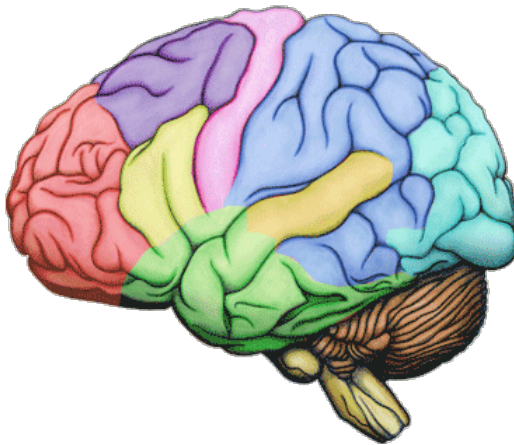


"Mysteries of the Mind"

Full Spectrum Neuro-entrainment

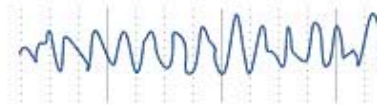
The operational bandwidth of the brain, as determined by clinical EEG monitoring, is about 0.5 to 30 cycles per second (Hz). Above this lies the lesser explored Gamma region. At any given time, one frequency will be dominant. By convention these are grouped into four categories, each with its own range of attributes.





Beta (14-30 Hz)

Concentration, arousal, alertness, cognition
Higher levels associated with anxiety, disease, feelings of separation, fight or flight



Alpha (8-13.9 Hz)

Relaxation, superlearning, relaxed focus, trance, increased serotonin production
Pre-sleep, pre-waking drowsiness, the beginning of access to unconscious mind



Theta (4-7.9 Hz)

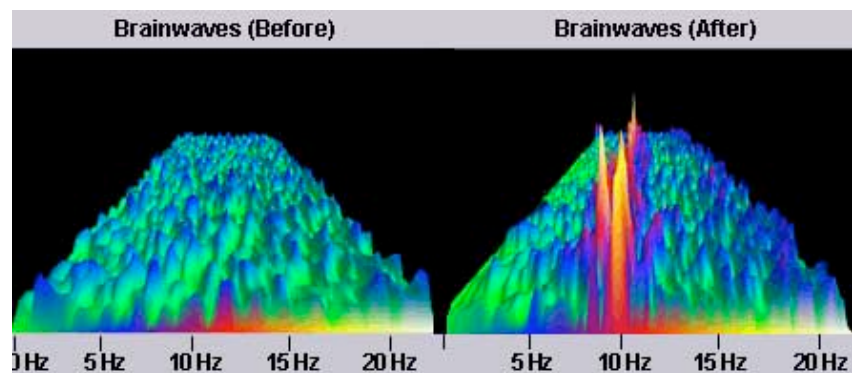
Dreaming sleep (REM sleep)
Increased production of catecholamines (vital for learning and memory), increased creativity
Integrative, emotional experiences, potential change in behavior, increased retention of learned material
Hypnagogic imagery, trance, deep meditation, access to unconscious mind



Delta (.1-3.9 Hz)

Dreamless sleep
Human growth hormone released
Deep, trance-like, non-physical state, full body awareness
Access to unconscious and "collective unconscious" mind

These signals derive from a complex system of internal and external transactions that comprise an experiential feedback loop. Part of this subject to neuro-entrainment to ambient energies as described on the [Earth Frequencies](#) page.



