, but could be fatal if one end was in a person's mouth while the other end is plugged in to the wall outlet. It is a matter of common sense, education, and a general understanding of the practical, related concepts behind these technologies of our study. I would of course recommend strongly for "innovation" directed more along the lines of our intended goals.

The technical papers and information available from FDA and universities and as the result of government grants are quite useful or invaluable in determining as a general rule what MIGHT be safe or not... still, the individual's specific PRIVATE application and decisions may have preference over the reported scenario. For instance, if our FDA has determined that the maximum voltage used in a TENS application is 80volts peak-to-peak... without causing localized cellular damage at the contact point of application, and the user found that 81 volts was beneficial for his particular application or destruction, It is my contention that it *is* NOBODY'S business but his own to determine what "his" acceptable "safety" threshold is under circumstances and conditions undoubtedly his own. He should be able to freely state from his technical OR non-technical perspective what his observations are. It is NOT any of our responsibility or right to predetermine, or make absolute assumptions or decisions for another person.

The Physics

Although beyond the limited scope of this probably already "too long" document, the technical physics, in my opinion surely should be considered. For the last decade, I have seriously been collecting technical documentation, medical, scientific, biological, electrical, patent, even info in the area of particle physics. Maybe surprisingly to many, I have NOT collected much in the way of anecdotal offerings although some DEFINITELY has merits, and unique content worthy of consideration and inclusion. When prepared to my satisfaction, I'm sure I will be making my information available as well as properly referencing, including (with proper permissions), or appropriately linking to my source materials. Unfortunately I believe too many folks are blinded and limited by past or too-simply furnished information when it is not considered into the larger picture.

An excellent example of this was presented by Stuart Andrews effectively demonstrating the all to common (Ella Fitzgerald/Memorex tape commercial) analogy of resonant destruction of a cell (and how that analogy is basically wrong)... by taking a water balloon, shaking, beating, talking, yelling, etc. to it and it was basically absorbing each abuse. There are probably few among us that really believe from a technical perspective that is how the targeted cellular destruction occurs, however... the original analogy REMAINS still, (to many folks), an acceptable method to describe to the complete neophyte the very basic concept of resonant frequency so that THEY TO can enjoy this "quest".

Many folks have informally asked me ... "What do you use on yourself?" knowing of my accessibility to almost anything. I have NO PROBLEM stating that I use the very hardware and software I/we openly discuss here... (Not JUST mine)... the very same things THEY have easy access to! As most of you should recall, my websites and observations are almost EXCLUSIVELY made up of photos, notations, editorial content of what I have PERSONALLY built and used myself. It is presented as such. I have never recommended anything I wouldn't use myself or feel safe in using. If and when that perspective ever

changes, the content and reasoning will not be necessarily removed, but rather TECHNICALLY EXPLAINED. This is so the reader can have the "choice" of deciding what is applicable for himself.

If I could emphasize but one point… that would be to not let cost or (perceived cost) get in your way of investigating this technology. Even the most modest of systems can be beneficial in enlightened hands.

The Future

Many people have asked us, "What's next?" These last several years or so, we have been concentrating heavily on precision control, documentation and attempting to more fully understand what is really going on. One of the key contributions Rife made was his able to demonstrate, (because of his microscope), the real time verification of action and reactions. Few independent researchers to this point have had the resources or the equipment to be able to repeatedly duplicate or perform similar work. Until recently, convenient and extremely accurate and easily controllable plasma excitation has been in the hands of too few. Designs have largely been based on limited and, in many cases, incorrect or incomplete information. Equipment and designs are definitely getting better. Advanced plasma tube designs such as the work of Barry Allred are not always apparent in visual appearance but have been instrumental in many of the advancements made. Simply put, the advances in the technology are not necessarily visually apparent.

We can now easily excite plasmas well past 100,000 Hz which is far more than the 10,000 claimed by some. There is nothing wrong with those designs, they simply don't represent the next generation of equipment becoming available.

We are getting a far richer picture and understanding of the physical and chemical interactions, and the documented sciences involved in what we are causing, witnessing, and experiencing. The realm of the electronic designer has rarely overlapped into the realm of the biology as a result of current conventional medicine's pharmaceutical approach and focus on patented chemicals rather than an in-depth understanding of the energetic nature of what is happening.

As researchers and experimenters it is up to us to responsible utilize existing knowledge and science, and incorporate it thoughtfully into our work… not simply follow the directions mindlessly that have been dropped in our laps... a portion of which may even be WRONG.

The RifeStation here was designed for real-time application, viewing, recording and documentation in a controlled and coordinated environment. The system shown here may also be used in conjunction with our (not shown) Bare-Rife system.

The custom tube shown here allows for direct exposure of selected subjects in a closely controlled environment.

In closing, I want to emphasize that it is YOU, the experimenters and researchers who will likely be the ones to best utilize this technology. Better understanding of the underlying principles, and necessity of controls, will help any user get the best possible performance out of their available equipment. It is through the open exchange of information that others can learn as well.

OTHER TOPICS TO BE INCORPORATED (as time permits)

- Frequency Assignment (ISM)
- Carrier Frewuency (RF)
- Modulation (RF)
- Pulsing (HV) Switch Rate
- Ela Fitzgerald Resonance Analogy
    - why it is right
    - why it is wrong
- Tuning Fork and xtal glasses Analogy
- Spectral Analysis, Bare-Rife off scale at 4.2 ghz

This paper excerpted from the information website

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