Waterfall EEG plot showing real time entrainment to

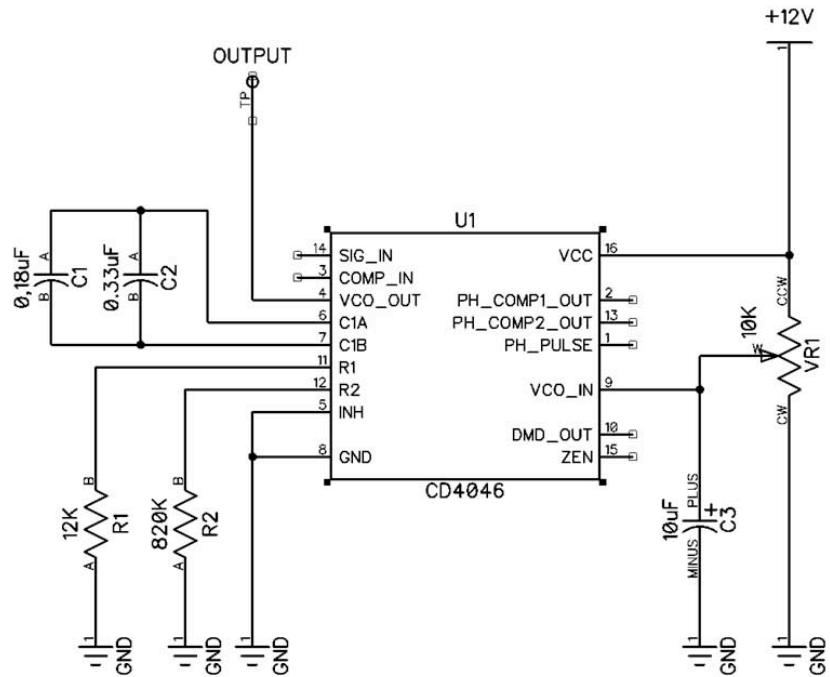
10Hz signal

Variable Frequency Generator

A primary aim of correlating the entire brainwave spectrum is to evoke them selectively using electronic generators of the appropriate frequency. This permits any subjective capability, mood or mental state to be evoked at the turn of dial.

Digital circuits, such as the one on the [Earth Frequencies](#) page, tune in discrete steps, dependent upon their clock frequency and subsequent divide down chain. While this allows great precision for preset effects, continuous analog tuning is more flexible for exploratory work. It also allows manual ramping, eg. a progression of experienced frequency from higher to lower which simulates a natural progression for improved assimilation.

The circuit below enables any frequency between 1 to 26Hz to be adjusted via VR1. As is, it generates a digital square wave. To convert to a more organic sine wave, and boost current to drive the emitter, the same RC filter and amplifier is employed as on the [Earth Frequencies](#) page. Simply remove the CD4060, and associated components, and connect the output below to the point where pin 1 was located.



Tuning can be accomplished intuitively by observing a flashing LED, and/or sensing the inner sensations that arise as frequencies are slowly swept through. In general, faster rates are arousing and extroverting, while slower ones are relaxing and introverting. To perform numerical tuning, a digital meter is required. This also enables preferred settings to be easily record and returned to. It also allows the operator to use any of the several "brainwave frequency" listings available online. Click [here](#) to view one of the more popular, if not wholly scientific, versions.

Another approach to linear tuning is a monolithic function generator IC such as the popular [XR 2206](#). By inserting appropriately

valued timing capacitors it will cover an impressive range of 0.1Hz to 2MHz, making it useful for both psychoactive ELF's and carriers, ie. one chip can AM or FM modulate the other. Output waveform can be selected as sine, square, or triangle.

Home Stereo Modification

The capability described above is even more remarkable in that tangible effects, ie. in behavior, metabolism and brain function, can be demonstrated using ordinary, or slightly modified, audio products and software. This allows a progressive scaling up without disproportionate expense or electronic skill.

The author's approach is to combine the techniques described on the [PC Test Lab](#), [Patterns of Nature](#), and [Magic Circle](#) pages. Of course, in doing so, one should adhere as closely as is practical to the life-supportive energy spectrum of a pristine, pre-technological environment.

Alternatively, pre-packaged kits and consumer devices can be recruited as mix and match "building blocks" for a variety of outcomes. As in any broadcast technology, the major functional elements are 1) signal content, 2) modulated carrier wave, 3) amplifier, and 4) emitter.

Note: do not use bridge tied load (BTL) amps to drive current opposition type emitters as the applied frequency will effectively be doubled.

Assorted Links

[A Comprehensive Review of the Psychological Effects of Brainwave Entrainment](#)
[What is Healing Energy?](#)
[Digital "Mood Changer" circuit](#)
[Electromagnetic Fields, the Modulation of Brain Tissue Functions](#)
[Bibliography on the Psychoactivity of Electromagnetic Fields](#)
[Spatial Frequency Modulates Visual Cortical Response](#)

[Return to Main Menu](#)

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